FINGER LAKES HEALTH SYSTEMS AGENCY

COMMUNITY NEEDS ASSESSMENT

FINGER LAKES PERFORMING PROVIDER SYSTEM
DELIVERY SYSTEM REFORM INCENTIVE PROGRAM
FINAL GRANT APPLICATION

December 18, 2014

1150 University Ave. | Rochester, NY | 14607

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF MAPS

EXECUTIVE SUMMARY

The Finger Lakes Performing Provider System (FLPPS) region consists of 14 counties in Upstate & Western New York and covers approximately 330,000 Medicaid beneficiaries. The metropolitan center of the region is Rochester, N.Y., where both performing provider system (PPS) lead organizations are located. The needs of the population living in these areas cross a variety of issues and are not homogenously distributed. While many health care resources exist for residents of these counties, some services are scarce, including behavioral health support. Furthermore, the health and lives of residents in particular geographic pockets might benefit from additional resources. In order to better understand the health care needs of the FLPPS population, we reviewed previous regional studies and reports, analyzed Medicaid data provided by the state, conducted 13 focus groups and 30 key informant interviews, and analyzed numerous other data sources. As a result, we have identified four primary opportunities for the region:

- The need for an integrated delivery system to address chronic conditions
- The need for integration between physical and behavioral health care systems
- The need to address social determinants of health
- The need to support women and children

Chronic conditions are a leading cause of mortality and years of potential life lost (YPLL) in the FLPPS region. Numerous metrics of integration, including Prevention Quality Indicator (PQI) admissions and Potentially Preventable Emergency Department Visits (PPV) indicate that these chronic conditions could be more appropriately addressed by a system that better integrates primary care and preventative medicine into the treatment plans for individuals with asthma, COPD, cardiovascular conditions, and diabetes. The PQIs which are attributable to chronic disease (diabetes, respiratory, and heart) account for 85 percent of all potentially preventable inpatient hospitalizations in the FLPPS in 2012. A review of the available literature suggests that a coordinated and integrated health care delivery system is well-positioned to provide efficient and effective care to complex patients with chronic disease. When multiple conditions are present in a patient, as is often the case, the complexity of treating that individual rises. Our analyses indicate that having three comorbidities on a hospital admission results in an 18 to 24 percent increased risk of readmission within 30 days. Addressing these conditions through an integrated delivery system should result in improved outcomes for these individuals and reductions in preventable utilization.

As is common in the United States, the FLPPS region typically separates physical and behavioral healthcare into two separate, non-integrated systems. However, the need to integrate these networks in the FLPPS region is especially critical because of the higher-than-average prevalence of behavioral health conditions. Our analyses indicate a clear lack of integration between the two systems in this region and this service silo leads to poor outcomes for individuals. Not only do these individuals' behavioral health conditions influence their mental health, but these conditions have real consequences for their physical health as well. In fact, suicide was found to be the fifth leading cause of premature mortality in the FLPPS. Additionally, 24 percent of all Medicaid-only hospital discharges in 2012 were for a primary behavioral health diagnosis compared to just 8 percent and 3 percent of private insurance and Medicare discharges, respectively. Developing links between the behavioral and physical health care systems may ensure that Medicaid patients are seen in the appropriate setting and receive the most appropriate care for their conditions. Addressing these individuals holistically will likely not only improve their wellbeing but may also reduce costly care that might otherwise be avoided.

Discussions with regional stakeholders have identified socio-economic barriers health as a key influence in the health of the Medicaid population. Nationally, these health factors have recently come to prominence as researchers identify that these issues are significant contributors to population health. Availability of transportation was noted as a barrier to health, both by focus group participants and health care and community service workers throughout the region. In a survey of community based organizations, lack of transportation was the most frequently cited obstacle to clients receiving services, identified by over 20 percent of groups that reported barriers. A regression analysis comparing PPV rates and distance to emergency rooms identified that proximity was associated with PPV utilization in the FLPPS region. Housing resources were also identified throughout this process as a need throughout the region. For example, of individuals who were homeless at the time of admission to a psychiatric hospital, only 62 percent were connected with housing before their discharge. Addressing the socioeconomic barriers to health will be critical to the long term success of any programmatic efforts.

Infant mortality rates in the FLPPS region are generally higher than the New York State average, particularly in Allegany, Monroe, Orleans, and Yates Counties. Substance use admissions among newborns also appears to be unexpectedly high in several PPS counties. While infant mortality does appear to be a serious concern in the FLPPS region, other measures of perinatal health generally match New York state trends, including low birth weight, initiation of prenatal care, and birth defect rates. It is likely that social determinants of health, not captured in the data, are driving that statistic, which is evidenced by the disparity in health outcomes of African Americans and Latinos in Monroe County. Increasing support for women and children will have long term positive impacts on the health of the FLPPS population.

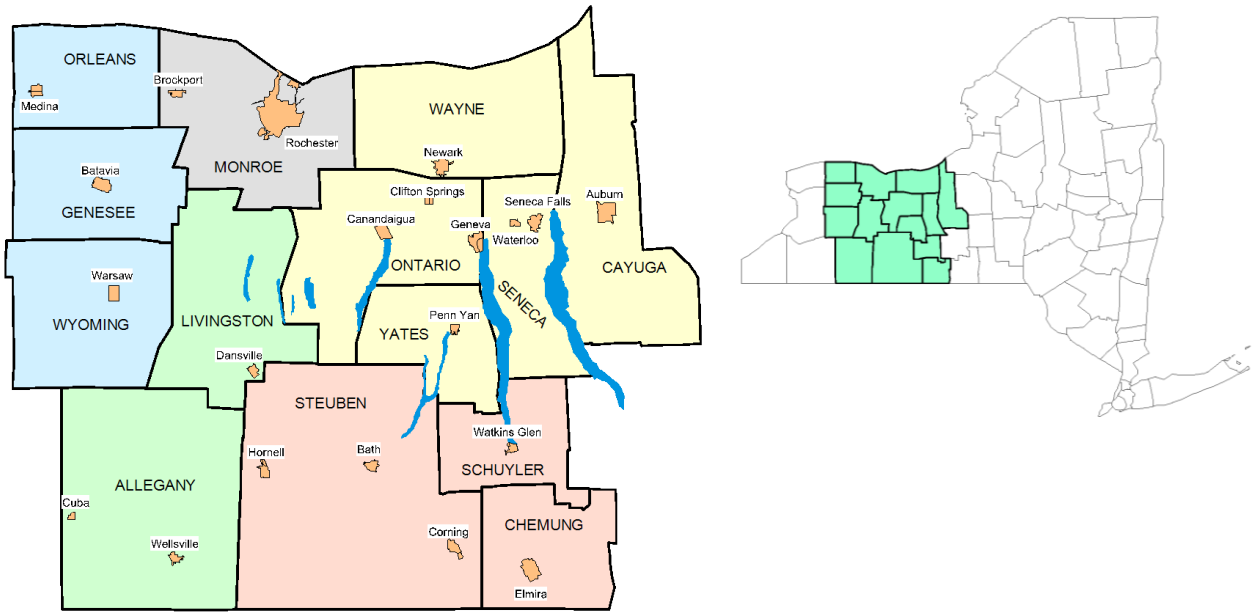
THE FINGER LAKES PPS REGION

The region that this analysis covers is comprised of 14 counties in the western portion of New York State. It is approximately 94 miles from the northern border along Lake Ontario to the Pennsylvania state line which is the southern boundary and 112 miles from east to west. One-fifth of 10,783 square miles in the region is lakes and rivers which often impede travel from one part of the region to another.

The region's 1.5 million residents live in a mix of urban and rural areas — Monroe County, which includes the city of Rochester, is the most densely populated with 1,132 people per square mile of land area while Allegany county is least densely populated with less than 48 people per square mile.

For planning purposes the region is subdivided into five "naturally occurring care network" (NOCN) areas.

- Monroe County is the most populous of the areas and contains almost half (48 percent) of the region's population.
- The Northeast NOCN — Cayuga, Ontario, Seneca, Wayne, and Yates counties — contains just over one-fifth of the region's population (342,000) and three smaller cities — Auburn, Canandaigua, and Geneva. This subarea is the center of the Finger Lakes and almost one-third of its territory is covered by water.
- The Southeast NOCN, which is just under 15 percent of the region's population, contains Chemung, Schuyler, and Steuben counties. Approximately one-quarter of the NOCN's residents live in the cities of Elmira, Corning, and Hornell.
- The counties of Allegany and Livingston make up the Southern NOCN, which includes a population of approximately 114,000 people, with about one of every 12 residents living in a college dormitory or a correctional facility.
- The Northwest NOCN, made up of Genesee, Orleans, and Wyoming counties and the city of Batavia, contains approximately one-tenth of the region's population.



Map 1 – The FLPPS Region

DESCRIPTION OF HEALTHCARE & COMMUNITY RESOURCES

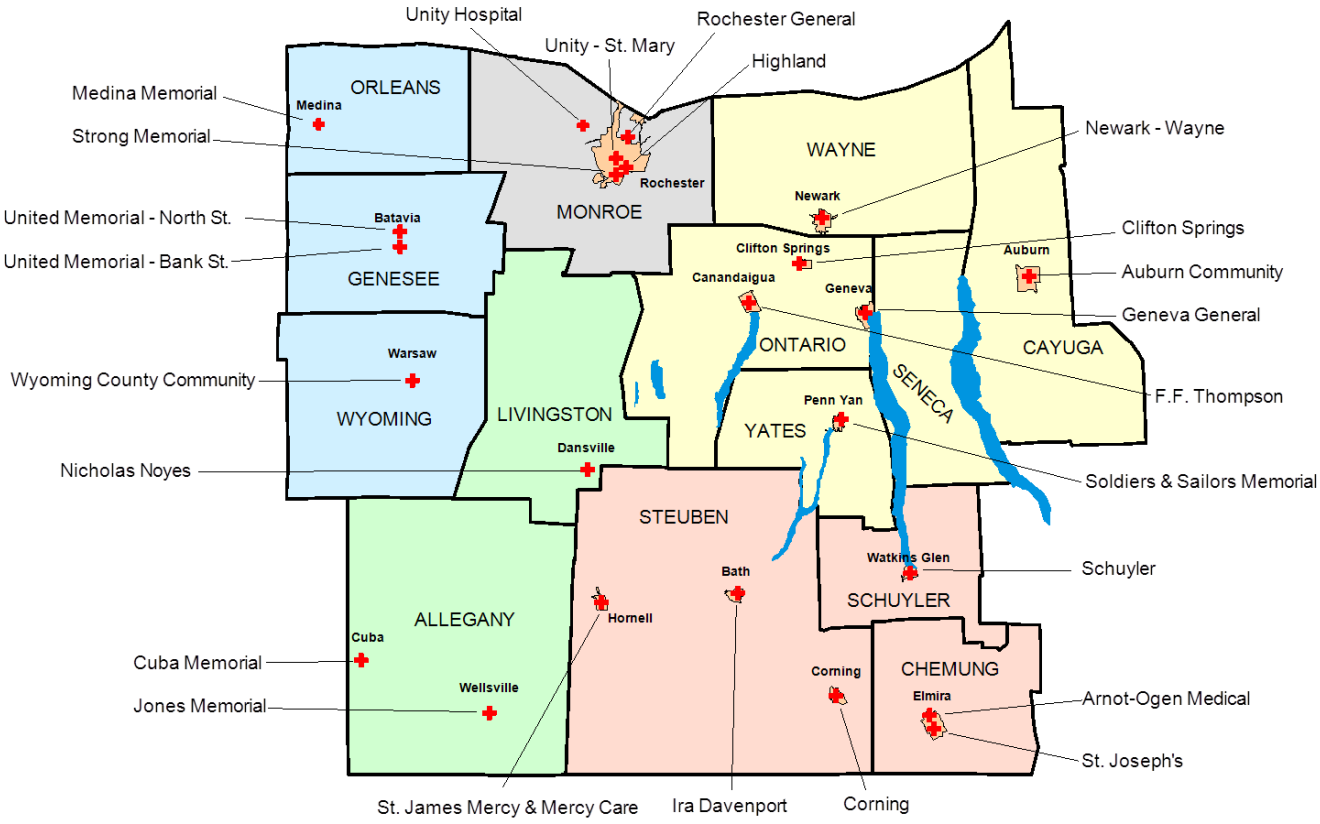
Health Care Resources

The fourteen counties to be supported by the FLPPS have numerous health care resources across the spectrum of acute care. While both physical and behavioral health resources do exist, access and availability vary throughout the region, with some areas lacking adequate access to both. Community based resources are available to much of the population, but again wide variation occurs in the number and types of services available by location.

Healthcare Resource Infrastructure

Acute Care Hospitals

The 14-county FLPPS region is home to 23 Acute Care Facilities. Additionally, the region has one of New York State's three "freestanding" emergency departments at the former site of Lakeside Hospital (now Strong West) which provides emergency care, as well as ambulatory surgery, radiology, and lab services in Brockport, Monroe County.



Map 2 – FLPPS Acute Care Facilities

The FLPPS Region contains a total of 3,843 acute care beds, 9,521 nursing home beds, 46 urgent care centers and 32 ambulatory surgical centers. The distribution of these resources is outlined in Table 1 and Table 2 by total count and per 100,000 population.

Table 1 – Healthcare Resources

Number of Health Care resources by county, FLPPS region, 2012							
County	Ambulatory Surgery Centers	Urgent Care Centers	Number of Nursing Home Beds	Number of Acute Care Beds	FQHCs	Assisted Living Facilities	Hospice Beds[1]
Allegany	2	1	361	76	2	2	0
Cayuga	1	1	529	99	5	5	0
Chemung	4	5	736	466	0	4	0
Genesee	1	4	488	131	0	3	0
Livingston	1	3	354	72	2	2	0
Monroe	11	21	5,244	2,015	36	33	11
Ontario	4	3	623	399	1	6	4
Orleans	1	2	310	70	2	3	8
Schuyler	1	1	120	25	0	1	0
Seneca	0	2	280	0	1	1	0
Steuben	3	3	699	273	1	7	0
Wayne	1	0	561	120	3	3	0
Wyoming	1	0	218	62	1	1	0
Yates	1	0	196	35	4	3	0

DATA SOURCES: FLHSA Surveys, NY State Cost Reports

Table 2 – Healthcare Resource Rates

Health Care resources per 100,000 population by county, FLPPS region, 2012							
County	Ambulatory Surgery Centers	Urgent Care Centers	Number of Nursing Home Beds	Number of Acute Care Beds	FQHCs	Assisted Living Facilities	Hospice Beds
Allegany	4.14	2.07	746.53	157.16	4.14	4.14	0.00
Cayuga	1.26	1.26	664.97	124.45	6.29	6.29	0.00
Chemung	4.50	5.62	827.79	524.12	0.00	4.50	0.00
Genesee	1.67	6.67	813.65	218.42	0.00	5.00	0.00
Livingston	1.54	4.63	546.21	111.09	3.09	3.09	0.00
Monroe	1.47	2.81	701.24	269.45	4.81	4.41	1.47
Ontario	3.69	2.76	574.09	367.68	0.92	5.53	3.71
Orleans	2.33	4.67	723.69	163.41	4.67	7.00	18.66
Schuyler	5.40	5.40	648.16	135.03	0.00	5.40	0.00
Seneca	0.00	5.66	793.09	0.00	2.83	2.83	0.00
Steuben	3.03	3.03	705.61	275.58	1.01	7.07	0.00
Wayne	1.08	0.00	603.47	129.09	3.23	3.23	0.00
Wyoming	2.39	0.00	520.39	148.00	2.39	2.39	0.00
Yates	3.95	0.00	773.36	138.10	15.78	11.84	0.00
NY State	N/A	N/A	746.53	289.00	N/A	4.14	0.00

DATA SOURCES: FLHSA Surveys, NY State Cost Reports

The Finger Lakes Health Systems Agency has for many years performed health planning including capacity analysis including but not limited to hospital and nursing home bed capacity. These have been exhaustive, complete planning analyses. While the timeline for DSRIP precludes studies of the depth that has traditionally been used, we fortunately have recent iterations of these complete analysis that encompass most of the counties in the FLPPS.

[1] These represent beds on hospice licenses only. The hospices have contracts for hospice services with nursing homes and hospices in scatter beds. These are also distinct from the unlicensed beds in homes for the dying in our region. Most hospice care is provided at the patient's place of residence.

Table 3 – Acute Care Facility Occupancy Rates and Medicaid Utilization

FLPPS Acute Care Facility Occupancy Rates, 2012		
NOCN	**Occupancy Rate**	**% Medicaid Days**
Monroe	78.9	19.0%
Northeastern	43.1	10.3%
Northwestern	46.5	19.2%
Southern	23.9	14.0%
Southeastern	43.0	19.4%
FLPPS TOTAL	61.1	18.2%
	*Excludes Newborns and Neonatal Beds	

The Occupancy Rate, defined as the average Daily Census per 100 Certified Beds, of the hospitals in the Finger Lakes region is 61.2 and ranges from 15 percent to almost 80 percent, with the rural areas demonstrating generally lower occupancy rates than the hospitals in Monroe County. As a percentage of patient days, Medicaid is the expected primary payer for 18.2 percent of patient days in the FLPSS. A facility level table, detailing the occupancy rate and Medicaid Days is available in Appendix A.

Hospital bed capacity has been analyzed recently by both the 2020 Commission and the 2020 Performance commission. The initial 2020 Commission was a community convening of stakeholders to direct hospital bed expansion when the Berger commission defined a need for more beds in the Finger Lakes Region. FLHSA and the State came to a consensus on the need for bed expansion in 2008 with the recognition that trends would have demanded more capacity but the community stakeholders including the hospital systems agreed to lower targets with a commitment to invest in projects to lower the demand by expanding outpatient care. The initial study was followed by the 2020 Performance Commission whose regional work group composed of the stakeholders from the rural counties surrounding Monroe County evaluated and made recommendations on the capacity needs of their counties. Actual bed projections for the rural hospitals were looked at in total, rather than by individual hospital taking into account the capacity needed and the recommended service capabilities needed in the local hospitals. The conclusion was that rural institutions needed to consolidate with either each other or their referral institutions to meet the changing needs of their local community. The hospitals are currently implementing affiliation/consolidation activities to improve service and increase efficiency. Targets for bed closure would be anticipated to have small impact on total beds in the region but there is already shifting of capacity location and it is anticipated that licensed beds currently not staffed could potentially be closed permanently.

Nursing Home capacity was studied by the Sage Commission and was completed in 2011. It was a 2 year effort using computer simulations to project the Nursing Home bed need out to 2030 taking into account the desires of those who would be affected. The bed projections were accompanied by the proviso that they could only occur if alternate home based services were developed prior to bed closings to ensure the care needs of this population could be met. Since the publication of the report there have been 280 NH beds closed in primarily Monroe County. The projections predict that there is still a net excess of 431 beds in the 9 county study area. Chemung, with 176 excess beds, and Monroe, with 165 excess beds, are the two largest counties with potential closings. We however hesitate to define excess strictly on county borders as the proximity of counties and usual care patterns demonstrate frequent migration of patients from their Country of origin to receive care, yet stay in the broader region. Nursing home occupancy rates and new admissions are available by facility in Appendix A.

Table 4 – Nursing Home Occupancy Rates and Medicaid Utilization

Nursing Home Occupancy and Medicaid Utilization, 2012				
	Occupancy		New Admissions	
NOCN	Occupancy Rate	% Patient Days Medicaid	Total	% Dual Eligible
Monroe	91.3	67.5	9,742	18.3
Northeastern	92.4	74.4	3,805	19.5
Northwestern	86.4	74.6	1,381	17.9
Southern	90.3	74.4	876	35.5
Southeastern	93.7	77.4	2,455	29.4
FLPPS Region	**91.4**	**71.1**	**18,259**	**20.8**

DATA SOURCE: NH Cost Reports

Urgent Care Centers (UCC)

The FLHSA also completed a survey of all urgent care centers in the fourteen county region, as identified through accrediting agencies and other online resources. One of the common concerns regarding the urgent care model is that the business models do not often support accepting Medicaid patients. While several of the urgent care centers in the FLPPS region are located in Article 28 facilities, and as such are required to serve the Medicaid population, 18 percent of urgent care centers will only accept Managed Medicaid (MMC) (13 percent only from certain insurers) but will not accept Medicaid FFS. Further details on Medicaid acceptance at urgent care centers are given in Figure 1.

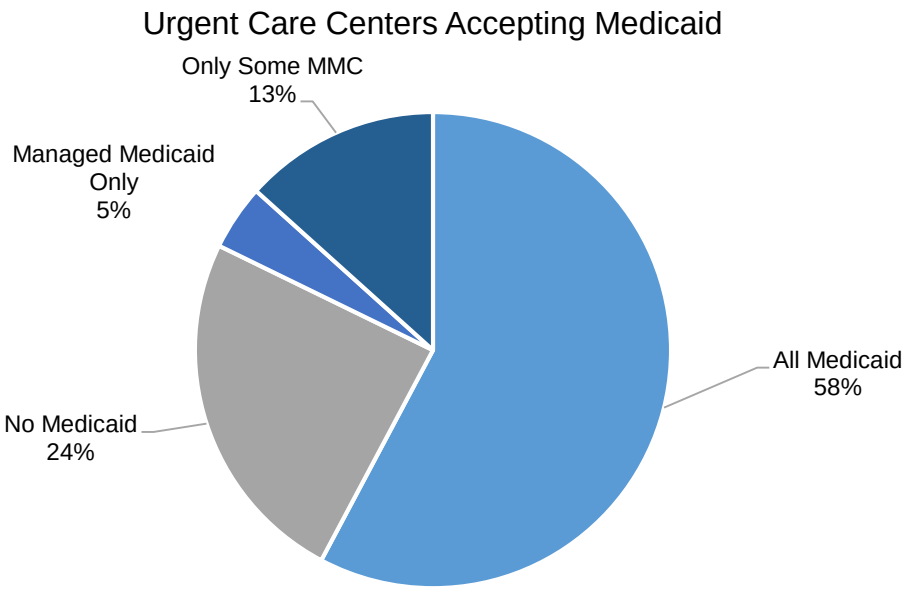


Figure 1 – Urgent Care Centers Accepting Medicaid

Federally Qualified Health Centers (FQHC)

There are 63 Federally Qualified Health Centers in the FLPPS region. FQHC's are vital points of access to primary care for many Medicaid patients, especially in rural areas. Nearly 60 percent of these facilities are in Monroe County, however the region does have five mobile providers that qualify as FQHCs and service multiple counties throughout the region. Chemung, Genesee, and Schuyler counties do not contain any FQHC's.

The Community Health Care Association of New York State recently ranked New York counties by both the need and sustainability of FQHC's. Among mixed urban and rural counties, Chemung ranked third in need and seventh in potential sustainability and Ontario ranked seventh in need and first in sustainability. Numerous other counties were ranked in terms of both need and sustainability for both rural counties and mixed urban rural counties. Additional information on the FQHC's is available from HRSA and a link to that information is included in Appendix C.

Figure 2 is adapted from that report (CHCANYS, 2013). According to this work, there is both need and justification for expansion of FQHCs in several areas of the FLPPS region.

TABLE 10. Ranking of Need and Sustainability in Rural Areas within Mixed Counties

The following two tables show the rankings of the rural areas within mixed counties in the Rest of State by need and by sustainability. The highest-ranking county is listed first.

RANK ORDERED BY NEED: County with Highest Need for FQHC Expansion Listed First		RANK ORDERED BY SUSTAINABILITY: County with Highest Potential to Sustain FQHC Expansion Listed First	
RANKING	COUNTY	RANKING	COUNTY
1	Oneida	1	Ontario
2	Jefferson	2	Onondaga
3	Chemung	3	Schenectady
4	Wayne	4	Erie
5	Broome	5	Broome
6	Warren	6	Niagara
7	Ontario	7	Chemung
8	Washington	8	Monroe
9	Niagara	9	Orange
10	Orange	10	Putnam
11	Ulster	11	Oneida
12	Albany	12	Rensselaer
13	Tompkins	13	Wayne
14	Tioga	14	Ulster
15	Rensselaer	15	Jefferson
16	Saratoga	16	Saratoga
17	Schenectady	17	Tompkins
18	Dutchess	18	Washington
19	Putnam	19	Tioga
20	Erie	20	Albany
21	Monroe	21	Dutchess
22	Onondaga	22	Warren

TABLE 9. Ranking of Need and Sustainability in Fully Rural Counties

The following two tables show the rankings of the fully rural counties in the Rest of State by need and by sustainability. The highest-ranking county is listed first.

RANK ORDERED BY NEED: County with Highest Need for FQHC Expansion Listed First		RANK ORDERED BY SUSTAINABILITY: County with Highest Potential to Sustain FQHC Expansion Listed First	
RANKING	COUNTY	RANKING	COUNTY
1	St. Lawrence	1	Fulton
2	Montgomery	2	Montgomery
3	Sullivan	3	Otsego
4	Franklin	4	Sullivan
5	Delaware	5	Chautauqua
6	Otsego	6	Steuben
7	Herkimer	7	St. Lawrence
8	Cattaraugus	8	Schoharie
9	Chautauqua	9	Herkimer
10	Yates	10	Delaware
11	Chenango	11	Clinton
12	Clinton	12	Chenango
13	Fulton	13	Cattaraugus
14	Schuyler	14	Franklin
15	Steuben	15	Madison
16	Greene	16	Schuyler
17	Seneca	17	Seneca
18	Allegany	18	Lewis
19	Essex	19	Columbia
20	Lewis	20	Oswego
21	Columbia	21	Greene
22	Orleans	22	Yates
23	Schoharie	23	Genesee
24	Cortland	24	Cayuga
25	Oswego	25	Allegany
26	Madison	26	Cortland
27	Cayuga	27	Livingston
28	Wyoming	28	Wyoming
29	Livingston	29	Essex
30	Hamilton	30	Orleans
31	Genesee	31	Hamilton

TABLE 11. Ranking of Need and Sustainability in Urban Areas within Mixed Counties

The following two tables show the rankings of the urban areas within mixed counties in the Rest of State by need and by sustainability. The highest-ranking county is listed first.

RANK ORDERED BY NEED: County with Highest Need for FQHC Expansion Listed First		RANK ORDERED BY SUSTAINABILITY: County with Highest Potential to Sustain FQHC Expansion Listed First	
RANKING	COUNTY	RANKING	COUNTY
1	Oneida	1	Chemung
2	Chemung	2	Jefferson
3	Westchester	3	Ontario
4	Jefferson	4	Broome
5	Albany	5	Wayne
6	Orange	6	Oneida
7	Broome	7	Albany
8	Erie	8	Warren
9	Rensselaer	9	Rensselaer
10	Rockland	10	Schenectady
11	Niagara	11	Orange
12	Schenectady	12	Ulster
13	Washington	13	Erie
14	Onondaga	14	Rockland
15	Suffolk	15	Onondaga
16	Ulster	16	Monroe
17	Nassau	17	Dutchess
18	Monroe	18	Nassau
19	Tompkins	19	Niagara
20	Warren	20	Saratoga
21	Dutchess	21	Suffolk
22	Ontario	22	Tompkins
23	Saratoga	23	Putnam
24	Wayne	24	Washington
25	Tioga	25	Westchester
26	Putnam	26	Tioga

Figure 2 – CHCANYS Ranking of Sustainability and Need for FQHC's

Health Homes

Several health homes serve various counties within the FLPPS region. The primary provider of health home services in the region is Health Homes of Upstate New York (HHUNY), which serves 11 of the 14 counties in the region. The other health homes in the region only provide services to residents of specific counties and do not provide services to most of the rural areas.

Table 5 – FLPPS Health Homes

Health Homes in the FLPPS Regions	
County	**Health Homes Serving Each County**
Allegany	Chautauqua County Department of Mental Hygiene
Cayuga	Central New York Health Home Network, Onondaga Case Management Services, St. Joseph's Coordination Network
Chemung	Onondaga Case Management Services
Genesee	Health Homes of Upstate NY
Livingston	Health Homes of Upstate NY
Monroe	Greater Rochester Health Home Network, Health Homes of Upstate NY
Ontario	Health Homes of Upstate NY
Orleans	Health Homes of Upstate NY
Schuyler	Health Homes of Upstate NY
Seneca	Health Homes of Upstate NY
Steuben	Health Homes of Upstate NY
Wayne	Health Homes of Upstate NY
Wyoming	Health Home Partners of Western New York LLC
Yates	Health Homes of Upstate NY

DATA SOURCE; NYSDOH Website

County Health Departments

The county health departments in the fourteen counties also provide services to the Medicaid and uninsured populations. These services can be critical for persons requiring specific services but with little resources to obtain them. Table 6 and Table 7 outline these services at the county level.

Table 6 – County Health Department Services

Health Department Services by County, FLPPS							
	Allegany	Cayuga	Chemung	Genesee	Livingston	Monroe	Ontario
Immunizations/clinics	X	X	X	X	X	X	X
TB Control/clinic			X		X	X	
STD Clinic/testing	X	X	X	X		X	
Nurse-Family Partnership						X	
HIV Testing	X	X	X	X		X	
Flu clinic/shots			X				X
Cancer screening	X		X		X		X
Licensed home care agency							
Pre-school program	X	X		X			
Well-child clinic							
Children w/special needs	X	X		X	X		
Prenatal services		X					
Child Health programs		X					
WIC	X	X	X		X		
Early Intervention	X	X		X	X		
Oral health		X	X				
Maternal/child health programs					X		

DATA SOURCE: County DOH Websites

Table 7 – County Health Department Services (cont.)

Health Department Services by County, FLPPS (cont.)							
	Orleans	Schuyler	Seneca	Steuben	Wayne	Wyoming	Yates
Immunizations/clinics	X	X	X	X	X	X	X
TB Control/clinic	X		X		X		
STD Clinic/testing		X	X	X		X	
Nurse-Family Partnership							
HIV Testing	X	X	X	X		X	
Flu clinic/shots	X		X		X		
Cancer screening		X		X		X	X
Licensed home care agency			X				
Pre-school program		X	X				
Well-child clinic					X		
Children w/special needs		X		X	X		
Prenatal services							X
Child Health programs							
WIC							
Early Intervention		X		X			
Oral health							
Maternal/child health programs	X			X		X	

DATA SOURCE: County DOH Websites

Physical Health Care Workforce

Overall the FLPPS region has a much lower abundance of physicians, as measured by licensed physicians per 100,000 population than New York State. The only county with a higher number of physicians than New York State is Monroe County, where both FLPPS lead organizations and major medical centers are located. As availability of primary care and preventative services is important to DSRIP and the overall health of the population, we also reviewed the number of primary care physician (PCP) full-time equivalents (FTEs) and the ratio of PCPs to specialists. The FLPPS region demonstrates a lack of PCPs on this measure when compared to the state, with several counties demonstrating less than half of the PCP workforce than the state per capita. With regards to the licensure counts and rates, it is important to note that while licensure data is valuable to understanding workforce availability, it does not necessarily represent the number of individuals currently providing care within the scope of a particular license. This measure does not account for researchers or other practitioners who may not be actively treating patients but still maintain their license

Dentists and pharmacists are also underrepresented in the 14-county region. The availability of both of these services remains critical to ensuring patient centered care and preventing avoidable hospitalization. Overall the region does appear to have higher RN licensure rates than the state, a resource which could be leveraged to implement DSRIP programs.

There is significant variability in the availability of additional clinicians among the FLPPS counties. With the understanding that the development of programs will rely heavily on the available clinical workforce, there may need to be additional consideration given to sub-regional implementation to ensure program success.

The region also participates heavily in the training of physicians and future health care providers as it hosts 78 medical resident programs, which graduated 277 physicians in 2012, as well as 6 nurse practitioner programs and a pharmacy training program.

Table 8 – Healthcare Provider Availability

Availability of Providers by Licensure Type per 100,000 Population, 2012								
County	All Physicians*	PCP FTE / 100,000 Pop	PCP*	All Other Specialties*	PCP / Spec Ratio	Dentists*	Pharmacists*	RN*
Allegany	97.8	46.1	63.4	34.4	1.84	20.3	60.9	1096.4
Cayuga	148.5	43.4	62.0	69.0	0.90	42.6	57.6	1295.9
Chemung	315.5	89.5	104.7	210.8	0.50	56.6	90.6	1445.8
Genesee	142.2	63.3	82.2	60.0	1.37	35.8	70.0	1543.0
Livingston	95.9	49.0	71.4	24.5	2.91	47.0	65.8	1399.6
Monroe	377.6	98.6	139.9	237.6	0.59	76.7	99.9	1305.3
Ontario	276.3	75.0	110.5	165.8	0.67	56.6	91.5	1557.3
Orleans	95.3	29.3	58.4	36.9	1.58	23.6	61.4	883.0
Schuyler	160.6	91.6	90.8	69.8	1.30	37.5	91.2	1147.5
Seneca	56.7	26.0	37.8	18.9	2.00	23.2	60.9	1027.2
Steuben	211.3	73.1	89.6	121.7	0.74	43.1	54.4	1225.2
Wayne	83.3	49.5	62.1	21.2	2.93	38.0	70.5	1155.0
Wyoming	121.7	64.1	71.8	49.9	1.44	26.4	79.1	1248.4
Yates	141.6	75.9	83.9	57.7	1.45	20.1	40.3	1301.0
NYS	**348**	**84.5**	**120**	**228**	**0.53**	**78.0**	**91.0**	**1093.0**

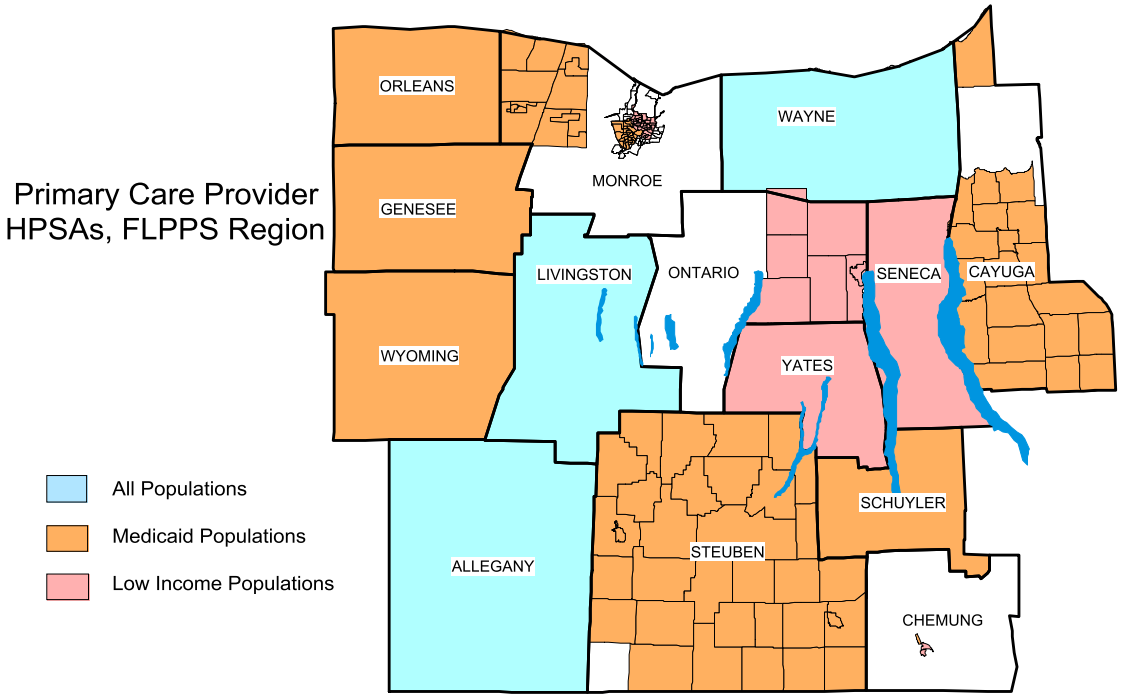
DATA SOURCE: Center for Health Workforce Studies
*Licenses per 100,000 Pop.

Table 9 – Healthcare Provider Availability (cont.)

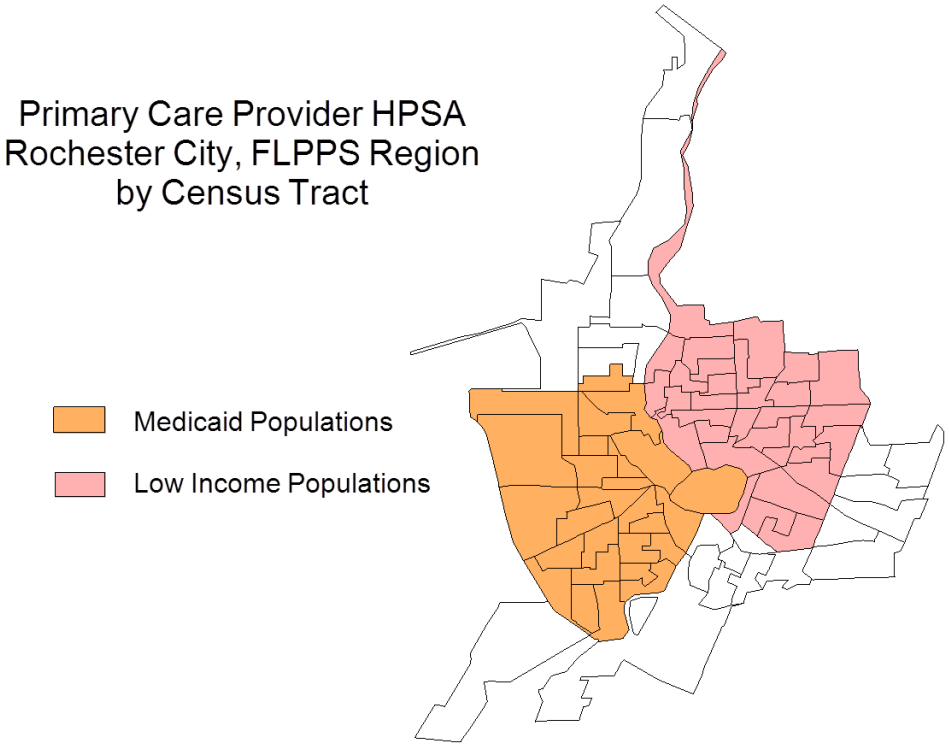
Availability of Providers by Licensure Type, per 100,000 Population, 2012					
County	Physical Therapists*	Occupational Therapists*	Speech Language Pathologists*	Physician Assistants*	Nurse Practitioners*
Allegany	46.7	18.3	48.7	30.5	62.9
Cayuga	61.4	25.1	40.1	23.8	92.7
Chemung	69.1	44.2	156.2	40.8	104.2
Genesee	68.3	42.7	68.3	29.0	107.5
Livingston	67.4	43.9	101.9	45.5	73.7
Monroe	91.2	47.1	94.6	64.9	135.8
Ontario	94.3	88.7	89.6	51.9	135.8
Orleans	37.8	11.8	23.6	7.1	54.3
Schuyler	69.7	53.6	26.8	21.4	26.8
Seneca	40.6	63.8	26.1	23.2	37.7
Steuben	50.3	43.1	43.1	31.8	58.5
Wayne	79.2	59.6	79.2	36.9	70.5
Wyoming	50.3	26.4	57.5	35.9	47.9
Yates	44.3	108.8	36.3	12.1	149
New York State	80.0	47.0	71.0	61.0	76.0

DATA SOURCE: Center for Health Workforce Studies
*Licenses per 100,000 Pop.

The Health Resources and Services Administration (HRSA) identifies Health Professional Shortage Areas (HPSAs) through an application process that documents need for a particular service. Within the FLPPS region Allegany, Livingston, Orleans, Schuyler, Seneca, Wayne, Wyoming and Yates counties are listed as entire counties with HPSA PCP designations for either the entire population and/or the Medicaid population. Further, Cayuga, Genesee, Monroe, Ontario, and Steuben counties contain PCP HPSA's for various portions of their population. This strongly suggests that there is a PCP shortage throughout the FLPPS region.

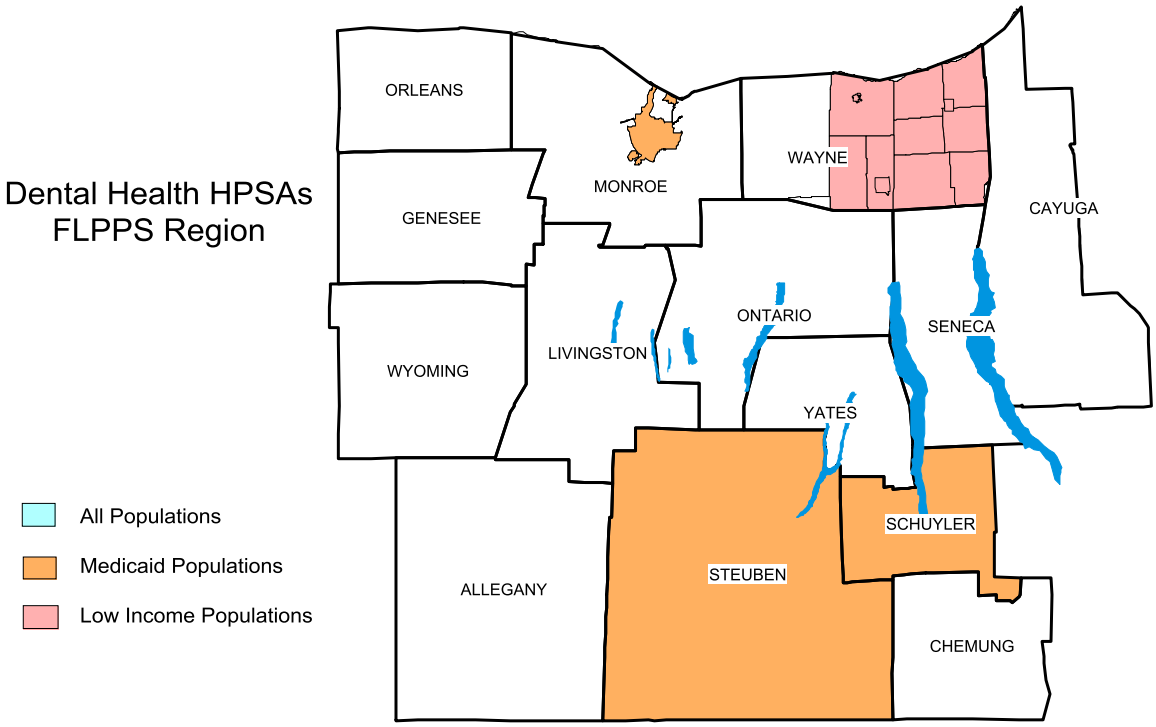


Map 3 – PCP HPSA's, FLPPS Region



Map 4 – PCP HPSA's, City of Rochester

Dental care is a primary area of concern for the Medicaid and Uninsured Populations. As identified in Map 5 below, there are numerous locations throughout the 14 counties that identify specific populations as needing additional dental health resources. Additionally, the HRSA data indicate that the institutionalized populations in FLPPS frequently experience dental provider shortages. While there are 888 dental licenses attributable to the FLPPS fourteen county region, only 211 unique billed providers had encounter or service claims in 2013 as identified in the Salient Medicaid claims database.



Map 5 – Dental Health HPSA's

One of the additional resources at our disposal is the FLHSA aggregated claims database. This database contains commercial, managed Medicaid and Medicare advantage claims from Excellus and MVP for residents in the majority of the FLPPS counties. One of the added benefits of this data source is that we can determine how many physicians in these counties are seeing Managed Medicaid patients. The providers in the rural communities are more likely to have Medicaid claims than those in the more urban communities. However, across the region, between 80 percent and 100 percent of the providers in our database accept Managed Medicaid. While this does not account for Fee-for-Service (FFS) Medicaid patients, it does demonstrate that the majority of providers are willing to accept Managed Medicaid patients in most of the regional counties.

