

# Transformation Data & Community Needs Report



**HTC**  
Healthcare Transformation  
Collaboratives

ROCKFORD AREA  
October 2022

This report was prepared by the University of Illinois at Chicago (UIC) School of Public Health, Department of Psychology and Institute for Healthcare Delivery Design and Southern Illinois University (SIU) School of Medicine's Center for Rural Health and Social Service Development for the Illinois Department of Healthcare and Family Services. This report details the findings and methods for a study UIC conducted to understand health outcomes and community needs in socially vulnerable areas in the State of Illinois.

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# Executive Summary

Healthcare policies enacted during the past decade incentivize healthcare systems receiving public funding to be more accountable for health outcomes in the communities that they serve. These policies are reflected in many forms, including triennial community needs assessments, value-based care models, accountable care organizations, and integrated health home models of care, among others. In spite of these efforts to change the status quo, poor health outcomes and health inequities persist, especially in communities with underlying social vulnerabilities. This reality suggests the need for a new approach.

In recognition of this need, the Illinois Department of Healthcare and Family Services (HFS) in 2019 initiated a healthcare transformation program with the goal of providing healthcare systems and other health-related organizations with financial assistance to transform services and care models to better meet communities' unmet needs. HFS engaged the Institute for Healthcare Delivery Design and the School of Public Health at the University of Illinois at Chicago (UIC) to develop an approach to measure health needs in Illinois communities with high rates of social vulnerability and to use that data to direct transformation funding to reduce existing health disparities and improve the health of Illinoisans. The approach developed by the UIC team combines analysis of Medicaid hospital utilization data for specific areas of the state with input from community members who were primarily, but not exclusively, publicly insured, gathered during in-depth conversations conducted by community-

based organization partners to give a fuller picture of communities' wants and needs.

Community input combined with data analysis converged around a set of disease groups and conditions driving hospitalizations, each of them frequent, resource intensive, and contributing to poor health outcomes—and for which hospital-level care can be avoided with outpatient care, coordination of treatment, and community-based supports. These key disease groups and conditions are:

- mental illness, in particular bipolar and depressive disorders
- substance use disorders, especially alcohol and opioid use disorders
- a subset of “ambulatory care sensitive conditions” or ACSCs: hypertensive diseases, diabetes, chronic obstructive pulmonary disease (COPD)/asthma, and heart disease

By definition, ACSCs are health conditions for which either good outpatient care can potentially prevent the need for hospitalization or early intervention can prevent complications and progression to more severe disease. The same can be said for substance use disorders and bipolar and depressive disorders.

Access to quality primary and specialty care is critical to decreasing hospital-level care for ACSCs, mental illnesses and substance use disorders. However, as this report highlights, there's a lack of access to quality care for vulnerable populations. Often, this lack of access is driven by healthcare access and quality of care challenges as

well as social, economic, and other "social-determinant-of-health" barriers that people face in achieving health (for example, lack of health literacy, discrimination, inequitable geographic distribution of healthcare services, transportation barriers, etc.) In other words, this is a problem that sits within both the healthcare system and the social fabric of communities.

Creating a middle ground in which hospitals and communities work together to achieve better health outcomes can become the basis for transformation that enables and sustains healthier lives. More specifically, this report's findings suggest that transformation efforts concentrate on building and strengthening linkages between clinical care and community needs. In other words, transformation should focus on "clinic-community linkages" that provide patient-centered, culturally-competent and community-based primary and secondary care and wraparound services to help people manage chronic illnesses, mental illnesses, and substance use disorders and reduce social-determinant-of-health barriers to care and treatment.

Clinic-community linkages can leverage the treatment expertise of healthcare systems and on-the-ground knowledge gained via community engagement and partnerships with community-based organizations, to provide more accessible, holistic, patient-centered care and support a more active approach to chronic disease management. In addition, clinic-community linkages can be a way to broadcast more information about healthcare resources, restore trust in the healthcare system in socially vulnerable communities and hold the promise of increasing engagement in healthcare over time. If healthcare systems and communities can adopt these new ways

of engaging with one another, the current healthcare delivery paradigm will shift from siloed and transactional to relationship-based and collaborative.

The data in this report is intended as a resource for hospitals, legislators, community-based organizations, and other key stakeholders to help them focus, prioritize, and plan efforts to address and more effectively manage the most frequent and resource-intensive diseases and conditions in a culturally competent manner and to produce better, more sustainable health outcomes that are equitable and just.

The UIC research team completed a series of analyses to establish the recommendations in this report as follows:

- 1:** Identified areas in Illinois with the greatest concentration of social vulnerability to health inequities and poor health outcomes
- 2:** Examined the most frequent and resource-intensive diseases driving Medicaid enrollee hospitalizations in 5 of these socially vulnerable areas and discovered a set of disease groups and conditions for which access to quality outpatient care can prevent the need for hospitalization
- 3:** Engaged community members from socially vulnerable areas in conversations and identified barriers to outpatient care, disease prevention, and treatment adherence
- 4:** Synthesized findings from the data analyses and the community conversations to define transformation opportunities for stimulating outpatient care access and reducing the social barriers to care and treatment

Detailed findings from each of these analyses follow, with particular attention on findings for Rockford.



# Detailed Findings

## 1: Identified areas in Illinois with the greatest concentration of social vulnerability to health inequities and poor health outcomes

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The Center for Disease Control's Social Vulnerability Index combines a number of factors such as poverty, lack of access to transportation, and crowded housing into an overall measure of vulnerability by census tract. Areas with higher levels of social vulnerability are more susceptible to health problems. This measure was a key index used in this study to determine the areas of Illinois with the highest levels of social vulnerability, areas susceptible to health inequities.

To identify Illinois areas with high social vulnerability and high susceptibility to health inequities, counties were analyzed individually and, where applicable, in combination, corresponding to Illinois metropolitan and micropolitan statistical areas designated by the U.S. Office of Management and Budget (OMB) (1). Population density, U.S. census-derived indicators of social vulnerability and socioeconomic distress, demographic factors, and history guided the selection of the study areas analyzed for this report. Racially and ethnically diverse population centers are often characterized by marked social and economic contrasts causally associated with health inequities by race and place (2–4). "Place stratification"—in which institutional factors (for example, structural racism) prevent minorities, especially black and brown Americans, from using their socioeconomic means to access

communities with greater resources and opportunities—has been implicated in these inequities (5, 6). Significant health gaps also exist between rural and urban residents in Illinois. These include higher rates of smoking and obesity-related health problems, overdose deaths, and being uninsured (7). Decreased spatial accessibility to healthcare providers and services in rural areas only exacerbates vulnerability to the health inequities as a consequence of geography.

Research for this project focused on 9 of the most socially vulnerable areas in Illinois:

- 4 areas within Cook County—the South Side of Chicago, the West Side of Chicago, South Cook County, and West Cook County
- 5 areas outside of Cook County—the Danville Metropolitan Statistical Area (Danville), the East St. Louis Metropolitan Statistical Area (East St. Louis), the Marion Health Region, the Peoria Metropolitan Statistical Area (Peoria), and the Rockford Metropolitan Statistical Area (Rockford)

This report contains data findings from the 5 socially vulnerable areas outside of Cook County (see Figure 1), with particular attention on findings for Rockford, and contains community-input findings from Rockford.

**Figure 1: Study Area Maps with Zip Code Boundaries**

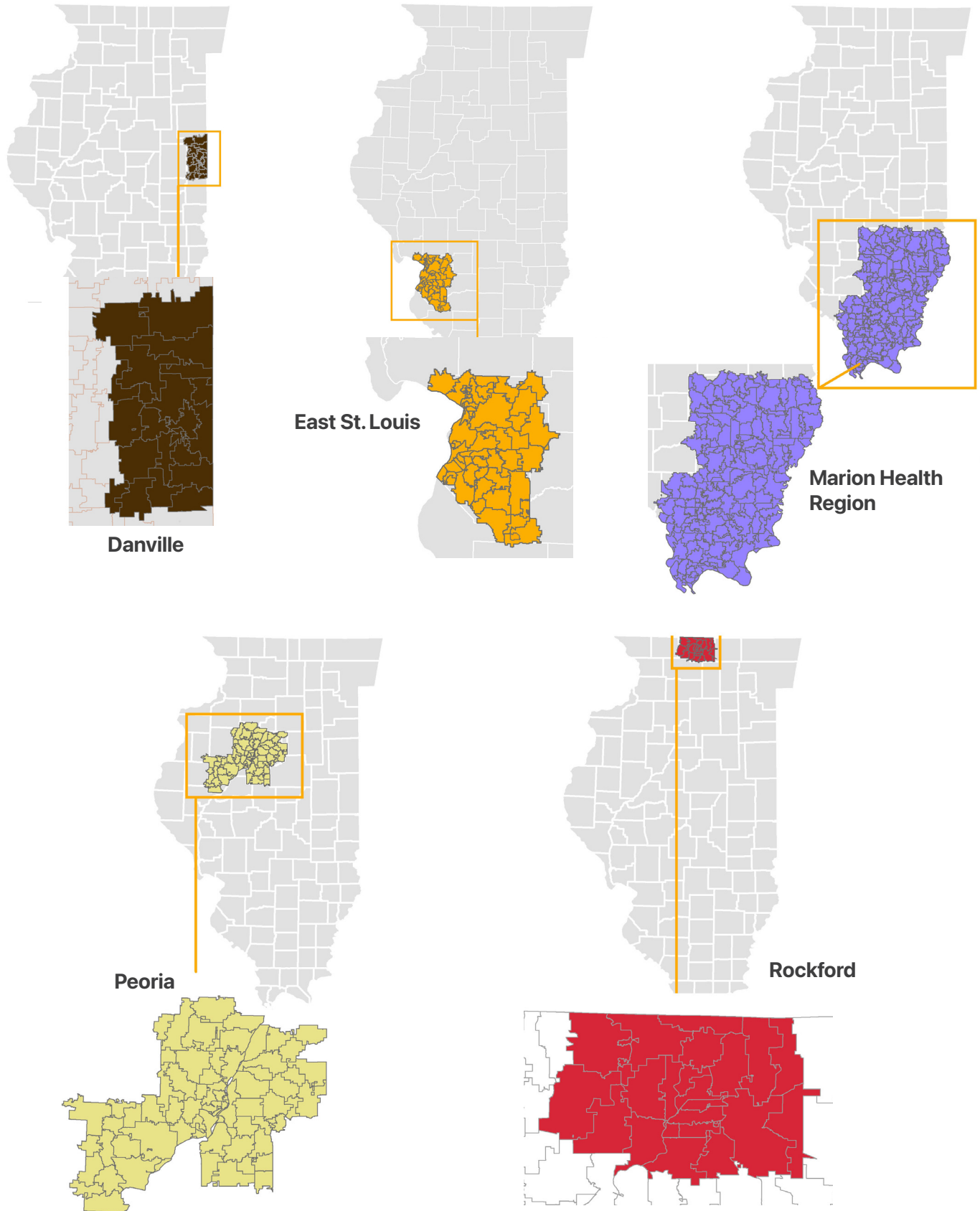


Figure 1 Continued

**Danville Zip Codes (24)**

60932	60963	61812	61831	61834	61846	61857
60942	61810	61814	61832	61841	61848	61858
60960	61811	61817	61833	61844	61850	61865
61870	61876	61883				

**East St. Louis Zip Codes (55)**

62001	62034	62061	62095	62281	62207	62232
62002	62035	62062	62097	62294	62208	62239
62010	62040	62067	62201	62059	62220	62240
62018	62046	62074	62234	62203	62221	62243
62021	62048	62084	62249	62204	62223	62255
62024	62058	62087	62254	62205	62225	62257
62025	62060	62090	62269	62206	62226	62258
62260	62264	62282	62285	62289	62293	

**Marion Health Region Zip Codes (199)**

62914	62949	62839	62838	62919	62997	62952
62957	62951	62858	62880	62931	62928	62961
62962	62959	62879	62885	62947	62938	62998
62969	62974	62899	62812	62982	62941	62410
62988	62801	62413	62819	62432	62956	62818
62990	62807	62427	62822	62436	62963	62863
62901	62849	62433	62825	62445	62964	62446
62903	62853	62449	62836	62448	62970	62809
62907	62854	62451	62856	62475	62976	62823
62916	62870	62454	62860	62479	62992	62833
62924	62875	62478	62865	62480	62996	62837
62927	62881	62476	62874	62481	62419	62842
62932	62882	62806	62884	62912	62421	62843
62940	62892	62815	62890	62923	62425	62850
62942	62893	62401	62891	62939	62450	62851
62950	62810	62411	62896	62943	62452	62878
62958	62814	62424	62897	62967	62868	62886
62966	62816	62426	62983	62972	62917	62895
62975	62830	62443	62999	62985	62930	62820
62994	62846	62461	62867	62995	62935	62821
62841	62864	62467	62871	62417	62946	62827
62902	62872	62473	62934	62439	62965	62835
62915	62883	62011	62954	62460	62977	62844
62918	62889	62080	62979	62466	62987	62861
62921	62894	62414	62984	62238	62905	62862
62922	62898	62418	62817	62274	62906	62869
62933	62434	62458	62828	62832	62920	62887
62948	62824	62471	62859	62888	62926	62908
62910	62953	62960				

Figure 1 Continued

**Peoria Zip Codes (85)**

61415	61520	61540	61536	61607	61535	61755
61427	61531	61541	61539	61614	61550	61759
61431	61542	61565	61547	61615	61554	61516
61432	61543	61451	61552	61616	61564	61530
61433	61544	61517	61559	61625	61568	61545
61441	61553	61523	61562	61421	61571	61548
61459	61563	61524	61569	61426	61610	61561
61477	61369	61525	61602	61449	61611	61570
61482	61375	61526	61603	61479	61721	61729
61484	61377	61528	61604	61483	61733	61738
61501	61424	61529	61605	61491	61734	61742
61519	61537	61533	61606	61534	61747	61760
61771						

**Rockford Zip Codes (25)**

61008	61038	61024	61073	61080	61102	61107
61011	61065	61063	61077	61088	61103	61108
61012	61016	61072	61079	61101	61104	61109
61111	61112	61114	61115			

Figure 2: Demographic Traits of Study Areas<sup>1</sup>

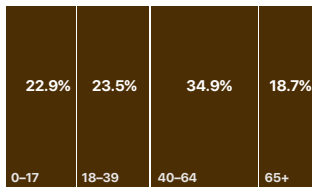
### Danville

**74,425**

Total Population

**50.6%** **49.4%**

Female Male



Age

**92.8%** **2.6%** **3.0%** **1.6%**

White Black Latino Other

Race

**77.4** **\$56,083** **10.2%**  
Life expectancy Median income % of population no HS diploma

**4.9%** **11.2%**  
% of population unemployed % of population living below the poverty rate

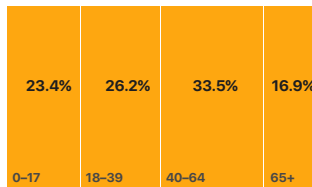
### East St. Louis

**524,778**

Total Population

**51.7%** **48.3%**

Female Male



Age

**76.2%** **18.5%** **2.8%** **2.5%**

White Black Latinx Others

Race

**76.8** **\$63,149** **9.1%**  
Life expectancy Median income % of population no HS diploma

**7.0%** **14.8%**  
% of population unemployed % of population living below the poverty rate

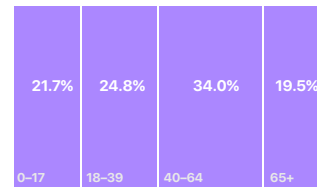
### Marion Health Region

**532,806**

Total Population

**49.4%** **50.6%**

Female Male



Age

**92.5%** **3.4%** **1.8%** **2.3%**

White Black Latino Other

Race

**77.8** **\$53,058** **11.6%**  
Life expectancy Median income % of population no HS diploma

**6.8%** **15.2%**  
% of population unemployed % of population living below the poverty rate

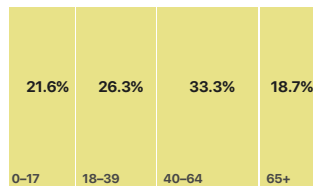
### Peoria

**401,049**

Total Population

**49.5%** **50.5%**

Female Male



Age

**91.9%** **2.9%** **2.6%** **2.6%**

White Black Latinx Others

Race

**78.9** **\$66,040** **8.9%**  
Life expectancy Median income % of population no HS diploma

**5.5%** **11.1%**  
% of population unemployed % of population living below the poverty rate

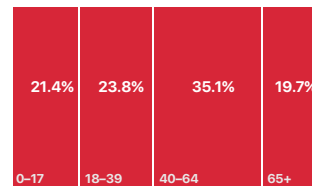
### Rockford

**337,383**

Total Population

**51.3%** **48.7%**

Female Male



Age

**78.2%** **7.3%** **10.6%** **3.9%**

White Black Latinx Others

Race

**78.5** **\$68,822** **12.4%**  
Life expectancy Median income % of population no HS diploma

**7.4%** **10.6%**  
% of population unemployed % of population living below the poverty rate

<sup>1</sup>Total population figures listed here are estimates.

Data Source: U.S. Census Bureau American Community Survey Subject Tables 5-Year estimates, 2019. Tables S0101, B0101B, B0101C, B0101D, B0101E, B0101H, and B0101I, <https://www.census.gov/acs/www/data/data-tables-and-tools/subject-tables/>

The process used to identify areas in Illinois with high social vulnerability is as follows:

1. *Geographical areas defined:* 3 types of geographical areas were defined for the analysis: metropolitan statistical areas (MSA<sup>1</sup>) [n = 14], micropolitan statistical areas (μSA<sup>2</sup>) [n = 17], and counties that were neither [n = 39]. In Illinois, MSAs are usually composed of multiple counties, whereas μSAs are typically a single county. Included as an area is the Marion Health Region, which consists of MSAs, μSAs and freestanding counties. See Table 1 for more details.