Table 10 – PCP Providers with Medicaid Claims

Percentage Of Primary Care Providers With Managed Medicaid Claims, 2013[2]

County	Provider Specialty	PCPs With Claims	% Of PCPs With Claims
Chemung	Family Practice	18	100%
	Internal Medicine	29	76%
	Obstetrics & Gynecology	6	100%
	Pediatrics	10	100%
	Total	63	88%
Livingston	Family Practice	19	100%
	Internal Medicine	9	100%
	Obstetrics & Gynecology	2	100%
	Pediatrics	6	100%
	Total	36	100%
Monroe	Family Practice	145	91%
	Internal Medicine	296	85%
	Obstetrics & Gynecology	111	93%
	Pediatrics	173	94%
	Total	725	89%
Ontario	Family Practice	20	83%
	Internal Medicine	26	67%
	Obstetrics & Gynecology	9	100%
	Pediatrics	12	100%
	Total	67	80%
Schuyler	Family Practice	8	100%
	Internal Medicine	3	75%
	Obstetrics & Gynecology	1	100%
	Pediatrics	2	100%
	Total	14	93%
Seneca	Family Practice	6	100%
	Internal Medicine	4	100%
	Total	10	100%
Steuben	Family Practice	26	100%
	Internal Medicine	17	74%
	Obstetrics & Gynecology	4	100%
	Pediatrics	8	100%
	Total	55	90%
Wayne	Family Practice	14	93%
	Internal Medicine	14	93%
	Obstetrics & Gynecology	3	75%
	Pediatrics	9	100%
	Total	40	93%
Yates	Family Practice	13	100%
	Internal Medicine	1	33%
	Total	14	88%
	Totals	**1,024**	**89%**

DATA SOURCE: FLHSA Aggregated Claims Database

[2] Based on the November 2014 enrollment, almost two-thirds (63%) of the 14-county region's Medicaid Managed Care enrollment was in Excellus or MVP plans. However, the proportion varies substantially among the NOCN subareas from a high of 83% in Monroe Co to 0% in the SE NOCN. See Appendix A for enrollment by county and NOCN.

Behavioral Health Workforce

The behavioral health workforce will be a critical component to the success of DSRIP programs. The availability of this workforce varies by county. However, the region consistently measures below the New York state average availability of behavioral health care workforce. In fact, no counties exceed the New York state average rate for either psychiatrists or psychologists. This lack of doctoral level practitioners may have serious implications, both for their patients and the patients being seen by the mid-level practitioners' patients, given the potential lack of support structure. The choice of implementation methodology by program will certainly need to account for the skill sets of the available workforce in the region, as well as the differences in capabilities by license type.

Table 11 – Availability of BH Providers

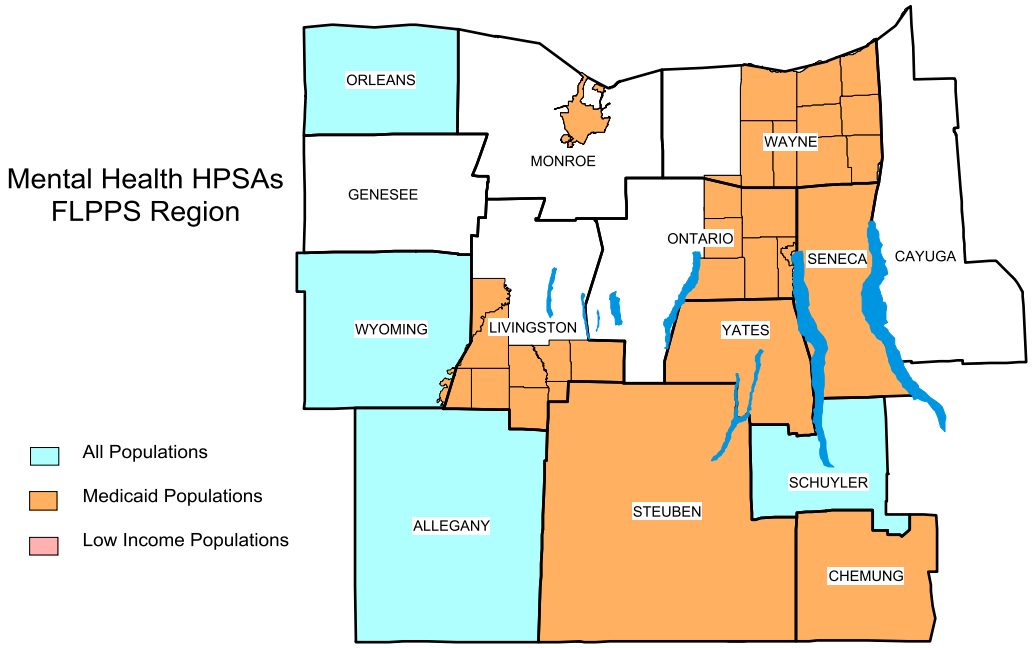
Availability of Providers by Licensure Type, per 100,000 residents, 2012				
County	Psychiatrists*	MH Counselors*	Psychologists*	Social Workers*
Allegany	2.6	32.5	28.4	56.9
Cayuga	8.2	17.5	6.3	100.3
Chemung	25.1	21.5	13.6	156.2
Genesee	4.4	18.8	11.9	124.6
Livingston	0.0	20.4	17.2	125.4
Monroe	27.4	31.1	42.3	217.5
Ontario	18.4	26.4	29.2	177.3
Orleans	6.1	9.4	9.4	75.6
Schuyler	0.0	5.4	16.1	171.6
Seneca	11.3	17.4	0.0	130.6
Steuben	14.7	10.3	21.6	121.2
Wayne	4.2	31.5	5.4	118.2
Wyoming	6.2	9.6	2.4	107.8
Yates	21.0	16.1	8.1	96.7
New York State	36.0	21.0	52.0	234.0

DATA SOURCE: Center for Health Workforce Studies

*Licenses per 100,000 Pop.

It should be noted that the data in the table above represents a rate of licensed practitioners assigned to a county based on the address listed on said license. It is unclear if this address represents where a clinician works or where he or she lives. Furthermore, we do not have information on the number of hours worked by clinicians or in what settings they work (i.e. – a research setting vs. a clinical setting). As such, it is likely that these numbers do not perfectly capture provider availability from a patient's perspective. Indeed, feedback from local county mental hygiene directors suggested that the above numbers may in many cases overstate the number of available providers in a given county. Using their working knowledge of the available behavioral health resources and informal provider surveys, the county mental hygiene directors produced estimated FTE numbers by provider type. These estimates can be found in Appendix A. Despite these potential discrepancies, it is likely that the above license rates provide a reasonable estimate of BH provider availability, particularly for the purpose of comparing between counties and to the state as a whole.

HRSA also identifies MH HPSA's by a similar process as the PCP and dental health HPSA's. Through this process Allegany, Chemung, Orleans, Schuyler, Seneca, Steuben, Wyoming, and Yates counties are all identified, in their entirety as lacking mental health services. Cayuga, Genesee, Livingston, Monroe, Ontario, and Wayne counties are also identified as having subsets of their populations in need of additional mental health services. Within many of these counties, correctional facilities are identified as needing additional mental health services. Additionally, half of the 14 counties specifically identify the Medicaid population as being in need of additional mental health care. These identified gaps in the mental health care workforce could present serious challenges to any programs targeted to the behavioral health population.



Map 6 – Mental Health HPSA's

While the rates of licensure for the FLPPS region appear to be below the state average, there is an additional separate concern regarding the availability of these services specific to the Medicaid and uninsured populations. Wilk et al. found that nationally over 85 percent of psychiatrists were willing to see new patients, but only 44 percent were willing to accept Medicaid patients, essentially cutting the psychiatrist availability in half for those individuals (Wilk JE; et al., 2005). Both health care and community based providers reiterated to us through our local reviews of the CNA that a shortage of psychiatrists was also an issue in the FLPPS region.

One of the FLHSA's regional partners for the CNA is Coordinated Care Services Incorporated (CCSI) which is well connected with behavioral health providers in the FLPPS region and continuously conducts research to evaluate the resources available and needs of patients. They have developed an extensive database of programs that serve behavioral health clients. Within this database, 812 programs provide services from crisis intervention (17) to supported community housing (54). A table of all of the available resources is included in Appendix A.

Table 12 – Behavioral Health Resources by County

Behavioral Health Resources, 2014	
County	**Number of BH Resources**
Allegany	37
Cayuga	45
Chemung	64
Genesee	36
Livingston	31
Monroe	213
Ontario	49
Orleans	30
Schuyler	25
Seneca	42
Steuben	54
Wayne	62
Wyoming	47
Yates	41
New York State	36

DATA SOURCE: CCSI BH Resource Database

Table 13 – Behavioral Health Resources

Number of BH resources by County, 2014							
County	Advocacy/Support Services	Clinic Treatment	Crisis Intervention	Day Hab/ Day Services	Family Support Services Children & Family	Health Home Care Management	OMH 1915i Providers
Allegany	6	1	0	1	1	3	5
Cayuga	1	2	0	3	3	1	0
Chemung	4	3	2	2	1	2	2
Genesee	2	1	1	1	1	1	2
Livingston	3	2	0	1	3	1	4
Monroe	23	11	4	1	5	4	7
Ontario	2	2	1	2	1	2	2
Orleans	2	1	0	1	2	1	1
Schuyler	1	1	1	1	1	2	1
Seneca	2	2	0	0	1	2	2
Steuben	2	1	1	3	2	2	3
Wayne	3	1	1	1	2	1	4
Wyoming	5	2	1	1	2	2	5
Yates	2	1	2	1	1	2	4
FLPPS Region	58	31	14	19	26	26	42

DATA SOURCE: CCSI BH Resource Database

Table 14 – Behavioral Health Resource Rates

BH Resources per 100,000 Population by County, 2014							
County	Advocacy/Support Services	Clinic Treatment	Crisis Intervention	Day Hab/ Day Services	Family Support Services Children & Family	Health Home Care Management	OMH 1915i Providers
Allegany	12.4	2.1	0.0	2.1	2.1	6.2	10.3
Cayuga	1.3	2.5	0.0	3.8	3.8	1.3	0
Chemung	4.5	3.4	2.2	2.2	1.1	2.2	2.2
Genesee	3.3	1.7	1.7	1.7	1.7	1.7	3.3
Livingston	4.6	3.1	0.0	1.5	4.6	1.5	6.2
Monroe	3.1	1.5	0.5	0.1	0.7	0.5	0.9
Ontario	1.8	1.8	0.9	1.8	0.9	1.8	1.8
Orleans	4.7	2.3	0.0	2.3	4.7	2.3	2.3
Schuyler	5.4	5.4	5.4	5.4	5.4	10.8	5.4
Seneca	5.7	5.7	0.0	0.0	2.8	5.7	5.7
Steuben	2.0	1.0	1.0	3.0	2.0	2.0	3.0
Wayne	3.2	1.1	1.1	1.1	2.2	1.1	4.3
Wyoming	11.9	4.8	2.4	2.4	4.8	4.8	12.0
Yates	7.9	3.9	7.9	3.9	3.9	7.9	15.8
FLPPS Region	3.7	2.0	0.9	1.2	1.7	1.7	2.7

DATA SOURCE: CCSI BH Resource Database, 2012 Population from ACS

Table 15 – Behavioral Health Resources (cont.)

Number of BH Resources by County, 2014 (cont.)							
County	Inpatient Psychiatric Unit of a General Hospital	Inpatient Rehab.	Partial Hospitalization	Outpatient Clinic	CPEP Crisis	Respite Services	Supported Housing Community Services
Allegany	0	0	0	1	0	1	3
Cayuga	1	0	0	2	0	2	3
Chemung	1	1	1	1	0	1	3
Genesee	0	1	0	2	0	0	1
Livingston	0	0	0	2	0	1	3
Monroe	3	2	3	13	1	0	14
Ontario	1	1	0	4	1	0	2
Orleans	0	0	0	1	0	0	2
Schuyler	0	0	0	1	0	0	2
Seneca	0	1	0	2	0	1	2
Steuben	0	1	0	4	0	1	4
Wayne	1	0	0	2	0	0	5
Wyoming	1	0	0	1	0	1	2
Yates	1	0	0	1	0	1	2
FLPPS Region	9	7	4	37	2	9	48

DATA SOURCE: CCSI BH Resource Database

Table 16 – Behavioral Health Resource Rates (cont.)

BH Resources per 100,000 Population by County, 2014 (cont.)							
County	Inpatient Psychiatric Unit of a General Hospital	Inpatient Rehab.	Partial Hospitalization	Outpatient Clinic	CPEP Crisis	Respite Services	Supported Housing Community Services
Allegany	0.0	0.0	0.0	2.1	0.0	2.1	6.2
Cayuga	1.3	0.0	0.0	2.5	0.0	2.5	3.8
Chemung	1.1	1.1	1.1	1.1	0.0	1.1	3.4
Genesee	0.0	1.7	0.0	3.3	0.0	0.0	1.7
Livingston	0.0	0.0	0.0	3.1	0.0	1.5	4.6
Monroe	0.4	0.3	0.4	1.7	0.1	0.0	1.9
Ontario	0.9	0.9	0.0	3.7	0.9	0.0	1.8
Orleans	0.0	0.0	0.0	2.3	0.0	0.0	4.7
Schuyler	0.0	0.0	0.0	5.4	0.0	0.0	10.8
Seneca	0.0	2.8	0.0	5.7	0.0	2.8	5.7
Steuben	0.0	1.0	0.0	4.0	0.0	1.0	4.0
Wayne	1.1	0.0	0.0	2.2	0.0	0.0	5.4
Wyoming	2.4	0.0	0.0	2.4	0.0	2.4	4.8
Yates	3.9	0.0	0.0	3.9	0.0	3.9	7.9
FLPPS Region	0.6	0.5	0.3	2.4	0.1	0.6	3.1

DATA SOURCE: CCSI BH Resource Database, 2012 Population from ACS

Community Based Resources

While health care resources are critical to the acute needs of patients, they are not the only factors in ensuring that patients are cared for in the most efficient and meaningful way. A litany of community based organizations (CBO) that support individuals in the Medicaid and uninsured populations exist in the FLPPS region. Unfortunately, the availability of these organizations has remained somewhat shrouded from the health care community. In order to identify these resources, the FLHSA asked our regional CBO's to complete an online qualitative survey. FLHSA staff also requested detailed data from the local 211 providers to help the FLPPS understand the diverse community based resources that are available to their patients to help improve their lives. As DSRIP encourages the increased interaction between community based resources and health care resources it will be important to understand not only where these types of resources exist, but also where they may be most needed throughout the region.

The Alliance of Information and Referral Systems (AIRS) 211 taxonomy separates various community resources into eleven basic taxonomic categories. The total number of programs providing services to the residents of FLPPS region is nearly 5,600. Of particular interest to DSRIP are the programs provided in the basic needs taxonomy, such as transportation, housing, and food.

Due to restrictions of the data set, we are unable to consistently provide service areas which are covered by the various community resources. What we are able to examine is the county of the parent agency's address. In order to provide a proxy for service area, we must assume that for many of these resources the parent agency provides services in the general vicinity of that location. There are limitations with this methodology, as several parent agencies identified as providing services to the region are located in other areas of the state, and in some instances, other areas of the country. Another confounding factor is that community-based prevention services are often grant funded and unsustainable over the long term. The resources listed here may be transient in nature and not available to residents in the long term. Among programs which are run by agencies located within the FLPPS Region, 36 percent are located in Monroe County, 13 percent are located in Steuben County and 10 percent are located in Chemung County. While many of the service regions for these organizations overlap the location of the parent agency may have significant influence as to both the penetration of those services in other areas and the understanding of local needs.

Table 17 – Community Based Resources by Type

211 Listed Community Resources by Taxonomy, 2014	
Resource Type	Number of Programs in the FLPPS Region
Basic Needs	1,082
Consumer Services	142
Criminal Justice and Legal Services	162
Education	76
Environment and Public Health / Safety	77
Health Care	1,085
Income Support and Employment	195
Individual and Family Life	1,137
Mental Health and Substance Abuse Services	754
Organizational / Community / International Services	878

DATA SOURCE: 211 Resource Directories

The total number of programs available in the region is a basic indicator of the number of community resources available for residents needing sets of services, however, this methodology does not account for variability in staffing, operating hours and service area that clearly exist among these organizations. There are several counties that do appear to have a disproportionate number of programs to the county populations but because this model does not account for size and availability of programs, it is difficult to compare adequately across the region.

Table 18 – Community Based Resources by County

211 Listed Community Resources by County, 2014		
Parent Agency County	Number of Programs	Percentage of FLPPS County Programs
Allegany	242	7%
Cayuga	135	4%
Chemung	331	10%
Genesee	70	2%
Livingston	112	3%
Monroe	1,233	36%
Ontario	244	7%
Orleans	33	1%
Schuyler	191	6%
Seneca	57	2%
Steuben	458	13%
Wayne	129	4%
Wyoming	30	1%
Yates	203	6%

DATA SOURCE: 211 Resource Directories

The 211 Resource Directories identify transportation resources for the region under several subcategories including: local transportation, long-distance transportation, transportation-expense assistance, transportation organizations, transportation passes and traveler's assistance. Obviously each subcategory provides a different type of service, not all of which are applicable to individuals needing transport for health services, but overall transportation needs are clearly an

area of concern for the region, and was identified as the leading barrier for residents needing services by our CBO and behavior health survey respondents.

Table 19 – Transportation Resources by County

211 Listed Transportation Resources by County, 2014	
Parent Agency County	Number of Transport Programs
Allegany	15
Cayuga	3
Chemung	17
Genesee	8
Livingston	1
Monroe	21
Ontario	3
Orleans	0
Schuyler	12
Seneca	1
Steuben	30
Wayne	3
Wyoming	1
Yates	5
Counties Outside PPS	39

DATA SOURCE: 211 Resource Directories

Safe and stable housing is one of the social determinants of health which DSRIP aims to address. This is particularly true among individuals with severe and persistent mental illness (SPMI). A systematic review of the literature conducted in 2008 found that adequate housing was critical for this population and that providing permanent housing minimized harm and increased treatment seeking behavior(Kyle & Dunn, 2008). Monroe County completes an annual housing and homeless services report detailing the availability and need for housing in Rochester. A link to that report is available in Appendix C.

Table 20 – Housing Resources by County

211 Listed Housing Resources by County, 2014	
Parent Agency County	Number of Housing Programs
Allegany	33
Cayuga	15
Chemung	27
Genesee	12
Livingston	5
Monroe	75
Ontario	12
Orleans	8
Schuyler	17
Seneca	3
Steuben	42
Wayne	1
Wyoming	3
Yates	16
Counties Outside PPS	89

DATA SOURCE: 211 Resource Directories

The FLHSA completed a survey of both behavioral health and community based organizations to better understand their availability and their perception of barriers to care for the patients they serve in the FLPPS region. Forty six percent of behavior health organizations reported barriers preventing their patients from receiving the specific services they provided. The most commonly noted barrier was transportation, but the organizations also frequently noted a lack of

personal motivation on behalf of patients to seek services and cited finances as a barrier as well. Additionally 8 percent of respondents noted that language and culture were barriers.

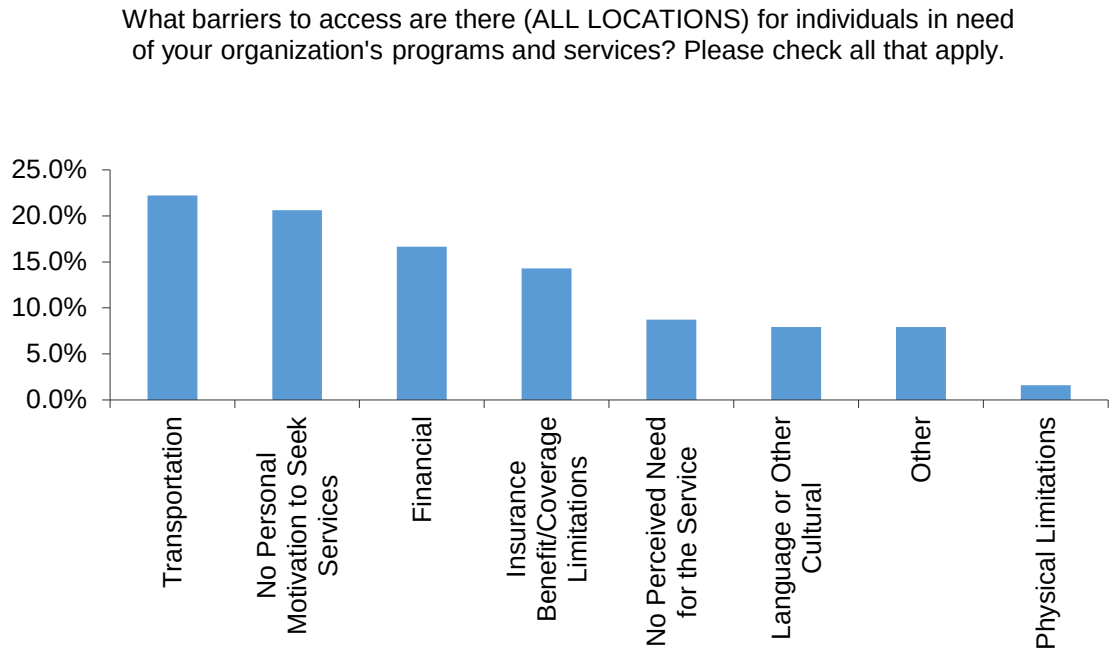


Figure 3 – CBO - Barriers to Access

DATA SOURCE: FLHSA PPS Community based organization Survey

Few of the organizations serving the behavioral health population noted that they had active waiting lists with two very notable exceptions. The majority of responding Residential Mental Health and Community Residence programs noted that there was a wait list to receive services.

Thirty five percent of Community Based Organization survey respondents identified barriers for their clients. Among these, transportation and lack of personal motivation were again the leading obstacles reported. These providers also cited a lack of perceived need for a service, financial barriers, and insurance gaps in their communities. The similarities in the identified barriers between the two cohorts points to the true need to address some of these barriers for the population of the FLPPS.

In addition to the resources listed above, numerous resources assist individuals with other needs. Two of the most important types of community supports include libraries and religious organizations. The availability of libraries influences both an individual's access to information and their ability to communicate with providers. Collaborative partnerships with community organizations have been illustrated as a strategy to improving community health (Roussos & Fawcett, 2000) and have demonstrated success locally through collaborations with religious organizations. Indeed, Rochester has utilized partnerships with primarily African-American faith-based organizations, which are frequently located in neighborhoods with high rates of poverty, to address disparities in high blood pressure and encourage healthy habits at the community level. Understanding the availability of these resources and knowing how to leverage them in a patient centered model could have far-reaching positive impacts on health care in the FLPPS region.

Table 21 – Libraries and Religious Organizations by County

Libraries and Religious Organizations by County, 2014		
County	Libraries	Religious Organizations
Allegany	17	23
Cayuga	8	25
Chemung	6	9
Genesee	7	39
Livingston	9	33
Monroe	35	466
Ontario	11	44
Orleans	4	30
Schuyler	3	12
Seneca	5	19
Steuben	14	32
Wayne	13	64
Wyoming	9	12
Yates	5	24
TOTAL	146	832

DATA SOURCE: FLHSA Community Research

Domain 2 Metrics

Using the state provided avoidable hospital use metrics, it appears the Finger Lakes PPS has significant potential to improve the quality of patient care while reducing cost and improving health care system efficiency for the Medicaid population.

Potentially Preventable Emergency Department Visits

The use of the emergency department for the treatment of conditions which could have been potentially treated in a more effective and lower cost setting such as a primary care office or an urgent care center is a driver of avoidable hospital use in the Finger Lakes region. Specifically, the FLPPS has a higher PPV rate (calculated as a weighted average of the 14 county rates), both adjusted and unadjusted (38.83 per 100 population and 37.56, respectively) as compared to the statewide rate (36.43). Furthermore, when compared to all counties in New York State, nine of the 14 counties in the PPS have PPV rates that fall below the 80th percentile, meaning that only five of the counties in the region are among the top 20 percent of performers with regards to preventing avoidable ED use. Collectively, these findings suggest significant opportunities for improving patient care and reducing potentially preventable ED use.

Table 22 – PPV Rates

PPV Rates and County Rankings
(Out of 62 counties with reported data)

	Observed Rate	Unadjusted Rank	Adjusted Rate	Adjusted Rank
Monroe	37.98	31	34.76	18
Seneca	16.81	1	17.25	1
Ontario	25.84	6	25.82	6
Cayuga	41.34	35	42.18	37
Wayne	28.70	11	28.93	10
Orleans	36.76	26	36.93	28
Genesee	45.98	40	46.66	42
Livingston	24.73	5	24.87	5
Wyoming	33.50	16	35.36	22
Allegany	46.19	42	48.06	45
Steuben	48.17	47	49.92	47
Chemung	62.45	61	62.54	61
Schuyler	51.33	49	53.02	49
Statewide	36.43	22	N/A	N/A

Indicates rate is below the top 20% of performers

DATA SOURCE: NY State Open Data

Potentially Avoidable Readmissions

Hospital readmissions may be an indication of suboptimal care around the time of an inpatient discharge. It appears that there is considerable opportunity to improve this facet of patient care for Medicaid recipients in the FLPPS. Using the unadjusted PPR rates provided by NYSDOH, this 14-county region has a facility-based weighted-average rate that is very similar to that of the state as a whole (6.26 readmissions per 100 at-risk admissions vs. 6.75). Additionally, most of the hospitals in the FLPPS perform worse on this metric in comparison to the highest performing facilities in New York State. Eighteen of the 22 facilities in the FLPPS have a PPR rate that is among the bottom 80 percent of performers in New York State, suggesting ample room for improvement across the vast majority of hospitals in the FLPPS.

Of note is the emphasis above on the unadjusted PPR rate. This focus was intentional due to the belief among the FLPPS CNA researchers that the unadjusted rate best captures the expected need of the patient population served by a given hospital. The adjusted rate, which was designed to isolate the quality of care delivered by a facility by controlling for a variety of patient-factors,(Goldfield et al., 2008) may mask differences in the baseline risk of the Medicaid populations being treated across counties and regions. The unadjusted rate, on the other hand, provides a more complete description of readmissions that captures both the quality of care delivered by a facility and the needs or complexity of the population it serves. As such, we believe the unadjusted rate to be most appropriate for the community needs assessment.

Table 23 – PPR Rates

PPR RATES BY FACILITY, 2011-2012 AVERAGE

Facility	Observed Rate	Unadjusted Rank	Adjusted Rate	Adjusted Rank
Arnot Ogden Medical Center	4.57	49	5.76	82
Auburn Community Hospital	4.75	54	4.88	36
Clifton Springs	8.22	154	5.8	85.5
Corning Hospital	4.3	40	4.79	33
Cuba Memorial Hospital	1.28	8	2.35	6
FF Thompson	5.95	100.5	7.82	169
Geneva General	4.06	34	4.84	34
Highland Hospital	4.26	38.5	5.12	48
Ira Davenport	4.26	38.5	3.56	13
Jones Memorial Hospital	3.97	28	5.71	79.5
Lakeside Memorial Hospital	5.1	70.5	6.49	121
Medina Memorial	8.22	153	6.02	94
Monroe Community Hospital	25	187.5	30.53	186
Newark-Wayne	4.87	59	4.9	37
Nicholas H Noyes	3.83	23	5.29	55
Rochester General	6.79	120	6.4	113.5
Soldiers And Sailors	7.23	139	3.64	15
St James Mercy	6.92	126	5.85	89
St Joseph's Hospital Elmira	6.72	117	4.33	21
Strong Memorial	7.83	148	5.65	76
Unity Hospital	5	65	4.52	25
Wyoming Community Hospital	5.07	68	4.16	19
Statewide	6.75	119	N/A	N/A

Indicates rate is below the top 20% of performers

DATA SOURCE: NY State Open Data

Potentially Preventable Hospitalizations (Adults)

Hospitalizations for conditions which potentially could have been treated in an outpatient setting represent another important measure of avoidable hospital use. Using the PQI rates provided by NYSDOH, it appears this is another area in which FLPPS could improve the quality of patient care for Medicaid recipients while promoting efficiencies. While both the unadjusted and adjusted rates of composite PQI admissions in the FLPPS are slightly below the statewide rate (1,624 PQIs per 100,000 population and 1,757 vs. 1,847), many of the counties in the PPS lag behind the highest performing communities. Namely, 11 of the 14 counties in the PPS have an adjusted or unadjusted overall PQI rate that is below the top 20 percent of counties in the state. Furthermore, it should be noted that the distribution of PQI rates across all counties in the state are highly skewed, resulting in the average statewide rate being higher than the median statewide rate. In other words, most counties have a lower PQI rate that the statewide average.

Collectively, it appears that there is considerable opportunity for improvement in the area of potentially preventable hospital admissions in the FLPPS.

Table 24 – PQI Rates.

PQI RATES BY COUNTY, 2011-2012 AVERAGE

County	Unadjusted Rate	Unadjusted Rank	Adjusted Rate	Adjusted Rank
Monroe	1611.265	30	1603.185	18
Wayne	1582.37	26	1827.685	34
Seneca	1629.125	31	2038.5	45
Cayuga	1869.855	47	2224.36	51
Yates	514.475	3	588.705	3
Ontario	1409.695	17	1634.565	19
Orleans	2049.16	53	2432.765	54
Genesee	1498.47	19	1700.275	23
Allegany	1213.375	11	1421.72	11
Wyoming	1754.755	38	2004.46	44
Livingston	1159.11	8	1445.81	12
Schuyler	2136.575	57	2504.025	59
Chemung	2181.77	60	2470.73	58
Steuben	1601.835	28	1882.34	38
Statewide	1846.9	46	N/A	N/A

Indicates rate is in the bottom 80% of performers

DATA SOURCE: NY State Open Data

Potentially Preventable Hospitalizations (Pediatric)

Separate metrics to identify potentially avoidable hospitalizations among the pediatric population have also been made available by the NYSDOH. Overall, FLPPS performance on this metric suggests that this is an area of strength for the 14-county region as both its unadjusted and adjusted rates are well below the statewide average (151 PDI admissions per 100,000 population and 194 vs. 323). However, it should be noted that PDIs are relatively rare events. As a result, many counties have PDI rates at or close to zero while a few have very high rates. This highly skewed distribution of PDI rates means that the statewide average is considerably higher that the statewide median, and therefore, most counties have a PDI rate lower than the state.

When examining where the individuals counties rank relative to the other counties in New York State, there appears to be greater room for improvement. Namely, nine of the 13 counties for which data were available rank in the bottom 80 percent of performers.

Table 25 – PDI Rates

PDI RATES BY COUNTY, 2011-2012 AVERAGE

	Unadjusted Rate	Unadjusted Rank	Adjusted Rate	Adjusted Rank
Monroe	154.945	31	140.52	15
Seneca	79.425	13	145.545	16
Ontario	53.145	6	79.14	6
Cayuga	130.565	23	213.79	31
Wayne	132.145	24	210.565	28
Orleans	22.36	2	34.045	2
Genesee	47.005	5	74.135	3
Livingston	71.825	10	126.88	11
Wyoming	172.06	35	336.725	45
Allegany	287.615	51	585.79	56
Steuben	169.395	34	332.105	42
Chemung	269.9	48	393.64	52
Schuyler	296.43	52	600.975	57
Statewide	323.19	54	N/A	N/A

Indicates rate is in the bottom 80% of performers

DATA SOURCE: NY State Open Data

A summary of the above and additional Domain 2 metrics are provided in the table below.

Domain 2 Metrics

Table 26 – Domain 2 Metrics

Worse than NYS Average	Better than NYS Average	Metric Pending	Data not available from NYS as of 12/16/2014

Domain Name	Value Type	Regional Value
Domain 2 – System Transformation Metrics		
A. Create Integrated Delivery System		
Potentially Avoidable Services		
Potentially Avoidable Emergency Room Visits	Per 100 persons	38.8
Potentially Avoidable Readmissions	Readmission Rate	6.26
PQI Suite – Composite of all measures	Per 100,000 pop	1,668.1
PDI Suite – Composite of all measures	Per 100,000 pop	189.7
Provider Reimbursement		
Percent of total Medicaid provider reimbursement received through sub-capitation or other forms of non-FFS reimbursement	Percentage of Reimbursement	39.1
System Integration		
Percent of Eligible Providers with participating agreements with RHIO's; meeting MU Criteria and able to participate in bidirectional exchange		Data N/A.
Primary Care		
Percent of PCP meeting PCMH (NCQA)/ Advance Primary Care (SHIP)		Data N/A.
CAHPS Measures including usual source of care		Data N/A.
Patient Loyalty (Is doctor/clinic named the place you usually go for care? How long have you gone to this doctor/clinic for care?)		
Access to Care		
HEDIS Access/Availability of Care; Use of Services		Data N/A.
B. Implementation of care coordination and transitional care programs		
CAHPS Measures: - Getting Care Quickly (routine and urgent care appointments as soon as member thought needed) - Getting Care Needed (access to specialists and getting care member thought needed) - Access to Information After Hours - Wait Time (days between call for appointment and getting appoint for urgent care)		Data N/A.
Medicaid Spending for Projects Defined Population on a PMPM Basis		
Medicaid spending on ER and Inpatient Services		Data N/A.
Medicaid spending on PC and community based behavioral health care		Data N/A.
B. Implementation of care coordination and transitional care programs		
Performing Provider Systems will be required to meet all of the above metrics with the addition of the following: Care Transitions		
H-CAHPS – Care Transition Metrics		Data N/A.
CAHPS Measures – Care Coordination with provider up-to-date about care received from other providers		Data N/A.
C. Connecting Settings		
Performing Provider Systems will be required to meet all of the above metrics for A and B.		

DESCRIPTION OF COMMUNITY TO BE SERVED

Demographics

The FLPPS is comprised of a diverse set of 14 counties (Allegany, Cayuga, Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne, Wyoming, and Yates) with a total of about 1.5 million residents, nearly half of which reside in Monroe County, the primary urban center in the region. The population of the region has remained relatively stable over the past several decades and demonstrates a 1.3 percent increase from 1992 through 2012. Particular groups, however, have seen substantial growth over the past decade. For example, the Hispanic and black, non-Hispanic populations in the FLPPS increased about 38 percent and 8 percent respectively between 2000 and 2010. This is in contrast to the white, non-Hispanic population which decreased about 2 ½ percent over the same time period. Also of note is that the population of individual born outside the US has increased by about 16 percent since 2000, yet this group remains relatively small as it accounts for only about 5 percent of the total FLPPS population (refer to Appendix A for further detail on population changes over time). Total county-level population trends are highlighted in the figure below.

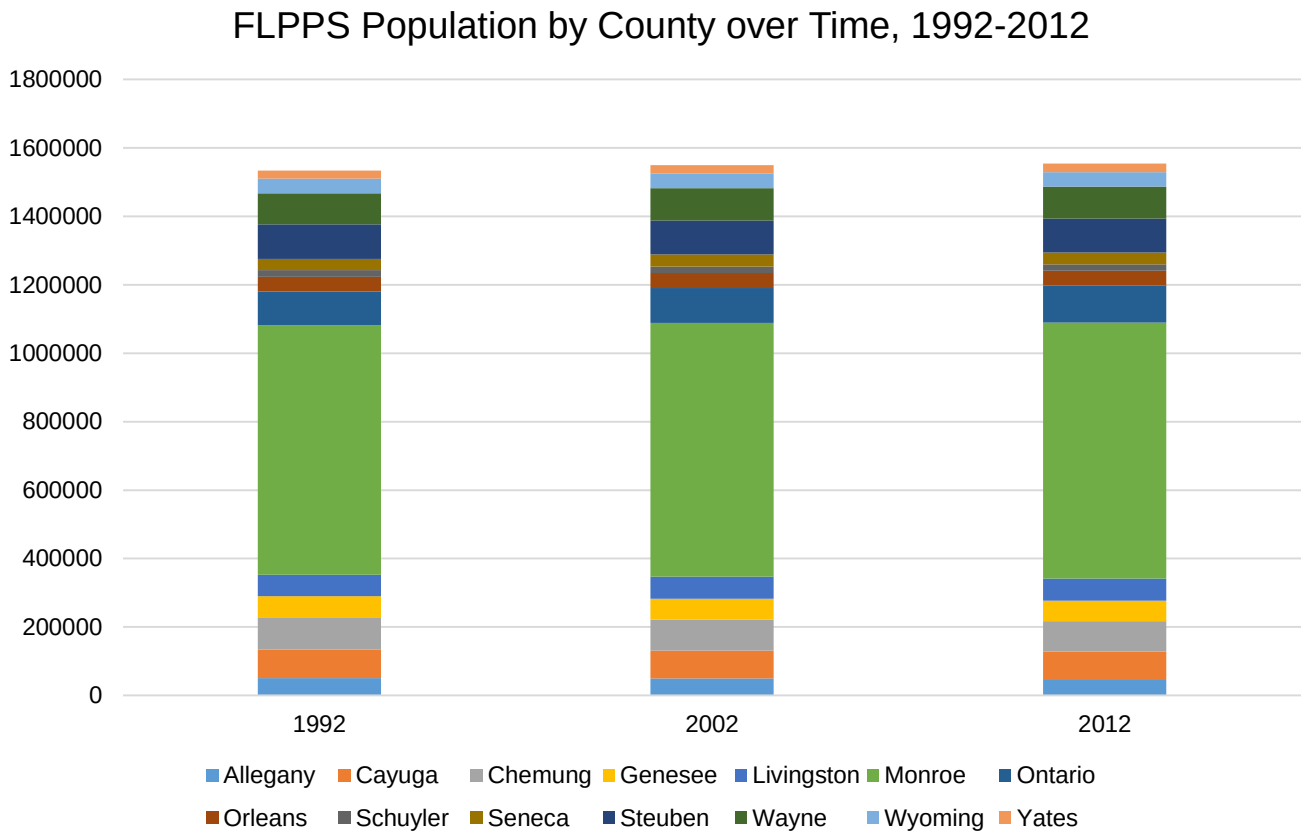
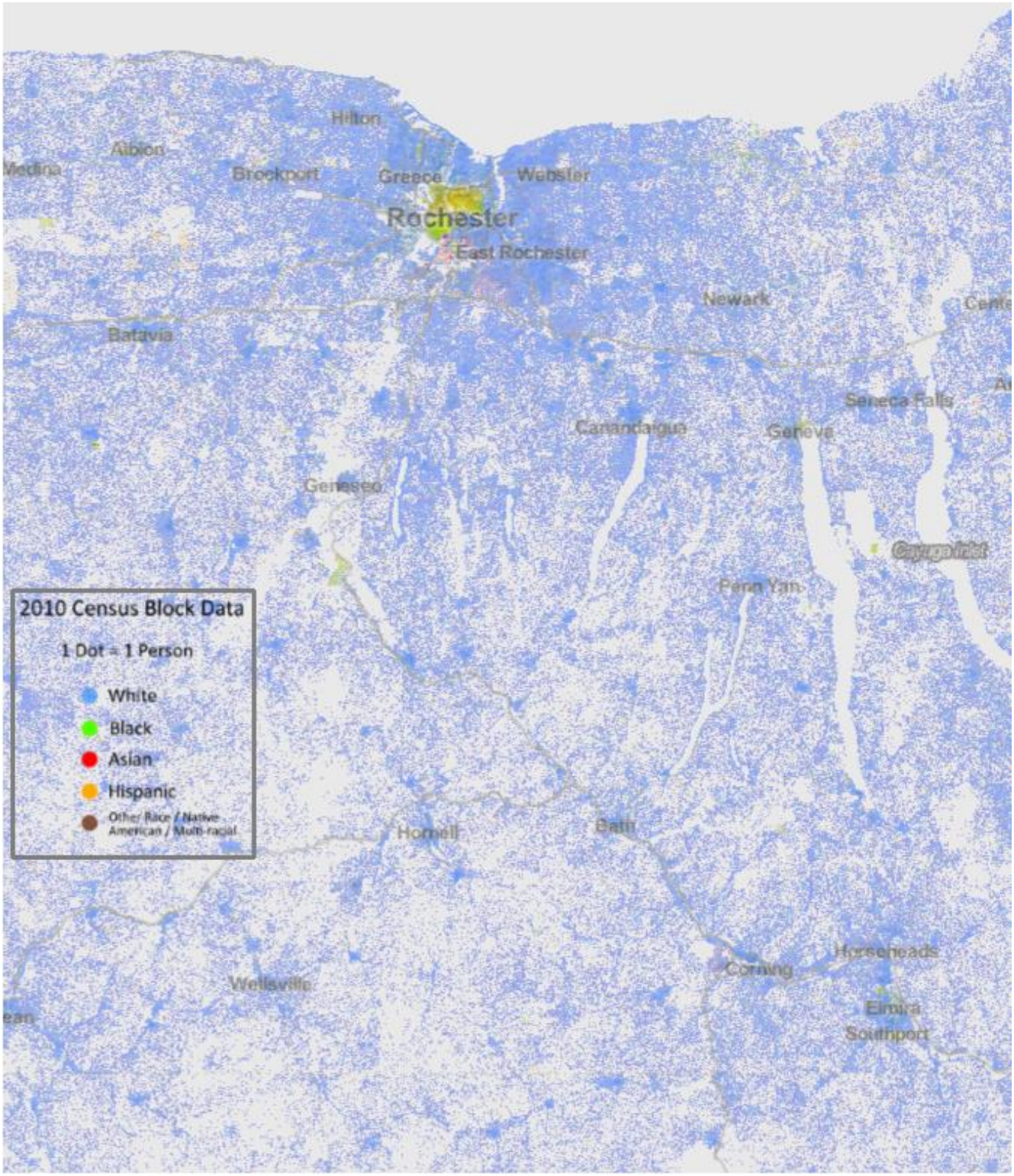


Figure 4 – FLPPS Population over Time

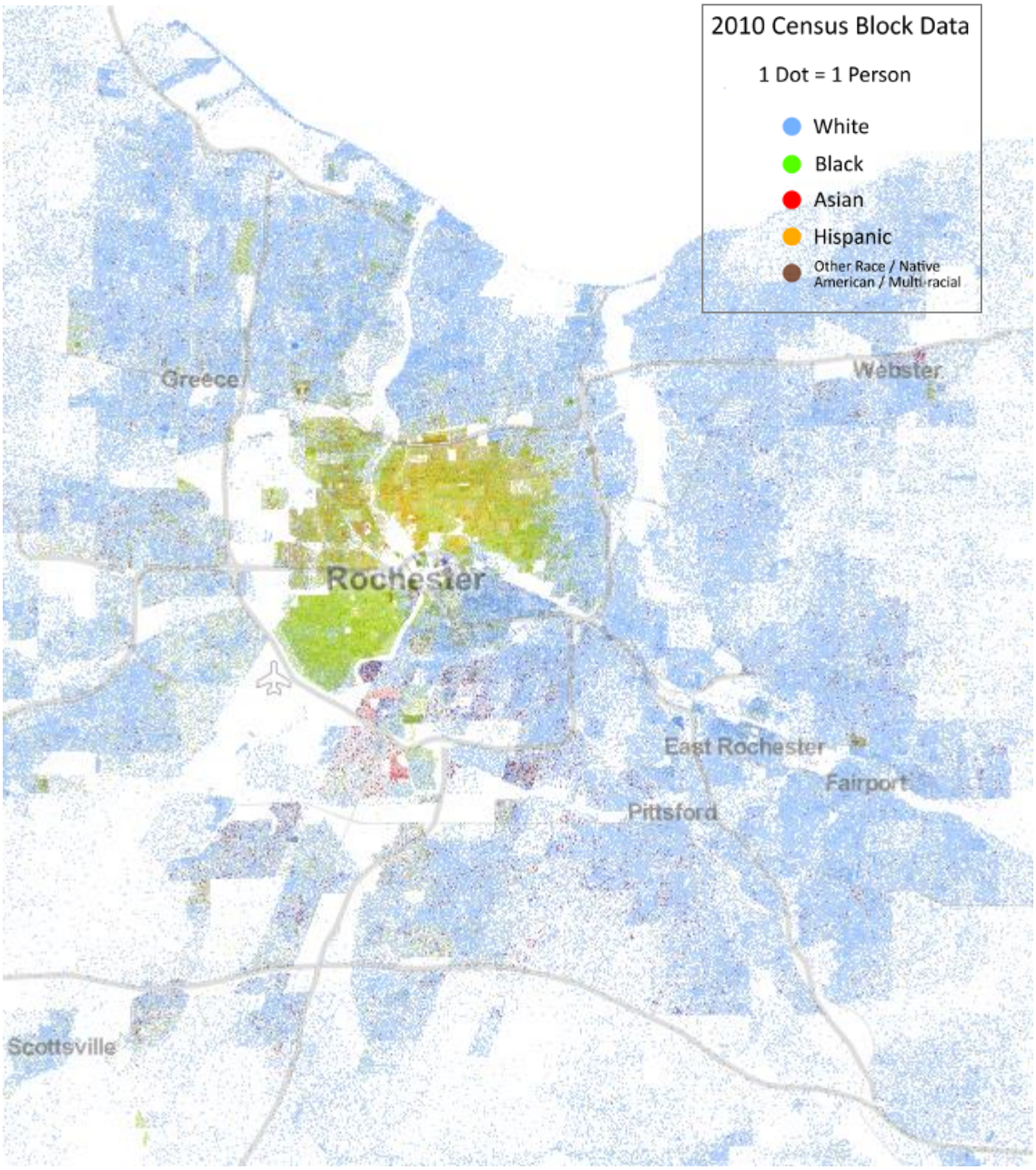
The FLPPS population appears to be racially and ethnically diverse, however the majority of the diversity is located in Monroe County, where the population identifies as 62 percent white, 22 percent African American and 6 percent Hispanic, while the remaining 14 counties identify as 92 percent white, 4 percent African American and 3 percent Hispanic. The dot maps below highlight the concentration of people of color in Monroe County, primarily within the City of Rochester.