2. *Social vulnerability measured:* Social Vulnerability Index (SVI) percentile rankings for all Illinois counties were obtained from the U.S. Centers for Disease Control and Prevention (CDC) (8, 9). Social vulnerability refers to the potential negative effects on

communities caused by external stresses on human health, such as natural or human-caused disasters and disease outbreaks (10). The CDC’s Social Vulnerability Index (CDC-SVI) uses 15 U.S. census-derived social factor variables, including poverty, lack of vehicle access, and crowded housing, and groups them into 4 related themes: socioeconomic status, household composition, race/ethnicity/language, and housing/transportation (see Figure 3). Since the county-level CDC-SVI percentiles are standardized to the state, “scores” for individual counties ranged from 0 to 100. For MSAs and μSAs composed of more than one county, the CDC-SVI percentile score for the entire geography was calculated based on the population-weighted average of the state-standardized CDC-SVI percentile ranks for the component counties.

**Figure 3: Social Vulnerability Index Themes and Variables. 5-Year Estimates from the American Community Survey (ACS), 2014–2018a**

Overall Vulnerability			
Housing Type & Transportation	Minority Status & Language	Household Composition & Disability	Socioeconomic Status
Group Quarters	Speaks English "Less than Well"	Single-Parent Households	No High School Diploma
No Vehicle		Older than 5 with a Disability	Income
Crowding	Minority	Aged 17 or Younger	Unemployed
Mobile Homes		Aged 65 or Older	Below Poverty
Multi-Unit Structures			

<sup>1</sup>An MSA is a geographical region with a relatively high population density at its core and close economic ties throughout the area. It is composed of one or more counties (or equivalents) anchored by an urban center of at least 10,000 people plus adjacent counties that are socioeconomically tied to the urban center by commuting and employment.

<sup>2</sup>A uSA generally has fewer than 50,000 people.

Note: The Marion Health Region, one of the 7 Illinois Department of Public Health (IDPH) Regions, is located in the south/southeast section of the state (11). The Marion Health Region includes all 3 types of geographies (MSAs,  $\mu$ SAs, and freestanding counties), and, in contrast to the other 6 health regions, the SVI percentile scores of nearly all of its counties were above average. This is a particularly rural area of the state and, when analyzed individually at the MSA,  $\mu$ SA, or county level, doesn't reflect the widespread social vulnerabilities in this area. However, when analyzed collectively, in this case using IDPH's definition of this region, it can more effectively be recognized for the level of social vulnerability that exists here.

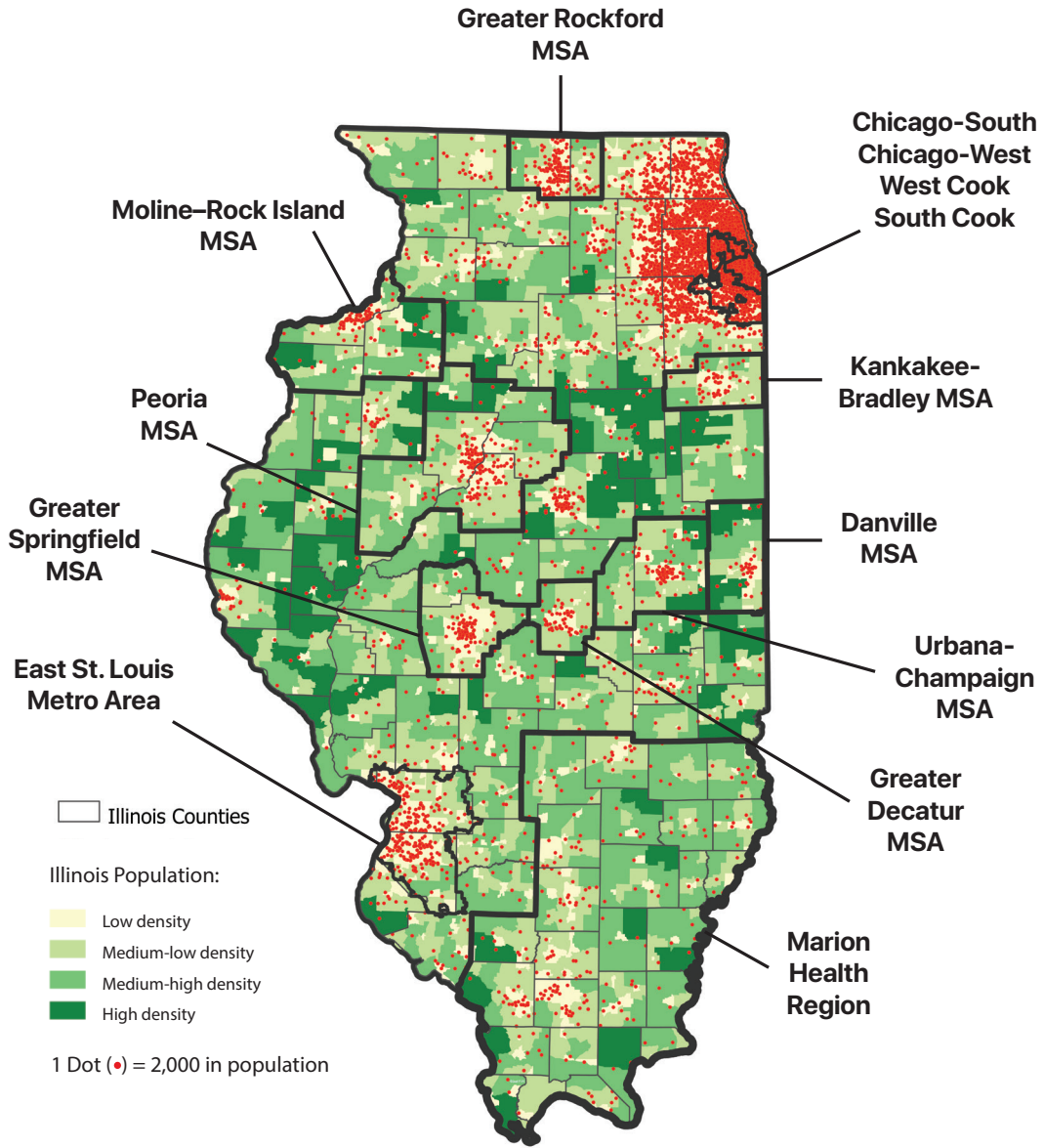
*3. Geographical areas ranked based on CDC-SVI percentile scores:* Geographical areas were ranked based on CDC-SVI percentile scores. Areas with scores >50 ("above average") [n = 35] were designated as potential priority locations (see Figure 4).

*4. Most socially vulnerable areas identified using zip code-level data:* Last, CDC-SVI percentile scores at the zip code level—where available—were used to help identify areas within counties and counties within statistical areas that were driving above average scores in geographical areas (see the last column in Table 1). Zip codes in each geographical area that were designated by the state as being disproportionately impacted by the economic effects of COVID-19 ("disproportionately impacted areas" or [DIAs]) (12) were also identified (see bolded zip codes in the last column of Table 1).

The findings in this report are organized around the following socially vulnerable areas: Danville, East St. Louis, the Marion Health Region, Peoria, and Rockford.

(Separate reports have been compiled for the socially vulnerable areas in Cook County: South Chicago, South Cook, West Chicago, and West Cook.)

**Figure 4: Areas in Illinois<sup>1</sup> with Above Average (>50th Percentile) Social Vulnerability Index Scores**



<sup>1</sup>This map does not include 6 micropolitan areas in Illinois that have above average Social Vulnerability Scores. These areas are contained in Table 1.

MSA stands for metropolitan statistical area.



**Table 1: Statewide Scan of Areas in Illinois with Above Average (>50th Percentile) Social Vulnerability Scores**

## 1. Whole or Partial Metropolitan Statistical Areas (MSA) [8]

<i>Areas with CDC Social Vulnerability Index Percentile Score &gt; 50<sup>1</sup></i>	<i>Pop. Count<sup>2</sup></i>	<i>CDC-SVI%-tile Score<sup>3</sup></i>	<i>Percentile Score-Driving County, City, or Other Geography [SVI score]</i>	<i>Pop. Count<sup>2</sup></i>	<i>Sample of Zip Codes w/ SVI Score &gt; 75<sup>4</sup> ("most vulnerable")</i>
<b>Danville [Vermillion CTY]</b>	75,758	98.0			<b>61832</b>
<b>Bradley-Kankakee [Kankakee CTY]</b>	109,862	91.1			60901, 60950, 60958
<b>Rockford</b>	336,116	88.1	Winnebago Cty [93.1]	282,572	61101, 61102, 61103
<b>Chicago-South</b>	1,026,829	87.6			<b>60621, 60636, 60637</b>
<b>Chicago-West</b>	590,175	83.5			<b>60623, 60624, 60644</b>
<b>Decatur [Macon CTY]</b>	104,009	78.2	Decatur, IL [77.5]	85,381	<b>62522, 62523, 62526</b>
<b>Moline-Rock Island [Rock Island CTY]</b>	206,229	69.0	Rock Island, IL [86.0]	141,879	<b>61201, 61443</b>
<b>Springfield [Sangamon CTY]</b>	197,661	60.4			62701, 62702, 62703
<b>East St. Louis Metro<sup>5</sup></b>	522,652	58.8	East St. Louis [93.6]	55,995	<b>62201, 62203, 62204</b>
<b>West Cook</b>	529,407	58.0			<b>60104, 60153, 60804</b>
<b>South Cook</b>	895,830	56.6			<b>60472, 60501, 60827</b>
<b>Champaign-Urbana [Champaign CTY]</b>	209,448	53.5			<b>61801, 61820</b>
<b>Peoria</b>	400,561	50.1	Fulton, Cty [82.2], Peoria, Cty [77.2]	55,995	62201, 62203, 62204
<b>Total</b>	5,256,685				

## 2. Micropolitan Statistical Areas (μSA) [6]

<b>Macomb, IL [McDonough CTY]</b>	29,682	72.2			-
<b>Freeport, IL [Stephenson CTY]</b>	44,498	68.3			<b>61032</b>
<b>Pontiac, IL [Livingston CTY]</b>	35,648	62.4			-
<b>Jacksonville, IL</b>	38,609	61.2	Morgan Cty [67.3]	33,658	-
<b>Galesburg, IL [Knox CTY]</b>	51,453	60.2	Galesburg, IL [74.7]	33,964	<b>61401</b>
<b>Charleston-Mattoon, IL</b>	61,387	59.7	Coles Cty [66.3]	50,621	-
<b>Total</b>	261,277				

Table 1 Continued

### 3. Marion Health Region

<i>Areas with CDC Social Vulnerability Index Percentile Score &gt; 50<sup>1</sup></i>	<i>Pop. Count<sup>2</sup></i>	<i>CDC-SVI%-tile Score<sup>3</sup></i>	<i>Percentile Score-Driving County, City, or Other Geography [SVI score]</i>	<i>Pop. Count<sup>2</sup></i>	<i>Sample of Zip Codes w/ SVI Score &gt; 75<sup>4</sup> ("most vulnerable")</i>
<b>Statistical areas [5]</b>					
<b>Mount Vernon, IL μSA [Jefferson CTY]</b>	37,684	97.0			<b>62846, 62864, 62872</b>
<b>Centralia, IL μSA [Marion CTY]</b>	37,205	95.1			<b>62801, 62882</b>
<b>Cape Girardeau, MO-IL MSA [Alexander CTY]</b>	5,761	94.9			62914
<b>Paducah, KY-IL μSA [Massac CTY]<sup>6</sup></b>	13,772	94.1			-
<b>Carbondale-Marion MSA</b>	136,764	72.9	Jackson [87.1]	58,551	<b>62901, 62902, 62903</b>
<b>Other Marion Health Region Counties [15]</b>					
<b>Saline</b>	23,491	99.0			62930, 62946
<b>Lawrence</b>	15,678	96.0			62460, 62466
<b>Union</b>	16,653	92.1			<b>62906</b>
<b>Pulaski</b>	5,335	85.2			-
<b>Perry</b>	20,916	84.2			-
<b>Clay</b>	13,184	83.2			62879
<b>Franklin</b>	38,469	86.1			-
<b>Fayette</b>	21,336	79.2			-
<b>White</b>	13,537	74.3			-
<b>Gallatin</b>	4,828	72.3			62934, 62954, 62984
<b>Hardin</b>	3,821	71.3			62919, 62931, 62947
<b>Richland</b>	15,513	65.4			-
<b>Wayne</b>	16,215	64.4			62885, 62886
<b>Pope</b>	4,177	56.4			-
<b>Crawford</b>	18,667	51.5			-
<b>Total</b>	<b>463,006</b>				

<sup>1</sup>CDC-SVI: <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>

<sup>2</sup>American Community Survey 2014–2018 5-Year Estimates: <https://data.census.gov/cedsci/all?d=ACS%205-Year%20Estimates%20Detailed%20Tables>

<sup>3</sup>From CDC based on 2018 estimates: [https://www.atsdr.cdc.gov/placeandhealth/svi/data\\_documentation\\_download.html](https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html)

<sup>4</sup>Zip-code level SVI scores were sourced from Covid-19 Healthcare Coalition/Mitre: <https://c19hcc.org/resource/vulnerable-population>

<sup>5</sup>St. Clair and Madison Counties

<sup>6</sup>Highest zip code = 62960, Metropolis (pop. ~ 11,250)

Last, a bolded zip code means that is also designated as being a disproportionately impacted area (DIA) due to COVID-19 by the Illinois Department of Commerce and Economic Opportunity: <https://www2.illinois.gov/dceo/SmallBizAssistance/Pages/C19DisadvantagedBusGrants-test.aspx>

## 2: Examined the most frequent and resource-intensive diseases driving Medicaid enrollee hospitalizations in the study areas and discovered a set of disease groups and conditions for which access to quality outpatient care can prevent the need for hospitalization

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Once the areas of Illinois with the highest SVI scores were determined, the next step was to develop a true understanding of health outcomes for the most vulnerable population in each area. To measure health outcomes across study areas, FY2019 and FY2020 Medicaid patient-level utilization data was analyzed. (Note: the FY2020 data contains data from March to June 2020, the initial 3 months of the COVID-19 pandemic.) Three data sets were analyzed: an “institutional” data set, a “recipient file” data set, and, in the case of East St. Louis, an FY2018 “noninstitutional” data set.

The institutional data set contained Medicaid recipients’ healthcare encounters (inpatient admissions, outpatient visits, and ED visits) at hospital/medical center systems. Key fields in this data set included the following:

- hospital system provider name (system in which the healthcare encounter occurred)
- zip code of hospital system provider (where the encounter occurred)
- recipient ID
- recipient zip code (indicating home address of recipient)
- service type (inpatient, outpatient, or renal)
- ER indication (indicates if the encounter is an emergency room visit)
- admission and discharge dates
- ICD-10 code and description (principal diagnosis for the encounter)
- Diagnosis related group (DRG) code

The noninstitutional data contained Medicaid

recipients’ outpatient visits to independent healthcare providers. Key fields in this data set included the following:

- provider type and description
- category of service and description
- provider zip code
- recipient ID
- recipient zip code (indicating home address of recipient)
- behavioral health indication (indicates if encounter is for behavioral health)
- service date
- ICD-10 code and description (principal diagnosis for the encounter)

(Note: FY2019 and FY2020 noninstitutional data was not available for analysis due to technical issues related to data size. See the “Limitations and Opportunities for Future Research” section of this report for more details as well as information about additional data-analysis constraints.)

The recipient file data set contained demographic data for Medicaid recipients in each study area, specifically sex, date of birth, and race data by unique recipient ID. (Note: Age at time of encounter was derived from recipient date of birth.)

The institutional and recipient data sets represent hospitalization and ED visit encounters for FY2019 and FY2020 for all Medicaid recipients living within the zip codes of areas defined in this study (specifically, all recipients with home zip codes within the study areas). In other words, the data track hospital and ED utilization by

Medicaid recipients living in the study areas, regardless of where that care took place.

Key to analyzing the data was categorizing International Classification of Diseases, Clinical Modification (ICD-10-CM) codes, the principal diagnosis for a healthcare encounter. To bucket these diagnosis codes into analytic categories, the data analysis team used the Centers for Medicare & Medicaid Services' (CMS) 2020 ICD-10-CM Tabular List of Diseases and Injuries (<https://>

[www.cms.gov/Medicare/Coding/ICD10/Downloads/2020-Coding-Guidelines.pdf](https://www.cms.gov/Medicare/Coding/ICD10/Downloads/2020-Coding-Guidelines.pdf)). This structured list of diagnosis codes is divided into 21 chapters based on body system or condition. Each chapter contains disease or injury blocks and the ICD-10 codes that make up those blocks (so the hierarchy is ICD-10 code > block > chapter). The chapters of the CMS ICD-10-CM Tabular List of Diseases and Injuries are as follows:

<i>Chapter Number and Title</i>	<i>ICD-10 Code Range</i>
1 Certain infectious and parasitic diseases	A00–B99
2 Neoplasms	C00–D49
3 Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	D50–D89
4 Endocrine, nutritional, and metabolic diseases	E00–E89
5 Mental, behavioral, and neurodevelopmental disorders	F01–F99
6 Diseases of the nervous system	G00–G99
7 Diseases of the eye and adnexa	H00–H59
8 Diseases of the ear and mastoid process	H60–H95
9 Diseases of the circulatory system	I00–I99
10 Diseases of the respiratory system	J00–J99
11 Diseases of the digestive system	K00–K95
12 Diseases of the skin and subcutaneous tissue	L00–L99
13 Diseases of the musculoskeletal system and connective tissue	M00–M99
14 Diseases of the genitourinary system	N00–N99
15 Pregnancy, childbirth, and the puerperium	O00–O9A
16 Certain conditions originating in the perinatal period	P00–P96
17 Congenital malformations, deformations, and chromosomal abnormalities	Q00–Q99
18 Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	R00–R99
19 Injury, poisoning, and other consequences of external causes	S00–T88
20 External causes of morbidity	V00–Y99
21 Factors influencing health status and contact with health services (includes the diagnoses codes for live-born infants)	Z00–Z99

### Initial Analyses

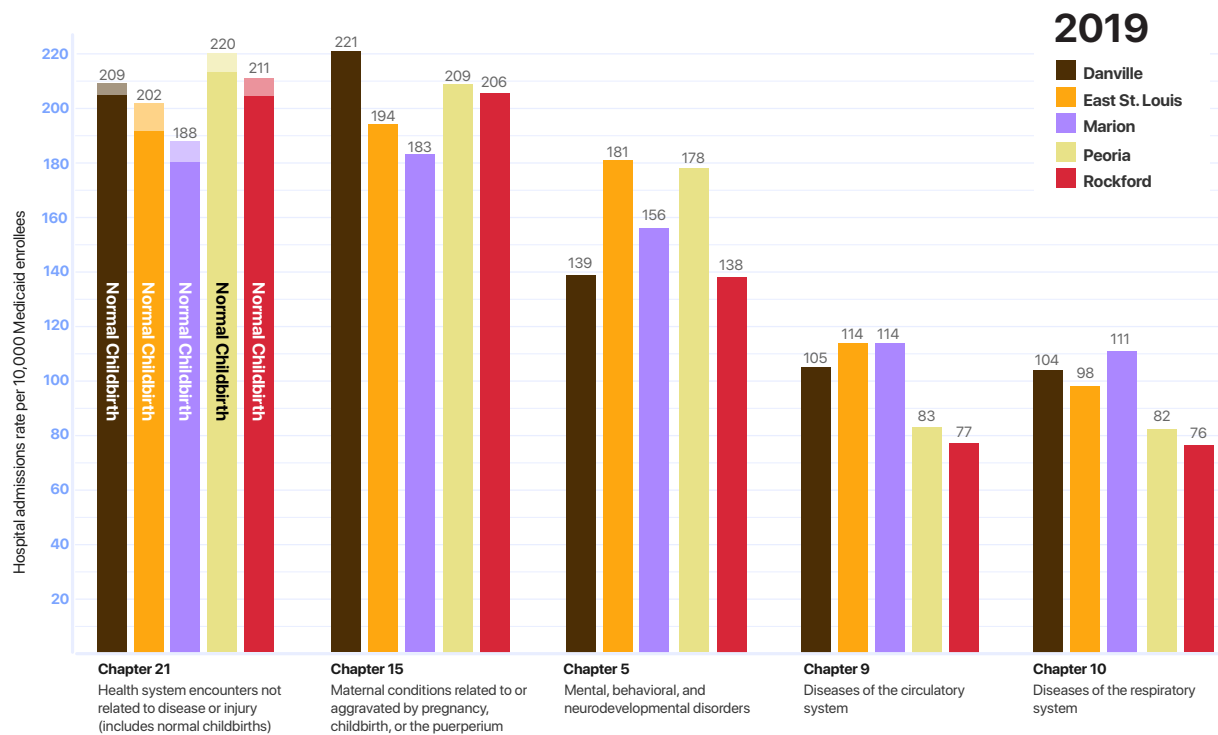
After getting to know the data sets via review of fields and variables, running histograms of variables, and doing basic data cleaning and new data creation (for example, patient age at time of the patient encounter), the data analytics team produced an initial set of descriptive statistics.

For the institutional data set, these initial analyses included looking at the distribution of healthcare encounters by demographic data (inpatient hospitalizations and ED visits by race, age, and sex by study area) and market share of hospitals receiving Medicaid patients by study area (see Appendix A for graphs of this data).

Initial analyses also included looking at the distribution of health outcomes, specifically the frequency distribution of chapters and blocks for inpatient hospitalizations. These analyses provided a basic picture of utilization and health outcomes.

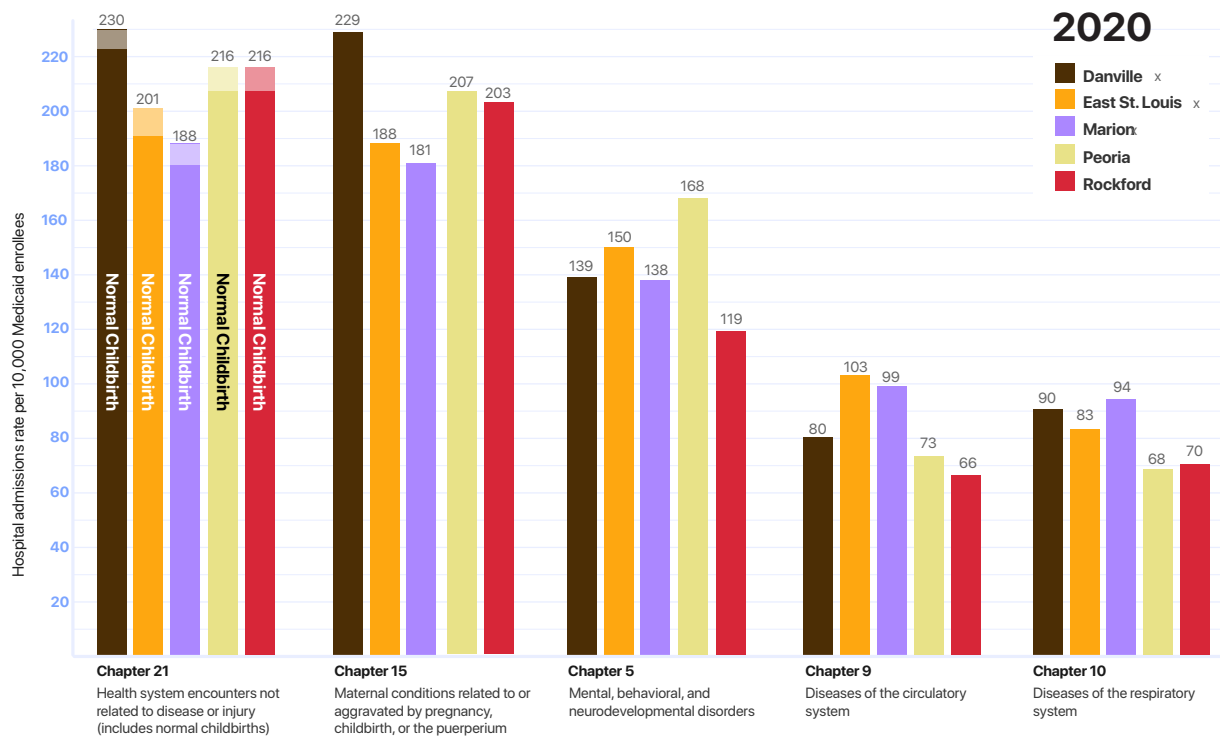
Across FY2019 and FY2020, healthcare encounters related to childbirth (Chapters 21 and 15) were the most frequent driver of hospital utilization. The vast majority of these childbirth encounters were normal or relatively uncomplicated. Following childbirth, the next most frequent hospital-level encounters included mental disorders, circulatory diseases, and respiratory diseases (Chapters 5, 9 and 10). See Figure 5.

**Figure 5: Top 5 Most Frequent Inpatient Hospitalization Chapters by Study Area**  
(Frequency expressed as rate per 10,000 Medicaid enrollees)



Note: The 5 chapters of the CMS ICD-10-CM Tabular List of Diseases and Injuries shown here (21, 15, 5, 9, 10) represent the most frequent inpatient hospitalization chapters in all areas except Peoria. In Peoria, the 5 most frequent chapters were 21, 15, 5, 1, and 9, respectively. Chapter 1 (diseases generally recognized as communicable or transmissible) ranked fourth in terms of inpatient hospitalizations in the Peoria study area, at a rate of 104.1 per 10,000 Medicaid enrollees.

**Figure 5 Continued**



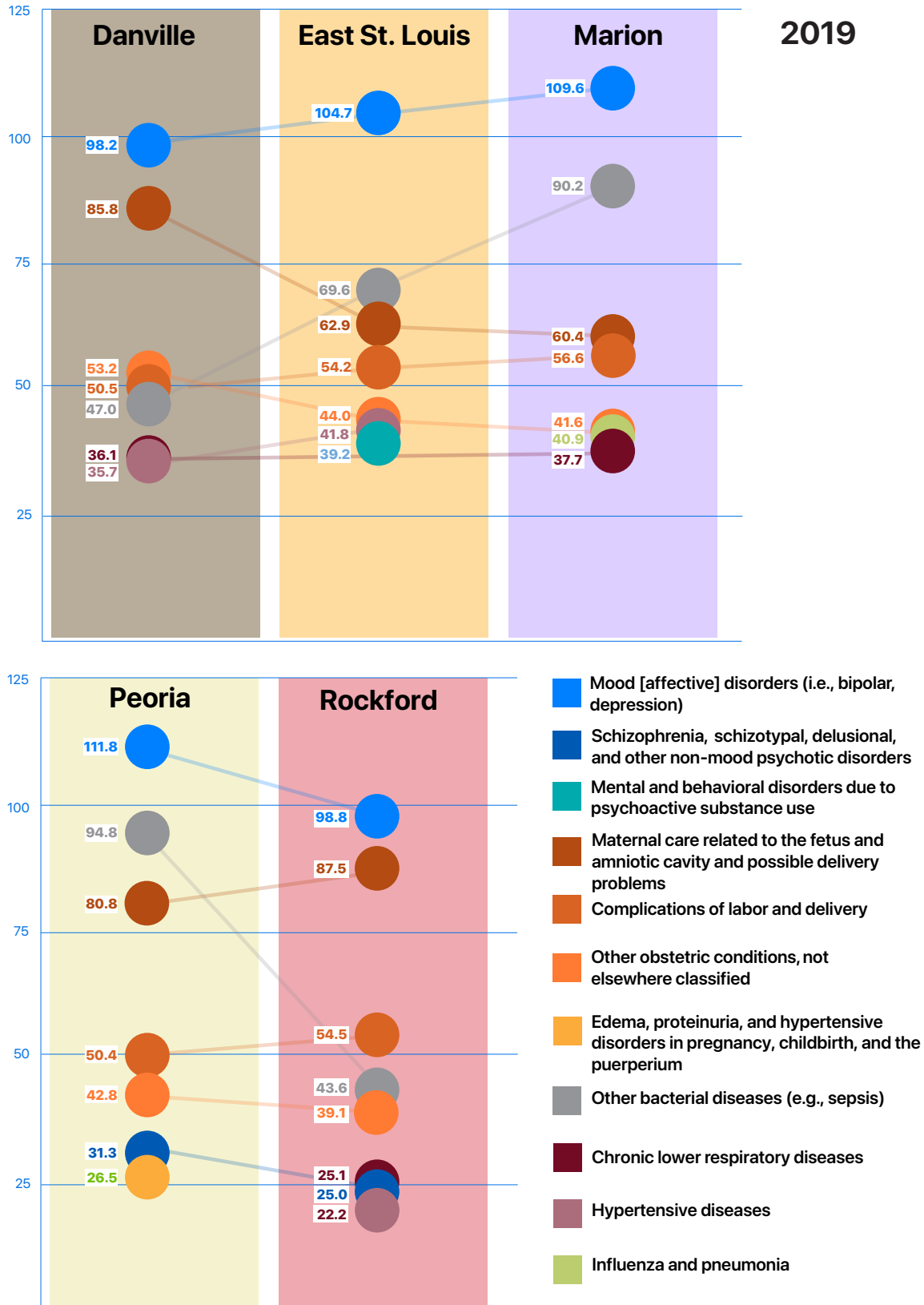
Note: The 5 chapters of the CMS ICD-10-CM Tabular List of Diseases and Injuries shown here (21, 15, 5, 9, 10) represent the most frequent inpatient hospitalization chapters in all areas except Peoria. In Peoria, the 5 most frequent chapters were 21, 15, 5, 1, and 19, respectively. Chapter 1 (diseases generally recognized as communicable or transmissible) ranked fourth in terms of inpatient hospitalizations in the Peoria study area, at a rate of 91.8 per 10,000 Medicaid enrollees. Chapter 19 (injury, poisoning, and certain other consequences of external causes) ranked fifth in Peoria at a rate of 74.1 per 10,000 Medicaid enrollees.

Figure 6 displays the most frequent blocks. Three of the most frequent hospitalization blocks in Rockford for both FY2019 and FY2020 are related to pregnancy or childbirth: maternal care related to the fetus and amniotic cavity and possible delivery problems; complications of labor and delivery; and other obstetric conditions, not elsewhere classified. All of these blocks point to complications related to pregnancy, childbirth, or postpartum. However, frequency distributions of the ICD-10 codes that make up these disease blocks show that most complications are mild and not preventable and are often, in fact, common issues related to childbirth. For example, in

Rockford, one of the top complications is first and second degree perineal lacerations during delivery, a common, treatable occurrence during childbirth (see Figure 7).

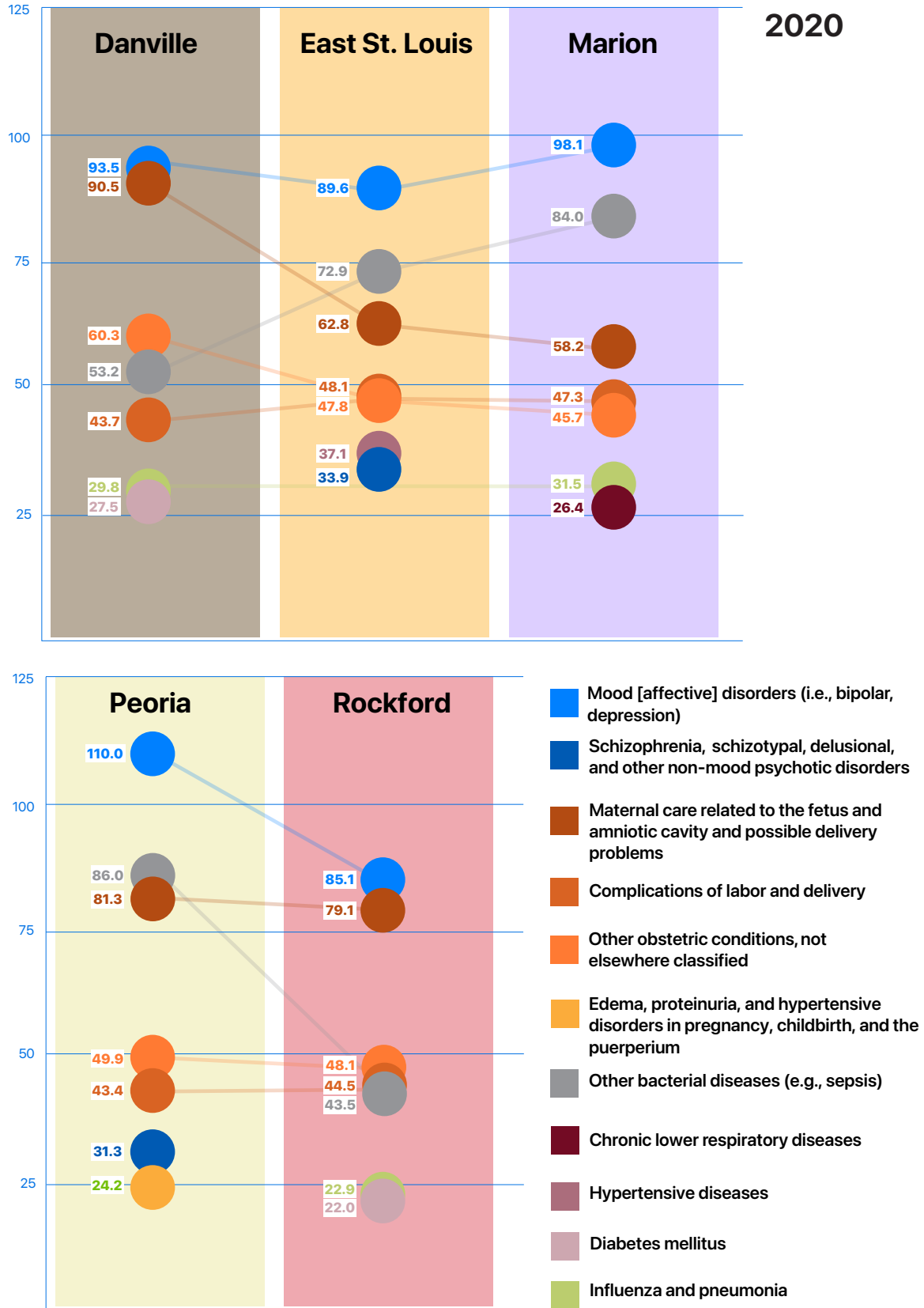
Otherwise, the top most frequent hospitalization blocks for Rockford are mood [affective] disorders and other bacterial diseases (in particular, sepsis). Additionally, in FY2019, chronic lower respiratory diseases, schizophrenia-related disorders, and hypertensive diseases were frequent hospitalization blocks and, in FY2020, diabetes mellitus and influenza/pneumonia were frequent hospitalization blocks.

**Figure 6: Top 7 Most Frequent Inpatient Hospitalization Blocks<sup>1</sup> by Study Area**  
 (Frequency expressed as rate per 10,000 Medicaid enrollees)



<sup>1</sup>These figures do not include Chapter 21 blocks, which include blocks for normal childbirth.