Map 7 – Racial Dispersion, FLPPS

Source: Weldon Cooper Center for Public Service, University of Virginia (interactive map available at http://demographics.coopercenter.org/DotMap/

Further detail of the racial/ethnic geographic distribution of Monroe County residents is provided below.



Map 8 – Racial Dispersion, Monroe County

Source: Weldon Cooper Center for Public Service, University of Virginia (interactive map available at http://demographics.coopercenter.org/DotMap/

This map highlights the existence of substantial racial/ethnic segregation even within the city boundaries.

Consistent with the racial and ethnic composition of FLPPS county populations, the largest rate of non-English speakers is found in Monroe County (about 13 percent of the population aged 5 and older), with the most frequently reported non-English language spoken at home being Spanish. It should be noted, however, that only about 5 percent of the total county population reports speaking English less than “very well.” Also of note is the relatively high rate of non-English speakers located in Yates County. Indeed, the percent of this county’s population that speaks English less than “very well” is virtually identical to the much more ethnically diverse Monroe County. This population is predominately made up of individuals who report speaking “other Indo-European” languages. At an aggregate level, however, the population of non-English speakers in the FLPPS is much lower than New York state rates.

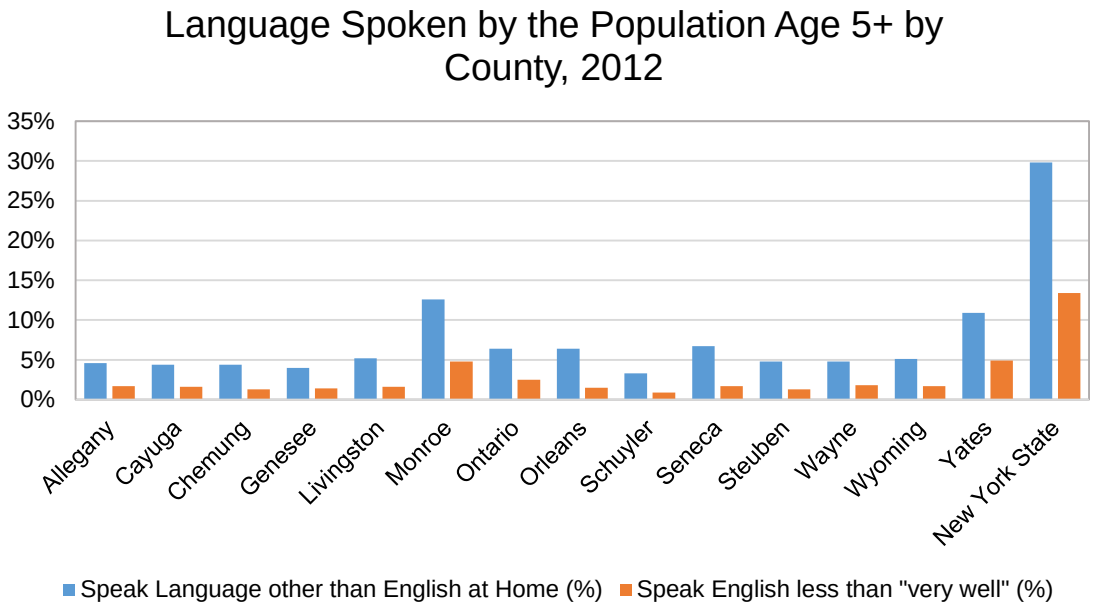


Figure 5 – Language Spoken by County

US Census Bureau: 2012 ACS 5-Year Estimates

The economic characteristics of individuals living in the FLPSS may also help provide an informative snapshot of the unique challenges facing this region. In 2012 the median income of the region ranged from $42,000 in Allegany County to $54,000 in Livingston County, with all counties demonstrating per-capita income below the New York state median income of $58,000. Allegany, Cayuga, Chemung, Genesee, Livingston, Monroe, Orleans, Seneca, Steuben, Wayne, Wyoming, and Yates counties all have greater than 10 percent of their population living below the poverty threshold, with four out of the 14 counties having a poverty rate above the state-wide average. Further details on the economic characteristics, including unemployment rates and occupation composition, of the FLPPS general county populations are provided in the table below.

Table 27 – FLPPS Economic Characteristics by County

FLPPS General Population Economic Characteristics by County, 2012

				Field of Occupation Among Those who are Employed				
	Median Household Income ($)	**People Living Below the Poverty Threshold (%)**	**Unemployed (%)**	**Management, Business, Science and Arts (%)**	**Service (%)**	**Sales or Office (%)**	**Natural Resources, Construction, and Maintenance (%)**	**Production, Transportation, and Material Moving (%)**
Allegany	42,095	17.1	8.8	32.2	19.3	20.5	12.5	15.6
Cayuga	50,950	12.2	8.2	29.6	19.3	23.2	11.6	16.3
Chemung	48,128	16	7.2	32.7	20	25.1	8.1	14.1
Genesee	51,734	11.8	7.4	30.4	18.9	22.3	12.5	15.8
Livingston	54,244	11.6	5.7	34.6	16.4	23.4	13	12.5
Monroe	52,700	14.6	7.9	41.6	17.2	24.8	5.8	10.6
Ontario	56,455	9.6	6.5	37.9	17.3	24	9.1	11.7
Orleans	50,113	13	9.9	26.7	17.9	22.6	13.6	19.2
Schuyler	47,869	9.4	6.2	30.4	20.6	22.9	12.9	13.2
Seneca	49,155	11.9	5.9	31.3	17.2	23.4	11.2	16.9
Steuben	46,519	15.1	9.1	33.7	18.1	20.8	11.6	15.8
Wayne	53,497	11.3	7.5	33.4	16.2	21.5	11.3	17.5
Wyoming	50,635	10.5	7.4	28.3	17.6	22.1	15.5	16.5
Yates	48,245	16	5.5	32.3	17.7	22.5	14	13.4
New York State	57,683	14.9	8.7	38.4	19.8	24.7	7.5	9.6

US Census Bureau: 2012 ACS 5-Year Estimates

Consistent with the variation in economic indicators, counties also show considerable differences across social characteristics. For example, the percent of the population with a high school degree or less ranges from over 52 percent

in Allegany County to about 36 percent in Monroe County. Furthermore, all but two counties in the FLPPS (Monroe and Ontario) have a larger percentage of their population with a high school degree or less than the state-wide rate.

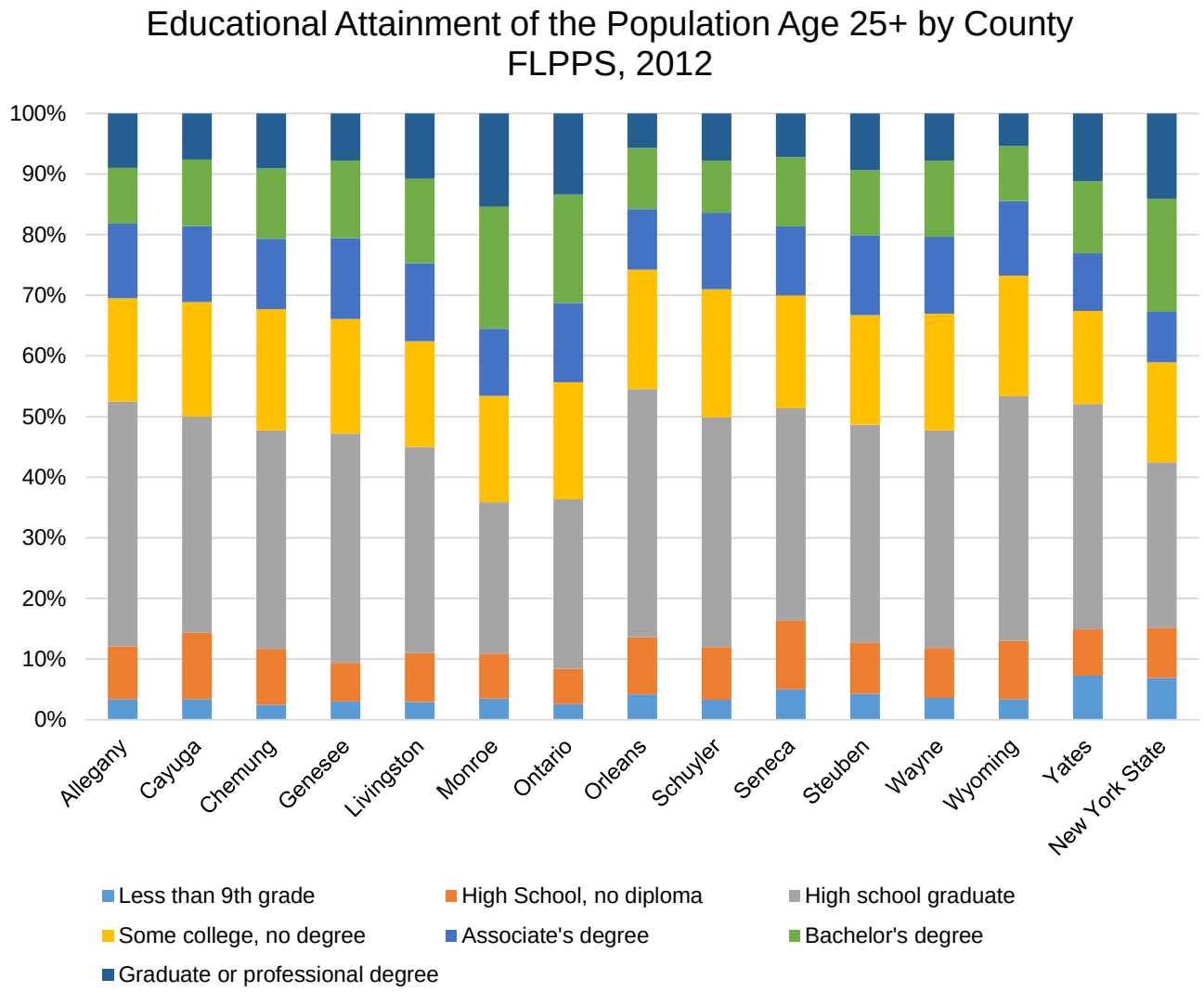


Figure 6 – FLPPS Educational Attainment by County

Data Source: US Census Bureau; 2012 ACS 5-Year Estimates

Significant portions of the FLPPS are also dealing with debilitating levels of morbidity. As the chart below demonstrates, the percent of the non-institutionalized population that is disabled ranges from 11.4 percent in Livingston County to 15.5 percent in Steuben County. Interestingly, all counties in the FLPPS have higher rates of disability than the state-wide rate.

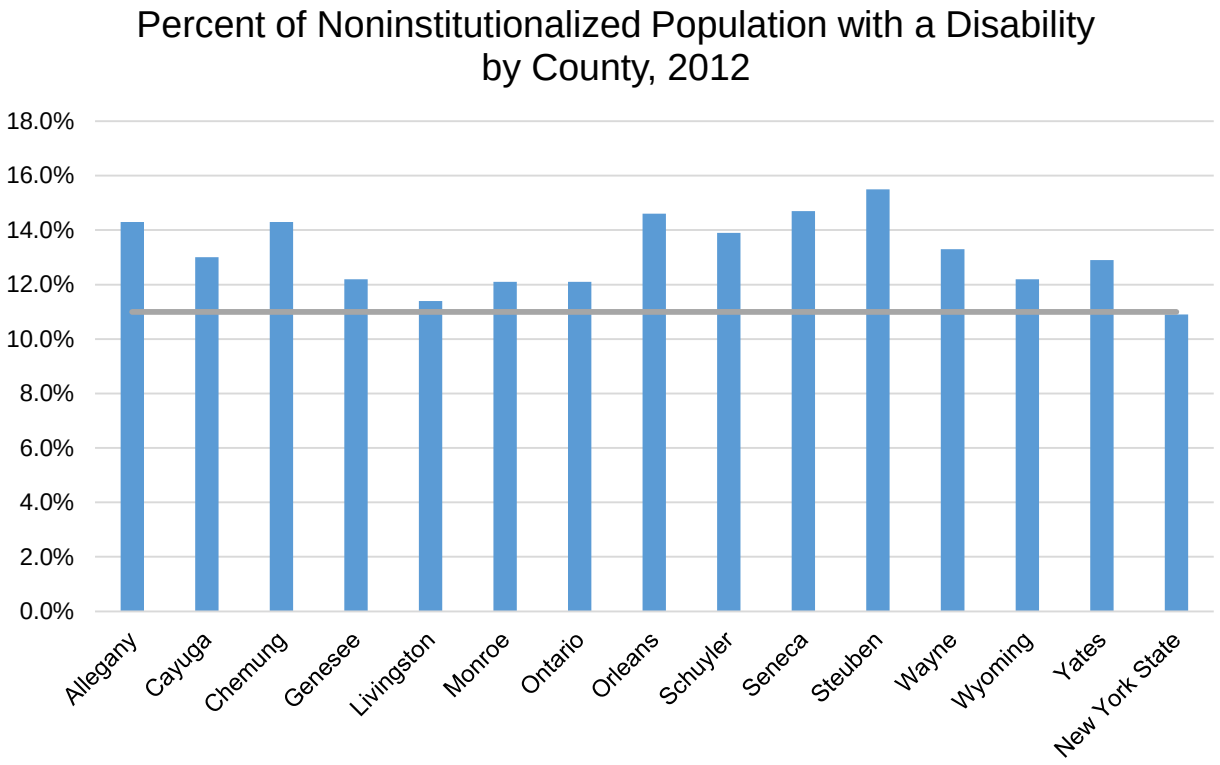


Figure 7 – Percent of Population Disabled

Data Source: US Census Bureau; 2012 ACS 5-Year Estimates

The apparently high prevalence of disability in the FLPPS may be related to the aging its population. From 1992 to 2012 the number of persons over age 65 has increased by nearly 40,000 and accounts for 15.4% of the region's total population.

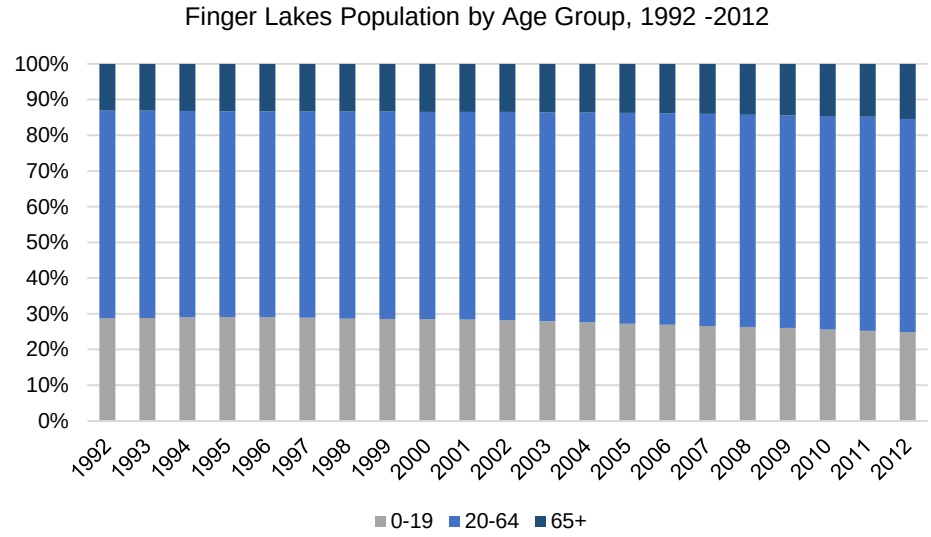


Figure 8 – FLPPS Population by Age Group

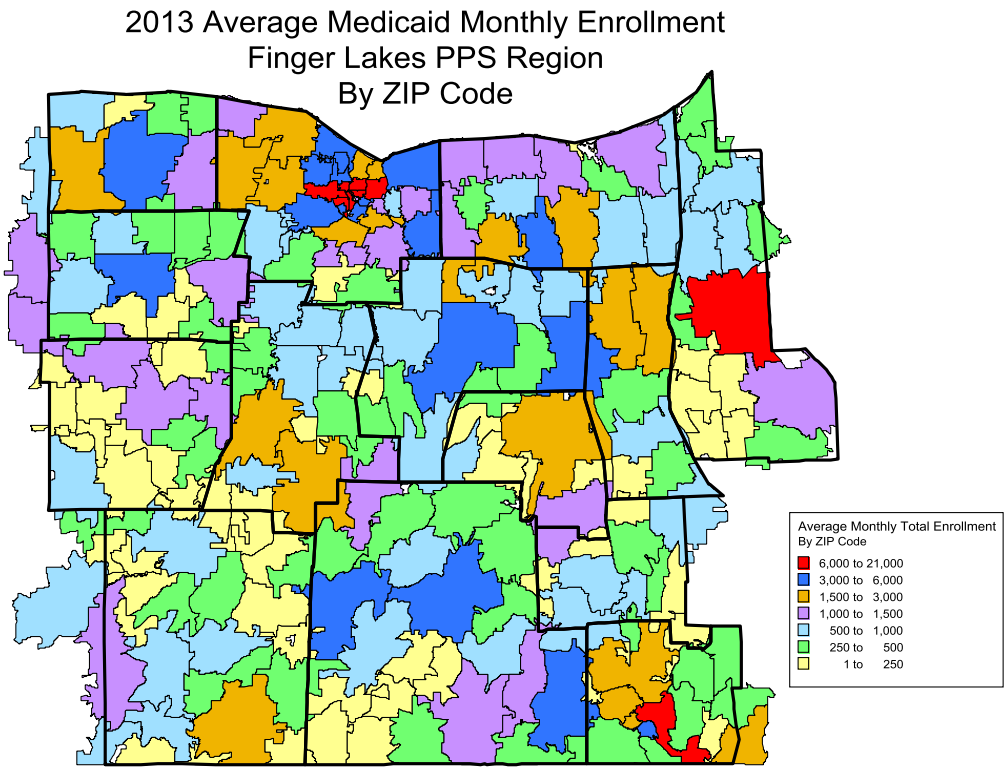
DATA SOURCE: US Census Bureau

From 2011 to 2013, the number of Medicaid beneficiaries, measured by average monthly enrollment increased in the FLPPS region by 32 percent and came to represent 20 percent of the region's population. An additional 8 percent of the

region's population is uninsured, with eight of the fourteen counties having uninsured rates higher than the upstate New York average (9.1 percent). (Refer to Appendix A for further information regarding the health insurance status of the FLPPS population). As a result of the Affordable Care Act, including the health exchanges and increased pressure to have health insurance coverage (i.e. - individual mandates), we expect the number of uninsured persons to decrease and the number of persons covered under Medicaid to increase in 2014 and for that trend to continue throughout the life of the DSRIP program. Early numbers provided by the New York State Exchange indicate that over 28,000 individuals signed up for Medicaid across the FLPPS region. Of those, over 24,500 were previously uninsured. A county by county analysis is presented in Table 28. While it is unclear how many of these individuals maintained coverage, the Exchange represents a new access point for persons to become enrollees in Medicaid. Therefore it is anticipated that the percentage of individuals in the region who will be impacted will only increase over the life of the program. The Medicaid population does appear to be centralized in the City of Rochester, however, all counties in the region have significant number of Medicaid enrollees to care for.

Table 28 – Medicaid Applications through HIE's by County

Medicaid Applications Through Health Insurance Exchanges Through April 15, 2014		
County	Medicaid Enrollment Applications Through the Exchange	Number Uninsured at Time of Application
Allegany	790	672
Cayuga	1,621	1,443
Chemung	1,611	1,434
Genesee	997	857
Livingston	905	787
Monroe	13,169	11,457
Ontario	1,876	1,595
Orleans	742	638
Schuyler	467	406
Seneca	572	480
Steuben	2,076	18,27
Wayne	2,144	18,44
Wyoming	793	658
Yates	527	453
FLPPS Region	28,290	24,551



Map 9 – Medicaid Enrollment by ZIP Code

The Medicaid population mirrors the regional population quite closely in terms of race and ethnicity with the majority of the diversity occurring within Monroe County.

Table 29 – FLPPS Medicaid Enrollee Race / Ethnicity

Race / Ethnicity of Medicaid Enrollees, 2013

	Race / Ethnicity					
Subarea	**Black Not Hispanic**	**Hispanic**	**Other Not Hispanic**	**Subtotal Other than White NH**	**White Not Hispanic**	**Total**
Member Months						
Monroe	728,800	334,519	156,208	1,219,527	749,487	1,969,014
Non-Monroe	76,417	73,260	77,114	226,791	1,613,336	1,840,127
Grand Total	805,217	407,779	233,322	1,446,318	2,362,823	3,809,141
Member Years (Months/12)						
Monroe	60,733	27,877	13,017	101,627	62,457	164,085
Non-Monroe	6,368	6,105	6,426	18,899	134,445	153,344
Grand Total	67,101	33,982	19,444	120,527	196,902	317,428
% Distribution by County						
Monroe	90.5	82.0	66.9	84.3	31.7	51.7
Non-Monroe	9.5	18.0	33.1	15.7	68.3	48.3
Grand Total	100.0	100.0	100.0	100.0	100.0	100.0
% Distribution by Race						
Monroe	37.0	17.0	7.9	61.9	38.1	100.0
Non-Monroe	4.2	4.0	4.2	12.3	87.7	100.0
Grand Total	21.1	10.7	6.1	38.0	62.0	100.0

DATA SOURCE: Salient No PHI Medicaid Claims Database.

Table 30 – FLPPS Medicaid Enrollees by Coverage Type

Medicaid Enrollees by Coverage Type										
County	Number Dual Eligible	Percent Dual Eligible	Number by Major Medicaid Coverage Group				Percent by Major Medicaid Coverage Group			
			FFS	FHP	Managed Care	Unknown	FFS	FHP	Managed Care	Unknown
Allegany	2,074	19.6	4,593	718	5,238	17	43.5	6.8	49.6	0.2
Cayuga	3,051	19.7	5,440	1,088	8,930	44	35.1	7.0	57.6	0.3
Chemung	4,492	20.2	9,224	1,168	11,845	48	41.4	5.2	53.2	0.2
Genesee	2,051	20.9	3,752	775	5,272	28	38.2	7.9	53.6	0.3
Livingston	1,910	18.5	3,762	698	5,863	25	36.4	6.7	56.7	0.2
Monroe	28,062	17.1	50,241	9,687	103,719	433	30.6	5.9	63.2	0.3
Ontario	3,489	20.6	6,465	1,328	9,041	84	38.2	7.9	53.4	0.5
Orleans	1,734	18.9	2,947	776	5,401	35	32.2	8.5	59.0	0.4
Schuyler	912	21.3	1,799	389	2,088	8	42.0	9.1	48.7	0.2
Seneca	1,270	20.2	2,223	441	3,590	16	35.5	7.0	57.2	0.3
Steuben	4,334	20.5	9,237	1,336	10,507	39	43.7	6.3	49.8	0.2
Wayne	3,241	20.0	5,754	1,107	9,348	36	35.4	6.8	57.5	0.2
Wyoming	1,443	23.1	3,080	557	2,587	13	49.4	8.9	41.5	0.2
Yates	968	21.1	1,620	452	2,499	12	35.3	9.9	54.5	0.3
Total FLPPS	59,030	18.6	110,136	20,521	185,927	836	34.7	6.5	58.6	0.3

DATA SOURCE: Salient No PHI Medicaid Data System

Health Status

Mortality

The population of this region experiences similar mortality and pre-mature mortality rates to that of Upstate New York. The most common causes of death and pre-mature mortality are heart disease and cancer followed at some distance by chronic obstructive pulmonary disease (COPD), stroke, and unintentional injury. Using years of potential life lost (YPLL) to examine deaths before the age of 75, cancer becomes the leading cause of premature mortality, followed by unintentional injury, heart disease, conditions arising in the perinatal period, and suicide.

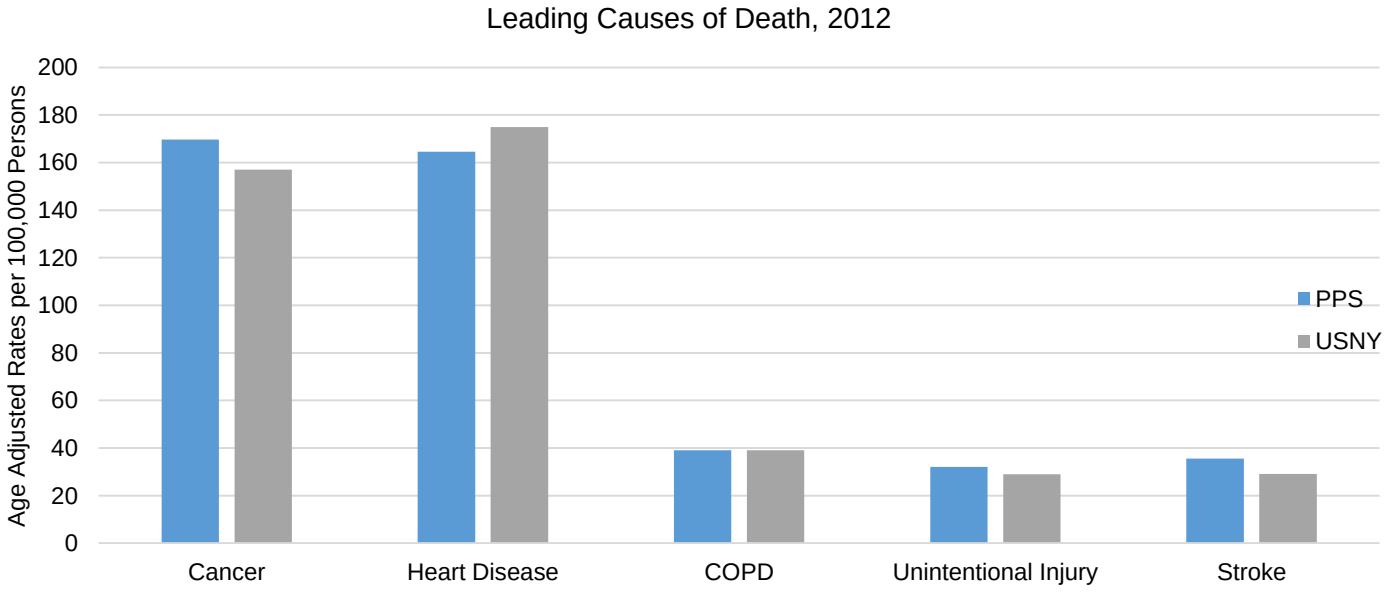


Figure 9 – Leading Causes of Death

DATA SOURCE: NY State VITAL Statistics

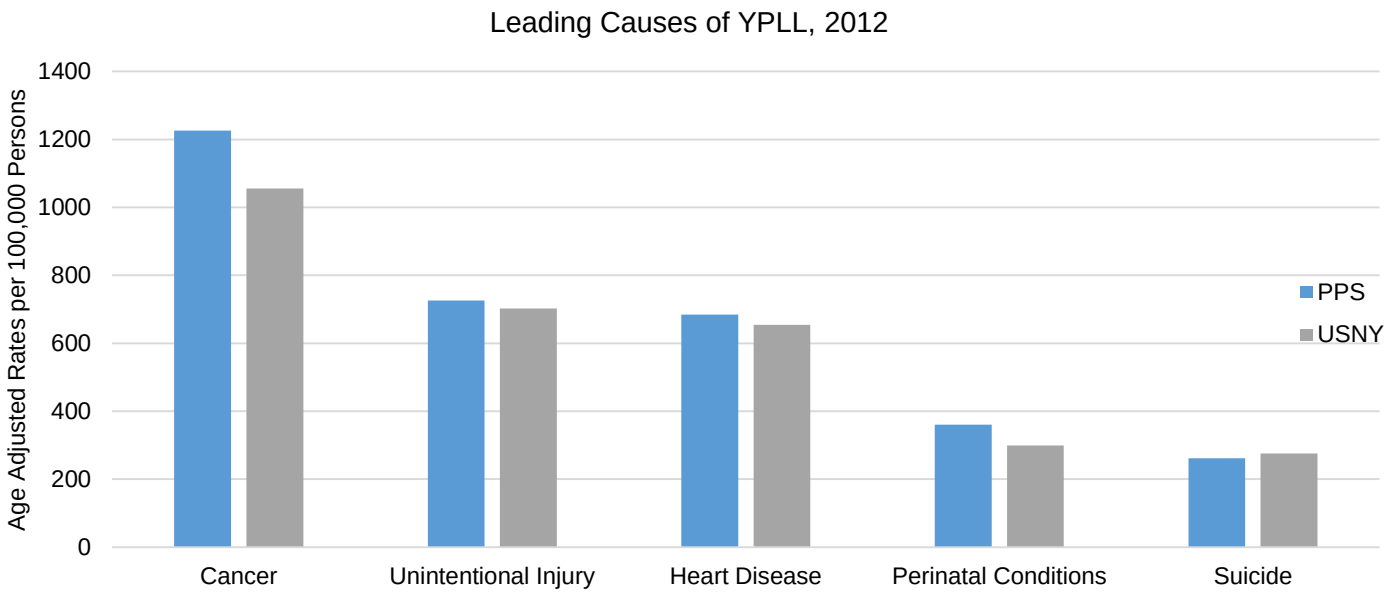


Figure 10 – Leading Causes of YPLL

DATA SOURCE: NY State VITAL Statistics

The presence of cancer, heart disease, COPD, and stroke on these lists underscore the substantial impact chronic disease has on the health of the FLPPS population. Furthermore, it should be noted that these conditions often share many risk factors, including smoking, physical inactivity, and an unhealthy diet.(Centers for Disease Control and Prevention, 2013) This suggests that primary prevention and the promotion of healthy lifestyles are key components to any efforts aimed at improving the health and longevity of individuals living in the FLPPS. While HIV has historically been an area of concern, both locally and nationally, it no longer appears in either the top five leading causes of death or YPLL in our region. Potentially contributing to that is the fact that the region hosts four Ryan White Programs (two in Rochester, one in Geneva and one in Elmira) which help to serve the HIV population lacking the means to adequately deal with the disease.

Also of note is that suicide is the fifth leading cause of premature mortality in the FLPPS. While the age-adjusted rate of YPLL is below that of Upstate New York, it remains telling that the fifth largest contributor to potential life lost in the Finger Lakes region is intimately linked with mental illness and substance abuse.(National Alliance on Mental Illness, 2014) The high suicide rate provides a clear indication that addressing mental well-being is an area of need for FLPPS residents. Additionally, of the top five leading causes of YPLL, suicide appears to be the only cause of YPLL that has been trending upwards from 2002 to 2012, as demonstrated in Figure 11.

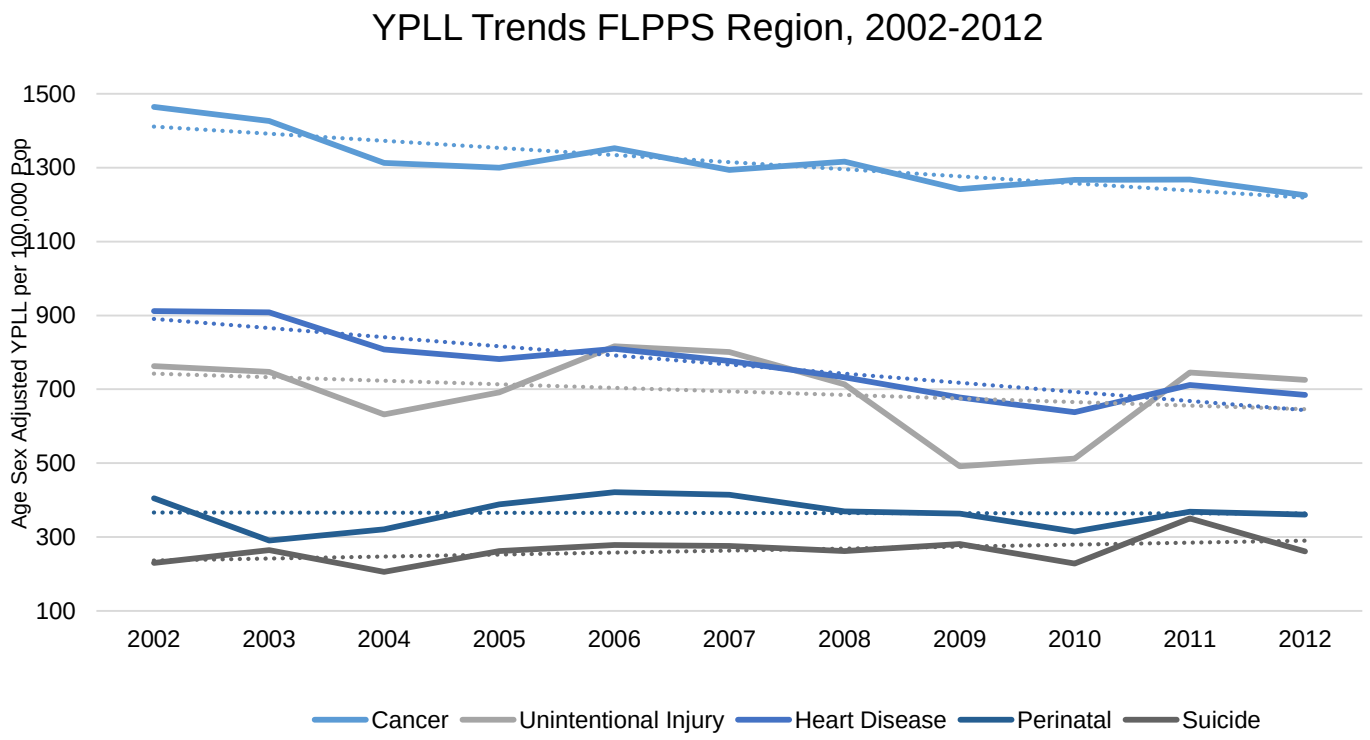


Figure 11 – YPLL Trends

DATA SOURCE: NY State VITAL Statistics

Disparities

According to the findings of the Health Disparities report recently published by the Finger Lakes Health Systems Agency and its partner African-American and Latino health coalitions, significant disparities in the rates of mortality and premature death exist in in the Finger Lakes region.(Finger Lakes Health Systems Agency, 2014) For example, the figure below illustrates that African Americans and Latinos living in the nine county Finger Lakes region (a subset of the 14-county FLPPS region) have consistently experienced higher rates of premature mortality relative to whites. This disparity is particularly pronounced between African Americans and whites, with African Americans having a YPLL rate that is almost twice that of whites.

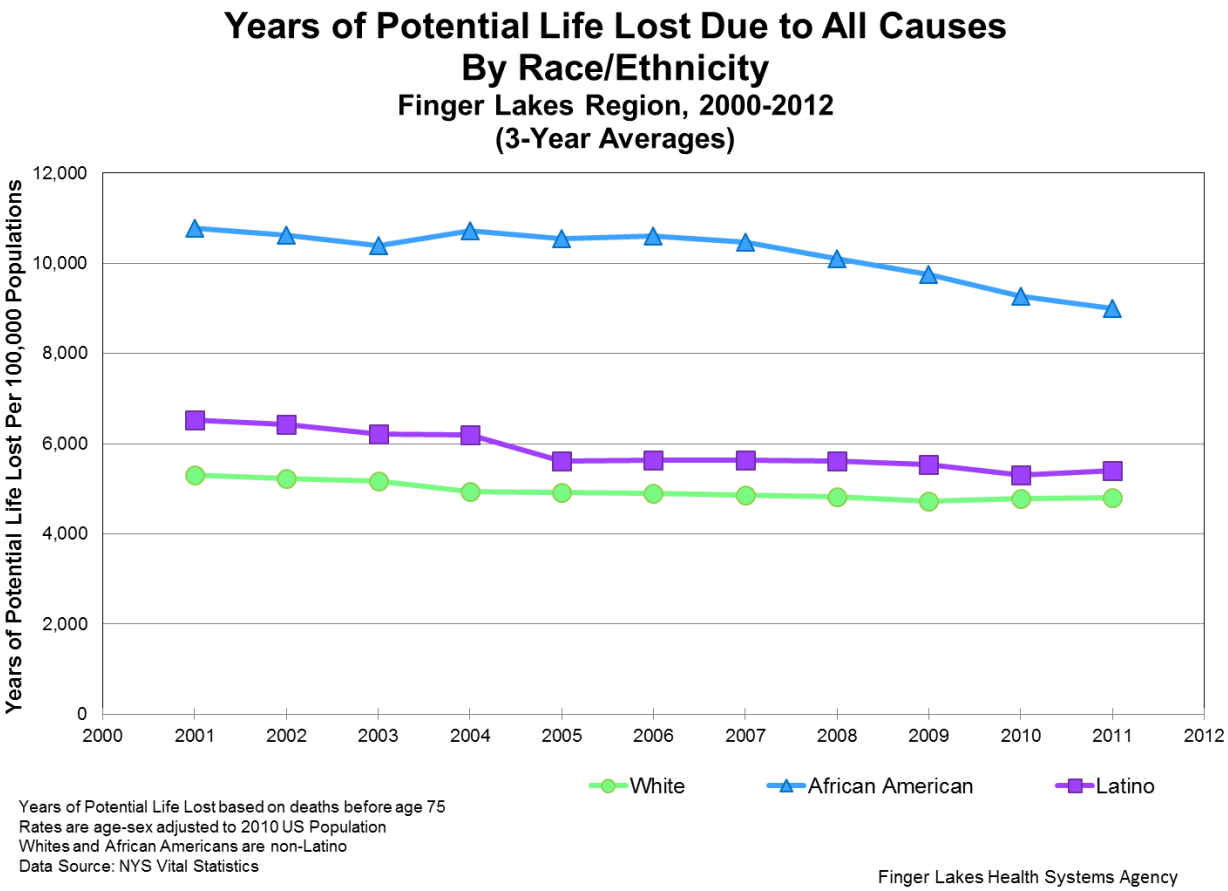


Figure 12 – YPLL by Race / Ethnicity

Furthermore, there are important differences in the leading causes of premature mortality between these racial and ethnic groups, as detailed in the figure below. While cancer and heart disease remain the top two causes, regardless of race/ethnicity, homicide appears to disproportionately impact individuals of color. Suicide is only in the top five for whites and Latinos, while stroke is unique to African Americans as a leading contributor.

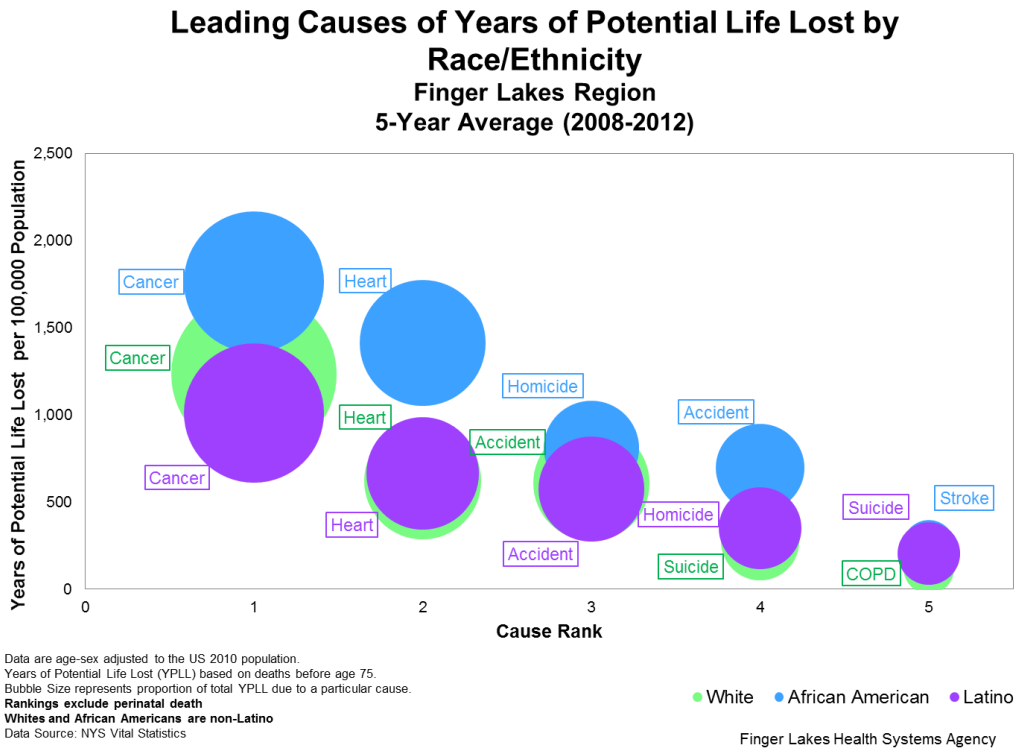
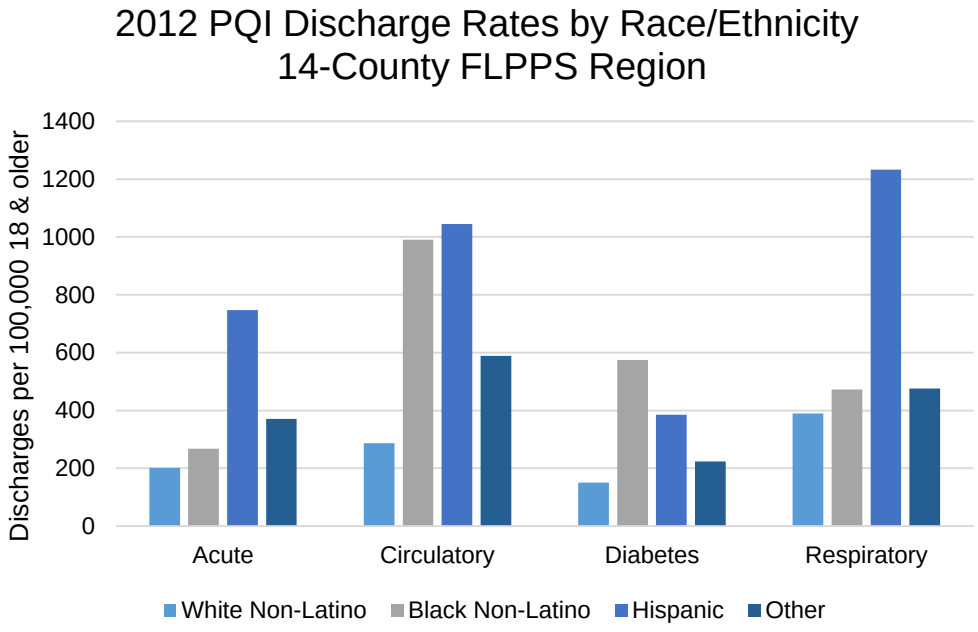


Figure 13 – Leading Causes of YPLL by Race / Ethnicity

Evidence of disparities also extend to area of potentially avoidable hospitalizations. As the graph below shows, people of color have substantially higher rates of PQIs, regardless of type, within the FLPPS. Presently, it is unclear if these differences are related to disparities in the quality of or access to primary care, differences in the utilization of primary care services, differences in disease prevalence, or some combination of these factors. Nevertheless, it is clear that certain groups, particularly blacks and Hispanics, are much more likely to experience a potentially avoidable hospitalization.



Data Source: NYS Dept of Health, SPARCS files

Figure 14 – All Payer PQI Discharges by Race / Ethnicity

Chronic Conditions

Chronic conditions are often contributors to preventable utilization, and the prevalence of those conditions is an indicator of population health. The table below illustrates that there are a substantial number of Medicaid recipients living with a chronic condition.

Table 31 – Medicaid Beneficiaries with Chronic Conditions

NUMBER OF BENEFICIARIES WITH CHRONIC CONDITIONS BY DISEASE CATEGORY, 2012			
Episode Disease Category	**Beneficiaries with Condition**	**Episode Disease Category**	**Beneficiaries with Condition**
Hypertension	45,159	HIV Disease	1,068
Depression	37,880	Other Diabetic Complications	1,052
Asthma	22,251	History of Percutaneous Transluminal Coronary Angioplasty	1,032
Diabetes	21,462	Opioid Abuse - Continuous	976
Chronic Stress and Anxiety Diagnoses	17,680	Bi-Polar Disorder - Severe	911
Schizophrenia	15,298	Other Significant Drug Abuse - Continuous	838
Depressive and Other Psychoses	13,654	Delirium Tremens	821
Attention Deficit / Hyperactivity Disorder	12,755	Diabetic Retinopathy	768
Chronic Alcohol Abuse	8,919	Chronic Cardiovascular Diagnoses - Minor	746
Bi-Polar Disorder	8,328	History of Coronary Artery Bypass Graft	678
Chronic Obstructive Pulmonary Disease and Bronchiectasis	8,180	Cocaine Abuse - Continuous	619
Drug Abuse - Cannabis/NOS/NEC	7,410	Other Major Chronic Pulmonary Diagnoses	608
Coronary Atherosclerosis	7,381	Diabetic Nephropathy	595
Chronic Mental Health Diagnoses - Minor	6,082	Pulmonary Hypertension	539
Other Chronic Pulmonary Diagnoses	5,997	Diabetes with Circulatory Complication	497
Cardiac Dysrhythmia and Conduction Disorders	5,430	Drug Abuse Related Diagnoses	440
Congestive Heart Failure	5,271	Conduct Disorder - Severe	421
Chronic Mental Health Diagnoses - Moderate	4,961	Unstable Angina	411
Opioid Abuse	4,551	Defibrillator Status	263
Conduct, Impulse Control, and Other Disruptive Behavior Disorders	4,118	Ventricular and Atrial Septal Defects	230
Post-Traumatic Stress Disorder	4,094	Diabetic Ketoacidosis	222
Malignant and Other Significant Hypertension	3,716	Status Asthmaticus	207
Cocaine Abuse	3,614	Eating Disorder	200
Other Significant Drug Abuse	3,404	Tracheostomy Status	193
Angina and Ischemic Heart Disease	3,303	Schizophrenia - Exacerbation	152
Atrial Fibrillation	3,296	Major Respiratory Anomalies	135
Diabetic Neuropathy	3,235	Prematurity - Birth weight < 1000 Grams	118
Depressive Psychosis - Severe	2,776	Coronary Graft Atherosclerosis	84
History of Myocardial Infarction	2,426	Prematurity - Birth weight 750 - 999 Grams	79
Other Cardiovascular Diagnoses - Major	2,163	Diabetic Coma	78
Diabetes - Juvenile Onset	1,302	Other Major Congenital Heart Diagnoses Except Valvular	77
Cardiomyopathy	1,239	Chronic Bronchitis	62
Major Personality Disorders	1,221	Prematurity - Birth weight < 750 Grams	56
Cardiac Device Status	1,097	Complex Cyanotic and Major Cardiac Septal Anomalies	48
Valvular Disorders	1,088		

DATA SOURCE: NY State Open Data.

Individuals may certainly have more than one chronic condition at a time, and as a result, the counts above are not mutually exclusive. However, it remains clear that chronic disease is widespread in the FLPPS Medicaid population. Conditions related to mental illness and substance use disorders, diabetes, respiratory illness, and heart disease appear to be major contributors to the overall chronic disease prevalence.

In terms of chronic disease rates per Medicaid recipients, the FLPPS region appears similar to New York State. Yet, it should be noted that the Medicaid population of the FLPPS experiences a much higher prevalence of mental diseases and disorders.

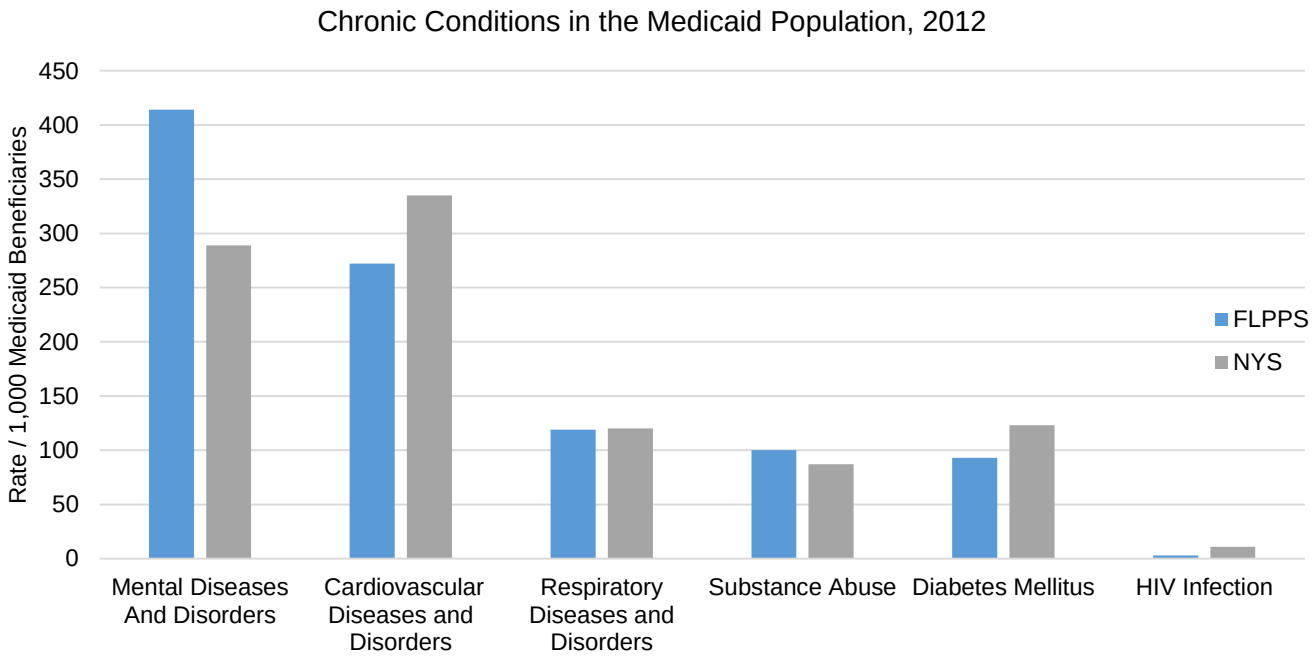


Figure 15 – Chronic Conditions in the Medicaid Population

DATA SOURCES: NY State Open Data AND Salient No PHI Claims Database

Behavioral Health

Behavioral health conditions are prevalent in the FLPPS region, especially among the Medicaid population. Most notably this region has a much higher prevalence of depression, schizophrenia, and stress and anxiety disorders than the New York state Medicaid population as a whole. Additionally the Medicaid population in the FLPPS has over twice the rate of ADHD.

Table 32 – Medicaid Mental Disease and Disorder Prevalence

Mental Diseases and Disorders, Prevalence / 1,000 Beneficiaries, 2012		
	Prevalence / 1,000 Beneficiaries	
Diagnoses (Not Mutually Exclusive)	FLPPS Region	NYS
Mental Diseases And Disorders	**411.2**	**289.4**
Depression	119.3	70.9
Chronic Stress and Anxiety Diagnoses	55.7	42.9
Schizophrenia	48.2	38.5
Depressive and Other Psychoses	43.0	37.2
Attention Deficit / Hyperactivity Disorder	40.2	20.0
Bi-Polar Disorder	26.2	19.0
Chronic Mental Health Diagnoses - Minor	19.2	15.8
Chronic Mental Health Diagnoses - Moderate	15.6	9.2
Conduct, Impulse Control, and Other DBD	13.0	9.6
Post-Traumatic Stress Disorder	12.9	7.7
Depressive Psychosis - Severe	8.7	8.9
Major Personality Disorders	3.8	3.5
Bi-Polar Disorder - Severe	2.9	2.9
Conduct Disorder - Severe	1.3	1.2
Eating Disorder	0.6	0.5
Schizophrenia - Exacerbation	0.5	1.4

DATA SOURCE: NY State Open Data.

Table 33 – Medicaid Substance Use Disorder Prevalence

Substance Use Disorders, Prevalence / 1,000 Beneficiaries, 2012		
	Prevalence / 1,000 Beneficiaries	
Diagnoses (Not Mutually Exclusive)	FLPPS Region	NYS
Substance Abuse	**99.5**	**86.8**
Chronic Alcohol Abuse	28.1	20.4
Drug Abuse - Cannabis/NOS/NEC	23.3	16.9
Opioid Abuse	14.3	15.1
Cocaine Abuse	11.4	9.6
Other Significant Drug Abuse	10.7	8.6
Opioid Abuse - Continuous	3.1	4.6
Other Significant Drug Abuse - Continuous	2.6	3.5
Delirium Tremens	2.6	3.1
Cocaine Abuse - Continuous	2.0	2.6

DATA SOURCE: NY State Open Data.

As a whole, behavioral health conditions seem to be more prevalent among the FLPPS population than New York State. While across the state, 51.5 percent of Medicaid beneficiaries have received OMH or OASAS services in their lifetime, 58 percent of FLPPS Medicaid beneficiaries have. From a diagnosis perspective, the rate of beneficiaries identified with mental diseases and disorders in the FLPPS region is nearly twice that of the overall NY State rate. The substance abuse prevalence is also significantly higher in the FLPPS region. The rate of substance abuse is particularly high in Monroe County, where over 5,000 (11.8 percent) of Medicaid recipients have a substance abuse diagnosis.

These are individuals with immensely complex medical needs. Among our substance use disorder focus groups, many individuals identified that they were addicted to multiple substances. As one participant put it:

> *"I'm an alcoholic but also a 'garbage head', which means that whenever I feel depression or anger I self-medicate, using anything and everything I can get my hands on in order to escape."*

This participant's insight drew attention not only to the interplay that occurs within many of these individuals and the various substances they use, but also to the fact that the underlying case of the substance abuse was perceived as a mental health problem, which led to self-mediation.

The needs assessment has identified that the behavioral health workforce in the PPS region appears to be inadequate to serve the substantially larger behavioral health population that appears to exist in this region. The nature of behavioral health conditions necessitate ongoing care. As one of the focus group participants noted:

> *"People like us suffer more than people with cancer. At least cancer has some sense of finality to it — it's cured, you go into remission, or you die. And you get flowers and cards and lots of sympathy. But mental illness keeps going on — for 10, 20, 30, 40, 50, even 60 years. People suffer so much longer, and it's so much more grueling and lonely without that same level of support. With cancer there are cards, flowers, and old friends coming out of the woodwork to provide sympathy and support. But with mental illness people get immune to it after a while. That's just Mike, they'll say, dismissively…"*

Not only do behavioral health conditions represent resource intensive needs on their own but for individuals who have both behavioral and physical health problems, the interplay of the multiple conditions can exponentially increase the needs of a particular patient. Indeed throughout our focus group process, individuals in groups focusing on physical health noted behavioral health concerns, unprompted and without fail.

Because of their increased need for integration of services these patients are at a higher risk for preventable utilization than the typical FLPPS Medicaid beneficiary.

These patients recognized immediately how the two topics related and how one influenced the other within themselves. They also express immense frustration at the failure of physical health professionals to acknowledge and prioritize their mental health concerns.

> *"I always tell them I'm having a manic episode — but they say 'that's not important now, your sugar is 625!' They only deal with my sugar and my blood pressure, but I never end up getting the psychological help I need. It takes them three days to get my blood levels under control, and then they discharge me because by then I've calmed down and my manic episode is over. But they NEVER deal with my psych problems."*

Perinatal Health

Perinatal health is also an area of concern for the region. The FLPPS region historically experiences higher rates of infant mortality than either New York state or Upstate New York. Explanations for this phenomenon have been difficult to ascertain, as the region demonstrates relatively low rates of teen pregnancy (except in Monroe and Chemung counties) and higher percentages of parents receiving prenatal care.

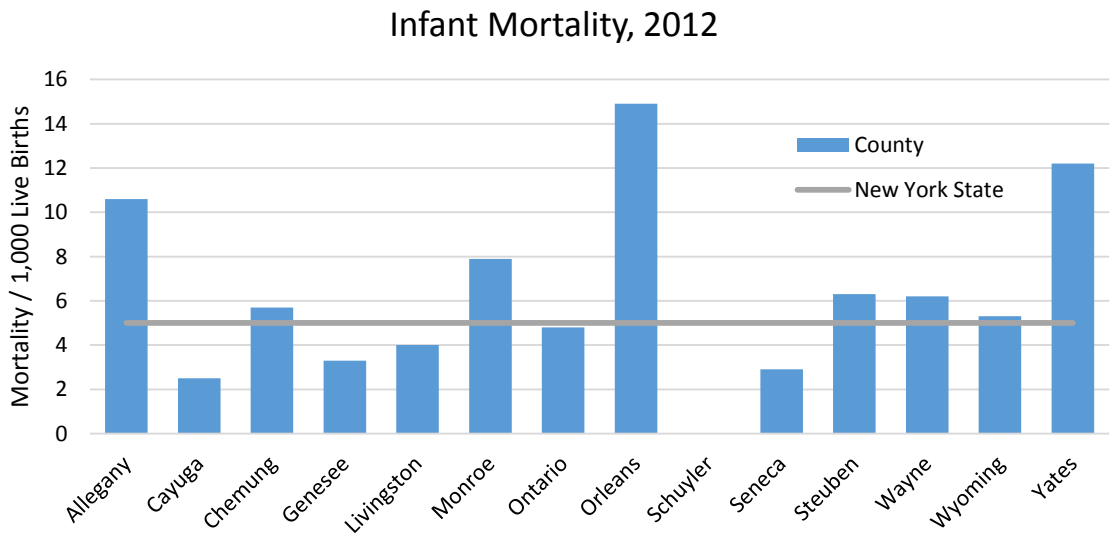


Figure 16 – FLPPS Infant Mortality

DATA SOURCE: NY State VITAL Statistics

One program that has demonstrated success in promoting healthy women and children both in Chemung and Monroe Counties, is the Nurse Family Partnership. This program provides pregnancy assistance for first time moms and has demonstrated success in the FLPPS region with quantifiable benefits to prenatal health and fewer childhood injuries, among others. While this program does not specifically address the issue of infant mortality, an increased focus on perinatal health is likely to improve awareness and additional investigation.

In Monroe County there are significant disparities in infant mortality. A recent study by FLHSA determined that infant mortality rates for African Americans and Latinos were between three and four times higher than for white residents. Figure 17, adapted from the 2014 'What's Goin On' report demonstrates that infant mortality from 2008-2010 was heavily driven by mortality among African Americans and Latinos.

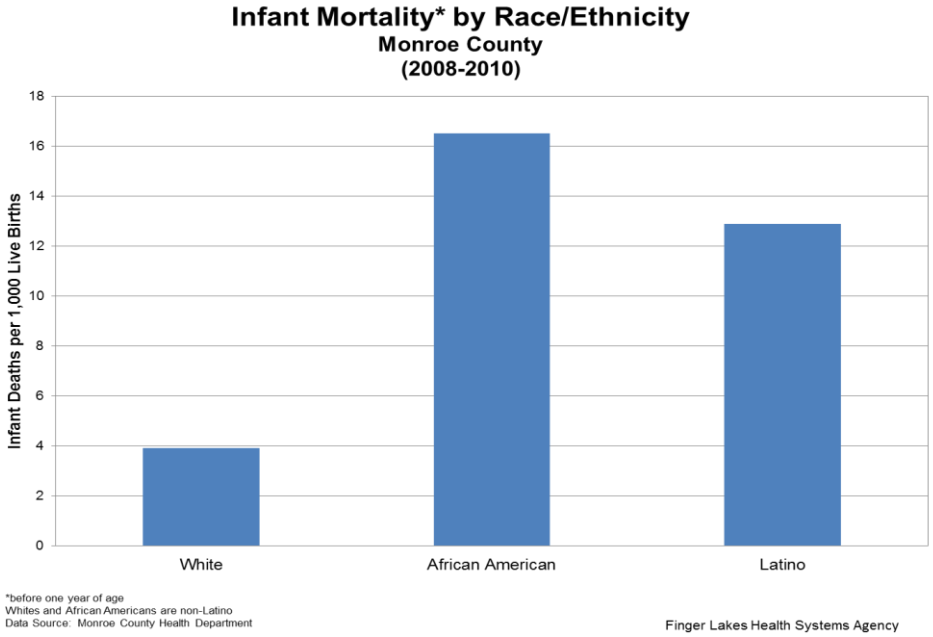
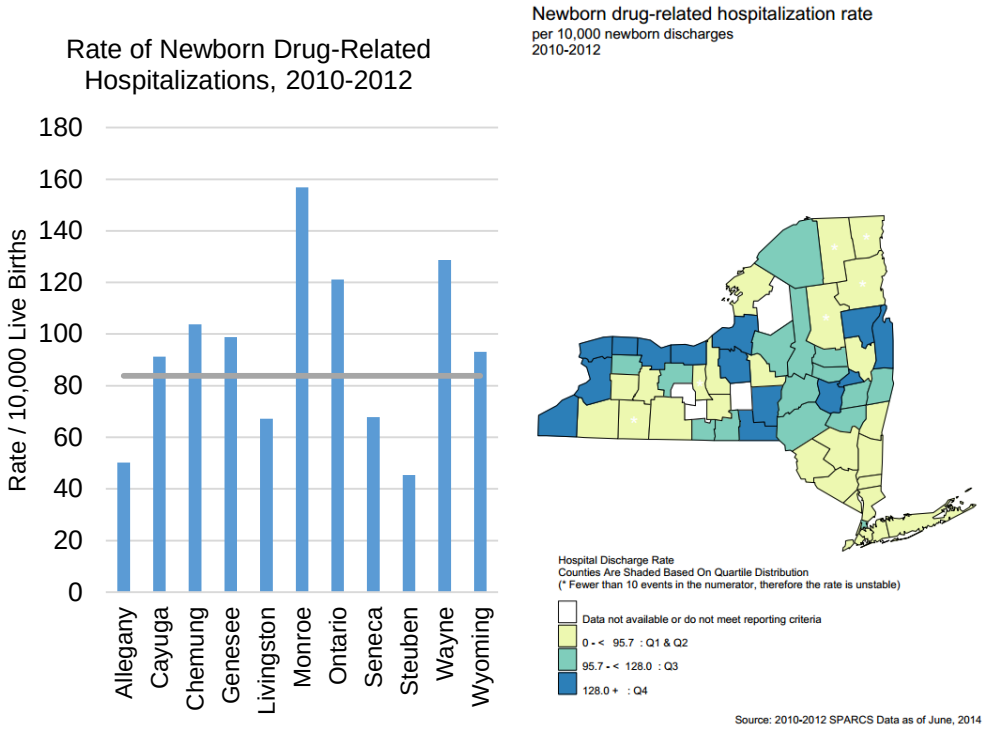


Figure 17 – Infant Mortality by Race / Ethnicity

The interaction between behavioral health and perinatal health has implications for both short and long-term health outcomes of the FLPPS population. Of the 11 counties where data is available, seven demonstrate a drug-related newborn discharge rate higher than the New York state average, potentially indicating a need for additional services for expecting mothers who have substance abuse issues. Of particular interest is that this rate appears to be highest in the primary population center in Monroe County. Compounding this issue is the fact that a recent FLHSA study demonstrated that 21% of mothers in nine of the fourteen counties contained within the PPS reported smoking either during pregnancy or in the three months prior to pregnancy. This rate is higher than the NY State wide reported tobacco use for the general population. Details of that report are available in the FLHSA Health Scan, a link to which is available in Appendix C.



Map 10 – Newborn Drug Related Hospitalizations

DATA SOURCE: NY State CHIR Files

Although there are many common factors amongst our urban and rural mothers, there do exist some striking differences. The disparities that are prevalent in Monroe County in terms of infant mortality are virtually non-existent in the rural areas. Additionally, while both moms are struggling with finances, the mothers in Monroe County seem to have had their children at a younger age. The mean age of the focus group participants was 19.3 vs 23.7 in the rural focus group. This coincides with the teen pregnancy data provided below, in that the teen pregnancy rates among 15 to17 year olds in Monroe and Chemung Counties are higher than that of the region as a whole.

Table 34 – Teen Pregnancy Rates by County

Teen Pregnancy Rates, 15-17 Year Olds, 2009-2011	
FLPPS County	Rate / 1,000 Fem. Pop
Allegany	19.0
Cayuga	16.1
Chemung	30.6
Genesee	12.8
Livingston	14.2
Monroe	27.7
Ontario	11.2
Orleans	13.5
Schuyler	14.7
Seneca	12.6
Steuben	17.2
Wayne	17.6
Wyoming	7.8
Yates	14.8
NY State	47.9

DATA SOURCE: NY State CHIR Files

Behavioral Risk Factors

Beyond chronic conditions, the behavioral risks are critical to understanding the needs of a given population. Utilizing the N.Y. state expanded Behavioral Risk Factor Surveillance Survey (BRFSS), we have identified that the region appears to experience higher rates of tobacco use (current smoking), overweight and obesity, binge drinking, and poor mental health (14 or more of the past 30 days) than the state overall. These social determinants can both result in the chronic conditions mentioned previously and can exacerbate issues that already exist.

Table 35 – BRFSS Statistics

Selected Statistics from 2009 NYS Advanced BRFSS				
County	Current Smoker	Overweight or Obese	Binge Drinking in the Past Month	Poor Mental Health 14 of the Past 30 days
Monroe	19.6%	62.6%	19.2%	12.4%
Livingston	16.9%	61.9%	19.7%	8.5%
Ontario	20.0%	56.4%	21.0%	11.0%
Seneca	24.3%	70.5%	14.4%	9.9%
Wayne	19.9%	71.7%	18.6%	13.2%
Yates	17.4%	65.7%	12.5%	8.6%
Cayuga	22.9%	63.6%	23.2%	14.8%
Chemung	30.8%	69.7%	20.5%	12.8%
Schuyler	23.2%	64.9%	22.5%	9.8%
Steuben	22.1%	65.9%	17.1%	12.6%
Allegany	22.5%	64.9%	19.4%	8.6%
Orleans	29.9%	63.0%	17.3%	12.2%
Genesee	18.7%	63.5%	16.4%	10.6%
Wyoming	22.3%	67.0%	24.3%	7.3%
NYS	**17.0%**	**59.3%**	**18.1%**	**10.1%**

DATA SOURCE: NY State Advanced BRFSS, 2009

Populations with Special Health Needs

Rochester and the Finger Lakes region has a vibrant deaf community, supported by the presence of the National Technical Institute for the Deaf (NTID) and the Rochester School for the Deaf (RSD). This community experiences language and communication barriers, especially among individuals deafened before the age of three. At a national level, these individuals are poorer on average than other Americans and are more likely to have public insurance (Medicare or Medicaid) (FLHSA, 2004). A regional task force identified that providers serving this population should have additional training, interpreters be made available to assist in communication, and that outside resources be catalogued and provided to assist deaf individuals understand their health and health care. It will be important to ensure that this population's needs are considered as the FLPPS approaches program selection and development.

Individuals with developmental disabilities, defined as a diverse group of severe chronic conditions that are due to mental and/or physical impairments, represent another population which requires special consideration. The FLPPS region has over 25,000 OPWDD consumers and almost 4,500 OPWDD consumers in community based residential care. These each disproportionately account for approximately 12 percent of the respective statewide OPWDD consumers.

As noted in a study by the Centers for Disease Control (CDC) the prevalence of developmental disabilities rose over 17 percent from 1996-1998 to 2006-2008. There is no reason to believe that the FLPPS region is immune to this trend. While it appears that these individuals do not access acute care in a manner which is significantly different than the rest of the Medicaid population, there are certainly additional considerations to ensure that the needs being addressed account for this group. Aside from the oft noted increase cost of care for medical conditions, a 2012 community task force in the Finger Lakes region has also identified that access to dental care is lacking for this population. As oral health care is important for overall health, meeting these needs is of particular interest for this population.

Table 36 – FLPPS OPWDD Consumers

OPWDD Consumers in the FLPPS Region, 2013		
County	**OPWDD Consumers**	**OPWDD Community Based Residential**
Allegany	660	83
Cayuga	1,582	387
Chemung	1,432	248
Genesee	721	129
Livingston	1,182	290
Monroe	11,678	1,854
Ontario	1,972	377
Orleans	605	76
Schuyler	247	66
Seneca	700	134
Steuben	1,514	216
Wayne	1,927	416
Wyoming	535	100
Yates	521	104
FLPPS Region	25,276	4,480
NY State	211,139	37,371

DATA SOURCE: OPWDD Reports

The institutionalized population, as defined by the U.S. Census Bureau, includes those living in prisons, juvenile facilities, nursing homes, psychiatric facilities, hospices, and residential schools for individuals with developmental disabilities. Across the FLPPS region, 2.0 percent of the population is institutionalized in one of these locations. There is a substantial amount of variation by county however.

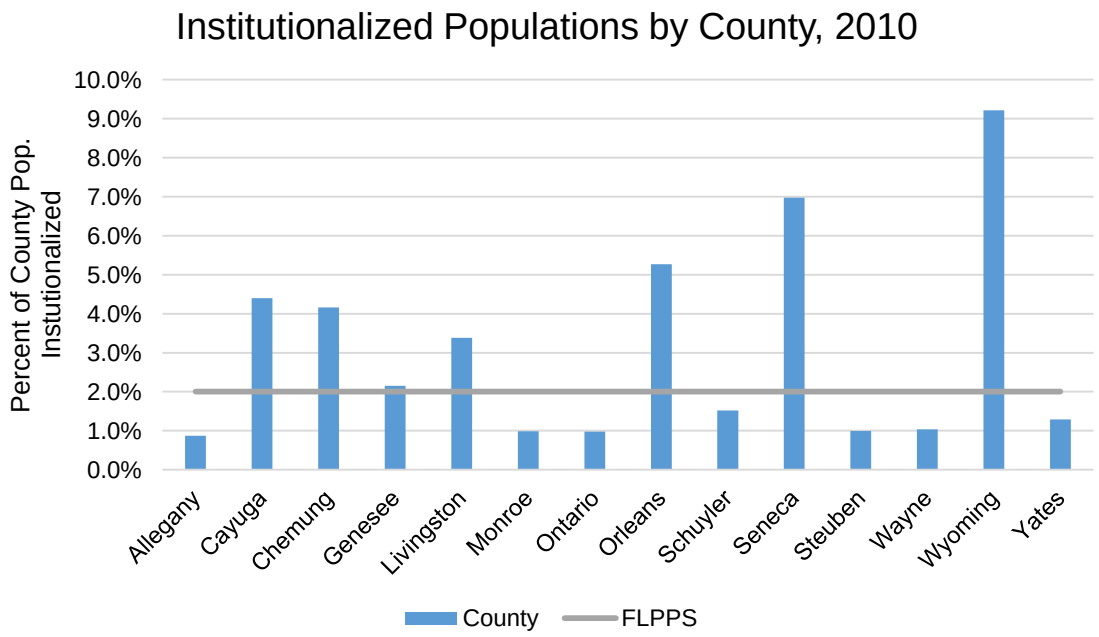


Figure 18 – Institutionalized Populations by County

Source: US Census Bureau, 2010

Another population which may require special consideration is that of the various Native American tribes located in Western N.Y. The FLPPS region is home to over 11,000 individuals who identify as at least partially Native American. Additionally, Genesee County is home to the Tonawanda reservation, where more than 500 Native Americans reside. There is national recognition that the current health care system does not sufficiently address the needs of this population. While local statistics are difficult to obtain, a study by the Urban Indian Health Commission (UIHC) in 2007 found that up to 30 percent of American Indian and Alaska Native adults suffer from depression and that this population was at a higher

risk for both diabetes and cardiovascular disease. The study also found that the current health care system had trouble recognizing this population and that these issues were not being addressed (UIHC, 2007). Given that the issues challenging this population mirror that of the FLPPS population, it will be important to ensure that this group is considered in any potential programming.

Table 37 – American Indian Population by County

FLPPS American Indian Population by County, 2010

	Non-Hispanic American Indian Population					Indian Reservation Population	
Geography	Total	One Race	Two Races	Three Races	Four or more Races	Tonawanda	Oil Springs
Allegany	295	97	173	22	3		1
Cayuga	636	252	343	39	2		
Chemung	713	206	405	97	5		
Genesee	949	661	254	29	5	517	
Livingston	474	158	282	34	0		
Monroe	4,952	1,589	2,603	692	68		
Ontario	688	244	373	65	6		
Orleans	449	199	217	31	2		
Schuyler	152	44	101	7	0		
Seneca	269	96	165	8	0		
Steuben	683	193	457	33	0		
Wayne	661	201	424	33	3		
Wyoming	222	103	115	2	2		
Yates	127	35	88	4	0		
FLPPS Region	11,270	4,078	6,000	1,096	96	517	1

Source: US Census Bureau, 2010

The FLPPS region also has over 5,200 refugees living in the region. Catholic Family Center (CFC) is the only resettlement agency in Monroe County and is responsible for all refugees designated for Rochester and the surrounding 50 miles. Most refugees settle in the city of Rochester. One of the primary responsibilities of CFC is to enroll these individuals in Medicaid and they tend to remain on Medicaid until they are able to secure employment or transition to other coverage. Understanding these refugees and their countries of origin will assist in developing programmatic efforts, especially in the Rochester area. Figure 19 contains a break out of the refugees who arrived in the region between 2008 and 2013 by country of origin.

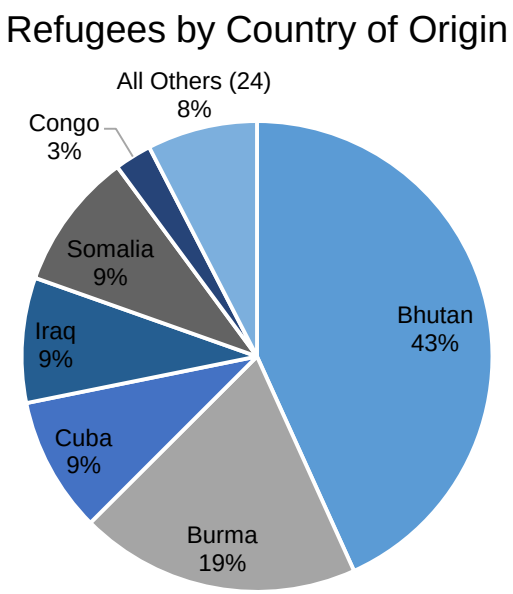


Figure 19 – Refugees by Country of Origin

DATA SOURCE: CFC Records

One last population of concern is that of the rural uninsured migrant workers. This is a population of primarily manual laborers who literally need to keep working in order to survive. Health care, while important for us all, represents an even more fundamentally critical need here. Due to the nature of their residence in the region, estimating the exact number of individuals who make up this group is extremely difficult, however we wanted to better understand their needs as they are a part of the fabric of the rural communities of the rural FLPPS region. To that end we convened a focus group of these individuals.

The agricultural work that most are doing in this area is physically demanding and very dangerous. The greatest fear within this community is that illness or injury might render them unable to keep working. If you cannot produce at the expected level for any reason (illness, injury, etc.) you are let go without further cause. They are vulnerable at the most fundamental level of survival (food, shelter, warmth, health) living a risky and precarious existence with no safety net.

New York provides more generous healthcare than some other states. However, the fact that Medicaid is currently a county-specific system makes it inappropriately structured for a mobile population. An individual may be covered in Wayne County, for example, and receive a 3-month supply of medication for their diabetes or blood pressure. But once their work here is over for the season and they move on either to a dairy farm in some nearby county, or to work the citrus crops down in Florida, they can be left without a way to refill their medications when their supply runs out. Ensuring that these individuals have access to basic care is critical to maintaining their health and preventing the need for unnecessary future care.

Acute Care Utilization

Medicaid recipients account for a significant portion of overall acute hospital use in the FLPPS and that portion has been increasing, both in terms of total discharges and the number of total hospital days.

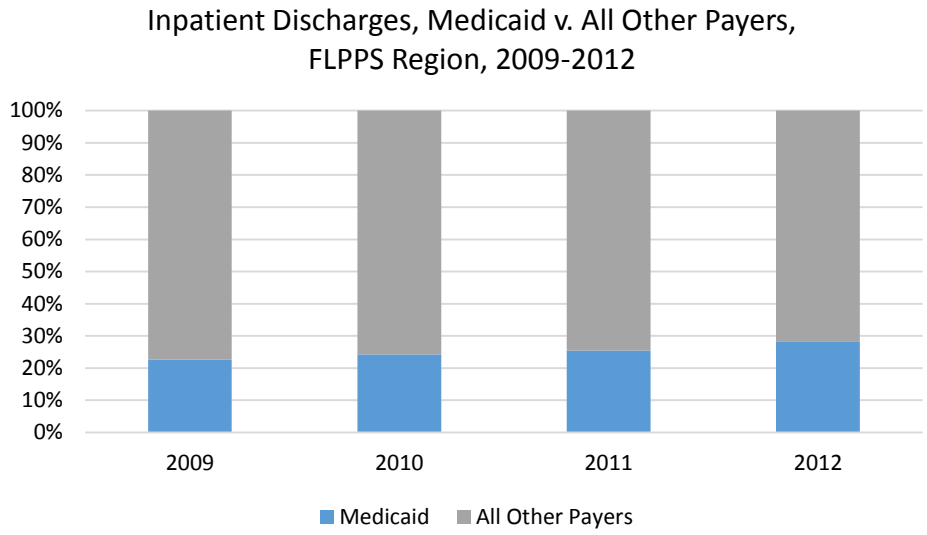


Figure 20 – Medicaid as a Percentage of Total Inpatient Discharges

DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement

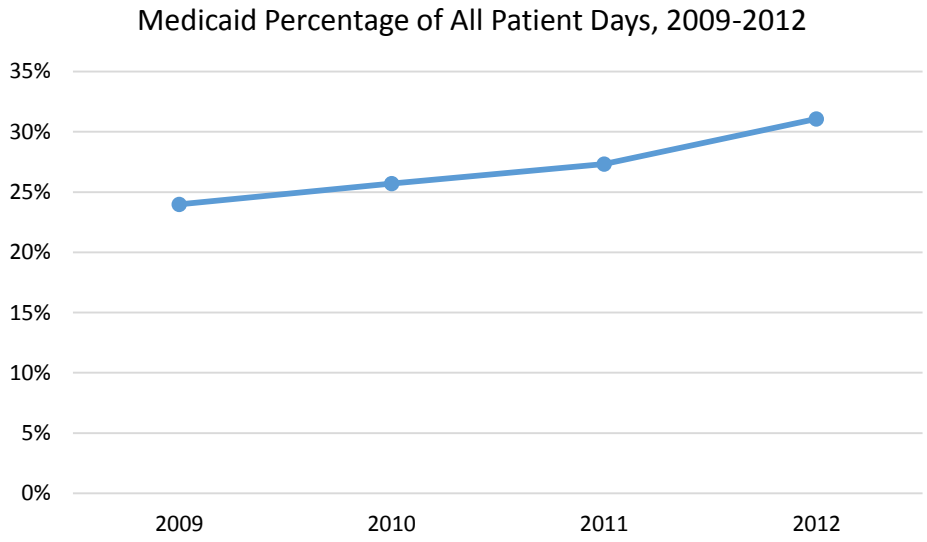


Figure 21 – Medicaid Patient Days

DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement

In total, there were 71,474 hospital admissions among Medicaid recipients. Table 38 breaks down these inpatient admissions by the principal diagnosis category. Here we see strong evidence of the role chronic disease and behavioral health conditions play in driving inpatient hospital utilization. Combined, diseases of the circulatory, respiratory, digestive and endocrine systems account for 13,856 (almost 20%) of Medicaid hospital admissions. SPARCS allows us to estimate ED utilization for the uninsured as well, defined as ED visits where the primary expected reimburse is 'Self-Pay.' Approximately 81,000 of the FLPPS's 684,000 ED visits in 2012 were delivered to individuals for whom the primary expected reimbursement was defined as such. As the uninsured population makes up 8% of the total FLPPS population, it appears that a disproportionate am0ount of ED visits are attributable to them.

Table 38 – Medicaid Inpatient Admissions

FLPPS Resident Medicaid Inpatient Admissions by Primary Diagnosis Class, 2013	
Primary Diagnosis Class	Claims and Encounters
Mental Disorders – All DSMIII C	12,796
Delivery And Complications Of Pregnancy	10,814
Liveborn Infants According To Type Of Birth	10,549
Circulatory System Diseases	4,853
Diseases Of The Respiratory System	4,816
Digestive System Diseases	4,538
Nature Of Injury, Adverse Effects And Poisoning	4,200
Infective And Parasitic Disease	3,284
Endocrine, Nutritional, Metabolic	2,649
Genitourinary System Diseases	2,223
Diseases Of The Musculoskeletal System	2,117
Signs, Symptoms, And Ill-Defined Conditions	1,713
Neoplasms	1,518
Diseases Of The Nervous System	1,480
Diseases Of The Skin And Subcutaneous Tissue	1,409
Diseases Of Blood & Blood Form	721
Suppl. Class Of Patient Status And Other Health	691
Certain Causes Of Perinatal Morbidity And Morality	599
Congenital Anomalies	368
Reason For Special Admissions And Exams	136
Total	71,474

DATA SOURCE: Salient No PHI Medicaid Claims Database.

In addition to inpatient admissions, the emergency department represents another form of hospital-based care that is a key contributor health care cost and resource utilization. The diagnosis clusters most frequently associated with Medicaid inpatient ED visits are summarized in Table 39 below. It appears that the majority of ED visits in the FLPPS region result in non-definitive diagnoses, potentially indicating that the ED is serving a role as a diagnostic center.

An important population among ED users is those users under the age of one. An analysis conducted in the Salient Non-PHI data set found that in 2013, there were 16,344 recipients less than one year of age at some point in the year. Within this population there were 8,087 ED visits among 4,417 of those 16,344 recipients. This indicates that there is approximately one ED visit for every two recipients less than year of age in the FLPPS region. Of those that had an ED visit, the average number of ED visits was 1.83.

Table 39 – Medicaid ED Treat and Release Visits by Diagnoses Clusters

Medicaid ED Visits by Diagnosis Cluster, 2012		
Diagnosis Clusters	**Count**	**Percentage**
Symptoms	27,673	23%
Injuries	24,939	20%
Behavioral Health	8,981	7%
Back Pain	7,178	6%
Resp. Infections	11,054	9%
Oral	4,199	3%
Ear	4,797	4%
Chronic Respiratory Conditions	4,024	3%
Skin	5,222	4%
Nervous	3,217	3%
Urinary	3,503	3%
Digestive (hernia)	5,169	4%
Eye	1,813	1%
Pregnancy + Fem Genital Tract	4,831	4%
Arthopathy	2,160	2%
Other	3,024	2%

DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement

Beyond diagnosis-based drivers of hospital use, it also appears that end-of-life care may contribute to a sizeable number of inpatient admissions and ED visits. In order to estimate the magnitude of hospital use associated with end-of-life, we examine the hospital use of Medicaid recipients who died in a hospital in 2012 over the 365 days prior to the date of death. This analysis is performed using the SPARCS databased due to the inability to track individuals over time in the Salient non-PHI Medicaid claims database. Overall, we estimate that 701 Medicaid recipients (including the dually eligible) died in a hospital in 2012. Including these in-hospital deaths, this population accounted for 2,033 hospital visits, equating to an average of almost 3 visits in the last year of life. Furthermore, about 63% of Medicaid recipients who died in a hospital in 2012 had more than one visit in their last year of life. The figure below illustrates the significant variation in hospital use during the last year of life for this population.

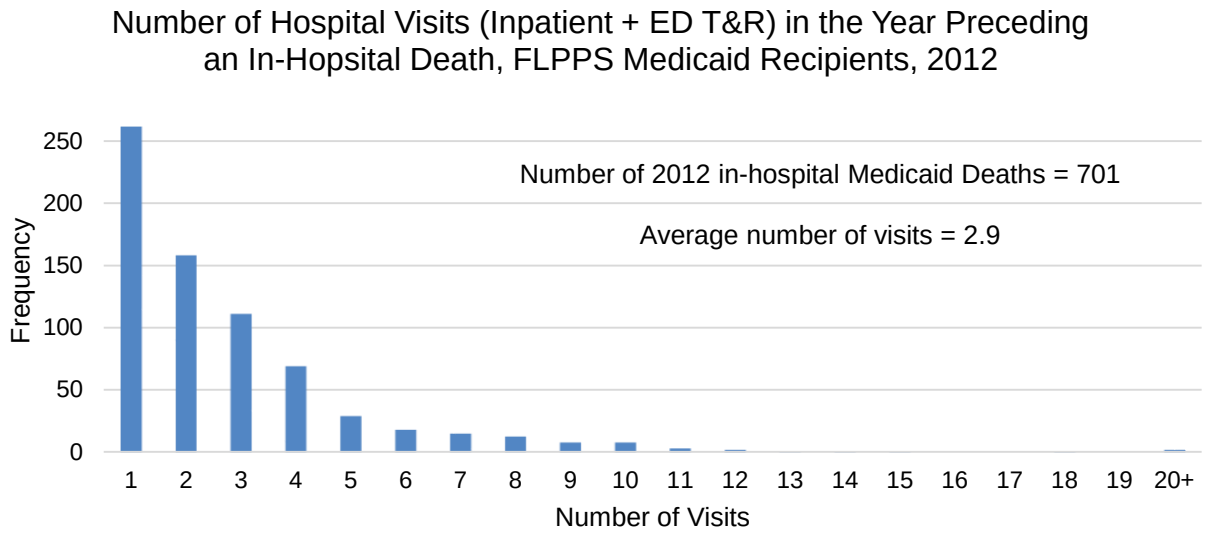


Figure 22 – Hospital Use in the Last Year of Life

Data Source: NYS SPARCS Database

Another important indicator of the current status of the FLPPS health care system is 30 day readmissions. Due to limitations in the state-provided data and the proprietary nature of the 3M algorithm, we are presently unable examine potentially preventable readmissions in greater detail than is provided in Table 23. However, using an alternative data source (SPARCS inpatient claims database) and a more general measure of readmissions (all-cause readmissions[3]), we are able to explore this topic in much greater detail. As outlined in the table below, roughly 18 percent of at-risk admissions have a subsequent visit within 30 days, representing over 7,907 repeat visits. The readmission rate is consistently higher among Medicaid recipients relative to the general population, but the highest rates are experienced by Medicaid FFS recipients (18.9 percent) and the dually eligible (22.2 percent).