Figure 6 Continued



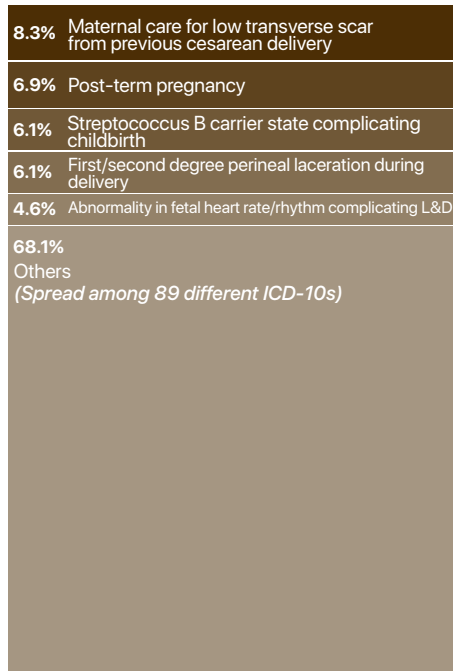
<sup>†</sup>These figures do not include Chapter 21 blocks, which include blocks for normal childbirth.



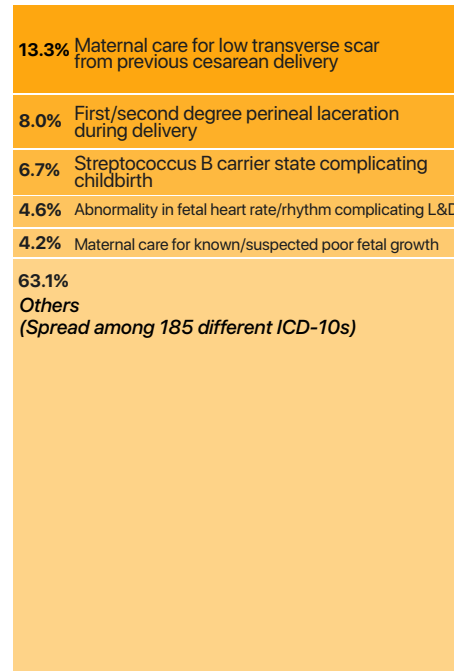
**Figure 7: Distribution of ICD-10s of Top Childbirth Complications Blocks<sup>1</sup> by Study Area**

**2019**

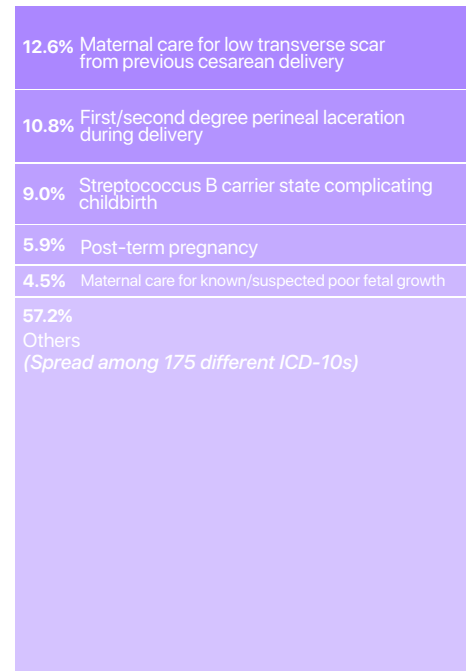
**Danville**



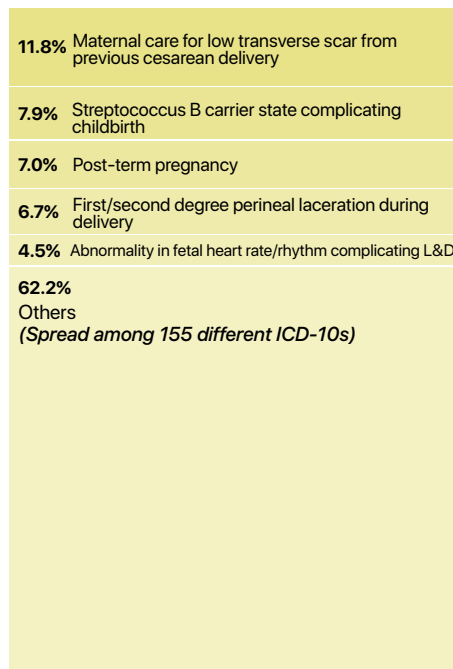
**East St. Louis**



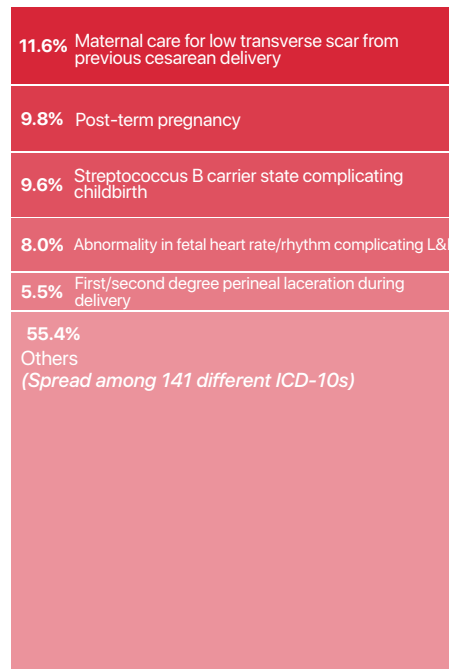
**Marion Health Region**



**Peoria**



**Rockford**



<sup>1</sup>The charts here contain ICD-10s from the top pregnancy, labor and delivery, and post-partum complication blocks across all 5 areas: complications of labor and delivery; maternal care related to the fetus and amniotic cavity; and other obstetric conditions, not elsewhere classified.

Note: L&D = labor and delivery.

Figure 7 Continued

2020

**Danville**

8.9%	Maternal care for low transverse scar from previous cesarean delivery
7.0%	Streptococcus B carrier state complicating childbirth
5.8%	Obesity complicating childbirth
5.3%	Maternal care for known/suspected poor fetal growth
5.1%	Anemia complicating childbirth
67.9%	Others (Spread among 93 different ICD-10s)

**East St. Louis**

14.3%	Maternal care for low transverse scar from previous cesarean delivery
9.5%	Streptococcus B carrier state complicating childbirth
7.4%	First/second degree perineal laceration during delivery
4.0%	L&D complication by cord around neck w/o compression, or unspecified cord complication
4.0%	Post-term pregnancy
60.8%	Others (Spread among 192 different ICD-10s)

**Marion Health Region**

13.0%	Maternal care for low transverse scar from previous cesarean delivery
9.5%	First/second degree perineal laceration during delivery
9.5%	Streptococcus B carrier state complicating childbirth
5.4%	Post-term pregnancy
4.5%	L&D complication by cord around neck w/o compression, or unspecified cord complication
58.1%	Others (Spread among 176 different ICD-10s)

**Peoria**

11.5%	Maternal care for low transverse scar from previous cesarean delivery
8.7%	Streptococcus B carrier state complicating childbirth
8.6%	Post-term pregnancy
5.7%	First/second degree perineal laceration during delivery
3.7%	Maternal care for known/suspected poor fetal growth
61.8%	Others (Spread among 152 different ICD10s)

**Rockford**

11.5%	Streptococcus B carrier state complicating childbirth
10.9%	Maternal care for low transverse scar from previous cesarean delivery
7.7%	Post-term pregnancy
5.0%	First/second degree perineal laceration during delivery
4.9%	Maternal care for known/suspected poor fetal growth
59.9%	Others (Spread among 166 different ICD-10s)

<sup>†</sup>The charts here contain ICD-10s from the top pregnancy, labor and delivery, and post-partum complication blocks across all 5 areas: complications of labor and delivery; maternal care related to the fetus and amniotic cavity; and other obstetric conditions, not elsewhere classified.  
Note: L&D = labor and delivery.

### *Pairing Frequency and Readmission Data*

To provide a more detailed understanding of health outcomes, hospitalization frequency data was paired with readmission rates, with readmission rates being a measure of "resource intensiveness."

Readmission was defined for each patient per disease block based on the total number of inpatient admissions. To calculate readmissions for a disease block, the data analytics team subtracted one from each patient's total number of admissions within that disease block during the year. So, if a patient in a particular disease block had only one admission, the number of readmissions was 0. An average readmission rate was calculated for each disease block and represents the average number of readmissions among all patients per disease block per year.

Readmission rates were cross-tabulated with frequency rates by disease block in each study area. Isolating the top sixth ("sextile") disease blocks for both measures produces a view of the most frequent and resource-intensive disease blocks in each area (see Tables 2a and 2b).

### *Most Frequent and Resource-Intensive Diseases and Conditions*

In Tables 2a and 2b, a clear pattern emerges. The 3 groups comprising the most frequent and resource-intensive hospitalizations, in Rockford and in other areas, are mental illnesses, substance use disorders, and a third group organized around a set of chronic illnesses identified as "ambulatory care sensitive conditions" (ACSCs).

By definition, ACSCs are health conditions for which good outpatient care can potentially

prevent the need for hospitalization or early intervention can prevent complications and progression to more severe disease (13).

The same can be said for mood [affective] disorders (made up mostly of bipolar and depressive disorders; see Figure 8) and mental and behavioral disorders due to psychoactive substance use (primarily alcohol and opioid use disorders; see Figure 9).

Given this, these frequent, resource-intensive and outpatient-treatable disease groups and conditions became the focus of the research:

- mood [affective] disorders (in particular, bipolar and depressive disorders)
- mental and behavioral disorders due to psychoactive substance use disorders (in particular, alcohol and opioid use disorders)
- ACSCs (in particular, hypertension, asthma/COPD, diabetes, and heart diseases such as congestive heart failure)

### *Outpatient Care Rates Prior and Subsequent to Hospital-Level Care*

A previous analysis of FY2018 data for the East St. Louis area shows that *outpatient care prior to or subsequent to hospital-level care for these disease groups and conditions is relatively low*, indicating that many patients who were hospitalized for these diseases or disorders did not engage in outpatient care to manage their conditions (see Figure 10). For example, outpatient care within 3 months after hospital-level care for a mental disorder, falls well below the national Medicaid benchmark of 56% of discharges receiving follow-up care within 30 days after a hospitalization for mental illness (14, 15).

**Table 2a: FY2019 Disease Blocks in the Top Sextile<sup>1</sup> for Both Frequency Rate and Average Hospital Readmission Score<sup>2</sup> (Ranked by Product of Frequency Rate and Readmission Score)**

**■ Mental illnesses**

**■ Substance use disorders**

**■ ACSCs**

Danville	East St. Louis	Marion	Peoria	Rockford
1. Mood affective disorders (bipolar, depression)	1. Mood affective disorders (bipolar, depression)	1. Mood affective disorders (bipolar, depression)	1. Mood affective disorders (bipolar, depression)	1. Mood affective disorders (bipolar, depression)
2. Hypertensive diseases	2. Schizophrenia, schizotypal disorders	2. Schizophrenia, schizotypal disorders	2. Schizophrenia, schizotypal disorders	2. Schizophrenia, schizotypal disorders
3. Diabetes mellitus	3. Hemolytic anemias	3. Diabetes mellitus	3. Psychoactive substance use disorders (alcohol, opioids)	3. Diabetes mellitus
4. Other bacterial diseases	4. Hypertensive diseases	4. Hypertensive diseases	4. Diabetes mellitus	4. Chronic lower respiratory diseases (asthma, COPD)
5. Schizophrenia, schizotypal disorders	5. Diabetes mellitus	5. Chronic lower respiratory diseases (asthma, COPD)	5. Complications of surgical/medical care	5. Diseases of liver
6. Other diseases of the respiratory system	6. Psychoactive substance use disorders (alcohol, opioids)	6. Complications of surgical/medical care	6. Hypertensive diseases	6. Psychoactive substance use disorders (alcohol, opioids)
7. Cerebrovascular diseases	7. Chronic lower respiratory diseases (asthma, COPD)	7. Disorders of gall-bladder, biliary tract, and pancreas	7. Disorders of gall-bladder, biliary tract, and pancreas	7. Hypertensive diseases
8. Chronic lower respiratory diseases (asthma, COPD)	8. Other diseases of the respiratory system	8. Other diseases of the respiratory system	8. Chronic lower respiratory diseases (asthma, COPD)	8. Other diseases of the respiratory system
9. Psychoactive substance use disorders (alcohol, opioids)	9. Cerebrovascular diseases	9. Psychoactive substance use disorders (alcohol, opioids)	9. Cerebrovascular diseases	9. Disorders of gall-bladder, biliary tract, and pancreas
10. Metabolic disorders	10. Complications of surgical/medical care	10. Diseases of liver	10. Episodic and paroxysmal disorders	10. Complications of surgical/medical care
11. Other forms of heart disease	11. Disorders of gall-bladder, biliary tract, and pancreas	11. Noninfective enteritis and colitis		11. Cerebrovascular diseases
12. Diseases of esophagus, stomach, and duodenum	12. Noninfective enteritis and colitis			
	13. Behavioral and emotional disorders			

<sup>1</sup>Sextile refers to the top sixth of the disease blocks found in the 2020 ICD-10-CM Tabular List of Diseases and Injuries for both frequency and early readmission, representing ~16.67% of all the disease blocks.

<sup>2</sup>This analysis excludes Chapter 21 of the ICD-10-CM Tabular List of Diseases and Injuries which contains encounters with the healthcare system not related to injury or disease, including encounters for normal newborns.

**Table 2b: FY2020 Disease Blocks in the Top Sextile<sup>1</sup> for Both Frequency Rate and Average Hospital Readmission Score<sup>2</sup> (Ranked by Product of Frequency Rate and Readmission Score)**

■ **Mental illnesses**
■ **Substance use disorders**
■ **ACSCs**

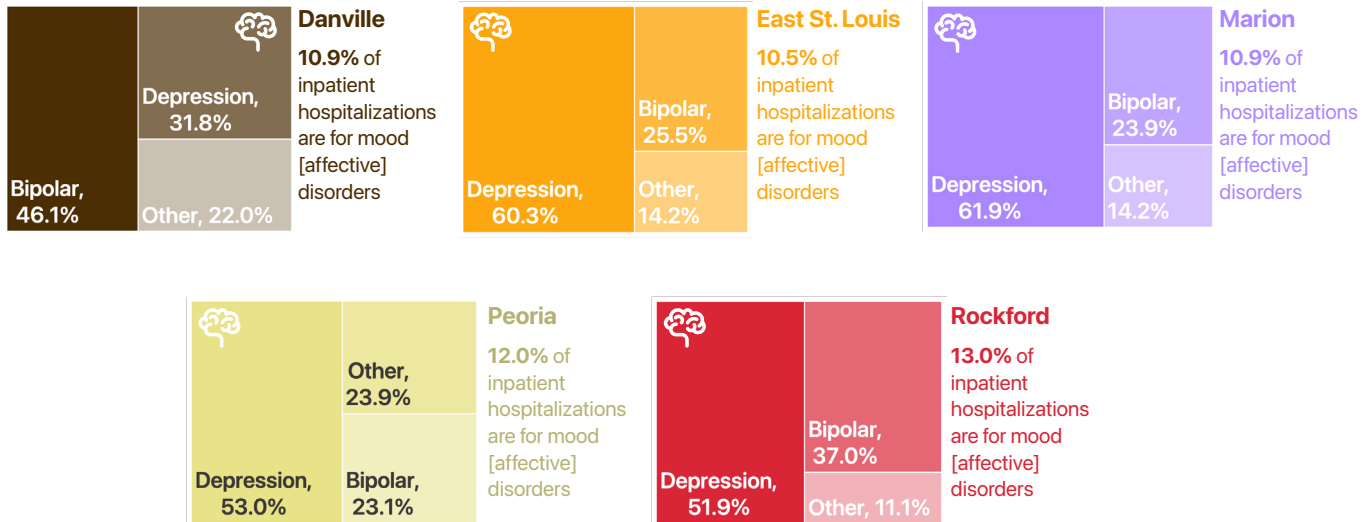
Danville	East St. Louis	Marion	Peoria	Rockford
1. Mood affective disorders (bipolar, depression)	1. Mood affective disorders (bipolar, depression)	1. Mood affective disorders (bipolar, depression)	1. Schizophrenia, schizotypal disorders	1. Mood affective disorders (bipolar, depression)
2. Hypertensive diseases	2. Schizophrenia, schizotypal disorders	2. Schizophrenia, schizotypal disorders	2. Mood affective disorders (bipolar, depression)	2. Schizophrenia, schizotypal disorders
3. Diabetes mellitus	3. Hemolytic anemias	3. Hypertensive diseases	3. Hemolytic anemias	3. Hemolytic anemias
4. Schizophrenia, schizotypal disorders	4. Hypertensive diseases	4. Hemolytic anemias	4. Hypertensive diseases	4. Hypertensive diseases
5. Complications of surgical/medical care	5. Other bacterial diseases	5. Diabetes mellitus	5. Other bacterial diseases	5. Diabetes mellitus
6. Hemolytic anemias	6. Diabetes mellitus	6. Psychoactive substance use disorders (alcohol, opioids)	6. Psychoactive substance use disorders (alcohol, opioids)	6. Psychoactive substance use disorders (alcohol, opioids)
7. Psychoactive substance use disorders (alcohol, opioids)	7. Psychoactive substance use disorders (alcohol, opioids)	7. Cerebrovascular diseases	7. Diabetes mellitus	7. Cerebrovascular diseases
8. Cerebrovascular diseases	8. Cerebrovascular diseases	8. Chronic lower respiratory diseases (asthma, COPD)	8. Complications of surgical/medical care	8. Other diseases of the respiratory system
9. Episodic and paroxysmal disorders	9. Disorders of gall bladder, biliary tract, and pancreas	9. Complications of surgical/medical care	9. Other diseases of the respiratory system	9. Disorders of gall-bladder, biliary tract, and pancreas
10. Metabolic disorders	10. Complications of surgical/medical care	10. Other forms of heart disease	10. Chronic lower respiratory diseases (asthma, COPD)	10. Chronic lower respiratory diseases (asthma, COPD)
		11. Disorders of gall-bladder, biliary tract, and pancreas	11. Episodic and paroxysmal disorders	11. Metabolic disorders
			12. Cerebrovascular diseases	
			13. Other forms of heart disease	
			14. Disorders of gall-bladder, biliary tract, and pancreas	
			15. Other diseases of the urinary system	

<sup>1</sup>Sextile refers to the top sixth of the disease blocks found in the 2020 ICD-10-CM Tabular List of Diseases and Injuries for both frequency and early readmission, representing ~16.67% of all the disease blocks.