Table 40 – All Cause Readmissions by Insurance Type

All-Cause Readmissions by NOCN and Insurance Type, 2012

	Monroe		NE		NW	
Insurance Type	**# of readmits**	**Readmit Rate (%)**	**# of readmits**	**Readmit Rate (%)**	**# of readmits**	**Readmit Rate (%)**
Non-Medicaid	6,657	15.06	3,359	15.01	1,273	15.74
Medicaid FFS	904	20.74	240	19.92	77	15.91
Medicaid Managed Care	1,396	17.50	309	14.77	124	16.69
Dual Eligible	1,535	24.17	641	20.11	245	21.51
Uninsured	547	12.31	151	11.4	45	11.36
Medicaid subtotal	4382	18.94	1341	17.17	491	17.78

DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement

[3] All-cause readmissions are defined as any readmission to an inpatient facility within 30 days of discharge related to an index admission. Every hospitalization, except those which result in a patient death, is considered an index admission. Additional exclusion criteria include index admissions with a primary diagnosis related to cancer, burns, trauma, or cystic fibrosis and index admissions with a disposition to an inpatient rehab facility due to the high likelihood of planned inpatient follow-up care. Transfers to another inpatient facility or hospice will not be considered as discharges from index admissions.

Table 41 - All Cause Readmissions by Insurance Type (cont.)

All-Cause Readmissions by NOCN and Insurance Type, 2012 (cont.)						
	SW		**ST**		**Region Total**	
Insurance Type	**# of readmits**	**Readmit Rate (%)**	**# of readmits**	**Readmit Rate (%)**	**# of readmits**	**Readmit Rate (%)**
Non-Medicaid	1,345	14.00	2,385	16	15,019	15.13
Medicaid FFS	136	17.00	534	17	1,891	18.92
Medicaid Managed Care	104	13.10	74	16	2,007	16.62
Dual Eligible	210	18.87	543	22	3,174	22.2
Uninsured	29	8.58	63	9	835	11.59
Medicaid subtotal	479	15.70	1,214	17.8	7,907	18.15

DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement

Use of this supplemental data source also allows for the evaluation of how readmission rates vary across Medicaid recipients based on the patient's discharge disposition. The table below demonstrates that one of the highest readmission rates is consistently found among those discharged with home care. It should be noted, however, that the greatest quantity of readmissions occurs among those discharged to self-care as this is the most frequently used disposition in the FLPPS.

Table 42 – All Cause Medicaid Readmissions by Disposition

All Cause Medicaid Readmissions by Patient Disposition, 2012						
	Monroe		**NE**		**NW**	
	# of readmits	Readmit Rate (%)	# of readmits	Readmit Rate (%)	# of readmits	Readmit Rate (%)
Self-Care	2,500	16.5	732	14.62	268	15.34
Home Care	1,099	24.64	296	22.7	76	22.03
SNF	550	21.93	232	19.43	102	19.88
Left against Medical Advice	189	27.08	49	34.27	35	28.93
Other	39	14.13	30	20.69	9	31.03
Law Enforcement	5	12.82	2	11.76	1	14.29

DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement

Table 43 – All Cause Medicaid Readmissions by Disposition (cont.)

All Cause Medicaid Readmissions by Patient Disposition, 2012 (cont.)						
	SW		**ST**		**Region Total**	
	# of readmits	Readmit Rate (%)	# of readmits	Readmit Rate (%)	# of readmits	Readmit Rate (%)
Self-Care	263	13.27	748	15	4,511	15.64
Home Care	77	20.16	104	25.55	1,652	23.95
SNF	105	19.27	227	23.45	1,216	21.23
Left against Medical Advice	26	26.8	77	25.84	376	27.71
Other	8	26.67	55	31.07	141	21.46
Law Enforcement	0	0	3	20	11	11.83

DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement

Furthermore, SPARCS data also facilitates an exploration of the primary diagnoses at index admission that are most frequently associated with a 30 day readmit. These diagnoses, classified by Major Diagnostic Category (MDC) are summarized in the table below.

Table 44 – All Cause Medicaid Readmissions by MDC

All Cause FL Medicaid Readmissions by MDC, 2012

MDC Description	MDC	Freq.	Percent
Circulatory System	5	1,177	14.89
Respiratory System	4	1,122	14.19
Mental Diseases and Disorders	19	901	11.39
Digestive System	6	766	9.69
Nervous System	1	500	6.32
Kidney And Urinary Tract	11	485	6.13
Infectious and Parasitic DDs	18	479	6.06
Alcohol/Drug Use or Induced Mental Disorders	20	467	5.91
Endocrine, Nutritional And Metabolic System	10	401	5.07
Musculoskeletal System And Connective Tissue	8	321	4.06
Hepatobiliary System And Pancreas	7	292	3.69
Skin, Subcutaneous Tissue And Breast	9	224	2.83
Injuries, Poison And Toxic Effect of Drugs	21	194	2.45
Blood and Blood Forming Organs and Immunological Disorders	16	186	2.35
Myeloproliferative DDs (Poorly Differentiated Neoplasms)	17	132	1.67
Factors Influencing Health Status	23	101	1.28
Female Reproductive System	13	53	0.67
Ear, Nose, Mouth And Throat	3	48	0.61
Newborn And Other Neonates (Perinatal Period)	15	20	0.25
Eye	2	16	0.20
Male Reproductive System	12	12	0.15
Multiple Significant Trauma	24	8	0.10
Pregnancy, Childbirth And Puerperium	14	2	0.03

DATA SOURCE: NY State SPARCS Database

Major Diagnostic Category determined by the primary diagnosis documented at the time of the index admission

Conditions of the circulatory and respiratory system occupy the top two spots, however, if mental illness and substance use disorder are combined, this aggregated category would be the most prevalent, accounting for over 17 percent of all readmissions. Regardless of the order, the above table clearly suggests a close relationship between chronic conditions and readmissions.

In order to more fully explore the many factors which may be associated with a patient's risk of being readmitted to the hospital within 30 days, we constructed a multivariate risk prediction model using observable patient-, admission- and facility-level information. Three separate models were constructed depending on whether the patient was admitted to a medical, surgical, or inpatient bed during the index admission. Logistic regression, with facility-level fixed effects, was used to estimate the probability of having an all-cause readmission within 30 days of index admission discharge. Results of these three models are summarized in Appendix A.

With regards to medical inpatient admissions, having more comorbid conditions, having Medicaid fee-for-service coverage, being discharged to home care, leaving against medical advice, having a primary diagnosis of congestive heart failure, COPD, diabetes, or ischemic heart disease, having a secondary diagnosis of serious mental illness, kidney disease (marginally significant with $p = 0.056$), or heart disease are all significantly associated with increased risk for a 30-day readmission.

For surgical inpatient admissions, being Hispanic, having more comorbid conditions, being admitted through the emergency department, leaving against medical advice, having a primary diagnosis of pneumonia, COPD, or CHF (marginally significant with $p = 0.054$), and having a secondary diagnosis of kidney disease or heart disease are significantly associated with increased risk of admission.

Among psych inpatient index admissions, being white race, having more comorbid conditions, having FFS Medicaid, being admitted through the ED (marginally significant with $p = 0.081$) leaving against medical advice, and having a secondary diagnosis of diabetes or heart disease are all associated with increased risk of readmission. Interestingly, longer length of stay during index admission is associated with reduced odds of being readmitted at 30 days.

Table 45 – Domain 3 and 4 Metrics

Worse than NYS Average	Better than NYS Average	Metric Pending	Data not available from NYS as of 12/16/2014.

Domain Name	Value Type	Regional Value
Domain 3 – Clinical Improvement Metrics		
A. Behavioral Health (Required) – All behavioral health projects will use the same metrics except for SNF programs implementing the BIPNH project. These providers will include the additional behavioral health measures below in A-2.		
PPV (for persons with BH diagnosis)		Data N/A
Antidepressant Medication Management – Acute Phase	Percentage	43.9%
Antidepressant Medication Management – Continuation Phase	Percentage	35.5%
Diabetes Monitoring for People with Diabetes and Schizophrenia – Acute Phase	Percentage	64.1%
Diabetes Screening for People with Schizo./BPD Using Antipsychotic Med.	Percentage	73.9%
Cardiovascular Monitoring for People with CVD and Schizo.		N /A
Follow-up care for Children Prescribed ADHD Medications – Initiation	Percentage	42.3%
Follow-up care for Children Prescribed ADHD Medications – Continuation	Percentage	47.4%
Follow-up after hospitalization for Mental Illness 7 Days	Percentage	49.2%
Follow-up after hospitalization for Mental Illness 30 Days	Percentage	66.5%
Screening for Clinical Depression and follow-up		Data N/A
Adherence to Antipsychotic Medications for People with Schizophrenia	Percentage	60.3%
Initiation of Alcohol and Other Drug Dependence Treatment	Percentage	81.1%
Engagement of Alcohol and Other Drug Dependence Treatment	Percentage	29.4%
A – 2. Additional behavioral health measures for provider systems implementing the Behavioral Interventions Paradigm in Nursing Homes (BIPNH) project		
PPR for SNF patients		Data N/A
Percent of Long Stay Residents who have Depressive Symptoms		Data N/A
B. Cardiovascular Disease		
PQI # 7 (HTN)	Per 100,000 pop	46.9
PQI # 13 (Angina without procedure)	Per 100,000 pop	14.4
Cholesterol Management for Patients with CV Conditions		Data N/A
Controlling High Blood Pressure (Provider responsible for medical record reporting)		Data N/A
Aspirin Discussion and Use		Data N/A
Medical Assistance with Smoking Cessation		Data N/A
Flu Shots for Adults Ages 50 – 64		Data N/A
Health Literacy Items		Data N/A
C. Diabetes Mellitus		
PQI # 3 (DM Long term complications)	Per 100,000 pop	147.3
Comprehensive Diabetes Care – HbA1C Testing		77.2%
Comprehensive Diabetes Care – Lipid Profile		66.8%
Comprehensive diabetes care – LDL-c control (<100mg/dL)		Data N/A
Medical Assistance with Smoking Cessation		Data N/A
Flu Shots for Adults Ages 50 – 64		Data N/A
Health Literacy Items		Data N/A
D. Asthma		
PQI # 15 Adult Asthma	Per 100,000 pop	83.2
PDI # 14 Pediatric Asthma	Per 100,000 pop	169.4
Asthma Medication Ratio		62.3%.
Medication Management for People with Asthma – 50% Days Covered		56.6%
Medication Management for People with Asthma – 75% Days Covered		34.4%
E. HIV/AIDS		
HIV/AIDS Comprehensive Care : Engaged in Care	Percentage	91.2%
HIV/AIDS Comprehensive Care : Viral Load Monitoring	Percentage	75.5%
HIV/AIDS Comprehensive Care : Syphilis Screening	Percentage	60.3%
Cervical Cancer Screening	Percentage	64.5%
Chlamydia Screening	Percentage	58.3%
Medical Assistance with Smoking Cessation		Data N/A
Viral Load Suppression	Percentage	75.1%
F. Perinatal Care		
PQI # 9 Low Birth Weight		Data N/A
Prenatal and Postpartum Care—Timeliness and Postpartum Visits		Data N/A
Frequency of Ongoing Prenatal Care		Data N/A
Well Care Visits in the first 15 months		85.0%
Childhood Immunization Status		Data N/A
Lead Screening in Children		65.1%
PC-01 Early Elective Deliveries		Data N/A
G. Palliative Care – All projects will use the same metric set.		
Risk-Adjusted percentage of members who remained stable or demonstrated improvement in pain.		Data N/A
Risk-Adjusted percentage of members who had severe or more intense daily pain		Data N/A
Risk-adjusted percentage of members whose pain was not controlled.		Data N/A
Advanced Directives – Talked about Appointing for Health Decisions		Data N/A
Depressive feelings – percentage of members who experienced some depression feeling		Data N/A
H. Renal Care		
Comprehensive Diabetes screening (HbA1c, lipid profile, dilated eye exam, nephropathy)	Percentage	75%

Worse than NYS Average	Better than NYS Average	Metric Pending	Data not available from NYS as of 12/16/2014.

Domain Name	Value Type	Regional Value
Comprehensive Diabetes Care: Hemoglobin A1c (HbA1c) Poor Control (>9.0%)		Data N/A
Comprehensive diabetes care - LDL-c control (<100mg/dL)		Data N/A
Annual Monitoring for Patients on Persistent Medications – ACE/ARB		Data N/A
Controlling High Blood Pressure		Data N/A
Flu vaccine 18-64		Data N/A
Medical Assistance with Smoking and Tobacco Use Cessation		Data N/A
Domain 4. Population-Wide Metrics		
Improve Health Status and Reduce Health Disparities (required for all projects)		
Percentage of premature death (before age 65 years)	Percent of all deaths	21.8
Ratio of Black non-Hispanics to White non-Hispanics	Ratio	2.35
Ratio of Hispanics to White non-Hispanics	Ratio	2.37
Age-adjusted preventable hospitalizations rate per 10,000 - Aged 18+ years		117.8
Ratio of Black non-Hispanics to White non-Hispanics		2.22
Ratio of Hispanics to White non-Hispanics		1.88
Percentage of adults with health insurance - Aged 18-64 years		88.7%
Age-adjusted percentage of adults who have a regular health care provider - Aged 18+ years		89.0
Prevent Chronic Diseases		
Percentage of adults who are obese	AA % of pop	27.7%
Percentage of children and adolescents who are obese		18.3%
Percentage of cigarette smoking among adults	AA % of pop	21.1%
Percentage of adults who receive a colorectal cancer screening based on the most recent guidelines - Aged 50-75 years		41.6%
Asthma emergency department visit rate per 10,000	crude rate	41.1
Asthma emergency department visit rate per 10,000 - Aged 0-4 years	crude rate	97.3
Age-adjusted heart attack hospitalization rate per 10,000	AA rate	17.3
Rate of hospitalizations for short-term complications of diabetes per 10,000 - Aged 6-17 years	crude rate PDI 15	2.24
Rate of hospitalizations for short-term complications of diabetes per 10,000 - Aged 18+ years	crude rate PQI 01	7.21
Prevent HIV/STDs		
Newly diagnosed HIV case rate per 100,000		6.8
Difference in rates (Black and White) of new HIV diagnoses		Suppressed
Difference in rates (Hispanic and White) of new HIV diagnoses		Suppressed
Gonorrhea case rate per 100,000 women - Aged 15-44 years		206.2
Gonorrhea case rate per 100,000 men - Aged 15-44 years		186.5
Chlamydia case rate per 100,000 women - Aged 15-44 years		1601.8
Primary and secondary syphilis case rate per 100,000 males		2.3
Primary and secondary syphilis case rate per 100,000 females		0.3
Promote Healthy Women, Infants, and Children		
Percentage of preterm births		10.3
Ratio of Black non-Hispanics to White non-Hispanics		Suppressed
Ratio of Hispanics to White non-Hispanics		Suppressed
Ratio of Medicaid births to non-Medicaid births		1.3
Percentage of infants exclusively breastfed in the hospital		56.9
Ratio of Black non-Hispanics to White non-Hispanics		Suppressed
Ratio of Hispanics to White non-Hispanics		Suppressed
Ratio of Medicaid births to non-Medicaid births		0.6
Maternal mortality rate per 100,000 births	per 100,000 births	10.0
Percentage of children with any kind of health insurance - Aged under 19 years	*18 and Under	61.3%
Ratio of low-income children to non-low income children	Ratio	Suppressed
Adolescent pregnancy rate per 1,000 females - Aged 15-17 years		17.2
Ratio of Black non-Hispanics to White non-Hispanics		Suppressed
Ratio of Hispanics to White non-Hispanics		Suppressed
Percentage of unintended pregnancy among live births		33.2
Ratio of Black non-Hispanics to White non-Hispanics		Suppressed
Ratio of Hispanics to White non-Hispanics		Suppressed
Ratio of Medicaid births to non-Medicaid births		Suppressed
Percentage of women with health coverage - Aged 18-64 years	Percent of all women	90.6%
Percentage of live births that occur within 24 months of a previous pregnancy		23.5
Promote Mental Health and Prevention Substance Abuse		
Age-adjusted percentage of adults with poor mental health for 14 or more days in the last month	AA % of pop	*10.0%*
Age-adjusted percentage of adult binge drinking during the past month	AA % of pop	*16.1%*
Age-adjusted suicide death rate per 100,000	AA Per 100,000 pop	*9.31*

IDENTIFICATION OF MAIN HEALTH AND HEALTH SERVICE CHALLENGES

Through their individual assessments. The fourteen county health departments of the FLPPS region have identified priorities for their entire populations. Throughout the region, obesity, heart disease and smoking were often identified as opportunities for improvement. While the issues are not specific to DSRIP it is clear that the county health priorities do align with numerous potential DSRIP programmatic areas.

Table 46 – County Health Priorities

County Health Priorities as identified in the Community Health Indicator Reports			
County	Issue #1	Issue #2	Disparity
Chemung	Reduce Obesity in Children and Adults	Reduce Tobacco Use	Reduce tobacco use of low income populations including those with mental health and substance abuse issues.
Livingston	Prevent Chronic Disease: Obesity/Diabetes	Promote Mental Health/Prevent Substance Abuse	Decrease Obesity in Low-Income Populations
Monroe	Reduce Obesity	Reduce Illness, Disability and Death Related to Tobacco Use and Secondhand Smoke Exposure	Increase access to high-quality chronic disease preventive care and management in clinical and community setting.
Ontario	Reduce the Rate of Obesity in Children and Adults	Reducing the Rate of Hypertension	Reducing Obesity Among the Low-Income Population
Schuyler	Reduce Obesity in Children and Adults	Reduce Illness, Disability and Death Related to Diabetes	Screen for Diabetes Risk 10% of the County's 20-49 Year Old Population, as many do not have Primary Care Physician nor Health Insurance Coverage. Once Screened for their Risk of Diabetes, they would be Referred to a Primary Care Physician (PCP) and if Appropriate a Navigator to be Screened for Health Insurance Eligibility.
Seneca	Reduce Obesity in Children and Adults	Prevent Substance Abuse and Other Mental, Emotional, and Behavioral Health Disorders	Tobacco use among those with Poor Mental Health
Steuben	Reduce Obesity in Children and Adults	Reduce Heart Disease and Hypertension	Promote Tobacco Cessation, Especially Among Low SES Population and Those with Mental Health Illness
Wayne	Reduce Obesity	Reduce Heart Disease	Reduce Obesity Among Low-Income Population
Yates	Prevent Obesity	Prevent Hypertension	Access to Specialty Care for the Low-Income Population
Allegany	Prevent Chronic Disease - Reduce Obesity in Children and Adults	Promote Mental, Emotional, and Behavioral Health	Reduce obesity in children and adults in Low-income populations. Promote mental health and prevent substance abuse in low income and disability populations.
Cayuga	Promote Breastfeeding to Pregnant and Post-Partum Women in an Effort to Increase the Number of Babies who are Breastfed	Increase the Number of Referrals Made to the Cayuga County Health Department by Hospitals, medical Providers and Community Agencies for Prenatal and Post-Partum Services	N/A
Genesee, Orleans, Wyoming	Prevent Chronic Disease	Promote Mental Health and Prevent Substance Abuse	Uninsured/underinsured

Furthermore, many of the priorities identified by the 14 member counties are consistent with the issues outlined in the preceding sections. For instance, both sources highlight the issue of chronic diseases (i.e. - heart disease, cancer, and respiratory disease) and their upstream risk factors (i.e. - smoking, unhealthy diets, lack of physical activity, and obesity) as crucial barriers to good health. Another area of overlap is the focus on mental illness and substance abuse. Six of the fourteen counties highlight this issue as a priority, while the data presented in the health status section clearly illustrate that behavioral health issues are both prevalent and drivers of hospital use in the PPS.

In order to better understand the interaction between community resources, population health outcomes, and the DSRIP outcomes of interest, the following sub-sections will explore apparent needs derived from the preceding sections of this report in detail.

Need for an Integrated Delivery System to Address Chronic Conditions

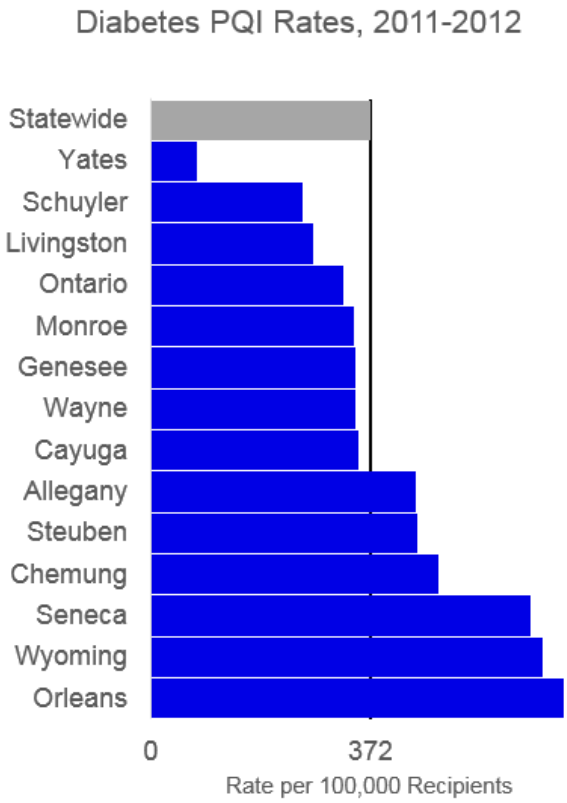
Evidence suggests that a coordinated and integrated health care delivery system is an efficient and effective way to provide care for complex patients with chronic disease (Coleman, Austin, Brach, & Wagner, 2009; Ham, 2010). In the past, acute disease was the primary cause of illness and patients were generally inexperienced and passive recipients of care. Today, chronic diseases management is ultimately the responsibility of the person with the chronic disease. Most skills required for disease management are not disease specific, but life and behavior change skills (Plumb, Weinsten, Brawer & Scott, 2012). A highly-functioning integrated delivery system should provide patients with the skills needed to manage those diseases and prevent unnecessary utilization of the healthcare system. Several data points indicate a need to move to a more integrated delivery system for the FLPPS Medicaid and uninsured populations. According to the chronic disease prevalence data presented in the Health Status section, a substantial portion of Medicaid recipients in the FLPPS have a chronic condition, clearly illustrating the sizeable population that could benefit from care that is coordinated and holistic.

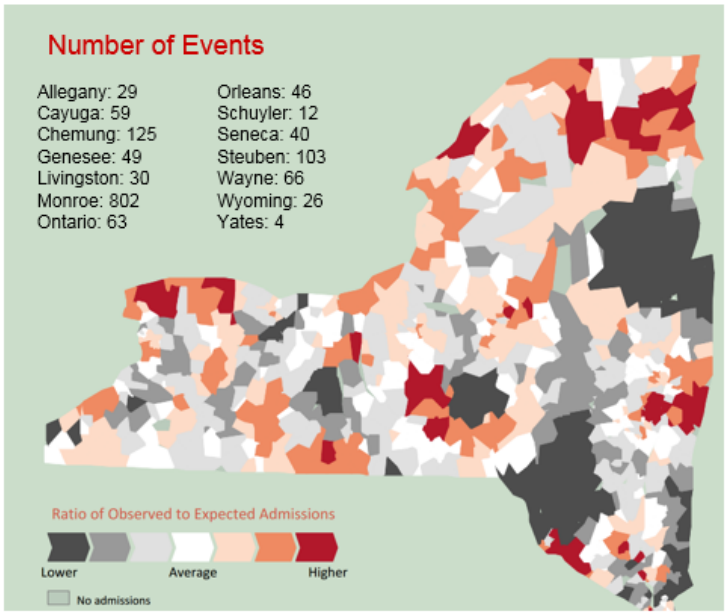
One measure of the lack of an integrated delivery system is the fragmented Health Information Technology (HIT) systems in the region demonstrated by surveys distributed to FLPPS providers. 33 different electronic medical record systems (EMR's) are employed by various organizations, three Regional Health Information Organizations (RHIO) provide services to different segments of the region but cannot communicate effectively with one-another, and 60% of the regional providers do not participate in their respective RHIOs. Additionally, the utilization data indicates that this population is not presently receiving optimal care. For example, the Prevention Quality Indicators (PQIs) which are attributable to chronic disease (diabetes, respiratory, and heart) account for 85 percent of all the potentially preventable inpatient hospitalizations in the FLPPS in 2012. In addition to certain over-utilization, underutilization of services can be an indicator of a poorly integrated system. In the year preceding May 2014 over 42,000 continuously enrolled FLPPS region Medicaid enrollees had fewer than three claims (excluding claims for Managed Medicaid enrollment payments, DME, and transportation). Lastly, the providers and public health officials present at the FLPPS stakeholder meetings identified that PCPs and Hospitals lack good information about the availability of community-based programs and resources. Community-based services are currently separated from the wider health system, including those programs delivered by Public Health Departments and Offices of the Aging.

Table 47 – Medicaid PQI Events

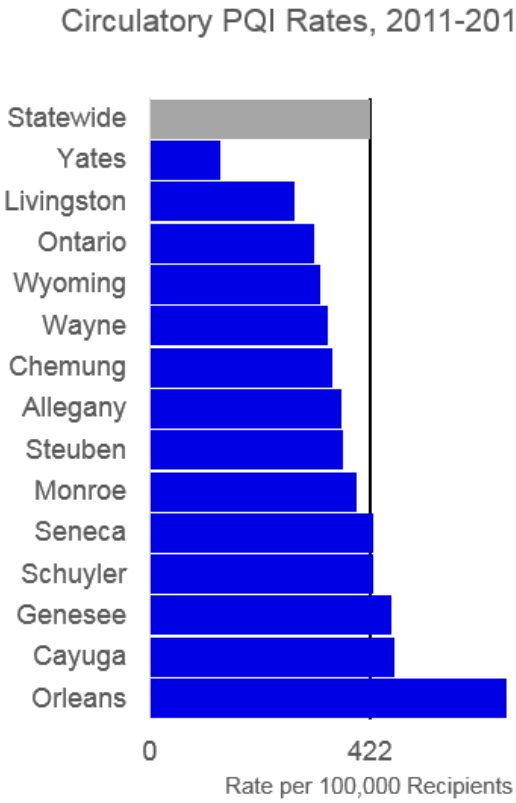
2012 PQIs for FLPPS Medicaid Recipients		
PQI Description	**# of Events**	**%**
Acute Rollup	360	15%
Diabetes Rollup	730	30%
Heart Rollup	595	24%
Respiratory Rollup	758	31%
PQI Total	2,443	100%
DATA SOURCE: NY State SPARCS Database, Payer is defined by Expected Primary and Secondary Reimbursement		

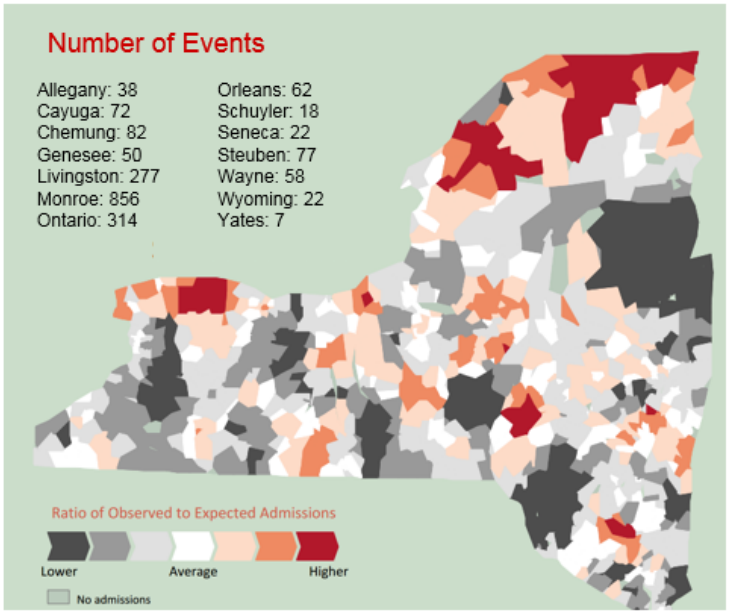
At the county level, the tables below suggest that there is significant variation in the quality of or access to primary care provided to persons with chronic disease resulting in potentially avoidable utilization of services.



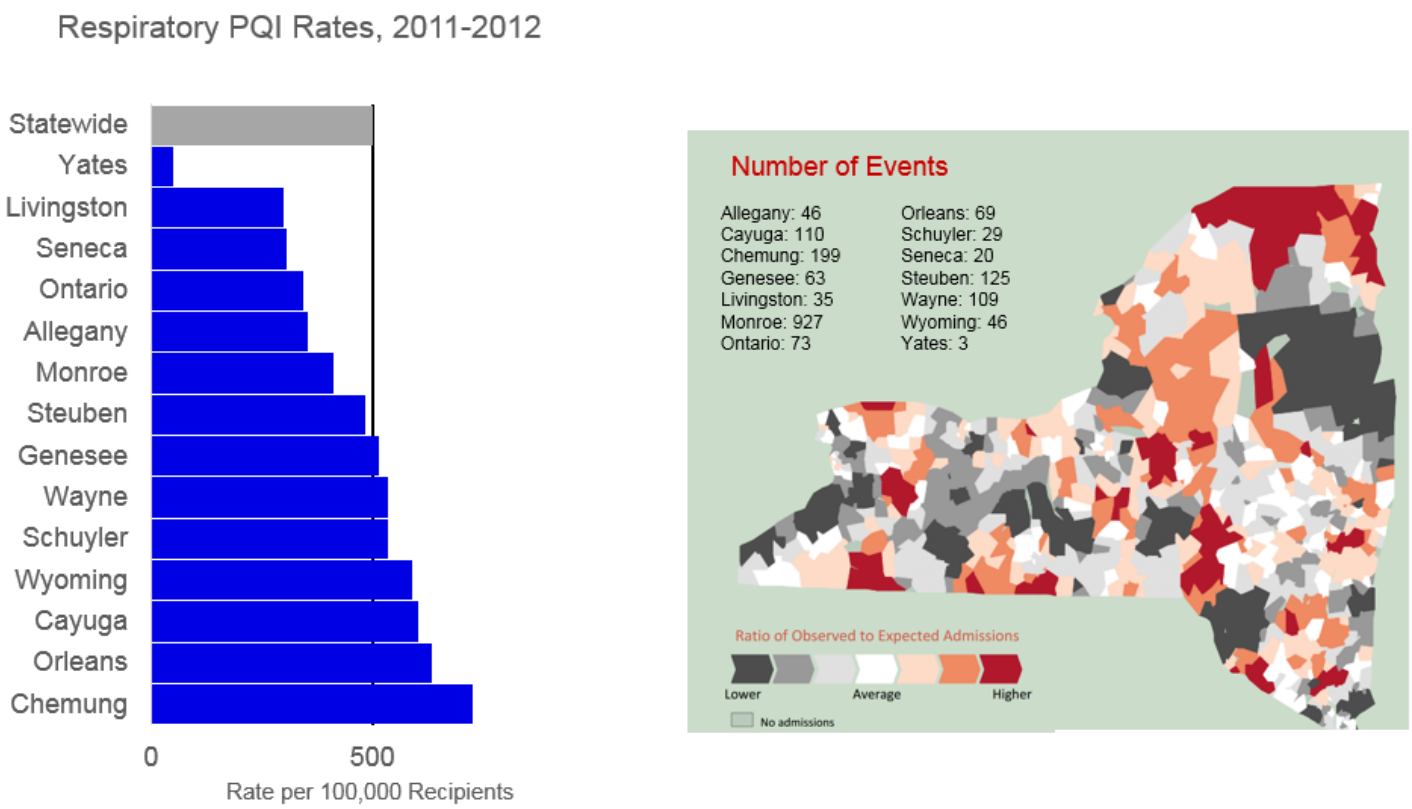


Map 11 – Diabetes PQI Rates





Map 12 – Circulatory PQI Rates



Map 13 – Respiratory PQI Rates

Evidence around hospital readmissions also gives some indication that improvements in care coordination and integration are needed, particularly for those with chronic disease. To the extent that the potentially preventable readmission metric captures the degree of coordination and integration across health care settings at and around the time of hospital discharge, there appears to be significant opportunity for improvement as the FLPPS's potentially preventable readmission rate is similar to the statewide rate, with only four of the 22 facilities in the region having a rate among the top 20 percent of performers. Based on analyses of all-cause readmissions using the SPARCS database, results presented in *Table 39*, chronic disease clearly accounts for a substantial portion of the readmissions in the FLPPS. Specifically, the two most frequent primary diagnoses present at the time of index admission are those related to the circulatory system (i.e. – heart disease) and respiratory system (i.e. – COPD). Collectively, these two diagnostic categories alone accounted for about 30 percent of all at-risk admission with a subsequent admission within 30 days in 2012. Furthermore, certain chronic diseases, including congestive heart failure, COPD, diabetes, and ischemic heart disease were found to be significant independent predictors of being readmitted among Medicaid medical inpatients.

The presence of multiple conditions also appears to be an important contributor to one's risk for being readmitted. Results of our multivariate analysis, which controlled for a variety of patient characteristics including age, race, gender, county of residence, length of stay during the index admission, discharge location, type of Medicaid, and primary diagnosis during index admission, indicated that each additional comorbid diagnosis increases one's odds of readmission by about 6 percent ($p < 0.001$) among medical inpatients and about 8 percent ($p < 0.001$) among surgical inpatients. This suggests that a patient with 3 comorbid conditions (in addition to the primary reason for hospital admission) would have between 18 and 24 percent greater risk of being readmitted within 30 days of discharge compared to a patient with no comorbid diagnoses, holding all else constant. As such, there appears to be a strong relationship between patient complexity and the probability of being readmitted, and it may be an indication of a need to improve the manner in which care is delivered to complex patients across multiple settings.

In order to better understand the reasons why individuals with chronic conditions might be readmitted, we convened focus groups of individuals who had at least one chronic condition and multiple hospital admissions in the past year. These individuals expressed clearly that they preferred alternatives to being admitted to the hospital and only utilized that resource when the felt it was absolutely necessary. While these individuals recognized the challenges they faced due to their conditions, the common theme among them was that socioeconomic factors were the driving force behind their

mental and physical well-being struggles. These individuals feel overwhelmed by their situations and are looking for help outside of the traditional healthcare system.

> *"We're under lots of stress due to the economy. We're dealing with multiple jobs, kids, no money, and our health care going to pot. It's a helpless feeling, like there's nothing you can really do."*

> *"They should make it easier to eat healthy. But it's everything -- not just one thing -- not just five things -- it's everything. You have to change the whole world. Where do you even start?"*

Structural characteristics of the current FLPPS health system also appear to be inconsistent with an integrated model of care. For instance, only about 59 percent of the FLPPS Medicaid population is enrolled in a managed care plan, with significant variation around this overall rate. Specifically, Monroe County was found to have the highest percentage of managed care recipients (63 percent), while several counties, including Wyoming (42 percent), Schuyler (49 percent), Allegany (50 percent), and Steuben (50 percent), had no more than half of their recipients in a managed product. Given the volume based incentives inherent to a fee-for-service payment model, this presents a significant barrier to promoting a model of care focused on value. Furthermore, the multivariate analysis of all-cause 30-day readmission risk described in the health status section and presented in detail in the appendix provides evidence of decreased risk among Medicaid managed care enrollees among medical and psych inpatients, indicating that this payment approach is associated with better outcomes following hospital discharge. Focusing on a patient centered model of care may also be critical in limiting readmission risk for patients. Both our rural and urban focus groups perceived a change in the availability of their caregivers in the hospital setting. While the participants could identify a few exceptional providers, they noted that these are the exception not the rule. They highlighted that building a relationship with their caregiver was critical to improving their health. As one participant identified:

> *"A trustworthy doctor understands relationship building. They make you feel safe not holding anything back or lying. I read that over 50% of patients lie to their doctors. If you trust your doctor, you're a lot less likely to lie."*

Another important feature of an integrated delivery system is ample access to high-quality primary care that can lead a multi-disciplinary team in patient-centered care (Ham, 2010). Locally, we see some evidence that greater primary care use is associated with lower rates of potentially avoidable hospitalizations. Specifically, we use the rate of primary care visits (defined by the presence of a preventive service CPT code in an encounter or claim) per Medicaid population within a ZIP code in 2012 (claims obtained from the Salient Medicaid Claims Database) as a measure of primary care utilization, and the two-year average of ZIP code-level adjusted composite PQI rate (obtained from state-provided data) as a measure of avoidable hospitalizations. We exclude ZIP codes with fewer than 25 Medicaid recipients and fewer than five PQI events in a year to ensure the stability of the rate estimates. Furthermore, we excluded two outlier ZIP codes with primary care visit rates below 0.2 primary care visits per Medicare recipient. These measures are compared against each other, and the weak but marginally significant negative association (indicating that greater primary care use is associated with lower PQI rates) is illustrated below.

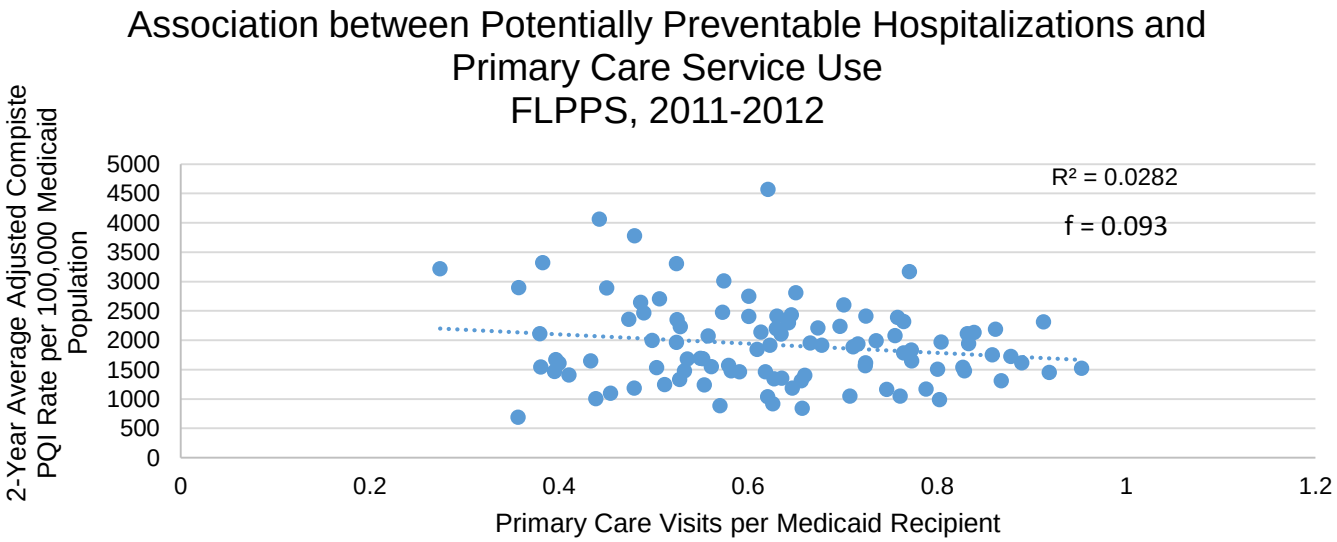


Figure 23 – Preventable Hospitalizations v. Primary Care Visits

Presently, there are areas within the FLPPS that have a shortage of primary care physicians which may restrict patients' ability to receive adequate primary care. Thirteen of the 14 FLPPS counties demonstrate PCP availability less than that of the New York state average, creating what appears to be a PCP shortage for approximately one-half of the FLPPS Medicaid population. Furthermore, eight FLPPS counties are identified HPSAs for the entire Medicaid and/or general population(s) with an additional four counties having an identified HPSA for a portion of the counties' populations. These primary care physician shortages may have important implications for reducing the rate of potentially preventable hospitalizations in the FLPPS. Lastly, in 2013, 196,000 Medicaid Recipients received at least one service by a family medicine, internal medicine, or pediatric physician. If we assume that all of those visits were for primary care physicians, this indicates that only about 60% of Medicaid recipients had a primary care visit during that timeframe.

Beyond the number of PCPs in the FLPPS, there also appears to be an imbalance between the supplies of primary versus specialty care providers. As shown in Table 8, the FLPPS currently has 0.96 primary care physicians for every specialist, with several counties having ratios less than 0.75. In light of available evidence suggesting that 75 to 85 percent of the population needs only primary care in a given year (Starfield, 1994), this ratio should likely be greater than one. Together, these findings suggest a clear community need to expand and rebalance primary care capacity in conjunction with a transition to a more integrated delivery system.

Our analysis also indicates a limited penetration of integrated models of care, such as accountable care organizations and health homes, in the FLPPS. As illustrated in Table 5 in the Health Care Resources section, all of the FLPPS counties, with the exception of Monroe and Allegany, are served by only one Medicaid health home. Typically, the provider is Health Homes of Upstate New York which operates in 22 counties in New York State (including Monroe County). Furthermore, there are presently only two accountable care organizations operating in the FLPPS. These ACOs are affiliated with the two major health systems in Monroe County, UR Medicine and Rochester Regional. Overall, it appears that much of the service capacity of currently existing integrated delivery systems are concentrated in Monroe County. The chronic disease PQI data discussed earlier, which indicated that many of the rural counties in the FLPPS have the highest rates of avoidable hospitalizations, point to a need to expand on these currently available models of care to ensure adequate access to integrated care for the region's over 330,000 Medicaid recipients.

Need for Integration between Physical and Behavioral Health Care Systems

Similar to the physical health priorities identified by the county health departments, the county mental hygiene directors have established a set of priorities for the population of individuals living with behavior health conditions in their respective counties. These priorities are included in the annual Local Services Plans provided to and distributed by the Conference of Local Mental Hygiene Directors. Generally, the priorities of the 14 counties align with the theme of integrated behavioral and physical health care, ensuring adequate access to transportation and housing, and focusing on a patient-centered approach to care. The top three priorities of each county are outlined in Table 48 and a link to the entirety of the local service plans is available in Appendix C.