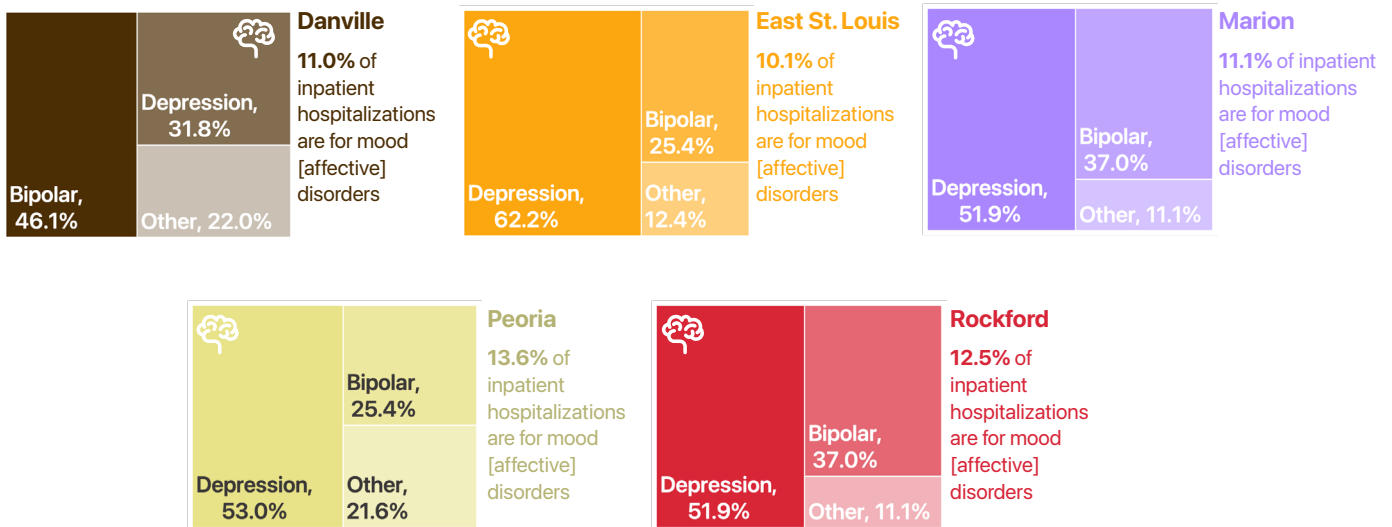
<sup>2</sup>This analysis excludes Chapter 21 of the ICD-10-CM Tabular List of Diseases and Injuries which contains encounters with the healthcare system not related to injury or disease, including encounters for normal newborns.

**Figure 8: Proportion of Inpatient Hospitalizations for Depressive Disorders, Bipolar Disorders, and Other ICD-10s<sup>1</sup> within the Mood [Affective] Disorders Block across Study Areas**

**2019**



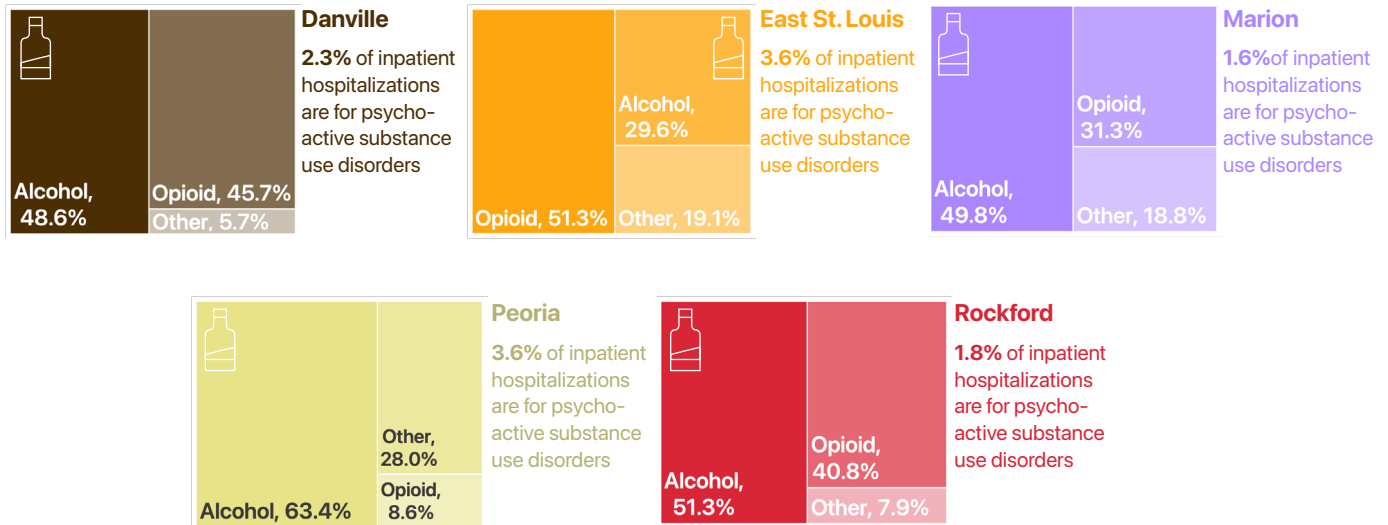
**2020**



<sup>1</sup>Depression in this figure includes all “depressive disorder” ICD-10 codes in the mood [affective] disorders block. Bipolar includes all ICD-10 codes labeled “bipolar.” The “other” category includes ICD-10 codes for conditions such as cyclothymic disorder, dysthymic disorder, manic episodes with and without psychotic symptoms, persistent mood [affective] disorders, and unspecified mood [affective] disorders.

**Figure 9: Proportion of Hospitalizations for Alcohol Use Disorders, Opioid Use Disorders, and Other ICD-10s within the Psychoactive Substance Use Disorders Block across Study Areas**

**2019**



**2020**



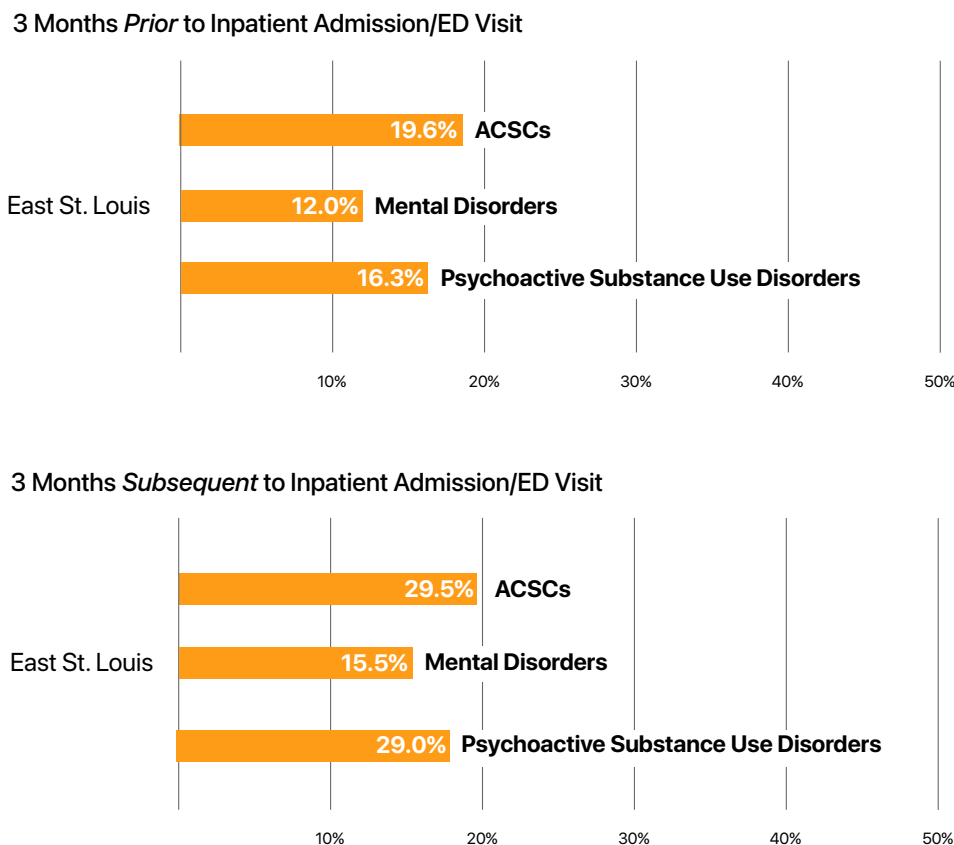
Note: "Other" psychoactive substance use disorders includes ICD-10 codes for cannabis, cocaine, hallucinogens, sedatives, and other psychoactive substances or stimulants.

FY2018 analyses completed for these disease groups and conditions in socially vulnerable areas in Cook County produced similar results.

(Note: All outpatient encounters were used for this analysis, whether related to the hospitalization diagnosis or not. Thus, the results presented in Figure 10 can be

considered a conservatively generous estimate of outpatient care for those with selected and preventable inpatient admissions or ED visits. Additionally, the outpatient care analysis presented here is for FY2018. Technical issues related to data file size prevented access to, and analysis of, FY2019 and FY2020 outpatient data.)

**Figure 10: East St. Louis 2018 / Proportion of Prior and Subsequent Outpatient Care among Patients Who Received Hospital-Level Care for ACSCs, Mental Disorders, and Psychoactive Substance Use Disorders**



ACSCs consist of all of the ICD-10 principal diagnosis codes categorized as Ambulatory Care Sensitive Conditions by the Agency for Healthcare Research and Quality.

Mental Disorders consist of all of the ICD-10 principal diagnosis codes from Chapter 5 of the CMS Tabular List of Diseases and Injuries, excluding ICD-10s for substance use disorders.

Psychoactive Substance Use Disorders consist of all of the ICD-10 principal diagnosis codes from Chapter 5 of the CMS Tabular List of Diseases and Injuries for the "Mental and behavioral disorders due to psychoactive substance use" disease block.

To look for outpatient care evidence prior to hospital-level care, patients who had an initial hospitalization or ED visit for mental disorders, substance use disorders or ACSCs in the last 3 quarters of FY2018 (10/01/2017 to 06/30/2018) were identified. The proportion of these patients who had outpatient care encounters within 3 months *prior* to their hospital admission date or ED visit was then tabulated.



The low rates of outpatient care observed prior to and following hospitalizations and ED visits motivate an interest in improved care for these disease groups and conditions, but it is possible to more directly link hospital use to the lack of preventive care in Rockford and the other study areas. ACSCs are a group of conditions identified by the Agency for Healthcare Research and Quality (AHRQ) as indicators of the accessibility, quality, and efficiency of the healthcare ecosystem in an area (16). Hospitalization rates for ACSCs are, in fact, an *established* metric for evaluating population access to care. Prior research has established that communities with poor access to outpatient care have higher rates of hospitalization for chronic illnesses and that improving this access is an effective way to reduce hospitalization rates for ACSCs (17). Furthermore, ACSCs and mental disorders are linked: Patients with coexisting mental disorders are 2 to 5 times more likely to be admitted to EDs for ACSCs (18–22).

AHRQ developed Preventative Quality Indicators (PQIs), measures based on ACSC hospital inpatient discharge data and designed to identify outpatient care quality and access issues, including appropriate follow-up care after hospital discharge. These widely used benchmarks for healthcare accessibility and quality are based on a subset of the ACSC codes for hospital admissions in the John Billings algorithm (23). Specifically, PQIs use data from hospital discharges to identify admissions that might have been avoided through access to high-quality outpatient care. In other words, while PQIs are based on hospital inpatient data, they provide insight into the quality of the healthcare ecosystem *outside* hospitals and in the community by measuring preventable complications that occur in a given population (in a community or region) (24).

The PQIs consist of the following 11 disease-specific ACSCs, which are measured as rates of admission to the hospital:

- diabetes mellitus, short-term complications admission rate
- diabetes mellitus, long-term complications admission rate
- uncontrolled diabetes mellitus admission rate
- chronic obstructive pulmonary disease or asthma, older adults (40+) admission rate
- hypertension admission rate
- congestive heart failure admission rate
- dehydration admission rate
- bacterial pneumonia admission rate
- urinary tract infection admission rate
- asthma, younger adults (18–39) admission rate
- rate of lower extremity amputation among patients with diabetes

Each of the above disease admission rates is its own PQI. AHRQ compiles these measures into *composite* PQIs as follows:

- PQI 90 Composite combines hospital admission rates for both acute and chronic PQIs
- PQI 91 Acute Composite is a composite indicator of acute, episodic admission rates and consists of the following admission rates:
  - bacterial pneumonia
  - urinary tract infection
- PQI 92 Chronic Composite is a composite indicator of chronic disease admission rates and consists of the following admission rates:
  - diabetes Mellitus, short-term complications
  - diabetes mellitus, long-term complications
  - COPD or asthma, older adults
  - hypertension

- congestive heart failure
- dehydration
- uncontrolled diabetes mellitus
- asthma, younger adults (18–39)
- rate of lower extremity amputation among patients with diabetes
- PQI 93 Diabetes Composite is a composite indicator of diabetes admission rates and consists of the following admission rates:
  - diabetes mellitus, short-term complications
  - diabetes mellitus, long-term complications
  - uncontrolled diabetes mellitus

AHRQ publishes national benchmarks for PQIs. Age-adjusted admission rates for composite PQIs in Rockford outpace national benchmarks (see Figure 11).

Results of multivariate logistic regressions show that Black adults age 40 and over are associated with hospitalizations for ACSCs, in general, in Rockford. Adults age 40 and over are associated with acute ACSC hospitalizations and Black adults age 40 and over are associated with chronic ACSC hospitalizations. Finally, Black men age 65–74 are most associated with diabetes hospitalizations in Rockford. (See Table 3.)

While not formally part of the definition of ACSCs or the related PQIs, bipolar disorder, depressive disorders, and alcohol and opioid use disorders are all outpatient-treatable. These disorders account for the majority of disorders within the mood [affective] disorders block and the psychoactive substance abuse disorder block. Results of multivariate logistic regressions show an association between teens, age 12–19, and hospitalizations for depression in

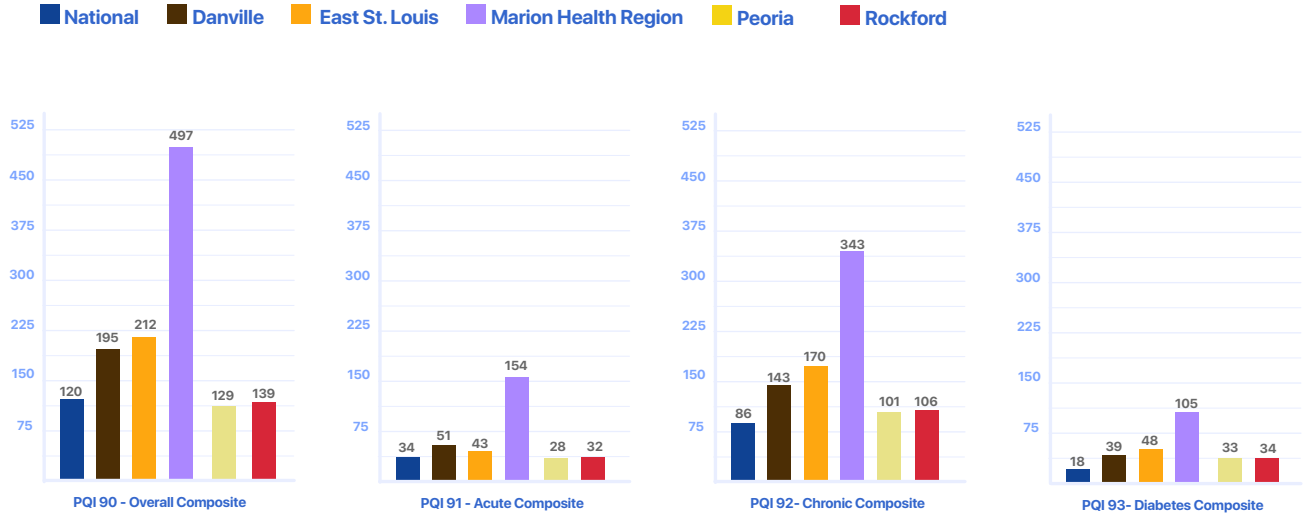
Rockford. Middle age adults, age 35–64, are associated with hospitalizations for alcohol use disorder. No associations are evident for bipolar or opioid use disorder hospitalizations in Rockford. (See Tables 4–7.)

The data paint a clear picture: Medicaid enrollees have poor access to outpatient care and higher levels of prevention-sensitive hospitalizations in all study areas. In Rockford, this is particularly true for the Black Medicaid population in terms of accessing care for ACSCs, the teen Medicaid population for accessing mental health services for depression and the middle-age Medicaid population for accessing substance use disorder services. Improving accessibility to quality primary and specialty care (including behavioral healthcare and detection of ACSCs and mental health comorbidities) will be critical to decreasing hospital admissions for ACSCs as well as hospitalizations for mood affective and substance use disorders.

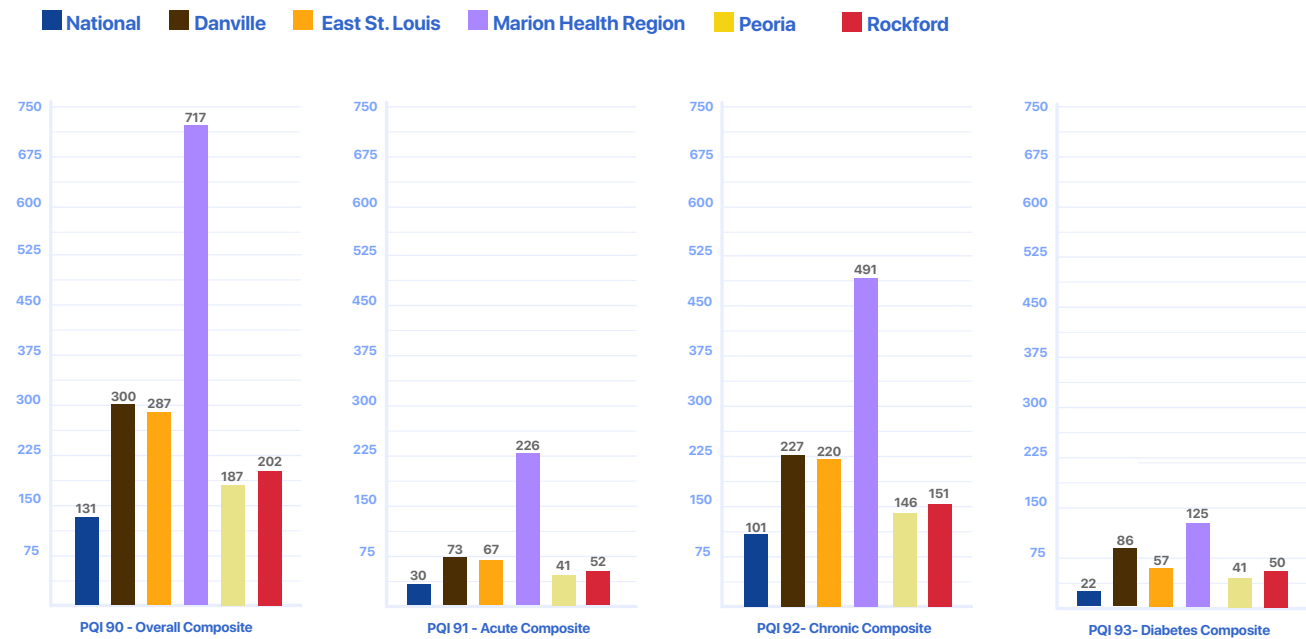
(Note: Rates of hospitalization for ACSCs are being analyzed to provide an indication of healthcare delivery gaps in a population defined by a geography—in this case, the selected study areas. In Figure 11, these rates are compared against *national* PQIs rates which are made up of discharge data from the general population. These benchmarks are being used to gauge, directionally, the state of the healthcare ecosystem in each study area. Data upgrades are needed to create additional benchmarks, such as national PQI rates by insurance status [for example, Medicaid vs. private] or Illinois PQI rates, statewide and by insurance status. See the “Data Limitations and Opportunities for Future Research” section for more information.)

**Figure 11: Composite Preventative Quality Indicators (PQIs 90, 91, 92, and 93) Hospital Admission Rates per 10,000 Medicaid Recipients, Age-Adjusted, by Study Area with National Benchmarks for the General Population as Reference**

**2019**



**2020**



**Table 3: Population Characteristics Associated with Composite PQIs in Rockford (FY2019 and FY2020 Data Combined)**

Note: Variables highlighted in red are statistically associated with the PQI, meaning the odds ratio and the confidence level lower limit are  $\geq 1$  and the p-value is  $<0.05$ .

PQI 90_Overall Composite			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	<b>3.34</b>	<b>2.79</b>	<b>4.01</b>	<b>&lt;.0001</b>
<b>65-74</b>	<b>18-39</b>	<b>5.48</b>	<b>4.31</b>	<b>6.95</b>	<b>&lt;.0001</b>
<b>75 or older</b>	<b>18-39</b>	<b>6.63</b>	<b>5.18</b>	<b>8.49</b>	<b>&lt;.0001</b>
<b>RACE</b>					
AmerN/AN	White	0.98	0.48	2.01	0.95
Asian/PI	White	0.68	0.37	1.25	0.21
<b>Black</b>	<b>White</b>	<b>1.48</b>	<b>1.27</b>	<b>1.74</b>	<b>&lt;.0001</b>
Other/UNK	White	1.03	0.80	1.32	0.84
<b>SEX</b>					
Male	Female	0.96	0.83	1.10	0.56

PQI 91_Acute Composite			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	<b>2.75</b>	<b>1.91</b>	<b>3.95</b>	<b>&lt;.0001</b>
<b>65-74</b>	<b>18-39</b>	<b>5.72</b>	<b>3.70</b>	<b>8.84</b>	<b>&lt;.0001</b>
<b>75 or older</b>	<b>18-39</b>	<b>8.88</b>	<b>5.89</b>	<b>13.40</b>	<b>&lt;.0001</b>
<b>RACE</b>					
AmerN/AN	White	0.48	0.07	3.50	0.47
Asian/PI	White	0.56	0.17	1.79	0.32
Black	White	0.90	0.65	1.23	0.49
Other/UNK	White	1.07	0.69	1.66	0.75
<b>SEX</b>					
Female	Male	1.13	0.86	1.47	0.38

Table 3 Continued

PQI 92_Chronic Composite			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	<b>3.40</b>	<b>2.78</b>	<b>4.17</b>	<b>&lt;.0001</b>
<b>65-74</b>	<b>18-39</b>	<b>4.94</b>	<b>3.78</b>	<b>6.47</b>	<b>&lt;.0001</b>
<b>75 or older</b>	<b>18-39</b>	<b>5.11</b>	<b>3.83</b>	<b>6.81</b>	<b>&lt;.0001</b>
<b>RACE</b>					
<b>AmerIN/AN</b>	<b>White</b>	1.21	0.57	2.58	0.62
<b>Asian/PI</b>	<b>White</b>	0.77	0.39	1.51	0.45
<b>Black</b>	<b>White</b>	<b>1.69</b>	<b>1.42</b>	<b>2.01</b>	<b>&lt;.0001</b>
<b>Other/UNK</b>	<b>White</b>	1.00	0.75	1.34	1.00
<b>SEX</b>					
<b>Male</b>	<b>Female</b>	0.98	0.84	1.15	0.83

PQI 93_Diabetes Composite			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	1.29	0.95	1.74	0.099
<b>65-74</b>	<b>18-39</b>	<b>1.69</b>	<b>1.08</b>	<b>2.64</b>	<b>0.021</b>
<b>75 or older</b>	<b>18-39</b>	0.82	0.43	1.57	0.54
<b>RACE</b>					
<b>AmerIN/AN</b>	<b>White</b>	0.43	0.06	3.13	0.40
<b>Asian/PI</b>	<b>White</b>	0.92	0.28	2.97	0.88
<b>Black</b>	<b>White</b>	<b>1.67</b>	<b>1.25</b>	<b>2.23</b>	<b>0.0005</b>
<b>Other/UNK</b>	<b>White</b>	0.98	0.59	1.63	0.95
<b>SEX</b>					
<b>Male</b>	<b>Female</b>	<b>1.74</b>	<b>1.33</b>	<b>2.28</b>	<b>&lt;.0001</b>

In the tables above, AmerIN/AN = American Indian/American Native, Asian/PI = Asian/Pacific Islander, Other/UNK = Other/Unknown

**Table 4: Population Characteristics Associated with Depression-Related Hospitalizations in Rockford (FY2019 and FY2020 Data Combined)**

Note: Variables highlighted in red are statistically associated with the PQI, meaning the odds ratio and the confidence level lower limit are  $\geq 1$  and the p-value is  $<0.05$ .

<b>DEPRESSION_Rockford</b>			<b>Confidence Interval (95%)</b>		<b>P-Value</b>
<b>Group</b>	<b>Compared To</b>	<b>Odds Ratio</b>	<b>Lower Limit</b>	<b>Upper Limit</b>	
<b>AGE</b>					
<b>12 to 14.9</b>	<b>25 to 34.9</b>	<b>3.13</b>	<b>2.39</b>	<b>4.10</b>	<b>&lt;0.001</b>
<b>15 to 19.9</b>	<b>25 to 34.9</b>	<b>3.44</b>	<b>2.76</b>	<b>4.28</b>	<b>&lt;0.001</b>
20 to 24.9	25 to 34.9	1.17	0.89	1.54	0.25
35 to 44.9	25 to 34.9	1.14	0.90	1.43	0.26
45 to 64.9	25 to 34.9	1	0.81	1.23	0.96
>65	25 to 34.9	0.38	0.25	0.57	<0.001
<b>RACE</b>					
AmericanI/N/AN	White	1.41	0.69	2.90	0.34
Asian/PI	White	0.37	0.16	0.83	0.05
Black	White	0.62	0.53	0.74	<0.001
Other/Unknown	White	0.7	0.59	0.84	<0.001
<b>SEX</b>					
Female	Male	0.87	0.76	0.99	0.05

**Table 5: Population Characteristics Associated with Bipolar Disorder Hospitalizations in Rockford (FY2019 and FY2020 Data Combined)**

<b>Bipolar_Rockford</b>			<b>Confidence Interval (95%)</b>		<b>P-Value</b>
<b>Group</b>	<b>Compared To</b>	<b>Odds Ratio</b>	<b>Lower Limit</b>	<b>Upper Limit</b>	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0.73	0.43	1.25	0.25
15 to 19.9	25 to 34.9	1.08	0.75	1.54	0.67
20 to 24.9	25 to 34.9	0.98	0.69	1.40	0.91
35 to 44.9	25 to 34.9	1.09	0.82	1.45	0.53
45 to 64.9	25 to 34.9	0.82	0.63	1.07	0.14
>65	25 to 34.9	0.15	0.07	0.33	<0.001
<b>RACE</b>					
AmericanI/N/AN	White	1.81	0.73	4.44	0.19
Asian/PI	White	0.26	0.06	1.05	0.06
Black	White	0.61	0.48	0.78	<0.001
Other/Unknown	White	0.64	0.47	0.88	<0.01
<b>SEX</b>					
Female	Male	0.64	0.53	0.78	<0.001

In the tables above, AmericanI/N/AN = American Indian/American Native, Asian/PI = Asian/Pacific Islander, Other/UNK = Other/Unknown

**Table 6: Population Characteristics Associated with Alcohol Use Disorder Hospitalizations in Rockford (FY2019 and FY2020 Data Combined)**

Note: Variables highlighted in red are statistically associated with the PQI, meaning the odds ratio and the confidence level lower limit are  $\geq 1$  and the p-value is  $<0.05$ .

AUD_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.98
15 to 19.9	25 to 34.9	0.17	0.06	0.47	<0.001
20 to 24.9	25 to 34.9	0.52	0.28	0.98	0.05*
35 to 44.9	25 to 34.9	1.75	1.24	2.46	<0.01
45 to 64.9	25 to 34.9	1.62	1.18	2.21	<0.01
>65	25 to 34.9	0.29	0.14	0.62	<0.01
<b>RACE</b>					
American/IN/AN	White	0	0.00	INF	0.99
Asian/PI	White	0.49	0.16	1.54	0.22
Black	White	0.55	0.42	0.73	<0.001
Other/Unknown	White	0.37	0.21	0.64	<0.001
<b>SEX</b>					
Female	Male	0.31	0.24	0.39	<0.001

**Table 7: Population Characteristics Associated with Opioid Use Disorder Hospitalizations in Rockford (FY2019 and FY2020 Data Combined)**

OUD_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.98
15 to 19.9	25 to 34.9	0.037	0.01	0.27	<0.01
20 to 24.9	25 to 34.9	0.25	0.11	0.58	<0.01
35 to 44.9	25 to 34.9	0.95	0.64	1.41	0.78
45 to 64.9	25 to 34.9	0.34	0.22	0.53	<0.001
>65	25 to 34.9	0.26	0.12	0.58	<0.001
<b>RACE</b>					
American/IN/AN	White	2.02	0.49	8.31	0.33
Asian/PI	White	0	0.00	INF	0.99
Black	White	0.41	0.26	0.63	<0.001
Other/Unknown	White	0.55	0.29	1.07	0.07
<b>SEX</b>					
Female	Male	0.39	0.28	0.55	<0.001

In the tables above, American/IN/AN = American Indian/American Native, Asian/PI = Asian/Pacific Islander, Other/UNK = Other/Unknown, AUD = Alcohol Use Disorder, and OUD = Opioid Use Disorder



Jacob Boomsma - <https://www.istockphoto.com/photo/rockford-illinois-in-early-spring-seen-from-above-by-drone-gm946964936-258579139>

### **3: Engaged community members from socially vulnerable areas in conversations and identified challenges to outpatient care, disease prevention, and treatment adherence**

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The findings presented in this report up to this point demonstrate a lack of access to outpatient care for the most frequent and resource-intensive conditions. Recognizing that healthcare data can reveal what is happening but not explain why, a parallel qualitative study was conducted to understand people’s lived experience of the healthcare system.



## **Demographics:**

39 individual interviews and 8 focus groups between February 10 and June 9, 2022 (71 total participants)

5 focus groups in English, 1 focus group each in Spanish, Swahili, and Dari

### **Age:**

18-25	7 Participants
26-35	17 Participants
36-45	13 Participants
46-55	8 Participants
56-65	15 Participants
66+	11 Participants

### **Gender:**

Female	37 Participants
Male	26 Participants
Transgender	5 Participants
Bi-gender	1 Participant
Non-Binary	2 Participants

### **Race/Ethnicity:**

Black	22 Participants
Hispanic	11 Participants
White	29 Participants
Asian/Afghan	3 Participants
Other	4 Participants

### **Zip Codes:**

61032	1 Participant
61073	1 Participant
61101	4 Participants
61102	12 Participants
61103	19 Participants
61104	10 Participants
61107	8 Participants
61108	6 Participants
61109	7 Participants
61115	2 Participants
63119	1 Participant

### **Insurance (Self-Reported):**

Private	10 Participants
Public	51 Participants
Insured, not specified	3 Participants
Uninsured	6 Participants
Unspecified	1 Participant

To understand the experiences of residents of the Rockford Metropolitan Statistical Area, which has a population of approximately 340,000, including the 150,000 people living within the city limits, a team based at the University of Illinois College of Medicine Rockford (UICOMR) partnered with five community-based organizations (CBOs), with a focus on reaching community members living and working in zip codes with a high social vulnerability index score (61101, 61102, 61103, and 61104). Partner agencies included Jeremiah Development (JD), The LIAM Foundation (TLF), St. Elizabeth's Catholic Community Center (SECCC), Shelter Care Ministries' Jubilee Center (JC), and Winnebago Emerging Small Business Services (WESBS). The Rockford team partnered with these agencies from February to June 2022 to conduct community-input sessions (focus groups) and one-on-one interviews. These in-depth discussions were intended to produce an expanded understanding of the health, healthcare experiences, and challenges faced by members of the Rockford community. Working with community partners allowed the team to obtain a range of perspectives that represent the diversity of the Rockford metropolitan area by race, ethnicity, age, gender, health insurance status, and country of birth.

In total, 39 individual interviews and 8 focus groups were conducted with 71 Rockford community members (see sidebar) who engaged in semi-structured discussions focused on 4 main topics:

1. Health and healthcare experiences
2. Healthcare service experiences relating to the COVID-19 pandemic and telehealth
3. Support for those with chronic illness and disability
4. Resources and recommendations for staying healthy



### Jeremiah Development

Founded by four downtown Rockford churches, this not-for-profit organization promotes the well-being of the area via housing, programming, local business support, and beautification.



### The LIAM Foundation

This not-for-profit encourages, assists, heals, and empowers Rockford's LGBTIA+ community through respect, advocacy, and compassion to promote well-being. Its services include case management, assistance with name changes, and support groups.



### St. Elizabeth's Catholic Community Center

This community center offers programs to improve the quality of the Rockford community, including day care, adult fitness classes, and workforce training.

### The Jubilee Center

Shelter Care Ministries' Jubilee Center is a day program for adults who live with chronic mental illness or may be homeless or at risk of homelessness. Its services include advocacy, case management, and hospitality.

### Winnebago Emerging Small Business Services

This not-for-profit helps refugee and immigrant entrepreneurs in Rockford to use expertise they had in their home countries to start and succeed in creating businesses.

The discussions highlighted the individual health experiences of the participants and people they know as well as a collective understanding of how the most vulnerable residents of Rockford experience health and healthcare.