Table 48 – Behavioral Health Priorities

County	Priority Outcome 1	Priority Outcome 2	Priority Outcome 3
Allegany	Expand and increase the use of available mental health services to individuals in Allegany County	Enhance the services for those with Co-Occurring disorder.	Allegany County will increase the identification and coordinated treatment of mental health disorders among individuals with developmental disabilities.
Cayuga	To continue supporting and developing a sustainable quality, comprehensive system of care that meets the complex needs of all consumers	Build and/or increase community competencies, by using elements of a public health model, in the areas of education, training, early identification, prevention and treatment to deal with emerging behavioral/developmental/ health issues	To work with voluntary agencies across all disability services to help position the treatment community to manage the program and fiscal shift required to navigate a fully managed care environment
Chemung	Establish a mechanism to provide appropriate and affordable housing with community supports where necessary regardless of age.	Prepare our community to be informed and proactive in our approach to systemic changes.	Utilize all available resources to maximize available capacities in the system(s) to address unmet service needs.
Genesee	Managed Care Preparedness	Physical Health Integration	Peer Support
Livingston	Increased access to transportation resources and services.	Increase availability of an appropriate range of residential services and income-based housing options.	Enhance the range of outpatient, acute and community support resources in our local MH/CD/DD services system.
Monroe	Ensuring individuals with highest need are appropriately identified, prioritized and linked with services responsive to their identified needs.	Increase the availability of, access to, and coordination and/or integration of appropriate services and supports to meet the needs of individuals whose needs cross systems.	Increase the availability of a full range of housing and residential options in the community with housing/residential services choice based upon person-centered planning and need.
Ontario	Complete a needs assessment to determine mental health needs of the community	Access to safe and affordable housing for individuals recovering from mental illness and/or substance abuse disorders and / or a developmental disability	Facilitate implementation of Health Homes serving Ontario County. Providers and Consumers in Ontario County will participate with the Regional Behavioral
Orleans	Help reduce the incidence of suicide in Orleans County by educating the community about suicide, the prevention of suicide, resources available and to support survivors of a suicide loss.	To increase the availability of evidenced-based medication assisted therapy (MAT) services to include all patients with Alcohol dependence and Opiate dependence diagnosis.	Reduce recidivism in the criminal justice system due to criminal activity related to substance abuse/dependency by providing effective chemical dependency education and treatment linkages at the jail.
Schuyler	To create integrated, sustainable, and self-funded housing for identified priority groups.	Reduce and prevent suicide among community members.	Educate the community about the wide reaching system changes.
Seneca	Supportive Living Apartment(s)	Continue to increase Housing Options for those with mental illness in Seneca County	Improved Early Detection and Access to Children's Mental Health Services
Steuben	Prevent suicide among youth and adults.	Strengthen Cross System Collaboration	Improve coordination and communication between Alcohol and Substance Abuse and Mental Health Programs to ensure that individuals with co-occurring disorders have access to integrated treatment.
Wayne	Continue Efforts to Develop, Improve, and Increase Access to Services for all Behavioral Health Groups in Need, and in Particular Those Dually Diagnosed.	Develop Additional Safe & Affordable Housing	Continue to Expand Community Support Services for Teens to Increase Positive Outcomes
Wyoming	Recipients of behavioral health, developmental disability, and physical health services will receive quality, person-centered, integrated and cost effective services. Their physical and behavioral health services will be well linked and coordinated.	Strong families, schools, and communities and an integrated system of care support children, youth and young adults who are happy, healthy, and productive.	More persons with disabilities are working in a wider range of work settings
Yates	Need for safe, affordable housing for individuals with mental illness, individuals in recovery from substance abuse, and developmentally delayed individuals residing with aging parents/other family	Lack of public transportation	Rationale: The providers in each disability group continue to use screening tools to determine the presence of a co-occurring disorder. There will be increased and/or enhanced integration/collaboration with primary care practices who provide medical care to individuals in the 3 disability groups

These reports also identify the need for additional capacity, as identified by the Mental Hygiene Directors. In order to assess what the most apparent priorities are across the region, we codified the responses provided (Sufficient Capacity = 0, Low Priority = 1, Moderate Priority = 2, High Priority = 3) and created a weighted score (based on county population) to determine which services were identified as lacking the most capacity in the region. Based on this methodology it would appear that housing, Medically Supervised Inpatient Withdrawal, and Medically Managed Withdrawal are the areas identified as requiring the most additional resources. Full results are detailed in the table below

Table 49 – Behavioral Health Capacity Priorities

BH Capacity Priority Rankings, 2015, FLPPS Region	
Priority	Regional Priority Rank
Housing	2.69
Medically Supervised Inpatient Withdrawal	2.45
Medically Managed Withdrawal	2.44
Recovery Supports	2.27
Medically Managed Detox	2.14
Supportive Living Facility	2.08
Opioid Treatment	2.07
Community / Residential Treatment	2.00
Primary Prevention	1.98
Medically Supervised Withdrawal Outpatient	1.98
Intensive Residential Treatment	1.86
Prevention Counseling	1.52
Outpatient Treatment (non-opioid)	1.32
Inpatient Rehab	0.82

One of the most prominent findings from the data presented in the Health Status section is the prevalence of mental illness and substance abuse disorders in the FLPPS population. In the general population, the prevalence of individuals reporting poor mental health 14 or more days out of the past 30 days was found to be 11.9 percent in the FLPPS compared to a prevalence of 10.3 percent across all of New York State. Within the Medicaid population, data pulled from the Salient Medicaid claims database indicated that 58 percent of current Medicaid recipients have had a behavioral health condition for which they received treatment at some point in Medicaid claims history. This number is considerably higher than the estimated national lifetime prevalence in the general population of 46 percent (Kessler et al., 2005), suggesting that behavioral health may be an issue of critical importance among local Medicaid recipients.

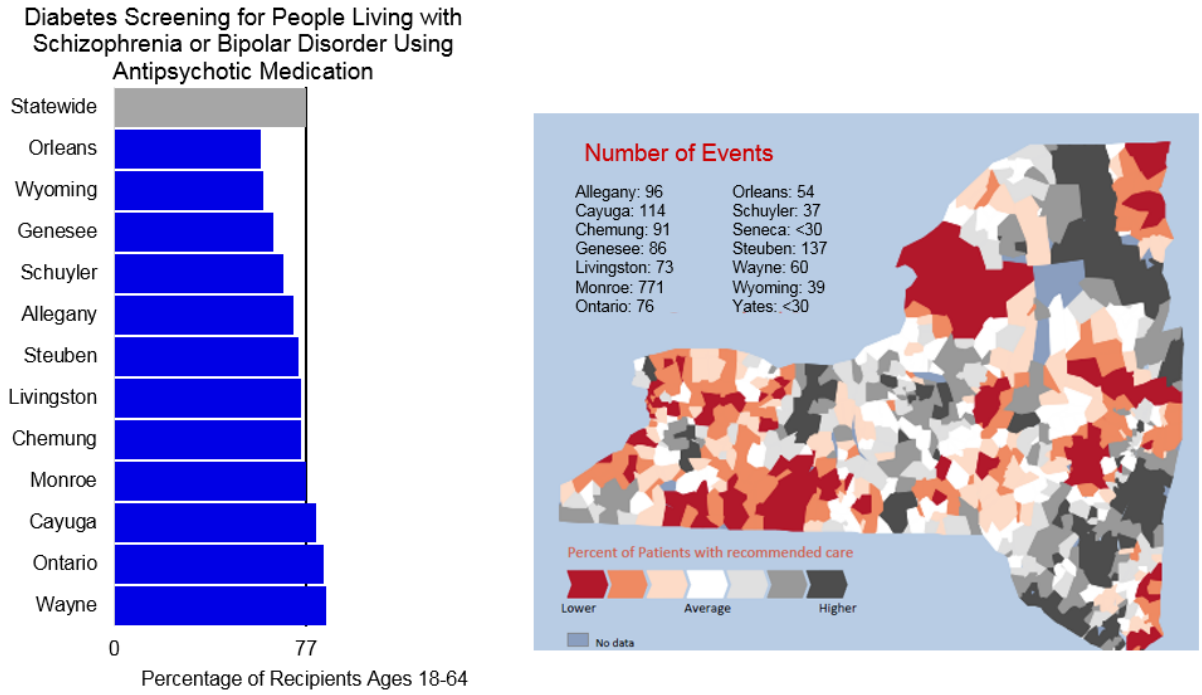
Furthermore, there also appears to be substantial interaction between individual's physical and mental health needs. For instance, according to the authors' analyses of the SPARCS database, 65 percent of Medicaid or uninsured adults admitted to an inpatient medical or surgical bed in the FLPPS (presumably for a primary physical health need) had a co-occurring behavioral health diagnosis documented. This rate was significantly higher than the 40 percent of the non-Medicaid population with a secondary behavioral health diagnosis. Likewise, work done by the Western Region Behavioral Health Organization (WRBHO) found that 77 percent of inpatient mental health or substance abuse admissions (in an 18 county region that includes the 14 counties of the FLPPS) had a physical health need identified during the inpatient stay (Western Region Behavioral Health Organization, 2014). Focus groups participants who were interviewed due to a diagnosed chronic physical health condition frequently self-identified a need for simultaneously addressing both physical and mental health. Collectively, the participants reported having diagnoses of depression, anxiety disorder, panic attacks, migraines, bi-polar disorder, and reformed substance abuse, on top of their chronic physical health condition. Said one participant,

> *"You've got to merge mental health care with physical health care."*

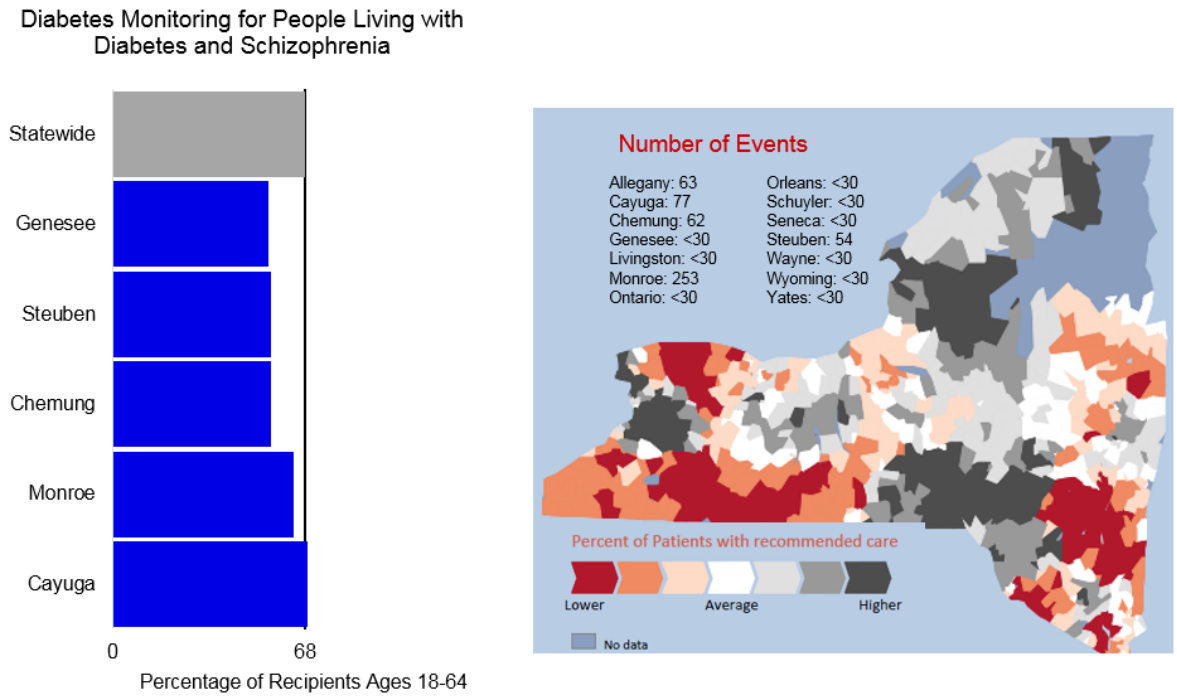
Meanwhile, separate focus groups that were recruited based on the presence of a mental illness or substance abuse disorder independently identified a need to incorporated physical health care with their behavioral health treatment. This sentiment is, perhaps, best summarized in the following focus group excerpt:

> *"All my medical problems stem from my psychological problems, but they always blame it on my diabetes. Whenever I get upset, it's always because I was not able to get to speak with my therapist — then my blood pressure goes up and my blood sugar goes crazy. But every time I'm hospitalized, even though it was always because of psychological issues, the discharge papers always say it was my sugar diabetes and blood pressure.* ***NO ONE LISTENS TO ME*** *when I try to explain!"*

Collectively, the qualitative and quantitative data speak to the importance of integrating the delivery of physical and behavioral health care. Yet despite this clear need, these types of care often are not delivered in a coordinated and holistic manner in the FLPPS. For example, among those individuals admitted to a psychiatric hospital for mental health or substance abuse treatment in the 18-county WRBHO geography, only 42 percent of these discharges had an appointment scheduled with an outpatient physical health care provider at the time of discharge. (Western Region Behavioral Health Organization, 2014) Likewise, data on screening and treatment of diabetes among individuals with schizophrenia or bipolar disorders with and without the use of antipsychotic medications shows poor integration between behavioral and physical health. Given the increased risk for obesity and diabetes associated with these types of medications, this metric provides a snapshot of the state of care for individuals who need careful monitoring from both behavioral and physical health providers (Haupt & Newcomer, 2001). Overall, it appears that several of the counties in the FLPPS fall below the statewide benchmark on these measures.



Map 14 – Diabetes Screening for People Living with Schizophrenia or Bipolar Disorder Using Antipsychotic Medication



Map 15 - Diabetes Monitoring for People Living with Schizophrenia or Bipolar Disorder

Hospital admission among Medicaid recipients reveals further shortcomings in the integrated management of physical and behavioral health conditions. For example, the results of our multivariate analyses of all-cause readmission risk indicated that adults admitted to a medical inpatient bed with a documented comorbid serious mental illness (i.e. – schizophrenia, episodic mood disorders, and personality disorders) had 22 percent higher odds of being readmitted ($p = 0.004$) compared to those without a serious mental illness secondary diagnosis after controlling for a variety of patient and facility characteristics (see Appendix A for full results and model details). Furthermore, individuals admitted to an inpatient psychiatric bed in the FLPPS with a secondary diagnosis of diabetes or heart disease had a 31 percent and 48 percent increase in the odds of being readmitted, respectively, relative to those without these comorbid conditions. Together, these results illustrate that the co-occurrence of a physical and a behavioral health condition places patients at a greater risk of being readmitted to the hospital. As such, these patients may require a more intensive level of coordinated and holistic care that addresses their complex needs than is currently being provided.

One consistent feature across many of the emerging models of integration between physical and behavioral health care is an ability to identify and address behavioral health needs in an outpatient or primary care setting (Nardone, Snyder, & Paradise, 2014). This appears to be another area of suboptimal performance for Medicaid recipients within the FLPPS. Within a focus group of individuals with a behavioral condition and a history of frequent emergency department use, the inability to receive adequate and comprehensive care from primary care physicians emerged as a major theme, as illustrated by the quotes below:

> *"MY PCP refuses to deal with anything psychological. She says she can't."*
>
> *"My PCP asks if I still see my psychiatrist. I say yes, so he leaves it at that."*
>
> *"My PCP asks 'so do you feel like shooting yourself today?' I say no, and that seems to satisfy him that I'm doing okay psychologically — even when I'm not."*

The perceived inadequacy of primary care physicians to address behavioral health needs appears to be exacerbated by a perceived lack access to specialist providers who are skilled in treating mental illness and/or substance use disorders. As one participant put it:

> *"I have a primary doctor, a neurologist for my diabetic neuropathy, a diabetic specialist, and diabetic nutritionist, a dietician, a foot doctor for the neuropathy, and a psych nurse practitioner. But I never get to see a psychiatrist or therapist, which is what I really need most. In Maryland I used to see a psychiatrist*

and he did it all. He could prescribe my meds, determine my therapy, and coordinate my treatment. That's what let me keep working for those 30 years. Now that's all in the past."

This feedback consistent with the work force data presented in the Health Care Resource section. Every county in the FLPPS has psychiatrist and psychologist licensure rates that are below the statewide rate, and much of the FLPPS has been designated a mental health professional shortage area (see Map 6). These documented shortages in behavioral health provider supply are likely understated for the Medicaid population as not all providers will accept Medicaid as a form of payment. This issue was highlighted by a focus group participant who stated, "*… most private practice psychiatrists won't take Medicaid."*

Such shortages may help explain why focus group participants expressed so much frustration regarding their ability to receive the treatment they feel they need from a practitioner who is well-suited to creating and implementing an effective plan of care. The current status, as perceived by those interviewed, is summarized by the following statements:

"My psychiatrist has never seen my face. But his name is on my chart, and I'm sure he's getting paid for my care."

" [I never actually see a psychiatrist, but just some lower level provider such as a psych nurse practitioner, yet I see on my paperwork the signature of] some doctor whose name you don't even recognize, and who you know doesn't know you, because they've never even met you. You know they're getting paid for having treated you, even though you never actually met them."

"Most of the time, all I really need is to talk to my therapist. But the system today doesn't provide that any more. How can they provide a program that never lets you see a therapist and think it's going to work? I can get medicine, I can see a nurse, I can occasionally see a counselor — but you can't see an actual therapist unless you act out! Preventive care has all been taken away. All that's left are emergency solutions, with expensive ambulance rides."

"For me DBT [dialectical behavioral therapy] used to be great. I was well when I had that kind of support, and I worked for 30 years. But now, without that support, because I can't see a therapist any more, I can't work anymore."

"When I had my last anxiety attack, I was looking to talk. I'm not a huge medicine person. If there's someone I can talk to, that calms me down and brings me back into focus again. If I can get hold of somebody to talk to, I'm usually okay. When no one's available, that's when I start to look to other sources. When my 'situations' arise, it's often at night, and daytime services aren't available. That's when I get into trouble. Family Services does have their "Crisis" line, but too many times they haven't been helpful."

Inpatient psychiatric and substance use providers also appear to perceive a lack of adequate outpatient follow-up for patients following discharge from a psych or detox unit. When interviewed by the WRBHO regarding discharges with a subsequent readmission within 30 days, inpatient providers cited a lack of engagement with an outpatient provider as a cause of readmission in 24 percent of mental health case and 36 percent substance use cases (Western Region Behavioral Health Organization, 2014). It is unclear, however, whether this lack of follow-up is attributable to restrictions in patient access, a lack of follow-through on the part of the patient, or failure of care coordination between inpatient and outpatient providers.

Returning to the 2014 priorities for the behavioral health population identified by the county mental hygiene directors, we see further evidence of need for a more integrated, holistic, and continuous behavioral health care delivery system. Indeed, almost every count in the FLPPS identified a component of an integrated behavioral health delivery system as one of its top three priority areas of focus.

This apparent lack of ongoing, integrated, and patient-centered outpatient care for individuals with behavioral health conditions may help explain the substantial volume of ED visits and inpatient hospitalizations that can be attributed to these diagnoses. As highlighted in the Health Status section, behavioral health conditions are the third most frequent primary diagnoses clusters seen in the ED, following only the very broad categories of symptoms and injuries. Additionally, it appears that many of the visits with a primary diagnosis of symptoms or injury may be attributable to

individuals with a behavioral health condition. The table below details the classes of diagnoses for which active BH[4] ED super-utilizers,[5] a group which accounts for about one-third of total Medicaid ED use in a year, are typically seen in the ED. The right most column signifies the percent of Active BH super-utilizers who were seen for a particular diagnosis class in at least one of their five or more visits.

Table 50 – BH Super Utilizer Admissions by Primary Diagnosis Class

Primary Diagnosis Class	Count of Unique Active BH Super-Utilizers Seen for Diagnosis Class in at least one of 5+ Visits	Percent of Active BH Super-Utilizers Seen for Diagnosis Class in at least one of 5+ Visits
Sign and symptoms	2,446	52%
Injuries, including poisoning	2,057	44%
Mental disorders	1,725	37%
Diseases of the MS system	1,393	30%
Digestive system diseases	1,197	26%
Diseases of the respiratory System	1,004	21%
Diseases of the neuro system	932	20%
Diseases of the GU system	812	17%
Diseases of the skin	573	12%
Other	1,925	41%

Data Source: Salient non-PHI Medicaid Claims Database

Over 50 percent of active behavioral health super-utilizers were seen in the ED for general signs and symptoms at some point during 2013, while 44 percent were seen for injuries. This population of individuals receiving some form of behavioral health care appear to constitute a substantial portion of ED use in the FLPPS. Furthermore, it is interesting to note that only 37 percent of this group had at least one ED visit with a primary diagnosis related to a mental disorder, providing further evidence of a lack of a clear boundary between physical and mental health issues and their impacts on service utilization.

On the inpatient side, behavioral health disorders are the most commonly seen principal diagnosis clusters (at the time of index admission) among admissions with a subsequent readmission within 30 days (Table 48)

Collectively, these admissions represent 17 percent of all Medicaid hospitalizations with a readmission within 30 days. Furthermore, inpatient discharges with a behavioral health primary diagnosis represent a disproportionate share of total hospital use among Medicaid recipients relative to individuals with other forms of insurance.

Table 51 – BH Inpatient Discharges by Payer

Inpatient Discharges with Behavioral Health Primary Diagnosis by Insurance Type, 2012								
	Private Insurance	Medicare	Medicaid	Self-Pay /Uninsured	Other	Dually Eligible	Medicaid Total	FLPPS Total
Admissions with BH Primary diagnosis	2,864	1,597	4,985	1,023	353	1,416	6,401	12,38
Total Admissions	35,798	58,596	20,769	6,935	5,702	13,773	3,4542	141,573
Percent of Discharges With a BH primary diagnosis	8.0%	2.7%	24.0%	14.8%	6.2%	10.3%	18.5%	8.6%

Data Source: NYS SPARCS
Primary BH diagnosis defined as primary ICD-9 code between 290 and 319

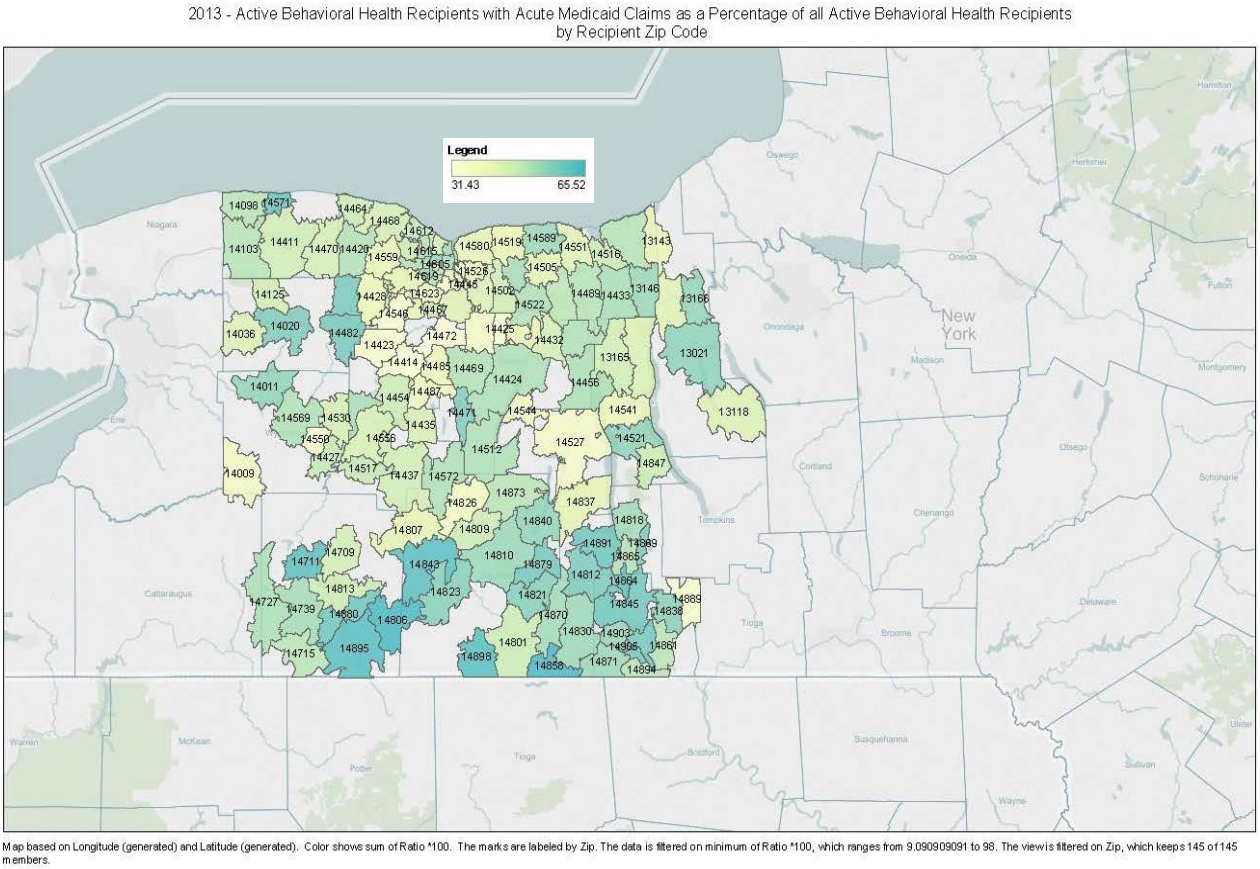
As the table above illustrates, 24 percent of all Medicaid-only hospital discharges in 2012 were for a primary behavioral health diagnosis compared to just 8 percent and 3 percent of private insurance and Medicare

[4] The salient database identifies all behavior health users as the population of Medicaid recipients who have ever received mental health or substance use disorder (SUD) services under OMH and/or OASAS. We narrow this definition to those who had at least one mental health outpatient service during 2013, which we named the active behavioral group, to limit our analyses to individuals who are likely currently dealing with a behavioral health issue.

[5] A “super-utilizer” is defined as an Medicaid recipient with at least five ED visits in a given year

discharges, respectively. This stark difference may be attributable to differences in the prevalence of BH conditions in the Medicaid population, however it could also be related to the type of care that is available to Medicaid recipients. Given the data presented in the preceding paragraphs, there is reason to suspect that BH care for Medicaid recipients is largely crisis-based, with services being provided in a high cost and potentially disjointed setting only when one's condition becomes severe enough to warrant an ED visit and/or hospitalization.

It should be noted that significant variability exists across the FLPPS in the use of hospital-based behavioral health services. The map below uses the Salient Medicaid claims database (non-PHI) to examine the percentage of active behavioral health[6] Medicaid recipients who utilized the ED or were hospitalized for a BH condition in 2013 by ZIP code of residence. ZIP codes with fewer than 10 acute BH events are suppressed.



Map 16 – Active BH Utilizers by ZIP Code

The percent of active behavioral health users in a ZIP code with a hospital-based service utilization ranges from about 31 to 66 percent. One potential explanation for this wide variation is that one's distance from a hospital may contribute to how likely he or she is to seek services from this setting. For instance, individuals with a BH condition may be more likely to seek out care at a hospital if its proximity to home makes it a convenient option. The data in the figure below indicate that there is a mild and statistically significant negative association between distance from a hospital and the percent of active BH users in a ZIP code who received a hospital-based BH service in 2013, meaning that those who live further from a hospital might be less likely to use hospital-based BH services. This finding may be consistent with identification of adequate access to transportation as a top priority by several of the FLPPS's county mental hygiene directors

[6] The salient database identifies all behavior health users as the population of Medicaid recipients who have ever received mental health or substance use disorder (SUD) services under OMH and/or OASAS. We narrow this definition to those who had at least one mental health outpatient service during 2013, which we named the active behavioral group, to limit our analyses to individuals who are likely currently dealing with a behavioral health issue.

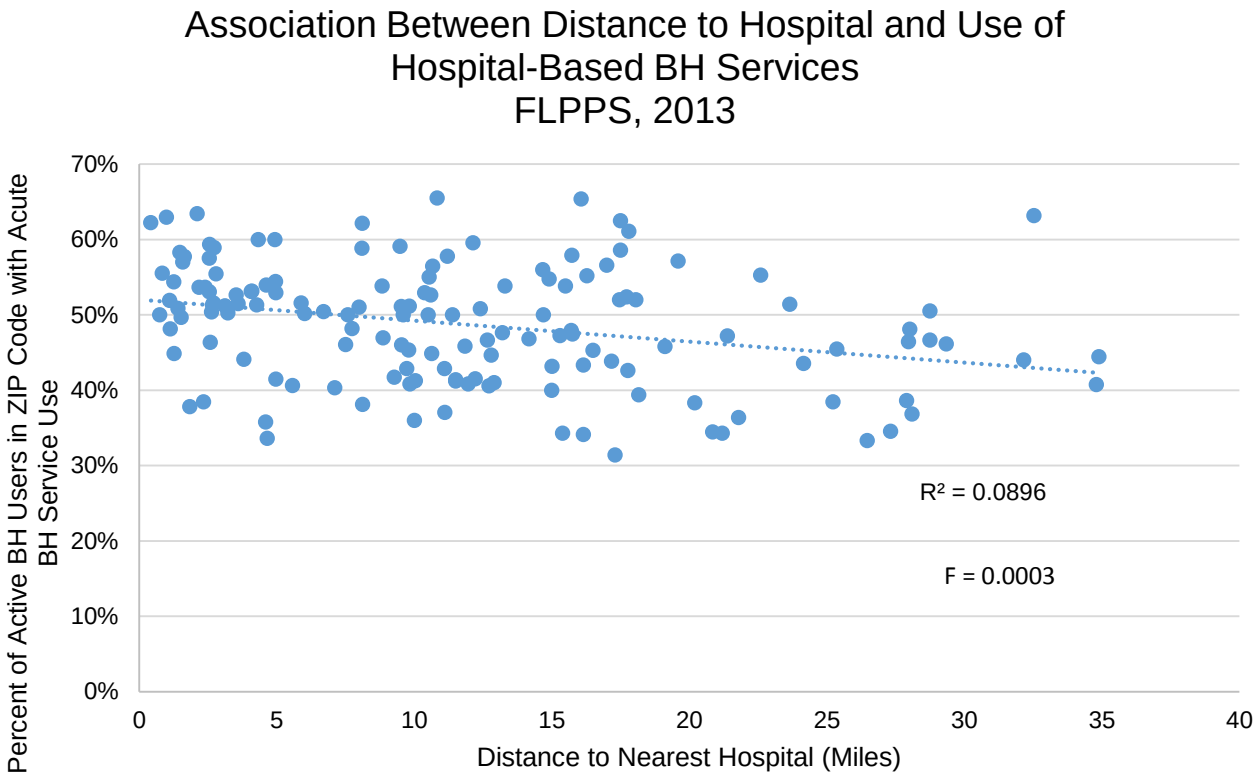


Figure 24 – Acute BH Utilization v. Distance to Hospital

See footnote for methodology[7]

Another potential contributing factor to this substantial variation in hospital-based BH service use may be geographic differences in the availability of and use of more coordinated and holistic services that provide on-going care, as well as social supports. When focus group participants were asked what was needed to help them avoid hospital use, many of their requested supports matched this model of care. Examples are highlighted in the quotes below:

> *"When discharged from the hospital, a much better coordinated communicative effort to both monitor and access symptoms, and better understand 'triggers' (perhaps environmental, living situation, economic situation, etc.). Work quickly to work with the patient to work on those particular issues / harbingers that keep a person 'down' and 'in the system'."*
>
> *"More care from doctors here. Someone who has education on my case, and actually cares about me."*
>
> *"Having a support group that you can turn to when you need them."*
>
> *"For me it's all about isolation. My problem is not a lack of care or need of help, but being able to accept my mental illness. I do get good care. I have a good therapist. I see a psychiatrist. I get my medication through Medicaid. I only wish that there was more interaction with fellow clients as we had here today, and as was evident here years ago but no longer provided or funded."*
>
> *"I need more clothes."*
>
> *"I need help getting gifts for my children."*
>
> *"I need help with transportation."*

[7] Distance data is calculated using geo-coding software to assign latitude and longitudes to hospital addresses and ZIP code centroids. Straight line distances are then calculated between the ZIP code centroid and all hospitals, and the minimum among these distance is used for graph creation.

"Transportation to and from medical care, store, etc."

"Support using transportation — I get lost, confused and overwhelmed."

These sentiments suggest that there is a strong desire for a caring and compassionate integrated care system that can address a variety of needs, whether they be physical, behavioral, or social. As a result, it appears that efforts to create such a system have the potential to not only reduce avoidable hospital use and improve the efficiency of the Medicaid program, but more importantly to improve the lives of individuals struggling with complex chronic conditions like mental illness or substance use disorders.

Need to Address Socio-Economic and Environmental Barriers to Health

As highlighted in the Health Status section, significant racial and ethnic disparities across a variety of health-related outcomes, including YPLL, infant mortality, and potentially avoidable hospitalizations, exist in the FLPPS. The reasons for these differences are complex, however, existing literature suggests that the interaction between one's social circumstances, health behaviors, and the physical environment in which he or she lives all play important and interconnected roles in explaining underlying causal mechanisms (Adler & Rehkopf, 2008). At a high level this can be described by the BRFSS finding that across the FLPPS approximately 7% of all residents have failed to seek care due to anticipated costs. As such, it is important that a transformed health care system adequately address these factors, in addition to patients' purely medical needs, in a holistic and culturally competent manner. Indeed, this approach to care has been cited as a key tenet of an integrated delivery system (Enthoven, 2009), underscoring how integral it is to achieving the stated goals of DSRIP. Available evidence suggests several areas of particular need with regards to addressing socio-economic and environmental barriers to health in the FLPPS. One such area is that of accessing health and community-based resources. While enrollment in Medicaid removes a variety of insurance- and cost-related barriers to care, we found several instances where other types of barriers persisted for this population.

Transportation issues were some of the most frequently encountered across several different data sources. Our survey of community-based service providers found that a lack of transportation was the most frequently cited barrier to individuals receiving necessary support (Figure 3). Transportation was also cited frequently in a variety of focus groups. For instance, in the focus group of urban residents who had been hospitalized with a chronic disease, participants twice cited a lack of adequate and timely transportation as a reason for missing doctor's appointments, failing to adhere to a plan of care, and eventually being admitted to the hospital. Among new young mothers, transportation surfaced as a crucial barrier to successful parenting. Most of the participants did not own a car, making it difficult to attend pediatrician appointments or travel to a full-service grocery store to shop for healthy food. Public transportation, while more readily available and affordable, was largely viewed as unfriendly to parents with young children. As two mothers put it:

"Have you ever tried riding the bus with a baby in a carrier and a diaper bag? No one gets up to offer you a seat. It's always a struggle."

"And it's even worse if you're trying to use the bus to go food shopping -- while carrying your baby."

One particular area of interest within DSRIP that may be closely related to transportation is that of potentially preventable emergency department visits. According to a 2004 study of non-urgent ED users, the reason most frequently given for utilizing an ED rather than a primary care for their non-emergent health care needs was the accessibility of the ED (Afilalo et al., 2004). This finding corresponds with the data below that show in the FLPPS the rate of PPVs within a given ZIP code is significantly and negatively associated with the distance from the ZIP code centroid to the nearest ED. In other words, the PPV rate attributable to a particular ZIP code tends to decrease as the distance to an ED grows larger.

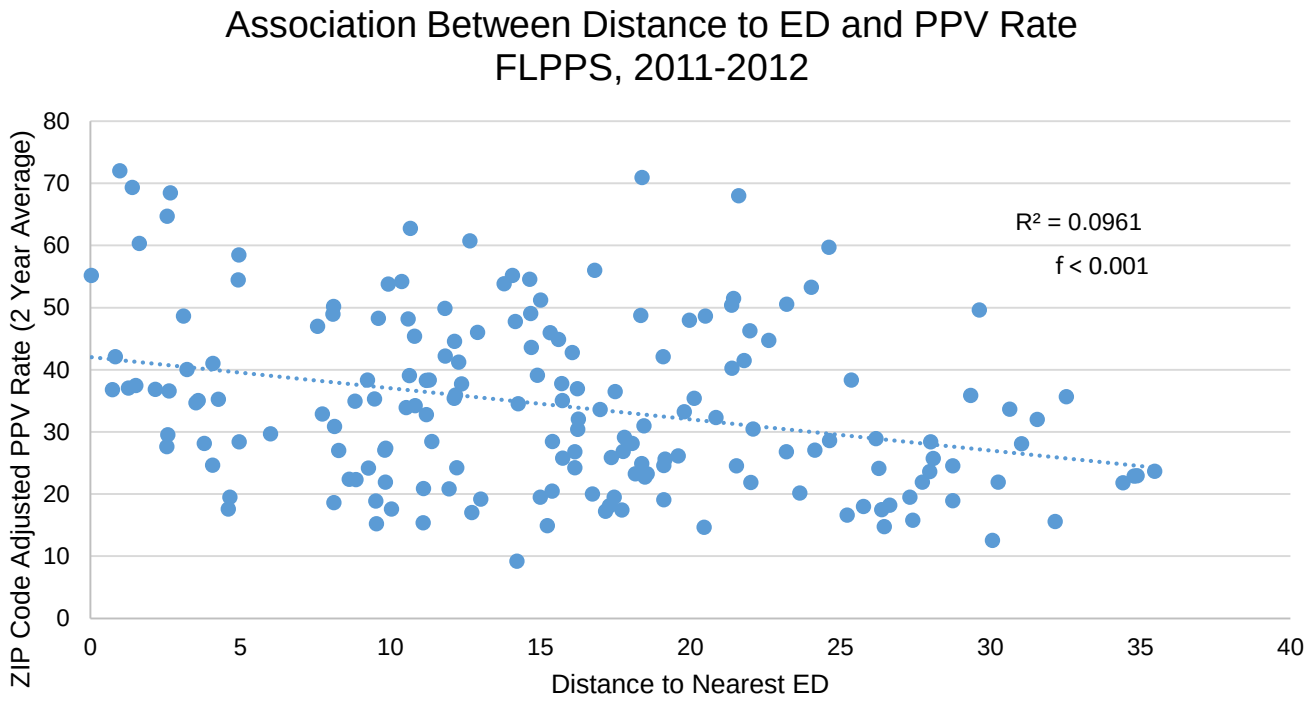


Figure 25 – PPV Rate v. Distance to ED

See footnote for methodology[8]

This supports the notion that individuals who seek care at an ED for ambulatory care sensitive conditions are doing so in part because it is convenient and easily accessible. Evidence from a focus group of individuals who frequently utilize the ED further suggests that proximity plays an important role in shaping their care-seeking behavior. Specifically, three focus group participants described their rationale for continuously seeking care at an ED as such:

> *"I come here because it's closer to home. I can walk here. I can't walk to Highland."*
>
> *"I was born here, in this neighborhood." "I live right up the street."*
>
> *"Strong is too far. Highland is far too. Here's the only close hospital ED to come to, even if it's not great, and you end up back with the same problems again and again."*

Additionally, these participants also appear to perceive the care they receive at an ED as more timely and convenient for reasons other than travel time. For instance, one participant cited difficulty in choosing a PCP as a reason for continued reliance on the ED.

> *"I heard you have to wait months to see a regular doctor, and that's too long. In the ED they always ask do you have a doctor. I still don't have one. They gave me a list to pick my own personal doctor but I haven't chose one because I've been busy working and doing stuff and haven't gotten around to it yet. It seems very complicated to get my own doctor and to get an appointment. If you don't come to the ED, you have to wait too long, and I'm an impatient person."*

Another participant perceived the ED as being more convenient and better suited to addressing his or her unplanned health care needs than a primary care office.

> *"So I do have a doctor, but I don't start out at his office, I start here* [at the ED] *first, then maybe go to my doctor if I need something more. I don't know why — but doing that just works good for me, so I keep on doing it like that. Whenever you leave the ED they always tell you to make an appointment to follow up*

[8] Distance data is calculated using geo-coding software to assign latitude and longitudes to ED addresses and ZIP code centroids. Straight line distances are then calculated between the ZIP code centroid and all hospitals, and the minimum among these distance is used for graph creation. PPV rates are obtained from the state-provided PPV by ZIP code file.

with your own doctor. Sometimes I'll do that, but I don't ever start there. I think that starting with the ED is the way to go. First you can come to the ED to find out what's really going on. Then you can go to your own primary care doctor to see what to do about it."

Collectively, these findings suggest that providing transportation to a lower cost setting that is timely, reliable, and patient-friendly may make these options more attractive to those who live relatively close to a hospital or freestanding emergency department. Furthermore, it appears that thoughtful patient education may be needed to change perceptions about what venues are best suited to providing different types of heath care.

In addition to patient education related to when to seek care from an ED, the broader concept of health literacy may need special attention. Obtaining direct data on this concept, defined as the degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decisions (Berkman, Davis, & McCormack, 2010), is difficult, however national research has demonstrated that low health literacy is more prevalent among minorities and those who are socially disadvantaged (Paasche-Orlow, Parker, Gazmararian, Nielsen-Bohlman, & Rudd, 2005). In light of the demographic characteristics of the FLPPS Medicaid population described earlier, particularly within Monroe County, and the income requirements attached to Medicaid eligibility, it is likely that health illiteracy is a key issue in this group. Focus group results support not only the presence of low literacy, but also its influence on health outcomes. For instance, among the focus groups participants with a chronic disease, the theme of self-management that is rooted in being well informed about one's condition came up frequently. One participant described a good approach to managing his or her chronic disease in this way:

"Know your own diseases so you know what's wrong. Like my diabetes can make my blood sugar go up and down, and that can cause my depression or anxiety. I need to understand all that to know what's going on."

A lack of understanding, coupled with the inherent complexity of monitoring one or more chronic conditions, was identified as a key barrier to successful self-management and avoiding hospitalizations. This was particularly true with regards to prescription drug regimens, as captured in the conversation below.

"You know what I need most? One pill to cure EVERYTHING!"

"They give you five or six different meds for one thing."

"She's right! I have five pills for my high blood pressure alone."

"How am I supposed to keep track of it all?"

"Not only do I have multiple meds, but they always seem to be changing them, and some don't seem to work."

"How do they even know what's working?!"

Failure to adhere to a prescribed medication plan has been cited as a key risk factor for being readmitted following hospital discharge (Calvillo–King et al., 2013), and there appears to be a clear relationship between poor health literacy and unintentional non-adherence (Lindquist et al., 2012). As such, adequately addressing this competency may be a key to reducing avoidable hospital use and improving patient outcomes.