For participants, health had different meanings, but collectively their characterizations of health spanned from physical to mental wellness from an individual to a community level. Participants shared their experiences with managing their health within the healthcare system as well as within their sociocultural environments. Key findings included the following:

- **Access to healthcare is hindered by geographic locations of services:** Healthcare access, particularly access to specialty care, presents challenges for many Rockford residents. Care related to pain management, autoimmune diseases, mental health, LGBTQ+ health, veteran's health, dental health, vision health, weight loss, pain management, and autoimmune diseases are inadequate or unavailable and may require traveling a significant distance to obtain needed care. Additionally, the locations of services creates barriers for those with limited or inadequate access to transportation.
- **Healthcare is not affordable for many residents:** Community members, even those with some type of healthcare coverage, often delay or avoid healthcare because it is not affordable. The participants highlighted cost-related factors that impede access to healthcare, including delayed receipt of healthcare bills, limited services covered by health insurance, the need to travel to access care, and other factors.
- **Patient-provider interactions need**

**improvement:** High-quality care is characterized by patient-centered care. While many participants expressed satisfaction with their care, immigrants and LGBTQ+ community members shared experiences of poor-quality care. There is a need for providers who are respectful of all patients, regardless of their background and identity. A greater effort is needed to provide both primary and specialty care that are culturally appropriate to accommodate the diversity of Rockford area community members.

- **To maximize health in the Rockford area, improvements in the physical and social environments are needed:** Improving the health status of Rockford residents in the long term requires reinvesting in communities to enhance social connectedness and promote health and wellness, including affordable, healthy food; free social and cultural activities oriented to particular populations such as youth, families, and seniors; and safe, accessible spaces for physical activities.

Specific themes from these community-input sessions fall into 3 categories: access to care, quality of care, and social determinants of health (SDOH), all of which actively contribute to health outcomes of Rockford community members.

### **Access to Care in Rockford**

Access to care is the ability to seek, approach, and fully utilize healthcare. This broad theme encompasses the availability, proximity, and affordability of healthcare services, all of which the participants identified as either facilitators or barriers to utilizing of healthcare. These elements of healthcare access are defined as follows (25):

- **Availability** refers to community members'

perceptions of the existence and/or number of providers that serve Rockford broadly or for a particular health concern or need. It also includes the adequacy of services available in Rockford, including the type and quantity of services.

- **Proximity** refers to elements related to having to travel to engage with the healthcare system, including the distance of healthcare service from community members' homes and access to the transportation required to seek needed care.
- **Affordability** refers to presumed and actual healthcare-related costs. These include out-of-pocket expenses, co-payments, and bills received after services have been received.

As illustrated by comments from community input participants, often these three elements of healthcare access intersect with one another or with SDOH, exacerbating access challenges for Rockford's most vulnerable populations.

### **1) Availability of Healthcare Services**

Insurance coverage, physical proximity, and costs all affect how available healthcare services are to the community.

#### ***Limited Services for Medicaid Recipients***

While many participants with Medicaid were satisfied with the availability of primary healthcare services, several described specific challenges related to provider availability. One was finding providers who accept dual-eligible community members—that is, those who have Medicare and Medicaid.

*"It is kind of problematic in Rockford to even find a healthcare provider that takes Medicaid and Medicare both. You're very limited in what you can find. Most places want people with [private] insurance, you*

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#### **Note:**

All focus group participants adopted a pseudonym during the session and all quotations are attributed to pseudonyms.

Where possible, insurance information has been provided for participants quoted in the community-input section.

***“There’s only one place in Rockford that takes [my previous insurance], and . . . they’re about a good 3 to 5 months out for appointments.”***

Dave, 52, on wait-time to get a vision appointments

***“I shouldn’t have to go all the way to Dixon just to go to a dentist.”***

Kyle, 25, on distance to Medicaid dental providers

*know, because they probably get paid sooner.”*

*–Marilyn, 69, female, Medicaid/Medicare*

Many participants, and particularly those with Medicaid, expressed a need for dental and vision care services, due to the limited number of dental and vision providers in the city who accept their insurance. This, in most cases, led them to neglect those aspects of their health:

*“Before, we had a dentist. Now they’re telling us there [is] no dentist. . . . I go through [my Medicaid insurance provider]. We call them up: ‘You got a dentist?’ ‘Here’s the number.’ You call the dentist: ‘Oh we don’t take your medical card.’”*

*–James, 45, male, Medicaid*

*“I decided to change and get rid of [my Medicaid insurance provider] because I was having problems with getting them to cover my vision. There’s only one place in Rockford that takes [my previous insurance], and . . . they’re about a good 3 to 5 months out for appointments.”*

*–Dave, 52, male, Medicaid and VA insured*

*“It is very hard to get your wisdom tooth pulled. I’ve been suffering with infections in my mouth and extreme pain because Medicare and Medicaid don’t want to pay for an oral surgeon to get the teeth removed. It’s very hard to find a doctor who accepts Medicare and Medicaid for a wisdom tooth.”*

*–Chelsea, 24, female, Medicare/Medicaid*

For some community members, accessing dental care requires traveling outside Rockford to see a dentist that accepts Medicaid.

*“I had to go to one [dentist] because it’s one of the very few, at the time period, that*

*accepted my insurance. I had to go all the way to Dixon [Illinois] for that. But that's my point: I shouldn't have to go all the way to Dixon just to go to a dentist."*

*–Kyle, 25, male, Medicaid*

### ***Insufficient Mental Health Facilities and Providers***

Community members described the need for more mental health services in Rockford, including psychiatric and counseling services as well as inpatient care. They also described the need for a stronger focus on the mental health of Rockford residents.

*"We need more like psychiatrists here . . . What's the other doctor that helps with mental issues? . . . Yeah, psychologist, we need more of them in Rockford. . . . I'm going through trauma myself. And I've been trying to find somebody that is in that type of setting, where you can talk to somebody and just let your feelings out. . . And there is hardly any here in Rockford."*

*–Susie May, 66, female, Medicaid/Medicare*

Difficulties of accessing the few mental health facilities in Rockford were among the issues raised; these often involved needing unavailable transportation and waiting in long queues. Gail explained how better access to mental health services might help to reduce more serious outcomes in the community:

*"We have a very poor system for mental health in Rockford. We have a beautiful facility . . . but it's not utilized. I have driven people there. I have talked to them. If they need meds filled or they're in a crisis, they have to walk or find a ride around 5 in the morning. They don't open till 8, but it's only one day a week, you stand in line to get an appointment, and they only take the first 5 people in line. So, during the winter months, and buses don't start that early, it's quite*

***“They need to open or refurbish a building or something, because all these people out here that have real mental issues, they don’t have nowhere to go at all. Nowhere.”***

Susie May, 66, on shortage of health facilities for people with severe mental illness

***“It is a pretty big issue for a lot of trans people . . . there is a pretty big lack of resources for bettering one’s mental health. . . .”***

Sam, 28, on lack of mental health services for transgender people

*an issue. . . . And if that could be improved, I think we would have a lot less people with mental issues where the police are called, or somebody gets killed. . . .”*

–Gail, 75, female, Medicare

Some participants suggested that increasing the number of beds available at inpatient facilities would help address the influx of community members seeking care at emergency rooms for these issues:

*“Inpatient treatment is a big thing. . . . I wish there was more beds available for inpatient treatment for drug and mental health issues.”*

–Stephanie, 29, female, Medicare

*“We also need a facility for really [mentally ill] people here in Rockford. They need to open or refurbish a building or something, because all these people out here that have real mental issues, they don’t have nowhere to go at all. Nowhere. They’re either on the street or they’re in the jailhouse. What’s the jailhouse going to do for them? You only got [a local mental health clinic], and they don’t have no beds.”*

–Susie May, 66, female, Medicaid/Medicare

Some participants described the need for mental health services that are appropriate for particular communities, such as immigrant populations and the LGBTQ+ community.

*“It is a pretty big issue for a lot of trans people. A lot of us do struggle with mental health in at least one facet or another. And I know that it’s obviously outside of the trans community as well. A lot of people struggle with mental health. And there is a pretty big lack of resources for bettering one’s mental health and seeking help.”*

– Sam, 28, transgender man, Medicaid

***“They’ve moved everything [specialists] out of the city, out to the outskirts where rich people live. . . .”***

Marilyn, 69, on distance to specialist care providers in Rockford

## **2) Proximity to Healthcare Services**

Health services, including clinical care, emergency care, and pharmacies, are limited in west and south Rockford, where many of the most socially vulnerable community members reside. Additionally, as previously noted, specialty care services are often unavailable in Rockford. Thus Rockford residents often must travel or to other metropolitan areas for care, which presents challenges for older adults and others with transportation barriers. Participants often described circumstances when support from friends or family members was critical for accessing needed care.

*“Transportation—you know, getting around. You don’t have a lot of access to that if you don’t have a car.”*

*–Kim, 62, female, Medicaid*

### ***Burdensome to Travel for Care***

Aging adults expressed concerns about getting to healthcare sites, especially when their mobility is limited. Without healthcare services within a reasonable distance from home, it has become increasingly difficult to access care.

*“You have to drive forever to get to a decent place. They’ve moved everything [specialists] out of the city, out to the outskirts where rich people live. . . . An appointment for, say, something with your foot . . . that doctor 9 times out of 10 is going to be far away.”*

*–Marilyn, 69, female, Medicaid/Medicare*

Participants also described the transportation barriers associated with running errands like grocery shopping — particularly the need to rely on friends and loved ones.

*“Several of my friends are getting into that stage of life now where they need assistance . . . and they always have to ask*



***“They’re saying that they can do [the cochlear implant procedure] somewhere near Chicago [or] in Madison. Well, we have got no transportation, and I don’t know how to get there.”***

Barbara, 79, on distance to specialist care and transportation burden to reach it

*other people for help. Or there’s something simple like just going to the grocery store or, you know, besides going to hospitals and doctor visits and that kind of thing.”*

*–Amanda, 74, bi-gender, Medicare*

### ***Transportation Burdens Compounded by Caregiving Responsibilities***

Caring for family members with a disability is an additional layer of complexity for aging adults. Multiple community members reported the challenges associated with navigating travel to Chicago (89 miles away), or Madison, Wisconsin (74 miles away), to ensure their child has access to healthcare.

*“[Rockford] don’t have anybody that has pain management under the medical card and we have to go to Chicago, which is not good for me because . . . I don’t want to drive in Chicago, so usually I have one of my sons-in-laws take him [my husband] if he has time. But now that he’s working, I don’t know if he’s going to be able to. . . . I’m not that good at driving. . . . We have to go to another town to be able to do some of the tests that he needs to get done.”*

*–Diana, 59, female, Medicaid*

*“[The doctor] want[s] to put a cochlear [implant] in. . . . They say that they can’t do it here in Rockford. . . . They’re saying that they can do it somewhere near Chicago [or] in Madison. Well, we have got no transportation, and I don’t know how to get there. I can drive a little bit, but I don’t know how to drive to get there. And with Medicare and Medicaid and everything. . . . we are having problems getting her health issue resolved.”*

*–Barbara, 79, female, Medicare*

***“They are going to transport me to have surgery. They'd rather spend the four thousand to ten thousand dollars to transport me to Madison or Hines [In Illinois, near Chicago] to do the surgery at a VA hospital. . . . We can't go to the local hospitals.”***

Dave, 52, on healthcare access issues for veterans in Rockford

### ***Inefficiencies Due to Lack of Approved Healthcare Sites for Veterans***

Veterans living in Rockford also highlighted the difficulty of accessing the care they need. Because the closest Veterans Administration hospitals are in Madison and Chicago, it can be taxing for veterans to find transportation to these locations every time they require care.

*“Rockford doesn't have a hospital . . . just a clinic. . . . I had to do a sleep test. Luckily, they were able to let me do it in Swedish American [Hospital, in Rockford] rather than me going to Madison.”*

*–Ashley, 32, female, VA insured*

In the past, as one community member mentioned, veterans could visit local clinics and the VA would pay for the services they received there, but preapproval is now required prior to visiting a non-VA clinic to receive services.

*“My appendix is going to rupture, but they are going to transport me to have surgery. They'd rather spend the \$4000 to \$10,000 to transport me to Madison, vor Hines [in Illinois, near Chicago] to do the surgery at a VA hospital. First, do the surgery at one of the local hospitals, which saves \$10,000, \$4,000 to \$10,000. Why are we wasting money? . . . We can't go to the local hospitals. The closest ones for us are Madison and Chicago. And if we go to a local hospital, we have to put in the paperwork within 72 hours and hope it gets approved. Otherwise, it's out of pocket.”*

*–Rob, 37, male, VA insured*

### ***Traveling Beyond Rockford Required by Limitations on Specialty Care Services***

As previously mentioned, the limited availability of specialty care services in Rockford presents a barrier to healthcare access. Some participants described the need for traveling outside

***“A lot of insurances offer that option of transportation, and I think that’s really cool because. . . they offer transportation in specialized vehicles for people in wheelchairs, too.”***

Victoria, 31, on accessibility of transportation methods

Rockford for services covered by their health insurance.

*“He [a loved one] got diagnosed with cancer, and in order for him to receive chemo, he has to go all the way to Monroe, Wisconsin . . . and find transportation for that because . . . he is not covered in the area that we live, which is unfortunate. And he has to go there, I think 3 or 5 times a week, once a month, or something like that. If he’s unable to go there, that’s not great for him.”*

*—Kyle, 25, male, Medicaid*

### ***Lack of a Gender Clinic a Barrier for Transgender Healthcare***

A specific segment of the Rockford community that lacks local healthcare is the transgender community. Similar to veterans, transgender people, depending on the kind of care needed, have to travel to a gender clinic in Chicago or Madison to access care:

*“For hormone therapy, there’s really no place in Rockford, no doctors here that specialize in trans health in that way. And the nearest place that does is in Chicago. So that’s why . . . that particular care provider is so far out of town.”*

*—Sam, 28, transgender man, Medicaid*

### ***Insurance-Sponsored Transportation Not Always Reliable***

With transportation being a major issue for Rockford community members, some participants turned to their insurance for transportation needs, which one described as helpful:

*“Actually, a lot of insurances offer a transportation option, and I think that’s actually really cool because they do it for people who can walk. . . . And they offer*

*transportation in specialized vehicles for people in wheelchairs, too.”*

*–Victoria, 31, female, Medicaid*

While a valuable resource, one community member commented that accessing care was still a barrier due to lack of reliable transportation:

*“I had a problem last year with my previous insurance trying to hook up with my new doctor. I was supposed to get a free ride from them, and I had to wait like 2 months for each appointment, and every time they didn’t show up. . . . They scheduled me for a pickup both times and they never showed. So that put me out about 6 months before I could actually see my doctor due to scheduling and everything.”*

*–Dave, 52, male, Medicaid and VA insured*

***“They scheduled me for a pickup both times and they never showed. So that put me out about 6 months before I could actually see my doctor due to scheduling and everything.”***

Dave, 52, on problems with publicly-insured transportation services

#### ***Inadequate Mass Transit in Rockford***

Proximity to healthcare services in Rockford creates a particular challenge for those who lack transportation. While Rockford has a city bus system, many participants complained that its limited and inconsistent routes led them to deem city buses unreliable. These limitations restrict where users can travel, how long they can stay, and reduce mass transit’s utility for functional travel to healthcare appointments, employment, and grocery shopping as well as to community resources such as parks.

*“The buses only go one way. They don’t go both ways on some of the routes . . . and [there are] parts of the city where the bus doesn’t even go. Well, even wealthy people sometimes need to take the grandkids to a downtown event. The hours on the bus are so hindering if you work the night shift. I mean, I got off work at 5 or 6 in the morning. It would be very difficult to get a bus ride home, so I can’t even get even a part-time job, you know, for 10 hours a week*

***“Even when [my health condition] got that bad, I still waited a full day to actually go to the doctor because I was stressing about not knowing how much that was going to cost for me.”***

Mars, 20, on fear of incurring unaffordable healthcare costs

*or whatever, because the transportation isn't there.”*

*—Paula, 69, female, Medicare/Medicaid*

### **3) Affordability**

Many participants, including those with private health insurance and Medicaid, described the healthcare-access barriers stemming from the costs of services. They also mentioned a tendency to delay or avoid care because of the anticipated out-of-pocket costs.

#### ***Young Adults Forgo Care Due to Cost***

Younger Rockford participants often deemed access to healthcare unattainable due to its presumed or anticipated cost, which led them to delay or avoid care. The fear of healthcare costs often stemmed from a lack of knowledge about which services their insurance covered or the cost that would be left for them to pay after insurance coverage.

*“In the past 3 or 4 years, I have to be completely honest, I've hardly gone to the doctor, because of problems with not knowing how much it will cost. . . . Even when [my health condition] got that bad, I still waited a full day to actually go to the doctor because I was stressing about not knowing how much it was going to cost me.”*

*—Mars, 20, nonbinary, employer insured*

In the absence of affordable mental healthcare, some young adults, such as Marcos, sought alternative ways to address mental health issues, including keeping a journaling and seeking social support:

*“One health problem that I was dealing with is my mental health. . . . Some things I've done to combat that [are] community outreach and talking to people, friends, lots of journaling. But I still wish that I had*

***“I don’t understand why I don’t qualify for Medicare, and I’m really sick.”***

Rosa, 58, on confusion about eligibility for Medicare

*access to more mental healthcare, like as far as therapy and ways to pay for that. It seems like every time I try to find a therapist or some sort of counselor, it costs lots of money. And I don’t always have that to give.”*  
–Marcos, 28, nonbinary, Medicaid

### **Public-Insurance Enrollment Challenges**

Older Rockford community members find affordable healthcare challenging to access. Some participants have been able to enroll for Medicaid and/or Medicare; however, others, such as Rosa, faced challenges despite being told they are eligible for the programs:

*“I don’t have Medicaid or Medicare, and [was told], ‘You qualify for this because of your age and your sickness.’ But then I call Social Security and [was told] there wasn’t enough money for [me] to go on disability or whatever you got.”*  
–Rosa, 58, female, Medicaid

### **Not Sick Enough or Poor Enough to Qualify**

Some community members exist in a “gray area,” where, despite having a low income or a disability, they are not eligible for Medicaid and/or Medicare because they are not “poor enough” or “sick enough” to qualify. Thus they remain uninsured or underinsured and unable to get needed care.