Several other social characteristics have also been shown to have some association with one's risk for being readmitted after a hospital discharge. Being non-white, having low income, being unemployed, having lower education levels, having poor home stability, and having a lack of social support have all been shown to increase the likelihood if a re-hospitalization (Arbaje et al., 2008; Calvillo–King et al., 2013). Due to data limitations, we are unable to examine many of these factors in isolation, however, our access to the SPARCS database facilitates some local investigation. We expand the multivariate model of all-cause readmission risk described in the Health Status section (Table 42) to the full population in order to ensure sufficient variation in social characteristics in the sample population. Further we add two important variables: a proxy measure of socioeconomic status (SES) defined as the median income within a patient's ZIP code of residence (obtained from the American Community Survey five year estimates) and a variable which captures the patient's insurance type (commercial insurance, Medicare, Medicaid, self-pay/uninsured, dually eligible, and other). The

model was estimated in the both the medical admission population and the surgical admission population; selected results are shown below.[9]

Table 52 – Social Determinants of Risk for Readmission

		Medical Admissions		Surgical Admissions	
		Odds Ratio	*p*-value	Odds Ratio	*p*-value
Median ZIP code Income	($10,000s)	0.98	0.013*	0.98	0.04*
Race					
	White, non-Hispanic	Ref.		Ref.	
	Black, non-Hispanic	1.01	0.854	1.11	0.018*
	Hispanic	1.07	0.285	1.38	<0.001***
	Other	0.08	<0.001***	0.88	0.132
Insurance Type	Commercial	Ref.		Ref.	
	Medicare	1.16	<0.001***	1.22	<0.001***
	Medicaid	1.37	<0.001***	1.36	<0.001***
	Self-pay/uninsured	0.89	0.071	0.96	0.594
	Other	0.93	0.353	0.82	0.011*
	Dually Eligible	1.30	<0.001***	1.35	<0.001***

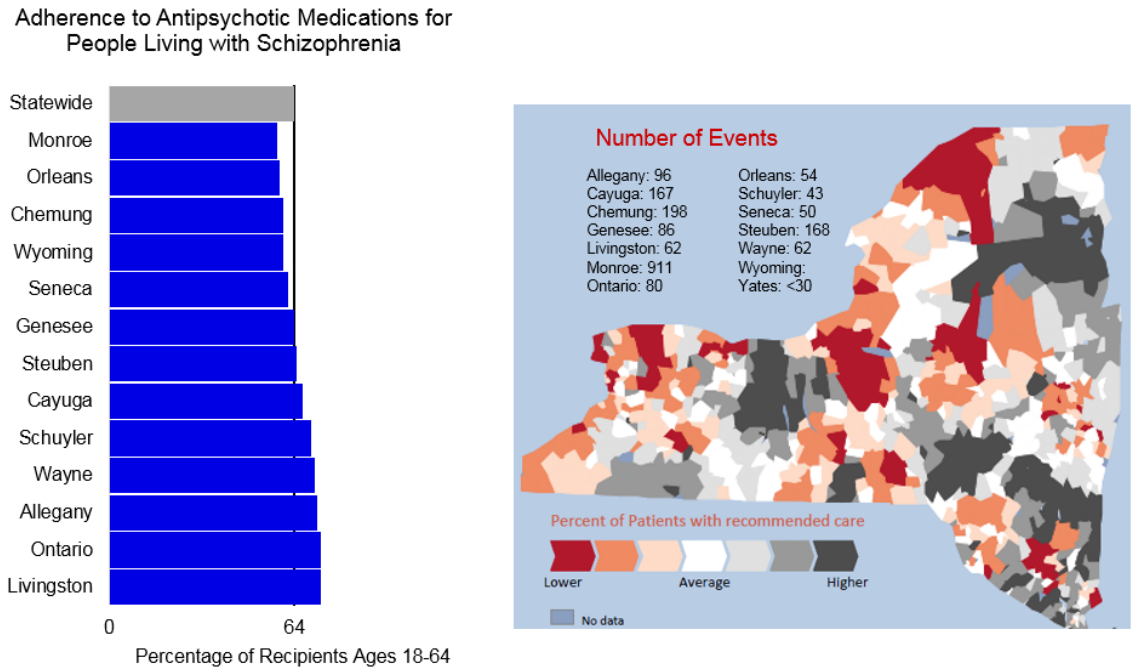
*Indicates significance at the p ≤0.05 level
***Indicates significance at the p ≤0.001 level

This analysis strongly suggests that social factors are key predictors of readmission risk within the FLPPS. Specifically, having Medicaid insurance (either by itself or in conjunction with Medicare), which is primarily obtained via means testing, significantly increases one's readmission risk, regardless of whether they were admitted to a medical or surgical bed, even after controlling for a variety of measures of patient severity and complexity. Median ZIP code income is also an important predictor of readmission risk, with every $10,000 increase in median ZIP code income decreasing one's readmission risk by about 2 percent. This effect, found in both medical and surgical inpatients, remains significant even after controlling for a likely more direct measure of a family's income (Medicaid eligibility), suggesting that the social environment in which a person lives may have independent impact on the chances of returning to the hospital within 30 days. Finally, it is interesting to note that racial and ethnic disparities in readmission risk were found only in surgical inpatients, with blacks and Hispanics having 11 percent and 38 percent greater odds of being readmitted relative to whites. This suggests that special focus may be needed on providing culturally competent care, perhaps with particular consideration of English-language proficiency, at and around the time of discharge for surgical patients.

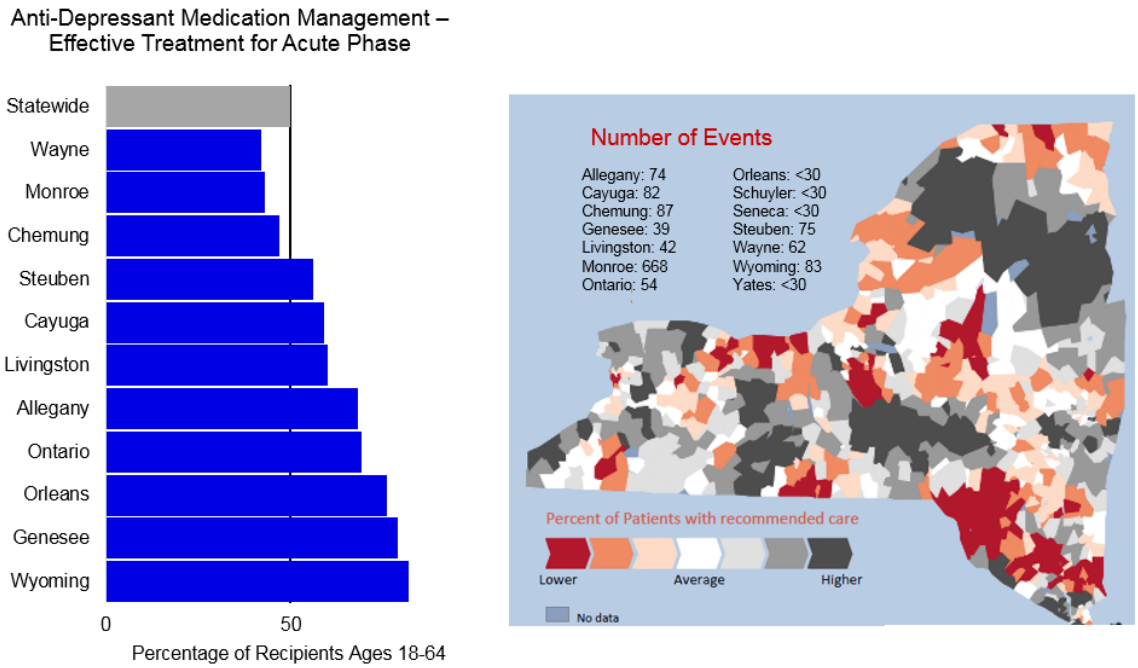
With regards to psychiatric and substance abuse inpatient admissions, data from the WRBHO suggests that social factors again play an important role in determining one's risk of being admitted to the hospital. One critical factor appears to be that of stable housing. Specifically, about 15 percent of inpatient mental health or substance abuse admissions in the WRBHO 18 county region were for individuals who were homeless at the time of admission. On average, the housing status of these individuals was improved by the time of discharge in about 62 percent of cases (Western Region Behavioral Health Organization, 2014). When inpatient providers were surveyed regarding potential causes of a readmission, homelessness was cited in 7.7 percent of mental health cases and 11.3 percent of substance use cases, giving further indication that providers must have an awareness of a patient's living situation.

Medication non-adherence was another factor that was frequently cited as a potential cause of mental health or substance use readmissions. Thirty-five percent of mental health readmissions and 7.5 percent of substance use readmissions were attributed to this factor, underscoring the potential role health literacy may play in avoidable in readmissions related to behavioral health issues. These findings seem to align with the following charts which show that several counties in the Finger Lakes region, including the population center (Monroe County), fell below the state average on quality metrics related to medication adherence in individuals with schizophrenia and acute depression.

[9] Full results available upon request. Models control for patient age, gender, length of stay during index admission, number of comorbid conditions, patient county of residence, discharge day of the week, time, and location, select primary and secondary diagnoses, and facility-level fixed effects.



Map 17 – Adherence to Antipsychotic Medications



Map 18 – Anti-Depressant Medication Management

Collectively, there appears to be significant opportunity to improve the quality of patient care, and potentially reduce avoidable hospital use, by providing care that is appropriately tailored to address the complex and interrelated social determinants of health.

A Need to Support Women and Children

The infant mortality rates demonstrated in Figure 16 are alarming as they potentially represent a failure to provide care to both mother and child, at a time when health care is critical for both. While infant mortality does appear to be a serious concern in the FLPPS region, other measures of perinatal health generally match New York state trends, including low

birth weight, initiation of prenatal care and birth defect rates. It is likely that social determinants of health, not captured in the data, are driving that statistic which is supported by the disparity in health outcomes of African Americans and Latinos in Monroe County.

The assumption that first-time parents are often quick to seek care emergency department care was not supported by our focus groups. Instead, participants indicated they followed a process to determine whether an issue warranted an ED visit. First and foremost they relied on their mothering instincts, next they asked their own mothers, when available for advice. When neither of those responses were sufficient, they sought advice from within the health care system, always their pediatrician first. They then utilized the emergency department as a last resort. This is evidenced by one focus group participants recounting of an ED visit:

> *"My daughter had a minor cold and runny nose, but her temp was up to 102 and she kept vomiting — a lot — and I was afraid that she was getting dehydrated. I called the doctor, and she called me right back, and when I described what was happening she assigned us a Medi-cab that took us to the Strong ED. We were there for eight hours, but after she slept and stopped throwing up, they sent us home, and gave me Tylenol and Pedialyte."*

Given that there is a high ED utilization rate (.49) for Medicaid recipients under the age of one this is an interesting finding. If physicians are recommending taking infants to the ED, it may be prudent to ensure that other alternatives are also available, and that both physicians and patients are knowledgeable of their capabilities.

To this end, of note is the fact that this group did not identify urgent care as a potential option for care. There was one participant who described a very valuable service she was receiving:

> *"I have a lifetime care nurse who comes to the house three times a week to check my baby's weight, and I have a 24/7 line that I can call. She had thrush on her tongue, and jaundice. But now she's gotten to four pounds, and the thrush and jaundice have cleared up, so she's doing good. The nurse is coming out to check her again today."*

These types of services help mom's get access to quick care when they need it and help to reassure them when they are questioning their own instincts.

In alignment with issues identified by the community organizations and health care providers in the region, these mothers highlighted transportation as primary concern that restricted not only their access to care but access to basic necessities including groceries. There is clearly a need for these individuals to have safe and reliable transportation to care for themselves and their children. Among the mothers in our rural focus group, nine out of 12 identified transportation as a major barrier to accessing care for their children.

> *"People are so rude and don't give moms with kids any kind of courtesy. Try having a baby <u>and</u> a toddler. It's impossible."*
>
> *"And it's even worse if you're trying to use the bus to go food shopping — while carrying your baby."*

SUMMARY OF ASSETS AND RESOURCES TO BE EMPLOYED

FLPPS has written attestations from over 600 organizations in the region, agreeing to participate in DSRIP. These resources include 18 of the major hospitals, 5 FQHCs, and 6 Health Homes, that provide services to the Medicaid population. In addition, there are numerous community based organizations, primary care providers, specialists (non-primary care), behavioral health, substance abuse providers, hospices, pharmacies, nursing homes, and skilled nursing facilities. These resources cover the breadth of the geography, and scope of services required for the projects to be successful. Further detail and numbers of resources will be found in the Scale and Speed section of the FLPPS application. These resources have been actively engaged in the planning process, through communication webinars, local meetings, web based surveys, representation on organizing committees, working groups, and preliminary project planning teams.

THE FLPPS VISION

For too long, many of our region's under- or uninsured patients have received acute, episodic care that can be characterized as fragmented and uncoordinated. As the health care environment undergoes significant transformation, caregivers must now develop innovative ways of delivering coordinated care to safety net patients. The New York State Medicaid 1115 Waiver Delivery System Reform Incentive Program provides a unique opportunity for providers from throughout the Finger Lakes region to collaborate on projects that will transform care delivery and payment, thus enhancing the ability of our community to provide cost-effective, quality care for our Medicaid members.

> *The vision of the Finger Lakes Performing Provider System is to create an accountable, coordinated network of care that improves access, quality and efficiency of care for the safety net patient population across the our participating counties.*

The Finger Lakes PPS has worked to develop strong, systemized partnerships for health care delivery among a wide range of care providers, with the purpose of creating a more integrated care delivery system that is accountable for some of the most vulnerable patient populations in our region. As it now stands, the Finger Lakes PPS is a highly comprehensive network that includes home- and community-based partners from health care, behavioral health, community service agencies, housing, health planning and FQHCs, all of whom have come together to enhance the well-being of the patients attributed to the PPS. This represents an unprecedented commitment to region-wide cross-organizational and cross-silo collaboration in an effort to achieve the following goals:

1. Improve access to care, quality of care, member safety and satisfaction, efficiency and cost-effectiveness of care.
2. Improve long term financial stability of caregivers within the network.
3. Provide strong clinical leadership and resources to the network.
4. Drive advocacy and policy development to improve access to care.
5. Provide the best practice opportunities for physicians and other practitioners who want to treat patients in underserved communities.

The model developed to meet these goals is distinguished by the following underlying principles:

Focus on the Patient

All decisions are weighed against the question, "How will this impact the member/patient's health care needs, cultural and linguistic preferences, enabling provision of the right care, at the right place, at the right time?"

Strong Physician and Provider Leadership

Physicians and other practitioners have representation and deep engagement in governance and leadership.

Accountability, Transparency and Trusting Partnerships

Clear and open partnerships with regular, proactive communication to support the design and implementation of truly cost-effective, best practice care delivery.

Adaptability

Develop the ability to continually transform based on patient needs and environmental changes. Recognize that there is not best, *there is only better.*

Capacity & Capability for Managed Care of a Population

Develop the ability to manage members/patients across the continuum of care with varying disease states, health care and social needs.

The FLPPS performing providers are committing to a multi-phase process of care transformation that requires ongoing collaboration, trial-and-error and piloting of innovative systems and concepts that will provide a strong, clinically integrated foundation. The phases of this care transformation model include:

Phase I – Alignment and Engagement

Determine shared vision and mission and delineate a joint governance structure.

Phase II – Clinical Integration

Develop care transformation plans and guidelines for meaningful use of HIT, align partners around the principles of a patient-centered medical home, and care transitions and coordination.

Phase III – Continuous Performance & Quality Improvement

Utilize process and outcomes data to establish metrics to monitor performance and guide quality and cost improvements.

Phase IV – Finance, Risk Sharing and Value-Based Reimbursement

Establish a system that rewards improvements in quality of care and patient outcomes, as well as cost savings.

We are confident that the initiatives taken on by FLPPS – in conjunction with partnerships with local, state and federal officials to attain the triple aim of better care of individuals, better health of patient populations, and lower costs through improvement of care – will lead to integrated, coordinated, patient-centered care that will ultimately improve the health of the population. We believe this will be a financially sustainable model of care for the safety net that can serve as an effective model for other, similar communities.

DOCUMENTATION OF PROCESS AND METHODS

In order to complete the Community Needs Assessment the FLPPS partnered with the Finger Lakes Health Systems Agency (FLHSA), a regional health planning group with extensive experience in data analysis related to population, health care utilization, and health system capacity. Under the direction of the FLPPS, the FLHSA undertook an over 6 month process to conduct a comprehensive CNA which could guide DSRIP project selection and inform project design. Quantitative and qualitative methods (including extensive community and stakeholder input) were implemented throughout the course of CNA completion; the methodology used to complete the CNA is described in the paragraphs that follow.

Laying the Groundwork for CNA

After initial announcement of the Delivery System Reform Incentive Payment program opportunity in the spring of 2014, the four emerging PPSs in the Finger Lakes region reached out to a diverse group of stakeholders to discuss the DSRIP opportunity, to ascertain level of interest, to initiate an assessment of perceived community needs, and to explore PPS/provider/organization potential roles in addressing those needs. In addition to numerous phone calls with individual providers, this also included discussions and informational meetings with:

- Excellus BlueCross/BlueShield – to discuss their perceived needs in the community and the need to overcome resistance to sharing behavioral health and substance abuse information
- Dianne Cooney Minor, Dean, Wegmans School of Nursing, St. John Fisher College – to discuss workforce training issues
- Regional Commission on Community Health Improvement – to present workgroup summaries and receive feedback from diverse community leadership
- New York State Assemblyman Joseph Morelle – to discuss his vision for DSRIP
- County Mental Health Department leaders (two meetings) – to discuss their strategic plan and needs
- Finger Lakes and Southern Tier Network (weekly meetings) – to discuss issues, priorities and access/capacity
- Self-organized group of over 30 providers in Genesee County – to discuss issues specific to their region and their possible role in DSRIP
- Rochester Primary Care Network and its related Federally Qualified Health Centers from the Finger Lakes Region – to discuss role and needs of FQHCs

Subsequently, the emerging PPSs engaged interested parties from across communities and types of organizations in a process to examine preliminary local health status data, identify gaps in service, and begin to prioritize focus areas for the community. This process included:

- Meetings were convened with workgroups of service providers in geographic sub-areas to consider local needs assessment data, discuss additional perceived needs and issues, and begin to prioritize those needs. One-hour kick-off meetings were conducted with three of these groups, and subsequent three-hour sessions were conducted with two of the groups to solicit feedback.
- Over 100 potential community partners received (and 68 responded to) a survey for ranking projects and obtaining feedback and comments by project domains.
- Over 240 organizations and providers participated in DSRIP Community Partner Engagement Meetings that fostered brainstorming and cross-silo communication in order to reach overall consensus on initial project selection. Project selection rationale included:
  - examination and ranking of community needs and health status data from previous stakeholder meetings and preliminary data collection,
  - the likelihood that a project would result in a reduction of avoidable hospital admissions as required by DSRIP,
  - the likelihood that a project would help create the platform for a Performing Provider System of shared financial risk in the deployment of healthcare and community resources to meet the needs of the Medicaid population,
  - and which projects meshed most effectively to augment one another to increase the overall effectiveness of the PPS to accomplish its targets.

  In addition, partners began discussing potential strategies to address these issues.

Input from all of these partners and discussions served as the basis for planning an initial data analyses that would be most useful not only in guiding individual PPSs in their initial planning, but also as the emerging PPSs moved toward collaboration as a single PPS. This single PPS – the Finger Lakes PPS – compiled a single Project Design Grant application representing the 14-county region. A draft of this Project Design Grant application was emailed to all Finger Lakes PPS partners two weeks before submission, and partners were asked to complete a survey that would provide feedback on the application. This feedback was incorporated into the final Project Design Grant application.

Compilation of CNA

During the months of June and July, the FLHSA conducted preliminary quantitative data analyses with a particular focus on the following topics: general population demographics, demographics and description of the Medicaid population, description of current inpatient and outpatient hospital use in the Medicaid population, DSRIP avoidable hospital use metrics, and population health outcomes. State-provided data (available through the DSRIP Performance Data website) served as the initial data sources for these analyses. In order to facilitate more in-depth exploration and subgroup analyses, a variety of additional data sources were used to supplement DSRIP resources. These data sources include:

- 2010 US Census data (US Census Bureau)
- Vital Statistics of New York State (NYS DOH)
- Salient non-PHI Medicaid Claims Database
- Statewide Planning and Research Cooperative System Inpatient and Outpatient Hospital Claims Database (NYS DOH)
- Behavioral Risk Factor Surveillance Survey

During weekly meetings between the FLHSA and FLPPS representatives, preliminary data and results of these analyses were shared, and plans were made for disseminating preliminary findings and additional CNA data, as it became available, within an even wider cross-section of the community. This was accomplished through:

- Project Advisory Committee meetings – FLPPS convened two Project Advisory Committee (PAC) meetings to provide PAC representatives from partner organizations, related unions, and interested community members with an update on the CNA and FLPPS status, and to gather feedback from these representatives.

- NOCN Planning Meetings – The Finger Lakes PPS convened six regional planning sessions, one in each of four Naturally Occurring Care Networks, and two in the Monroe County NOCN, due to its size. Invitees to the meetings included, but were not limited to, potential participating health care providers, community service providers, hospital and health system leadership, subject matter experts, patient advocates, and interested community members. Copies of all the presentations made to the NOCN stakeholder groups were made available on the FLHSA website and are still available. The web address for those presentations is listed in Appendix C.

  Each planning session agenda included:

  - an introduction to the Finger Lakes PPS Project Management Office;
  - a review of Community Needs Assessment data, with particular emphasis on data pertinent to the NOCN where the meeting was being held, and discussion of the data's role in project selection;
  - an introduction to preliminarily identified projects and the FLPPS Project Managers associated with those projects;
  - small, project-specific, break-out sessions in which participants discussed and provided feedback on each project overview and metrics with the associated project managers; and
  - an opportunity for stakeholder Q&A and feedback.

  These planning sessions helped to:
  - ensure that regional-level needs and geographical disparities would be taken into account as the PPS's preliminary project selections were finalized,
  - identify NOCN-specific gaps and resources,
  - identify characteristics and factors that might be unique to that area but might not be readily identifiable through other channels, and
  - to encourage participation and input as the Project Plan application took shape.

- Regional Commission on Community Health Improvement (RCCHI) – This commission, sponsored and supported by the FLHSA, is a large group of diverse community leaders whose aim is to improve health outcomes by facilitating the integration and coordination of care by addressing the complex medical, behavioral, developmental and social

needs of individuals of all ages in the nine counties of the Finger Lakes region. FLHSA presented preliminary CNA findings to RCCHI. This meeting provided the opportunity to broadly disseminate the findings of the preliminary CNA data analysis and other DSRIP information to numerous community representatives who may or may not currently work with the Medicaid population.

- FLPPS Website – A public website was launched to provide up-to-date information on DSRIP and the Finger Lakes PPS. The website includes background, FAQs, updates and tools for interested providers, key milestones, updates from the state, upcoming events (such as NOCN meetings and webinars), and weekly updates. The most recent version of the CNA is also posted on the site.

- Public Webinar – In October the FLPPS team conducted a webinar on Updates and Next Steps. The webinar was open to the public, and information about it was posted on the FLPPS website. Feedback was solicited from attendees and responded to as necessary.

- FLHSA Focus Groups – A consultant with expertise in conducting qualitative research conducted 15 focus groups with a variety of Medicaid recipients, Medicaid providers, and other special populations throughout the FLPPS region. These focus groups were conducted in community settings in collaboration with FLPPS partner organizations working with specific at-risk populations, and the general themes of the focus groups were guided by the preliminary findings of quantitative data analysis, as well as stakeholder input regarding key areas of interest. These themes included:

    - Currently pregnant, first time mothers
    - Mothers of young children
    - Individuals with a behavioral health condition and a history of hospital use
    - Individuals with a chronic disease and a history of hospital use
    - Individuals with a substance use disorders and a history of hospital use
    - Individuals who were readmitted to hospital within 30 days of discharge
    - Individuals with a history of frequent emergency department use (not related to a behavioral health condition)
    - Migrant workers in rural counties

  Multiple focus groups for each theme were held in different counties to capture differences between urban and rural populations. The focus group moderator facilitated discussion regarding current challenges faced by the group, underlying causes of hospital use (if applicable), barriers to receiving needed care, and what they needed to live healthier lives.

- FLHSA Key Informant Interviews – A total of 30 key informant interviews were utilized to better understand the systematic perspective on the issues we discussed with the focus groups and hone our understanding of the extraordinarily complex issues facing these individuals.

- Community Services Survey – The supply and distribution of community services was identified by the FLHSA and FLPPS as an area with relatively little available data, in contrast to health care resources. As such, a large-scale web-based survey solicited information from community-based organizations about the services provided, the location and capacity of these services, and special populations served. In addition, the survey also asked these community-based organizations to identify any barriers that prevented individuals from utilizing their services. Invitations to participate in the survey were distributed to all known community service providers using FLPPS and FLHSA distribution lists.

Throughout this process, compilation and sharing of additional quantitative data continued. Much of this work was aimed at moving from describing the current Medicaid/uninsured population and health care challenges to gaining a better understanding of the potential factors contributing to these challenges. Methods included the combining of multiple datasets, geographic variation analyses, bivariate analyses, and multivariate modeling techniques. Data sources include those listed above, as well as the additions of data from the Western Region Behavioral Health Organization's quarterly progress reports, the 2012 American Community Survey (US Census Bureau), hospital and nursing home cost reports, and directories of community-based service providers obtained from three regional 2-1-1 centers. The completion of these analyses was vital to the identification of gaps within the current FLPPS care delivery system.

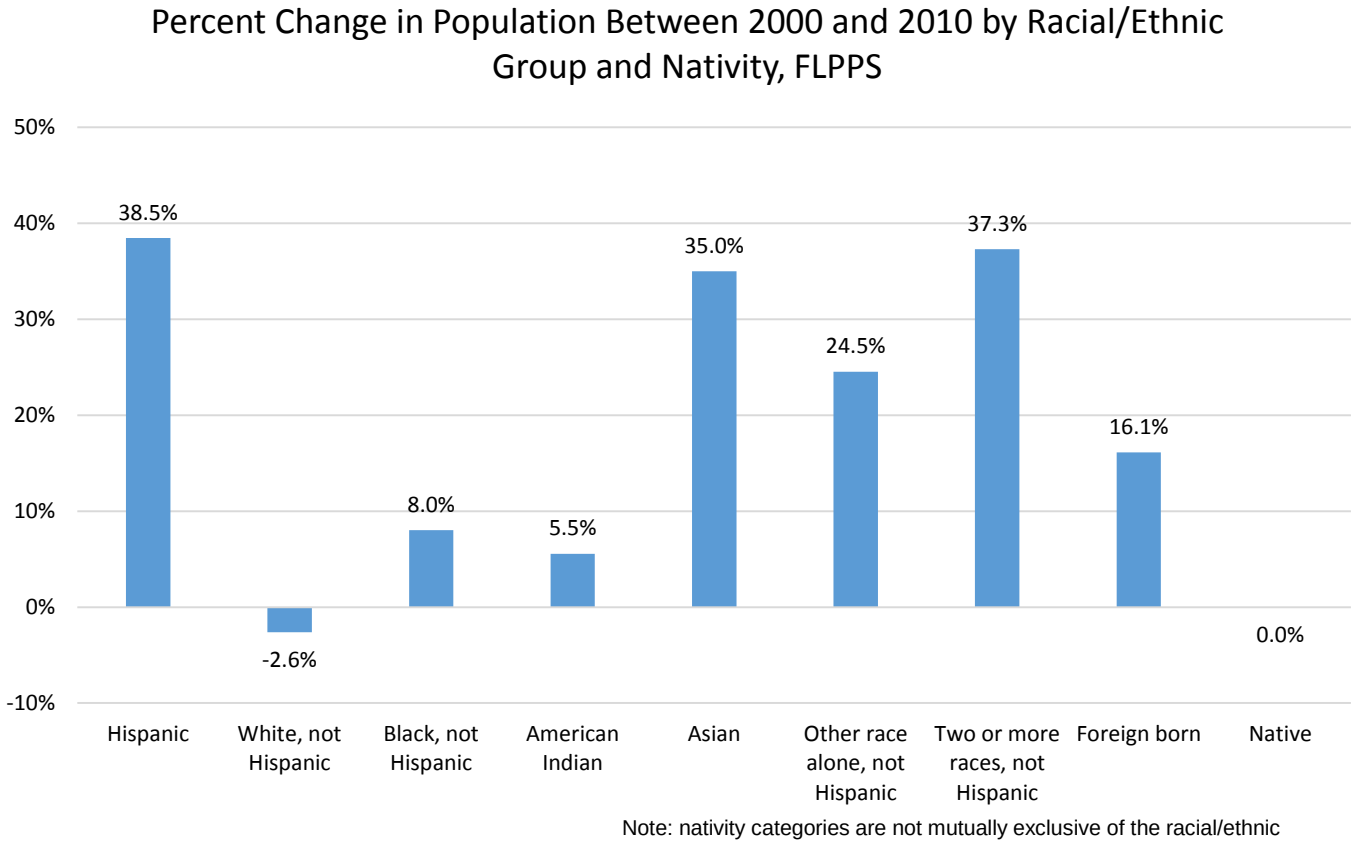
Finalization of CNA

An initial draft of the final CNA document was provided to the FLPPS on October 31. During the first week of November, the FLHSA and FLPPS met to discuss the report, synthesize its findings, and discuss potential projects that could address the identified needs. Minor revisions were made based on FLPPS feedback prior to broad public dissemination on

November 10, at which time the CNA and potential project list was sent to the full list of potential FLPPS providers and stakeholders. Further, the draft report was posted on the FLHSA DSRIP website for public consumption and comment. The FLPPS set up a systemized method for the public and stakeholders to provide input and feedback to the draft CNA. These comments were cataloged, shared with the FLHSA, and incorporated, as appropriate, into the drafting of a final document. Feedback was closed at the end of November, and a finalized version of the CNA was completed by the first week of December.

APPENDIX A – SUPPORTING DATA FIGURES AND TABLES

Percent Change in Population by Racial and Ethnic Groups and Nativity



Note: nativity categories are not mutually exclusive of the racial/ethnic

Data Source: 2000 and 2010 Census Data

Health Insurance Status by County

County	Civilian non-institutionalized population	Number with health insurance	% with health insurance	Number with private health insurance	% with private health insurance	Number with public health insurance	% with public health insurance	Number without health insurance	% without health insurance
Allegany	48360	43823	90.6%	34109	70.5%	16883	34.9%	4537	9.4%
Cayuga	76272	68012	89.2%	53287	69.9%	25974	34.1%	8260	10.8%
Chemung	84522	77464	91.6%	59933	70.9%	30744	36.4%	7058	8.4%
Genesee	59176	53903	91.1%	44518	75.2%	17888	30.2%	5273	8.9%
Livingston	62579	58490	93.5%	50276	80.3%	17225	27.5%	4089	6.5%
Monroe	737073	685507	93.0%	558231	75.7%	228434	31.0%	51566	7.0%
Ontario	106714	98106	91.9%	83862	78.6%	30743	28.8%	8608	8.1%
Orleans	40206	35817	89.1%	28633	71.2%	14398	35.8%	4389	10.9%
Schuyler	17987	15409	85.7%	11852	65.9%	6221	34.6%	2578	14.3%
Seneca	32594	28369	87.0%	23110	70.9%	10408	31.9%	4225	13.0%
Steuben	97817	86917	88.9%	67605	69.1%	34925	35.7%	10900	11.1%
Wayne	92128	83533	90.7%	68611	74.5%	27712	30.1%	8595	9.3%
Wyoming	38154	34715	91.0%	29419	77.1%	11333	29.7%	3439	9.0%
Yates	24938	20318	81.5%	15960	64.0%	8090	32.4%	4620	18.5%
FLPPS	1518520	1390383	91.6%	1129406	74.4%	480978	31.7%	128137	8.4%

Data Source: 2012 ACS 5-Year Estimates

Managed Medicaid Recipients Captured in Aggregate Claims Database

Percentage of Managed Medicaid in Excellus and MVP Managed Care Plans, November 2014

NOCN	Percentage
Monroe NOCN	83%
Northeast NOCN	68%
Northwest NOCN	35%
Southern NOCN	44%
Southeastern NOCN	0%
FLPPS Total	63%

County Mental Hygiene Directors Estimates of Behavioral Health Provider Availability

Behavioral Health Provider Resources (FTE counts) by Discipline

	Allegany	Livingston	Chemung	Schuyler	Steuben	Genesee	Orleans	Wyoming	Ontario	Seneca	Wayne	Yates	Monroe	FLPPS Total
Psychiatrists	0.72	3.00	20.77	0.60	2.00				2.75	1.70	10.00	1.50	36.00	79.04
NP	0.75	3.00	4.37	0.75	1.00				0.50	0.30	2.00	2.20	42.10	56.97
PhD	1.90	1.00	15.28	1.00	5.00				1.10	0.10	2.00	0.65		26.13
Social Workers	7.00	17.00	47.10	10.40	19.00				18.00	15.30	28.00	6.50	146.30	314.60
LMHT, CAT, MFT	4.00	10.00	11.00		5.00					3.20	6.00	5.65	1.90	46.75
CASAC	4.00	16.00	6.50		7.00				12.00	3.00		1.50	112.50	162.50
RN			4.10	2.20	7.00				4.00	3.75	4.00	9.00	149.00	183.05
CASAC-T			6.00	1.00										7.00
Total	18.37	50.00	115.12	15.95	46.00	N/A	N/A	N/A	38.35	27.35	52.00	27.00	487.80	876.04

Full Results of Multivariate Logistic Regression of All Cause 30-Day Hospital Readmissions

Medical Admissions

		Odds Ratio	95% Confidence Interval	
Age		1.009153	0.997462	1.020982
Age^2		0.999889	0.999787	0.999991*
Length of Stay (days)		1.005815	0.998426	1.01326
Race/Ethnicity				
	White	Ref.		
	Black	1.017745	0.917277	1.129216
	Hispanic	1.104551	0.950118	1.284086
	Other	0.718116	0.557558	0.924909**
Gender				
	Male	Ref.		
	Female	0.980985	0.907799	1.060071
# of Comorbid Conditions		1.059804	1.049025	1.070694***
Type of Medicaid				
	FFS	Ref.		
	Managed Care	0.848869	0.752375	0.957739**
	Dually Eligible	0.882803	0.785475	0.99219*
	Uninsured/Self-pay	0.642347	0.55174	0.747834***
County				
	Allegany	Ref.		
	Cayuga	1.320654	0.599858	2.907567
	Chemung	1.301019	0.674838	2.50823
	Genesee	0.865465	0.472553	1.585067
	Livingston	0.793147	0.440929	1.426719
	Monroe	0.728483	0.422704	1.255459
	Ontario	0.706614	0.380589	1.311923
	Orleans	0.651843	0.336478	1.262785
	Schuyler	1.30941	0.631977	2.713002
	Seneca	1.030183	0.52501	2.021441
	Steuben	0.916974	0.511343	1.64438
	Wayne	0.838421	0.462203	1.520868
	Wyoming	1.078729	0.531706	2.188534
	Yates	0.91664	0.435058	1.931304
Disposition				
	Self-Care	Ref		
	Home Care	1.230912	1.110437	1.364459***
	SNF	0.88909	0.77893	1.01483
	Left Against Medical Advice	1.856003	1.533731	2.245992***
	Other	0.305431	0.130215	0.716418**
	Law Enforcement	0.595667	0.172746	2.053989
D/C on Weekend		1.019174	0.920521	1.128399
D/C between 5pm and 8am		1.015146	0.914691	1.126634
Principal Dx- CHF		1.199056	1.018933	1.411021*
Principal Dx- pneumonia		0.754568	0.627037	0.908037**
Principal Dx- COPD		1.437845	1.227773	1.683861***
Principal Dx- diabetes		1.672765	1.422737	1.966733***
Principal Dx- CVD		0.718453	0.564506	0.914383**
Principal Dx- ischemic heart disease		1.630827	1.226026	2.169282**
Secondary Dx- substance abuse		0.95565	0.861358	1.060264
Secondary Dx- mental illness		1.014729	0.917323	1.122478
Secondary Dx- serious mental illness		1.223681	1.06856	1.40132**
Secondary Dx- kidney disease		1.103612	0.997612	1.220876
Secondary Dx- diabetes		1.076375	0.987029	1.173808
Secondary Dx- hypertension		0.907856	0.832963	0.989482*
Secondary Dx- COPD		1.087048	0.996105	1.186294
Secondary Dx- heart disease		1.170216	1.065552	1.28516***

*Indicates significance at the p ≤0.05 level

**Indicates significance at the p ≤0.01 level

***Indicates significance at the p ≤0.001 level

Data Source: NYS Department of Health SPARCS Database

Surgical Admissions

		Odds Ratio	95% Confidence Interval	
Age		1.000683	0.985598	1.016
Age^2		0.999957	0.999822	1.000093
Length of Stay (days)		0.998793	0.995156	1.002442
Race/Ethnicity				
	White Ref.			
	Black	1.119529	0.983941	1.273801
	Hispanic	1.383509	1.156859	1.654564***
	Other	0.903637	0.678175	1.204054
Gender				
	Male	Ref.		
	Female	0.99258	0.901924	1.092347
	# of Comorbid Conditions	1.076817	1.064433	1.089345***
Type of Medicaid				
	FFS	Ref.		
	Managed Care	0.958109	0.822565	1.115988
	Dually Eligible	0.994901	0.856986	1.155011
	Uninsured/Self-pay	0.706743	0.5891	0.847881***
County of Patient Residence				
	Allegany	Ref.		
	Cayuga	0.473471	0.229864	0.975251*
	Chemung	0.901318	0.502402	1.61698
	Genesee	0.884395	0.536016	1.459201
	Livingston	0.544379	0.326563	0.907475*
	Monroe	0.687992	0.449217	1.053685
	Ontario	0.748886	0.458104	1.224243
	Orleans	0.958416	0.5797	1.584547
	Schuyler	0.547366	0.238683	1.255261
	Seneca	0.697042	0.383997	1.265291
	Steuben	0.873924	0.52576	1.452646
	Wayne	0.685501	0.42716	1.100082
	Wyoming	0.582627	0.328155	1.034432
	Yates	0.543647	0.265988	1.111148
Admitted through the ED		1.28395	1.146277	1.438157***
Disposition				
	Self-Care	Ref.		
	Home Care	1.093753	0.970799	1.232278
	SNF	1.035435	0.889426	1.205414
	Left Against Medical Advice	2.511276	1.778881	3.545212***
	Other	0.198597	0.046213	0.853463*
	Law Enforcement	1.64121	0.440397	6.116232
D/C on Weekend		0.820061	0.715113	0.940411**
D/C between 5pm and 8am		1.09794	0.968946	1.244106
Principal Dx- CHF		1.268641	0.996217	1.615562
Principal Dx- pneumonia		1.53242	1.10963	2.116301**
Principal Dx- COPD		2.296076	1.519777	3.468907***
Principal Dx- diabetes		1.147014	0.890865	1.476814
Principal Dx- CVD		0.897612	0.616702	1.306479
Principal Dx- ischemic heart disease		0.806395	0.64722	1.004718
Secondary Dx- substance abuse		1.071514	0.937126	1.225174
Secondary Dx- mental illness		0.9318	0.821463	1.056958
Secondary Dx- serious mental illness		0.90423	0.746279	1.095612
Secondary Dx- kidney disease		1.33197	1.18328	1.499345***
Secondary Dx- diabetes		1.091372	0.980531	1.214742
Secondary Dx- hypertension		0.853124	0.766061	0.95008**
Secondary Dx- COPD		1.180074	1.060673	1.312918**
Secondary Dx- heart disease		1.048663	0.932597	1.179174

*Indicates significance at the p ≤0.05 level
**Indicates significance at the p ≤0.01 level
***Indicates significance at the p ≤0.001 level
Data Source: NYS Department of Health SPARCS Database

Psych Admissions

		Odds Ratio	95% Confidence Interval	
Age		1.028959	1.003092	1.055493*
Age^2		0.999706	0.999413	0.999999*
Length of Stay (days)		0.992474	0.985716	0.999279*
Race/Ethnicity				
	White	Ref.		
	Black	0.819825	0.683878	0.982796*
	Hispanic	0.75475	0.549519	1.03663
	Other	1.167821	0.765259	1.78215
Gender				
	Male	Ref.		
	Female	0.949913	0.832281	1.08417
	# of Comorbid Conditions	1.052549	1.030851	1.074703***
Type of Medicaid				
	FFS	Ref.		
	Managed Care	0.701422	0.58342	0.84329***
	Dually Eligible	1.123219	0.94422	1.336151
	Uninsured/Self-pay	0.620904	0.498045	0.774071***
County of Patient Residence				
	Allegany	Ref.		
	Cayuga	0.246932	0.097099	0.62797**
	Chemung	0.559778	0.286281	1.09456
	Genesee	0.743066	0.384261	1.436906
	Livingston	0.728848	0.385203	1.379063
	Monroe	0.854862	0.472397	1.546982
	Ontario	0.63867	0.307109	1.328192
	Orleans	0.775176	0.360522	1.666744
	Schuyler	0.679076	0.279426	1.650328
	Seneca	0.703262	0.309336	1.598837
	Steuben	0.746691	0.435769	1.279456
	Wayne	0.406572	0.194222	0.851093*
	Wyoming	0.721977	0.351948	1.481044
	Yates	0.786044	0.267017	2.313953
Admitted through the ED		1.186524	0.979337	1.437542
Disposition				
	Self-Care	Ref.		
	Home Care	0.874475	0.520241	1.469907
	SNF	0.916674	0.55266	1.520449
	Left Against Medical Advice	2.369832	1.845896	3.042481***
	Other	0.627163	0.242896	1.619352
D/C on Weekend		1.120904	0.866887	1.449353
D/C between 5pm and 8am		0.98571	0.809508	1.200266
Secondary Dx- kidney disease		0.954755	0.613293	1.486333
Secondary Dx- diabetes		1.312217	1.08105	1.592816**
Secondary Dx- hypertension		0.930394	0.790876	1.094524
Secondary Dx- COPD		1.053801	0.889589	1.248325
Secondary Dx- heart disease		1.477438	1.164237	1.874896***

*Indicates significance at the p ≤0.05 level

**Indicates significance at the p ≤0.01 level

***Indicates significance at the p ≤0.001 level

Data Source: NYS Department of Health SPARCS Database

Behavioral Health Resources in the FLPPS Region

BH Service Type	Allegany	Cayuga	Chemung	Genesee	Livingston	Monroe	Ontario
BH Care Management / Coord.	9	7	13	6	6	17	8
BH Community Support	13	6	14	10	8	40	8
BH Emergency/Crisis	0	0	2	1	0	9	2
BH Inpatient	0	1	3	1	0	9	3
BH Other	1	2	4	0	2	2	0
BH Outpatient	3	6	7	5	4	38	8
BH Prevention/Intervention	1	2	3	1	2	12	1
BH Residential	6	8	7	5	3	61	11
Developmental Disabilities	4	13	11	7	6	25	8
Grand Total	37	45	64	36	31	213	49

BH Service Type	Orleans	Schuyler	Seneca	Steuben	Tompkins	Wayne	Wyoming	Yates
BH Care Management/Coord.	5	8	10	9	6	7	7	7
BH Community Support	6	4	10	8	13	8	13	13
BH Emergency/Crisis	0	1	1	1	3	1	3	3
BH Inpatient	0	0	1	2	1	1	1	1
BH Other	2	1	3	0	0	2	2	0
BH Outpatient	3	3	4	8	8	5	4	3
BH Prevention/Intervention	2	1	3	3	3	3	1	2
BH Residential	4	2	4	11	12	10	3	2
Developmental Disabilities	8	5	6	12	16	10	7	5
Grand Total	30	25	42	54	62	47	41	36

BH Service Type	FLPPS Total
BH Care Management/Coord.	125
BH Community Support	174
BH Emergency/Crisis	27
BH Inpatient	24
BH Other	21
BH Outpatient	109
BH Prevention/Intervention	40
BH Residential	149
Developmental Disabilities	143
Grand Total	812

Acute Care and Nursing Home Occupancy Rates by Facility

FLPPS Acute Care Facility Occupancy Rates, 2012			
NOCN	**Facility**	**Occupancy Rate**	**% Medicaid Days**
	Highland Hospital	72.5	14.6%
	Lakeside Memorial Hospital (No Longer Operating Inpatient Beds)	--	5.1%
	Monroe Community Hospital	0.8	0.0%
	Rochester General Hospital	77.3	17.3%
	Strong Memorial Hospital	85.1	21.0%
	The Unity Hospital of Rochester	74.2	20.9%
	The Unity Hospital of Rochester-St Mary's Campus	--	0.0%
Monroe		78.9	19.0%
	Auburn Community Hospital	74.2	9.6%
	Clifton Springs Hospital and Clinic	33.1	20.7%
	F F Thompson Hospital	41.7	7.2%
	Geneva General Hospital	38.8	10.4%
	Newark-Wayne Community Hospital	40.7	16.9%
	Soldiers and Sailors Memorial Hospital (CAH)	29.1	13.5%
Northeastern		43.1	10.3%
	Medina Memorial Hospital	40.7	10.6%
	United Memorial Medical Center Bank Street Campus	79.1	68.9%
	United Memorial Medical Center North Street Campus	41.3	9.0%
	Wyoming County Community Hospital	52.0	16.9%
Northwestern		46.5	19.2%
	Cuba Memorial Hospital Inc. (CAH)	14.4	7.9%
	Jones Memorial Hospital	22.2	17.1%
	Nicholas H Noyes Memorial Hospital	26.3	11.8%
Southern		23.9	14.0%
	Arnot Ogden Medical Center	68.2	11.4%
	Corning Hospital	61.8	10.2%
	Ira Davenport Memorial Hospital Inc.	15.4	10.6%
	St James Mercy Hospital (eliminating inpatient capacity)	26.7	32.4%
	St James Mercy Hospital - Mercycare	68.7	76.6%
	St Joseph's Hospital	34.3	23.8%
	Schuyler Hospital (CAH)	32.5	6.9%
	Total SE	43.0	19.4%
FLPPS TOTAL		61.1	18.2%
		*Excludes Newborns and Neonatal Beds	

Nursing Home Occupancy and Medicaid Utilization, 2012

NOCN	Facility Name	Occupancy		New Admissions	
		Occupancy Rate	% Patient Days Medicaid	Total	% Dual Eligible
	Monroe Community Hospital *	96.4	88.5	361	32.4
	Episcopal Church Home	84.4	60.1	353	6.2
	Kirkhaven	94.6	69.8	168	72.6
	Wesley Gardens Corporation	88.1	84.3	163	44.8
	St John's Health Care Corp	95.6	68.8	633	11.1
	Brighton Manor	92.2	75.9	201	39.8
	Baird Nursing Home	89.8	58.6	48	35.4
	Unity Living Center	94.9	84.7	137	59.1
	The Shore Winds, LLC	89.0	82.6	153	15.0
	Blossom North	92.2	90.7	97	66.0
	Blossom South LLC**	69.5	87.6	78	78.2
	Wedgewood Nursing Home	94.8	71.7	40	0.0
	Fairport Baptist Homes	95.4	51.8	331	3.9
	Aaron Manor , dba	87.0	70.0	92	20.7
	Maplewood Nursing Home, Inc.	98.2	29.0	129	0.0
	Rochester Friendly Home	97.0	46.2	330	36.1
	Woodside Manor Nursing Home	86.1	47.2	66	12.1
	Jewish Home of Rochester	94.4	60.1	915	6.6
	The Highlands at Brighton, (The Meadows at Westfall)	93.5	78.6	544	17.6
	The Brightonian	92.5	49.7	215	10.7
	The Hurlbut Nursing Home	89.2	77.5	176	19.9
	Lakeside Beikirch Care Center	90.5	60.0	222	16.7
	Westgate Nursing Home	59.4	83.2	177	34.5
	Hamilton Manor Nursing Home	94.9	69.9	54	0.0
	Latta Road Nursing Home	100.9	76.9	24	4.2
	Park Ridge Living Center	97.1	50.3	718	23.5
	Latta A Road Nursing Home	94.2	68.7	58	12.1
	Edna Tina Wilson Living Center	98.8	65.2	81	8.6
	St. Ann's Home for the Aged	90.0	61.3	1757	12.0
	The Heritage, St Anne's	109.4	67.3	249	6.0
	Rochester General Long Term Care, Hill Haven	85.9	73.7	723	19.1
	Penfield Place	89.7	70.7	51	3.9
	Crest Manor Living and Rehab Center	90.7	54.6	165	10.3
	The Highlands Living Center, Inc.	96.1	65.4	233	6.4
Monroe		91.3	67.5	9,742	18.3
	Finger Lakes Center For Living	96.8	71.4	148	1.4
	Mercy Health & Rehab. Center Nursing Home Co., Inc	87.1	79.1	184	9.8
	Auburn AGT, LLC	91.6	69.3	245	9.4
	HOWD at Moravia	88.3	76.1	46	8.7
	Cayuga County Nursing Home	95.5	74.9	111	19.8
	Living Center at Geneva - South	79.1	65.6	428	14.3
	Living Center at Geneva - North	93.4	82.1	119	48.7
	Clifton Springs Hospital & Clinic Extended Care	97.0	73.6	156	2.6
	M.M. Ewing Continuing Care Center	96.8	75.3	338	9.5
	Ontario County Health Facility	87.4	85.6	108	74.1
	Elm Manor Nursing Home	83.1	53.1	117	28.2
	Huntington Living Center	97.2	80.4	160	40.6
	Seneca Nursing Home & Rehab Center	91.9	75.2	104	8.7
	Demay Living Center	95.1	66.6	627	19.8
	Newark Manor	83.1	68.6	77	10.4
	Wayne County Nursing Home	94.8	71.8	404	15.3
	Blossom View Nursing Home, Inc	91.6	69.3	241	20.7
	Soldiers & Sailors Hospital Extended Care Unit	95.3	82.4	175	46.3
	Penn Yan Manor	98.4	75.2	17	41.2
Northeastern		92.4	74.4	3,805	19.5

Nursing Home Occupancy and Medicaid Utilization, 2012

NOCN	Facility Name	Occupancy		New Admissions	
		Occupancy Rate	% Patient Days Medicaid	Total	% Dual Eligible
	Genesee County Nursing Home	95.4	83.7	297	15.5
	Western NYS Veterans Home	94.2	68.2	62	32.3
	Batavia Nursing Home	39.5	75.9	43	34.9
	Leroy Village Green	89.6	69.1	161	7.5
	The Villages of Orleans	91.9	80.5	172	25.6
	Medina Memorial- SNF	88.2	74.2	27	74.1
	Orchard Manor, Inc.	93.1	78.7	179	22.3
	Wyoming County Community Hospital-Nursing Facility	76.9	68.3	257	10.1
	East Side Nursing Home	83.9	67.9	183	13.1
Northwestern		86.4	74.6	1,381	17.9
	Cuba Memorial Hospital, Inc	92.9	82.2	34	32.4
	Absolut Ctr for Nursing & Rehab at Houghton, LLC	74.2	78.7	93	30.1
	Highland Park Rehabilitation & Nursing	96.4	66.9	79	38.0
	Wellsville Manor Care Center	86.2	62.6	263	28.1
	Conesus Lake Nursing Home	93.5	69.4	68	10.3
	Livingston County Center for Nursing & Rehab	95.4	80.7	283	55.8
	Avon Nursing Home	90.1	66.0	56	5.4
Southern		90.3	74.4	876	35.5
	Arnot-Ogden Residential Health Care Facility	96.4	62.0	140	7.9
	St. Joseph's Hospital - Skilled Nursing Facility	96.6	67.9	200	20.0
	Chemung County Health Center - Nursing Facility	97.6	85.5	175	14.9
	Bethany Nursing Home & Health Related Facility, Inc.	91.8	65.0	224	12.5
	Elcor Nursing & Rehabilitation Center	95.2	83.5	401	52.9
	Schuyler Hospital -Seneca View Long Term Care	97.0	74.5	129	44.2
	Corning Founders Pavilion Inc	95.4	72.3	301	40.9
	McAuley Manor at Mercycare	95.2	81.2	236	30.9
	Hornell Garden	86.5	83.5	79	7.6
	Steuben County Health Care Facility	89.5	80.1	218	23.9
	Ira Davenport Memorial Hospital	92.5	75.7	150	44.0
	Absolut Ctr for Nursing & Rehab at Three Rivers, LLC	88.0	68.5	202	13.4
Southeastern		93.7	77.4	2,455	29.4
FLPPS Region		91.4	71.1	18,259	20.8

NOCN ANALYSIS

NOCN ANALYSIS WITH MEDICAID CLAIMS DATA

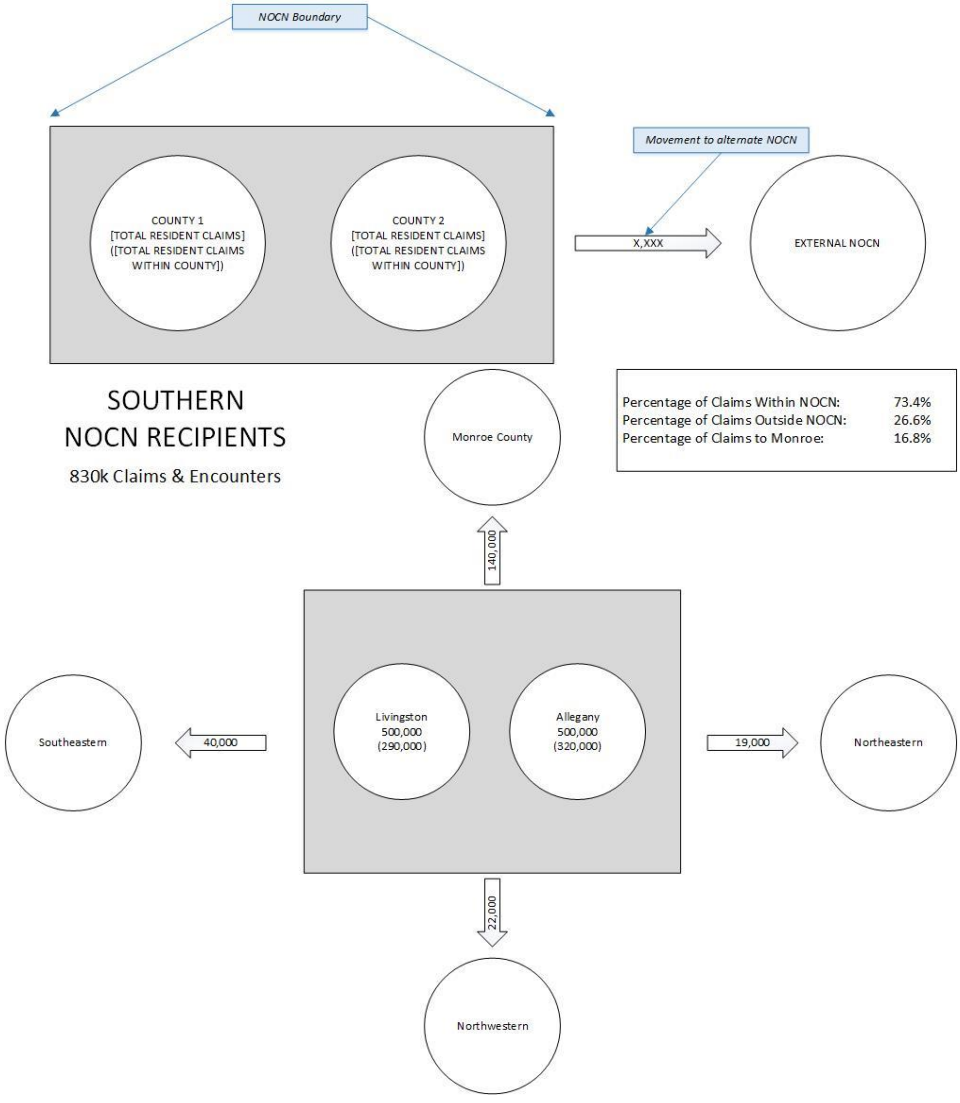
OVERVIEW:

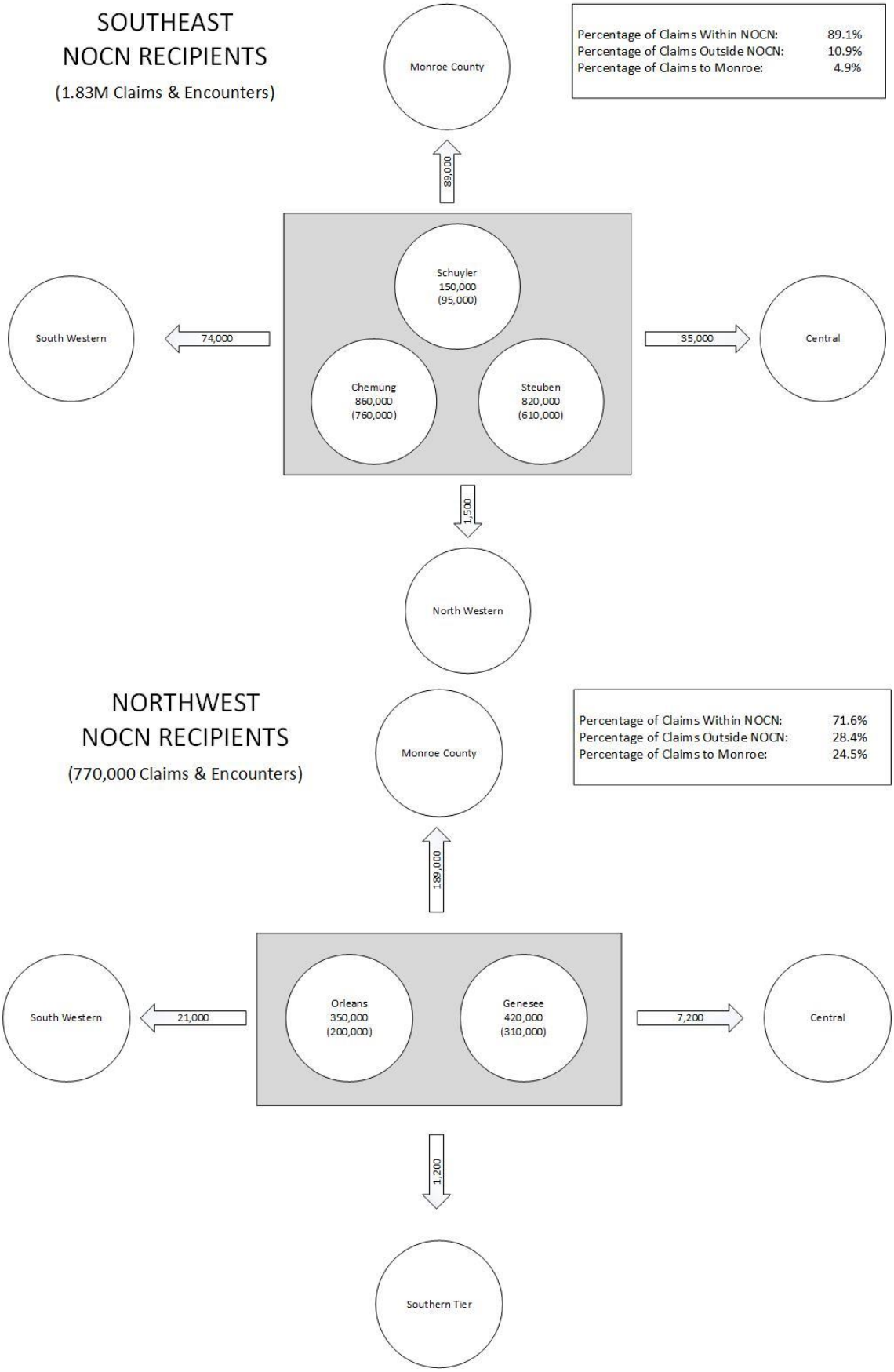
This analysis examines the amount of where Medicaid Recipients within the various Naturally occurring Care Networks receive care within the Finger Lakes Performing Provider System (FLPPS). **All claims and encounters with service counties outside of the 14 County PPS Region are excluded for the purposes of this analysis.** A unit of services is defined as one claim (Medicaid FFS) or one encounter (Managed Medicaid). The sum of both provides an estimate of the total amount of services provided. The analysis only includes claims with dates of service within calendar year 2013 for Medicaid Beneficiaries. The source of the data is the Salient Interactive Miner, utilizing the NY State Medicaid Claim and Encounter Database.

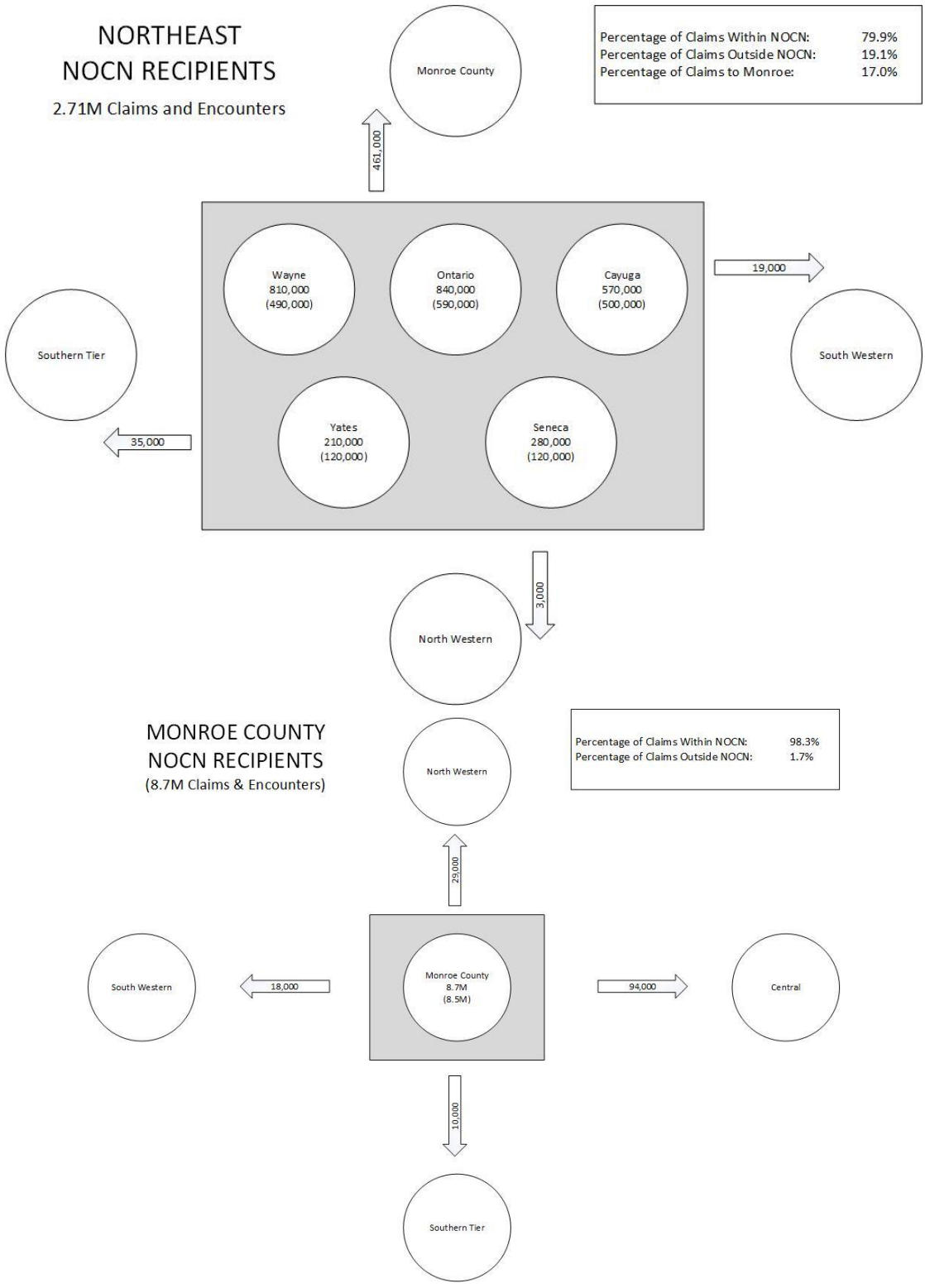
DEFINITIONS:

Patient County – The county where the patient is currently residing
Service County – The county where the servicing provider is located.
Claim – A submission of service(s) for payment by a provider
Encounter – A unit of service reported by Managed Care Organizations to Medicaid
FLPPS Counties – Allegany, Cayuga, Chemung, Genesee, Livingston, Monroe, Ontario, Orleans, Schuyler, Seneca, Steuben, Wayne Wyoming, and Yates

LEGEND:




SOUTHEAST
NOCN RECIPIENTS
(1.83M Claims & Encounters)
Monroe County
Percentage of Claims Within NOCN: 89.1%
Percentage of Claims Outside NOCN: 10.9%
Percentage of Claims to Monroe: 4.9%
89,000
Schuyler
150,000
(95,000)
South Western
74,000
Chemung
860,000
(760,000)
Steuben
820,000
(610,000)
35,000
Central
1,500
North Western
NORTHWEST
NOCN RECIPIENTS
(770,000 Claims & Encounters)
Monroe County
Percentage of Claims Within NOCN: 71.6%
Percentage of Claims Outside NOCN: 28.4%
Percentage of Claims to Monroe: 24.5%
189,000
South Western
21,000
Orleans
350,000
(200,000)
Genesee
420,000
(310,000)
7,200
Central
1,200
Southern Tier


NORTHEAST
NOCN RECIPIENTS
2.71M Claims and Encounters
Monroe County
Percentage of Claims Within NOCN: 79.9%
Percentage of Claims Outside NOCN: 19.1%
Percentage of Claims to Monroe: 17.0%
461,000
Wayne
810,000
(490,000)
Ontario
840,000
(590,000)
Cayuga
570,000
(500,000)
19,000
Southern Tier
South Western
35,000
Yates
210,000
(120,000)
Seneca
280,000
(120,000)
3,000
North Western
MONROE COUNTY
NOCN RECIPIENTS
(8.7M Claims & Encounters)
North Western
Percentage of Claims Within NOCN: 98.3%
Percentage of Claims Outside NOCN: 1.7%
29,000
South Western
18,000
Monroe County
8.7M
(8.5M)
94,000
Central
10,000
Southern Tier

THE DSRIP CONSUMER ENGAGEMENT DIMENSION

ABRIDGED FINDINGS

Prepared for: **Wade Norwood, Melinda Whitbeck and the Finger Lakes Health Systems Agency DSRIP Team**

Prepared by: **Jocelyn Goldberg-Schaible**
Rochester Research Group

5 December 2014

THE DSRIP CONSUMER ENGAGEMENT DIMENSION

Prepared by Jocelyn Goldberg-Schaible
President, Rochester Research Group

I BACKGROUND & INTRODUCTION

Stories are all around us. You just have to know where to look. The data told us where to look. The data told us whom to listen to and what to ask. The stories now make that data come alive.

The data are the dots. The stories are what connects those dots. Behind the data are now powerful, insightful stories.

It has been our honor and privilege to gather those stories, and assemble them for you. You now have the honor and privilege to take those powerful insights and, from them, create programs and services that can help improve not only the Medicaid system but the lives of those who have honored us with their stories.

II CONSUMER ENGAGEMENT METHODOLOGY

Most of our stories were collected around the table, during focus groups defined by a data-driven theme, with all participants being either Medicaid recipients or uninsured. As a result, our findings, methodology and research design were all focused on capturing the attitudes and beliefs of our region's financially struggling population, irrespective of race / ethnicity or place of residence.

Fifteen such sessions were planned, most of them coupling an urban [City of Rochester] and rural [regional] version. By theme and going-in intent, they were:

- Pregnant first-time mothers-to-be [intent = understanding prenatal care or the lack thereof]
- Mothers of babies under age 3 [intent = understanding their perceptions of emergency versus non-emergency pediatric needs]
- Active behavioral health / frequent ED users [intent = understanding ED overuse by those with behavioral health issues]
- Frequent ED users without BH diagnoses [intent = understanding ED overuse by those without behavioral health issues]
- Chronic disease inpatients [intent = understanding how those with asthma, COPD, diabetes or hypertension might, with proper preventative care, avoid hospitalization]
- 30-day readmissions [intent = understanding how inpatients readmitted for the same condition might, with proper discharge instructions and follow-up care, avoid those readmissions]
- Persons with recurring SUD issues [intent = understanding the healthcare needs and experiences of those with chronic substance usage disorder]

- One planned session gathered several members of the rural uninsured community to better understand their healthcare needs and experiences.

Participant recruitment for many of these sessions was accomplished with the assistance of various collaborating partners throughout the region served by the Finger Lakes PPS. Those partners also provided our meeting venues.

Some sessions were recruited via agencies such as Youth for Christ [an urban program for moms with very young children] or Arbor Housing [a regional program for those with chronic substance abuse and behavioral health issues], and from those sessions we learned about services and supports that are proven to be extremely helpful and well-received, and deserve to be replicated and emulated elsewhere. Other sessions gathered participants without such services and supports, and from these sessions we learned about the many needs that remain unaddressed and unmet today and leave people still struggling. Both types of learning in combination provided the powerful array of insights assembled here.

At each session a healthy meal was provided, and each participant received a $50 gift card to their choice of Wal-Mart, Kwik-Fill, Wegman’s, or Tops.

Our focus group sessions were supplemented and complemented by a series of telephone-based, one-on-one, in-depth key informant interviews. Some of those interviews served to gather the stories from potential participants who never made it to a focus group session. Others targeted specific individuals with expertise or insight into one or more of the above topics, included among which were several providers mentioned during our focus groups as modeling positive behavior and providing extraordinary care. Here our intent was to gather learning that built upon, and pushed beyond, the insight we gained during the focus group process.

III EXECUTIVE SUMMARY

Despite our well-engineered methodological approach, we quickly discovered that there are far fewer "clear margins" defining these consumer segments than we had anticipated. These consumers and their experiences do not fit neatly into patient segments and adhere to patterns of behavior that the data seemed to define so clearly. Their real lives in poverty are messy and complex, and their health care experiences are complicated ones.

In session after session, we recruited via the very specific and targeted criteria you see outlined in the methodology section and enumerated in the table of contents. But the stories we heard -- the stories that are told in these reports -- are not about coloring inside those data-defined lines.

If you want to learn about the realities of behavioral health issues, in other words, you cannot just go to our table of contents and look for the behavioral health sessions. You will find behavioral health stories told in virtually every session. The same holds true for the other powerful lessons we learned -- about hospital re-admissions, about ED use, about chronic diseases, about medications, etc.

Those who will be planning services and supports for this complicated population really need to read all the reports assembled, because these stories are all tangled up -- as tangled up as the lives of the people living in poverty in our city and across our region. The full report, including detailed findings from every focus group session and key informant interview is available at www.flhsa.org.

Each of our focus group sessions and key informant interviews has its own detailed set of findings and observations, with an incremental report supported by the powerful stories we heard. Those reports can now be used to inform the project planning process, as DSRIP projects are designed and implemented. But stepping back from those more specifically-targeted findings, ten recurring over-arching themes have emerged, and they are provided here as our Executive Summary.

TEN CRITICAL FINDINGS

[Critical Finding #1] Fragmented health care is dysfunctional. By requiring that a patient go someplace for their physical health needs, someplace else for their mental health needs, someplace else to get their prescriptions filled -- to different venues for preventative services versus diagnostics versus treatment versus follow-up -- we are ignoring the fact that **transportation represents a severe challenge to the impoverished.** Whether it is dependence upon the bus system in the city *["making my evening AA meetings hard to attend"*] or dependence upon an unreliable car with bad brakes in a rural area *["making it hard to get to my pre-natal visits"*], getting around is extremely difficult when you live in poverty.

Hence, the more integrated and comprehensive the care, the better. Why? Because when care is fragmented, access is hindered, compliance is compromised, the quality of care suffers, and the outcomes of that care are jeopardized.

Three positive examples of holistic one-stop provider settings we discovered: Youth for Christ's comprehensive support of young urban moms [at 1 Favor Street in Rochester]; Arbor Housing [in Hornell] which consciously links and addresses both substance abuse and mental health, with an excellent urgi-center right down the street for its residents' physical health needs; the RGH Clinic [at Clinton and Upper Falls Blvd] for the comprehensive pre-natal programming it provides to pregnant first-time moms.

[Critical Finding #2] Integrated comprehensive care is vital because of the fact that people routinely grapple with multiple diagnoses, situations, and complications all at the same time. Although we initially intended to recruit focus group participants who had one chronic illness, that notion proved unrealistic, and in session after session we ended up with participants who suffer from several concurrent chronic and episodic illnesses, on top of which they frequently deal with long-term depression and anxiety. The complicated medical situations they describe are painful to hear about, but clearly more painful to live through. A coping mechanism we heard used again and again was the use of dark humor, although there is nothing comical about the complex and stressful medical and social challenges our participants endure.

[Critical Finding #3] The myth of the ED frequent flyer is now more clearly understood. Those around our table, in session after session, have not been visiting the ED to get out of the cold or seek meds. They come to the ED with real issues -- illnesses and injuries -- but nearly always experience the same scenario: Long wait time, a few minutes at most with a doctor who rushes through without really listening, minimal diagnostic effort, receive a pain-killer, feel temporarily better because of that pain-killer, sent away with yet another med to add to their collection and the advice that they follow-up with their doctor. A scenario heard over and over again, whether urban or rural*:* ***"Two minutes and out came the Rx pad. All they did was treat my pain that night without ever bothering to figure out -- or deal with -- whatever was actually causing that pain."*** **Repeated ED visits, and repeated treat-and-release experiences, all result from a lack of diagnostic care.** The phrase heard again and again to describe today's EDs: **"*Band-Aid Stations.*"**

It might, in other words, not be the patients who are dysfunctional, but the ED itself, which seems today to be either ill-equipped or unwilling to provide the kind of substantive diagnostic care being sought. **Today's frequent flyer syndrome might be eliminated if real diagnoses took place sooner rather than later, before diseases spiral out of control** -- as in the undetected cancer diagnoses from the man with the stomach pains, the overlooked PE from the woman who came in complaining that it hurt to breathe, etc.

[Critical Finding #4] Getting the voice of the patient heard is a matter of patient safety. The doctors encountered by many of those we heard from rarely listen. A few do, but most don't. Perhaps it is a function of the very complex psycho-social-medical needs of the Medicaid / uninsured population. Needs that are so complex that they cannot be discussed or addressed in the limited time within which doctors are expected to meet productivity expectations. Irrespective of the cause, the result is clear: **Compromised quality of care, a poor patient experience, and a lack of trust between the patient and their care-providers.**

Throughout virtually all of our sessions, we heard:

- **Physically**, doctors are not listening closely enough to figure out what's really wrong with these complicated patients and their time-consuming multi-symptom stories, and how to effectively fix them.
- **Mentally,** with neither formerly-funded individualized listening from a therapist nor formerly-funded structured group listening sessions, BH patients are left on their own to cope with – or not cope with – complicated mental health challenges. Even 24-hour crisis hotlines are quick to listen to the caller's first few sentences and dismissively declare "that's really not a crisis – good bye now" as they move on to the next caller.

The challenge patients face in getting heard is so profound that, as two different participants put it so well, in statements that apply to both mental and physical distress:

> ***"I have to tell them I have suicidal ideation even if I don't. Otherwise they won't listen."***
>
> ***"I have to be totally strung out before I finally get the help I need – why aren't we providing help to people before they get to this point?!"***

The complexity of multiple chronic diseases complicated by behavioral and social challenges, coupled with the lack of listening, were such common denominators across sessions that we took the opportunity to probe these topics during several of our key informant interviews. One physician, reputedly an unusually effective and caring listener, recommended **the concept of incentivizing doctors to listen** by basing a portion of their compensation on their patients' responses to a brief battery of feedback questions regarding their office visit experience. The assumption here is that a satisfied patient who feels that he/she was listened to well -- i.e. heard and understood -- was in fact listened to well, because perception equals reality. This assumption **transforms the listening process into measurable outcomes related to patient's health, quality of care, and the patient experience**.

[Critical Finding #5] **The people who shared their stories were not ignorant about their health conditions and their health needs. They may or may not be educated, but they know their bodies -- and their children's bodies -- better than anyone.** Our new moms and the pregnant first-time moms, for example, were extremely knowledgeable about their pre-natal health and their babies' health, and neither group are running to the ER unnecessarily, panicking about a back pain or a baby's rash. Instead of middle-of-the-night phone calls to their pediatricians or non-essential trips to the ED, they are actively using the Internet -- Googling each week of pregnancy to see what they should be expecting, or visiting parenting sites 24/7 to seek advice and ideas for dealing with their children's symptoms. In session after session, we came away impressed by the self-awareness, knowledge, and personal insight these people possess, and the respect they deserve.

[Critical Finding #6] **Differentiation and segmentation between those who are black or Hispanic or white, urban or rural, is irrelevant.** Around our table, in session after session, we heard about the same experiences, sometimes even using the same words. **We heard variations on the very same themes because, fundamentally, poverty is poverty.** How poverty plays out and how you solve it may vary – transportation challenges in the inner city versus the countryside being one key example – but the needs are the same. **Hunger is hunger. Anxiety is anxiety. Pain is pain. Human caring is human caring.**

[Critical Finding #7] Given the backdrop of poverty and the common denominator it represents across participants, we have now documented the critical role that fundamental human services play in filling the health care resource gap. **People cannot be healthy, and cannot stay activated to manage their complex physical and mental health care needs, unless and until their simple basic needs -- food, clothing, shelter, safety -- are met.** If these needs are not met, then none of the basic health management demands (from showing up to appointments to adhering to complicated prescription regimens) can be met. As one participant so potently explained, **"*When you live in poverty, your health is not your top priority*."**

[Critical Finding #8] **In a thin resource base, those most vulnerable are those least protected. In our community, they are our rural uninsured – many of whom are undocumented and therefore living in perpetual fear.** Today these individuals enjoy none of the rights of citizenship – even those afforded to individuals experiencing poverty. Citizens or not, we have a duty to treat other human beings in a humane and caring way. We need to ensure that their wounds are healed, their bodies are cared for, and that they have a right to live safely in our community. Without a sustained commitment to resources, services and supports for this overlooked and often ignored segment of our community, we are failing to meet our moral duty to other human beings. **We are not just spectators on the sidelines of this debate.**

For starters, **the clinics that serve their routinized needs deserve the funding support required to keep those services affordable** But the problem runs deeper. There is **no safety net today for illness and injury**, either of which might render a worker unable to support themselves and those who depend upon them. From the work done so far, we understand that **county-specific benefits are not appropriate for a mobile population** that needs to follow its work with the seasons, so a

more appropriate funding paradigm becomes a bundle of $$ that follows the person as their geography changes. Even more fundamentally, **how do we create the context of safety for people to come forward when illness and injury occur?** Today these people are understandably afraid to come to our hospitals for their care. The "barefoot doctor" model, bringing basic medical care to those living in remote rural areas in developing countries where urban-trained doctors would not settle, may represent one possible approach. But for more dire conditions, other solutions need to be identified.

Our DSRIP Project 11 will focus specifically the uninsured. Beyond the "young invincible" uninsured, and the "structurally" uninsured, the greatest share of our effort will be dedicated to the rural uninsured.

[Critical Finding #9] The inefficiencies of the system are not the fault of the patients. Over-use and under-use are both inefficient use. **Under-use happens because trust has broken down.** "*If my doctor doesn't listen, why keep going back there?*" **Over-use happens because the transaction hasn't solved the problem.** *"They send me home every time without my problem having been thoroughly diagnosed and addressed, so I end up coming back again and again."* When well-educated, insured individuals go to their doctors and persistently self-advocate, they are celebrated and congratulated for that self-advocacy. When individuals who are financially struggling keep going back trying to get their medical problems solved, they are treated as a frequent flyer nuisance. **Under-use and over-use represent system failure more than people failure.**

[Critical Finding #10] When a doctor treats a financially disadvantaged patient well, and takes the time to demonstrably and truly listen, it restores that patient's humanity. In the course of doing this work, although we heard about many doctors who don't listen and don't seem to care, we also heard about **a sprinkling of exceptional doctors who model excellent behavior and excellent care. These providers treat their Medicaid / Uninsured patients with respect, and are superb role models for the right kind of care.** We heard about Kevin Wentworth in Dansville, Mark Brown and Bill Bayer on Jefferson Avenue, Robin Shaw in LeRoy, Robin Bayne on Orchard Street, Laurie Donohue at Westside, and a few others in the City and beyond. **Some of these caring role model "doctors" are actually mid-level providers [PAs and NPs] but to the people receiving their attentive care that differentiation is immaterial.** In fact, as our health care system evolves, more of the patient relationships and diagnostic work might well be handled by these mid-level providers. Effective and empathetic listening, in other words, is not about the provider's credentials. These outstanding individuals are doing what all good doctors should do – and should be celebrated and emulated for doing so.

APPENDIX C – LIST OF ADDITIONAL HEALTH INFORMATION RESOURCES

1.	FLHSA 2014 Regional Chart Book	http://www.flhsa.org/2014-regional-health-scan
2.	FLHSA 2014 Regional Profile	http://www.flhsa.org/2014-regional-health-scan
3.	FLHSA 2014 Health Disparity Reports	http://www.flhsa.org/2014-disparity-reports
4.	FLHSA Presentations to DSRIP Stakeholders	http://www.flhsa.org/cna
5.	2013 Health Center Profiles (FQHC)	http://bphc.hrsa.gov/uds/datacenter.aspx?q=d&state=NY#glist
6.	DSRIP Consumer Engagement Report	http://www.flhsa.org
7.	Mental hygiene Director Local Service Plans	http://www.clmhd.org
8.	2020 Performance Commission Report	http://www.flhsa.org/2020-commission-on-system-performance
9.	Sage Commission Report	http://www.flhsa.org/sage-commission-final-report
10.	CHCANYS FQHC Report	http://nyshealthfoundation.org/
11.	Monroe County Annual Housing Report	https://www2.monroecounty.gov/files/housingservicesreport

NOTE: The hyperlinks in the text above are not necessarily the full or current URL of the resources. The links are accurate and functional as of December 16, 2014.

APPENDIX D – LIST OF ACRONYMS USED IN THIS REPORT

Acronym	Definition
AIRS	Alliance of Information Referral Systems
BH	Behavioral Health
BRFSS	Behavioral Risk Factor Surveillance System
CBO	Community Based Organization
CCSI	Coordinated Care Systems Inc.
CFC	Catholic Family Centers
CHIR	Community Health Indicator Report
CNA	Community Needs Assessment
COPD	Chronic Obstructive Pulmonary Disease
DSRIP	Delivery System Reform Incentive Program
ED	Emergency Department
EMR	Electronic Medical Record
FFS	Fee for Service
FLPPS	Finger Lakes Performing Provider System
FQHC	Federally Qualified Health Center
FTE	Full-Time Equivalent
HH	Health Home
HIT	Health Information Technology
HPSA	Health Professional Shortage Areas
HRSA	Health Resources and Services Administration
MDC	Major Diagnostic Category
MH	Mental Health
MMC	Managed Medicaid
NOCN	Naturally Occurring Care Network
NTID	National Technical Institute for the Deaf
NYS	New York State
NYSDOH	NY State Department of Health
PCP	Primary Care Physician
PDI	Pediatric Prevention Quality Indicatory
PHI	Protected Health Information
PPR	Potentially Preventable Readmission
PPS	Performing Provider System
PPV	Potentially Preventable [ED] Visit
PQI	Prevention Quality Indicator
RHIO	Regional Health Information Organization
RN	Registered Nurse
RSD	Rochester School for the Deaf
SPARCS	Statewide Planning and Research Cooperative System
SPMI	Serious and Persistent Mental Illness
SUD	Substance Use Disorder
UCC	Urgent Care Center
YPLL	Years of Potential Life Lost

CITATIONS

Adler, N. E., & Rehkopf, D. H. (2008). US disparities in health: descriptions, causes, and mechanisms. *Annu. Rev. Public Health, 29*, 235-252.

Afilalo, J., Marinovich, A., Afilalo, M., Colacone, A., Leger, R., Unger, B., & Giguere, C. (2004). Nonurgent emergency department patient characteristics and barriers to primary care. *Academic Emergency Medicine, 11*(12), 1302-1310.

Arbaje, A. I., Wolff, J. L., Yu, Q., Powe, N. R., Anderson, G. F., & Boult, C. (2008). Postdischarge environmental and socioeconomic factors and the likelihood of early hospital readmission among community-dwelling Medicare beneficiaries. *The Gerontologist, 48*(4), 495-504.

Boyle CA, Boulet S, Schieve L, Cohen RA, Blumberg SJ, Yeargin-Allsopp M, Visser S, Kogan MD. Trends in the Prevalence of Developmental Disabilities in US Children, 1997–2008. Pediatrics. 2011Berkman, N. D., Davis, T. C., & McCormack, L. (2010). Health literacy: what is it? *Journal of Health Communication, 15*(S2), 9-19.

Calvillo–King, L., Arnold, D., Eubank, K. J., Lo, M., Yunyongying, P., Stieglitz, H., & Halm, E. A. (2013). Impact of social factors on risk of readmission or mortality in pneumonia and heart failure: systematic review. *Journal of General Internal Medicine, 28*(2), 269-282.

Centers for Disease Control and Prevention. (2013). Preventing Chronic Diseases and Reducing Health Risk Factors. from http://www.cdc.gov/nccdphp/dch/programs/healthycommunitiesprogram/overview/diseasesandrisks.htm

Coleman, K., Austin, B. T., Brach, C., & Wagner, E. H. (2009). Evidence on the Chronic Care Model in the new millennium. *Health Affairs, 28*(1), 75-85.

Community Health Care Association of New York State. A Plan for Expanding Sustainable Community Health Centeres in New York. April 2013.

Enthoven, A. C. (2009). Integrated delivery systems: the cure for fragmentation. *American Journal of Managed Care, 15*(12), S284.

Finger Lakes Health Systems Agency. (2014) Health Disparity Reports. Rochester, NY.

Finger Lakes Health Systems Agency. (2004) Deaf Health Task Force Report. Rochester, NY.

Goldfield, N. I., McCullough, E. C., Hughes, J. S., Tang, A. M., Eastman, B., Rawlins, L. K., & Averill, R. F. (2008). Identifying potentially preventable readmissions. *Health care financing review, 30*(1), 75.

Ham, C. (2010). The ten characteristics of the high-performing chronic care system. *Health Economics, Policy and Law, 5*(01), 71-90.

Haupt, D. W., & Newcomer, J. W. (2001). Hyperglycemia and antipsychotic medications. *Journal of Clinical Psychiatry, 62*(27), 15-26.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry, 62*(6), 593-602.

Kyle, T., & Dunn, J. (2008). Effects of housing circumstances on health, quality of life and healthcare use for people with severe mental illness: a review. *Health & Social Care in the Community*, 1-15.

Lindquist, L. A., Go, L., Fleisher, J., Jain, N., Friesema, E., & Baker, D. W. (2012). Relationship of health literacy to intentional and unintentional non-adherence of hospital discharge medications. *Journal of General Internal Medicine, 27*(2), 173-178.

Nardone, M., Snyder, S., & Paradise, J. (2014). Integrating Physical and Behavioral Health Care: Promising Medicaid Models *Issue Brief*. Menlo Park, CA: The Kaiser Family Foundation.

National Alliance on Mental Illness. (2014). Suicide. from http://www.nami.org/Template.cfm?Section=By_Illness&Template=/ContentManagement/ContentDisplay.cfm&ContentID=23041

Paasche-Orlow, M. K., Parker, R. M., Gazmararian, J. A., Nielsen-Bohlman, L. T., & Rudd, R. R. (2005). The prevalence of limited health literacy. *Journal of General Internal Medicine, 20*(2), 175-184.

Plumb J, Weinsten LC, Brawer R, & Scott K (2012). Community-Based Partnerships for Improving Chronic Disease Management. Department of Family and Community Medicine Faculty Papers. Paper 29. http://jdc.jefferson.edu/fmfp/29/

Starfield, B. (1994). Is primary care essential? *The Lancet, 344*(8930), 1129-1133.

Urban Indian Health Commission. Invisible Tribes: Urban Indians and Their Health in a Changing World. Seattle: Urban Indian Health Commission, 2007.

Western Region Behavioral Health Organization. (2014). Q4 2013 Performance Report *New York Care Coordination Program*.