*“I was supposed to get Medicare because I’ve been on Social Security for years. And she goes, ‘Well, you qualify for the red, white, and blue card, why don’t you have it?’ I said, ‘I don’t know, they said something about . . . not enough earned money, or I don’t even know.’ She goes, ‘You qualify for it with what you got going on.’ . . . I don’t understand why I don’t qualify for Medicare, and I’m really sick.”*  
–Rosa, 58, female, Medicaid

***“She makes too much money, I guess, so she doesn’t apply.”***

Diana, 59, on a family member not being “poor enough” to qualify for public insurance

***“Not having insurance is a big problem . . . It is difficult because there they sent me to a hospital to get a scan done, which was almost \$8,000. I still have not paid that.”***

Gianny, 68, on high healthcare costs without insurance

*“My mother-in-law is on . . . Medicare, plus some supplementary insurance. She has a harder time because she does have to pay the co-pays and she lives on her husband’s Social Security. But she’s on limited income. It’s harder for her to get all her medication because she does have to pay, sometimes a big co-pay, to get them. . . . I tried to see if we could get her on a medical card with Medicaid. But I guess with the money she makes from Social Security, she can’t. She makes too much money, I guess, so she doesn’t apply.”*

*–Diana, 59, female, Medicaid*

### **Other Healthcare-Related Costs**

Regardless of their health insurance status, many participants mentioned out-of-pocket costs associated with receiving healthcare, including deductibles, co-payments, and medications. For example, some of them highlighted their experiences with receiving unexpected or unaffordable bills:

*“Not having insurance is a big problem. I have had jobs with insurance, but now I am not working and it is very difficult, and even now that I am going to [a local clinic], which is where I always go, what the doctors give me . . . is cheaper, but I still get a bill. It’s difficult because there they sent me to a hospital to get a scan done, which was almost \$8,000. I still have not paid that.”*

*–Gianny, 68, male, uninsured*

*“I used to be on the Depo-Provera, which is an injection every 3 months for birth control. The last time I got it was the last time I was able to afford it because our insurance had lapsed and I wasn’t aware of it. So I went, and got a \$900 bill afterwards when it was supposed to be free. It took a few months to be able to pay that off through payments.”*

*–Mars, 20, nonbinary, employer insured*

***“Sometimes the bill arrives months later and you don't know what it's for.”***

Hermey, 28, on delays and confusion around billing

***“[The cost] is why we are always looking for medication in other places that work, . . . to find the least expensive option and cure ourselves.”***

Chata, 62, on medication workarounds due to high costs

Many participants also described inconsistencies and lack of upfront information about co-payments as well as delayed billing. For some, this lack of cost transparency was a substantial barrier to seeking care.

*“I have noticed that the payments you have to make to go to the doctor, the co-pays, those are a little confusing to me because they do not always charge them when you are there. Sometimes the bill arrives months later and you don't know what it's for.”*  
—Hermey, 28, female, employer insured

Participants described the challenges associated with the cost of medication as well as healthcare.

*“They did an operation that improved my condition, but over time it has gradually declined. They also gave me medicine; however, it was costly and not significantly subsidized by Medicaid.”*  
—Lorema, 68, male, Medicaid

Another participant described the challenges associated with paying for 3 months' worth of medication instead of 1 month's worth:

*“I used to get 30 little pills before, and now they are giving the 90. I do not know why, and sometimes I think that it is more expensive. I used to pay \$17.00, \$20.00, and now I pay 3 times the price, so it is more difficult for me to buy it.”*  
—Gianny, 68, male, uninsured

Lack of insurance coverage for some medication has led some participants to seek less expensive options:

*“[The cost] is why we are always looking for medication in other places that work . . . to find*



***“I received quality care from the doctors. I was diagnosed with high cholesterol, and they told me what kinds of foods to eat, and I was happy with the care I received.”***

Qasim, 41, on the quality of care received in Rockford

*the least expensive option and cure ourselves.”*

—Chata, 62, female, Medicare

## **Quality of Care in Rockford**

The topic of quality of care encompasses the experiences of community members as they utilize healthcare, with a focus on the degree to which care is patient-centered. The team looked at this theme on individual, organizational, community, and societal levels, loosely following a socio-ecological model (26), and did so to better understand the interactions between community members and their physical and sociocultural environment and how all these factors contribute to their ability to fully utilize healthcare.

### **1) Patient-Centered Care**

Conditions for the provision of high-quality care include a strong patient-provider relationship and sufficient operational capacity to serve patients well. In the community-input sessions, participants’ descriptions of their healthcare experiences varied. While many comments were positive, the poor quality of care some experienced—reflecting negative patient-provider interactions and problematic limitations in operational capacity—suggests a need to focus on patient-centered care, particularly for low-income residents, LGBTQ+ populations, and those who speak limited English.

### **No Issues with the Care**

Several participants expressed satisfaction with the quality of care they have received from their providers. Some praised their providers and described how their care went above and beyond their expectations:

*“The doctors are all good, yeah. They take*

***“When you get a good rapport with your doctor, you don’t want to just give that up and risk going to someone new.”***

Kyle, 25, on the importance of continuity in the patient-provider relationship

*their time with you.”*

—Kim, 62, female, Medicaid

*“I received quality care from the doctors. I was diagnosed with high cholesterol, and they told me what kinds of foods to eat, and I was happy with the care I received.”*

—Qasim, 41, male, employer insured

Some expressed similar satisfaction with the healthcare sites where they received the care:

*“At [the local clinic], they have treated me very well. They take my pulse, my weight, and everything. Everything is very good. Even with the pandemic, it was still the same. I have had good treatment there. I have received very good service.”*

—Gianny, 68, male, uninsured

#### ***Patient-Provider Relationship Disruptions***

However, the relationships of some of the participants with their providers were disrupted by personnel changes at the healthcare organization, health insurance changes, or the death of their provider. Such disruptions can interfere with patients’ ability and desire to build trust with providers.

*“When you get a good rapport with your doctor, you don’t want to just give that up and risk going to someone new. The only way I could get to another therapist around my area is I would have to change insurance, and then I would lose my doctor.”*

—Kyle, 25, male, Medicaid

*“[My doctor] had told me that if I decide to have another kid, he will deliver my next kid, which he did. He recently passed away, like a year ago. . . . That was my favorite doctor, and he’s gone. So it’s hard for me to realize [what I’ll do when] maybe one day I have [more] kids.”*

—Serenity, 27, female, Medicaid

***“[The doctor] didn’t really care about my issues, my problems. She was in and out. A ‘hurry up, get out of here, I don’t want to be here,’ type deal.”***

Serenity, 27, on the lack of patient-centered care in her healthcare encounters

***“I think they don’t really consider the seriousness of what the person is going through.”***

Princess, 56, on the lack of patient-centered care in her healthcare encounters

### **Care Not Patient-Centered**

Provider interactions that weren’t patient-centered left some community members dissatisfied with the quality of their care. A recurring issue participants raised was feeling as if doctors were not paying attention to them or their symptoms, or as if their provider was not taking them seriously:

*“[The doctor] didn’t really care about my issues, my problems. She was in and out. A ‘hurry up, get out of here, I don’t want to be here,’ type deal. . . . I need to look for another doctor. One that’s actually closer versus where I was, on the west side. Look, I’m just trying to look for a decently good doctor that’s going to actually care about my problems as well.”*

—Serenity, 27, female, Medicaid

*“Many times, I have felt that [the doctors] do not really take into account how we feel when we go to the doctor. . . . I think they don’t really consider the seriousness of what the person is going through.”*

—Princess, 56, female, uninsured

Princess also shared that she visited the doctor after experiencing dizziness and, despite voicing her doubts about the diagnosis, was wrongly diagnosed with vertigo:

*“[The doctor] gave me medication supposedly for vertigo, which I did not take. I just asked them to run all kinds of tests because I was feeling very tired and very dizzy. . . . I felt like I did not know what it was in spite of what the doctor said. . . . They ran all kinds of tests because I insisted on [it]. So they ran a thyroid exam and found out that my problem was not vertigo, it was a thyroid problem.”*

***“I think they don’t really consider the seriousness of what the person is going through.”***

Princess, 56, on the lack of patient-centered care in her healthcare encounters

—Princess, 56, female, uninsured

Another participant shared how a child was not diagnosed with autism until age 11, despite previous doctor visits as required by teachers and day care staff:

*“The doctors would always tell us that this person was OK because he could socialize with other children. . . . I did not think there was anything wrong with him until he turned 11 and fell into depression. That’s when we started to do research about what he had [and] took him to the doctor. There he was referred for autism, and that [referral clinic] diagnosed him with autism and with depression.”*

—Hermy, 28, female, employer insured

Some participants who are immigrants described a lack of information during their healthcare interactions. Latinx and Congolese community members had particular concerns about the short amount of time providers spent with them during healthcare visits.

*“When you see a cardiologist for [a pacemaker], you don’t see him for quite some time. You [do] see a lady that monitors your pacemaker. You [do] see a nurse after 6 months, [but] I think it’s a year before you see the doctor at all. So you might see him for 10 to 15 minutes on your first visit. You see him for less than 5 minutes the day of surgery, and then you don’t see him again for a period of time, which I don’t agree with. I have talked to other people that have gotten pacemakers and they’ve gone out of the state to get theirs for that reason.”*

—Gail, 75, female, Medicare

Finding themselves leaving healthcare visits with more questions than answers, some participants also expressed dissatisfaction with their providers’ communication. They said they did

***“A lot of people, a lot of doctors or nurses or whatever . . . just don’t understand or don’t know how to help with gender transitioning.”***

Nathan, 22, on lack of expertise among providers for providing LGBTQ+-sensitive care

not understand why they had to take prescribed medications for long periods of time, why certain health issues could not be cured, or why they received instructions were a seemingly unrelated health issue:

*“He [the doctor] said that my child should drink plenty of water and I wondered how this would help with my child’s nose-bleeding condition.”*

—Victor, 36, male, Medicaid

*“What is the point of taking the medicine if it can’t cure my [high blood pressure]?”*

—Hibrahim, 67, male, Medicaid

### ***Lack of Inclusive Healthcare for LGBTQ+ Community***

A particular group of Rockford residents, members of the LGBTQ+ community, expressed the many ways in which their care, both interpersonally and organizationally, lacked respect and decency:

*“There’s a real lack of LGBT-sensitive or focused healthcare in Rockford, which is a big problem. A lot of people, a lot of doctors or nurses or whatever . . . just don’t understand or don’t know how to help with gender transitioning.”*

—Nathan, 22, transgender man, employer insured

Provider interactions were described as discriminatory and transphobic, particularly when providers failed to provide gender-affirming care:

*“Just the fact that my physician asked me, being trans, very invasive questions over stuff that doesn’t matter. Alongside being born female, I’m not taken very seriously when they see me as a woman. So I was scared of going in there. Usually my*

***“[Doctors] kind of just make the general assumption that, ‘Oh, you’re gay. And that’s what’s wrong with you right now.’”***

Tim, 26, on problematic patient-provider interactions due to his sexual orientation

*physicians ask if I’ve had any surgeries in reference to my gender or . . . ask about hormones and stuff like that when I was . . . there for a cold or something. It’s not necessary and very invasive.”*

—Mars, 20, nonbinary, employer insured

In other instances, participants shared examples of providers dismissing their presented health issues and attributing concerns to their transgender identity:

*“I have had a doctor literally say that my stomachache was because of my testosterone. And it turned out to be an ulcer in my stomach, so I went to a different doctor for a second opinion.”*

—Theo, 22, transgender man, Medicaid

*“[Doctors] kind of just make the general assumption that, ‘Oh, you’re gay. And that’s what’s wrong with you right now.’ It’s, ‘Uh, have you done things with other men?’ It’s like, what does that have to do with my back hurting? . . . Doctors just kind of generalize when they find out you’re a gay man or you’re a trans man, like: ‘Oh, all your issues are because you’re a homosexual and not because you might have, you know, scoliosis.’”*

—Tim, 26, transgender man, Medicaid

The need for appropriate services for LGBTQ+ populations also extends to mental healthcare, as illustrated by Theo’s negative interaction with a provider when seeking mental health services in Rockford:

*“The therapist . . . said me being transgender isn’t the way God intended. She did get fired for that, so I do feel a little bit of justice for that. But then again, she shouldn’t have said that at all in the [first place].”*

***“Doctors here in Rockford [have said] in the past, ‘No, you were born this way. This is what the file says. So that’s what I’m going to call you.’”***

Theo, 22, on disrespectful interactions with providers due to his transgender status

***“Because I am part of a low-income family and have Medicaid, I already feel that we are treated differently and that we're restricted to where we can go”***

Sarah, 25, on subpar care and limitations in options due to Medicaid status

—Theo, 22, transgender man, Medicaid

The community-input sessions also provided an opportunity for community members to learn from one another’s experiences. During one discussion, Priscilla, a transgender person, shared how she insisted that her provider refer to her respectfully and appropriately:

*“I had to explain to [the provider about] the name thing, or the name game thing: ‘Please call me this. Please call me that. Do not refer to me as [this]. Ever.’ . . . Because I’m yeah, that name. I’m a girl, I’m she. Her/hers. And that’s what I’ve requested you to call me. So ever since, that’s the name they respectfully call me.”*

—Priscilla, 51, transgender woman, Medicaid

Priscilla’s story resonated with other community members in the discussion who expressed motivation to do the same:

*“That’s really awesome that you were just like, ‘No, you’re not going to call me that. You’re just going to call me this.’ . . . I wish I had the bravery to do that. Because I have always been terrified to do that because doctors here in Rockford [have said] in the past, ‘No, you were born this way. This is what the file says. So that’s what I’m going to call you.’”*

—Theo, 22, transgender man, Medicaid

### ***Subpar Care for Those with Medicare/Medicaid***

Another group that said they had often received poor-quality care were those with Medicaid or Medicare. Some community members attributed their poor healthcare experiences to the type of insurance they had:

*“My son, he’s 5 and, before he started pre-K, he had to get vaccinations. Because*

***“They are so understaffed and overworked that you get very piss-poor care, and it’s not their fault. . . . If you’re poor, you’re S-O-L [simply out of luck].”***

Marilyn, 69, on perceived capacity limitations at local Medicaid providers

*I am part of a low-income family and have Medicaid, I already feel that we are treated differently and that we're restricted to where we can go. . . . My son was flailing. She just kept sticking the needle in his arm over and over again. . . . She gave him his vaccines all in one arm. Later that night, he went to the hospital. His body was burning up. He was throwing up . . . I felt he didn't deserve that.”*  
—Sarah, 25, female, Medicaid

## **2) Organizational Capacity**

Many participants attributed the poor quality of care to insufficient operational capacity at provider facilities. Specifically, they suggested that the number of healthcare staff members was insufficient to meet the needs of their many patients and interfered with their ability to provide high-quality care.

*“One of my friends recently went to one of the clinics that accepts Medicaid. In a nutshell, the nurse practitioner spen[t] more time with [him] asking questions and this and that, which is normal, than the doctor did. But the problem is, when the doctor came, [she] didn't even look at him. . . . She said, ‘Well, we’ve got to talk about these labs,’ and she spent the whole time on the computer. Never even looked at him. Yeah. So it’s like the level of care is very poor—and it’s not her fault. She’s got 20 people after him. She only had time to do the labs. That was it.”*

—Marilyn, 69, female, Medicaid/Medicare

Marilyn went on to discuss the capacity issues she observes at clinics that serve patients on public insurance.

*“When you do find someone that accepts [Medicaid], like [the local outpatient clinic], they are so understaffed and overworked that you get very piss-poor care, and it’s not their fault. So that’s been my personal*



***“I’ve been waiting for [the doctor] for 3 months and they just called me yesterday . . . and told me they had to reschedule me again. . . . I said, ‘But I’ve been waiting for months for this and this is my spleen.’”***

Rosa, 58, on long lead times and difficulties scheduling specialist appointments

***“When I first came to this country, I was looking forward to receiving quality care for my condition. But my experience so far has been the slow delivery of care, with prolonged treatment times.”***

Zahi, 26, on long lead times for scheduling appointments

*experience and some of my friends’ and relatives’ experiences. If you’re poor, you’re S-O-L [simply out of luck].”*

—Marilyn, 69, female, Medicaid/Medicare

### **Long Wait Times for Referral and Follow-up Appointments**

This lack of capacity was often reflected by difficulties with seeing healthcare providers for referrals or getting follow-up appointments with providers.

*“You might get referred to a doctor, but that doctor could already have 1,200 patients and can’t possibly take you on. So if you have major health issues, you really have a problem.”*

—Gail, 75, female, Medicare

*“I’ve been waiting for [the doctor] for 3 months and they just called me yesterday . . . and told me they had to reschedule me again because they didn’t have one of the nurses to do the ultrasound and the doctor was only seeing 10 patients at a time. I said, ‘But I’ve been waiting for months for this and this is my spleen.’”*

—Rosa, 58, female, Medicaid

Some participants mentioned possible causes for the long wait times for appointments, while others emphasized the impact of long wait times on their quality of life:

*“When I first came to this country, I was looking forward to receiving quality care for my condition. But my experience so far has been the slow delivery of care, with prolonged treatment times.”*

—Zahi, 26, female, employer insured

*“I know a child with a toothache [who] had to wait 1 month to see a doctor.”*

—Qasim, 41, male, employer insured

***“The experience goes well if there’s a Swahili translator. In their absence, I do not receive good services because I have a hard time communicating with the provider.”***

Zahi, 26, on the need for translation services for Swahili-speaking patients

### **WWW Issues with Interpreter Services**

While the majority of immigrant community members said that a language interpreter had always been available during care, the Congolese immigrants who participated in a focus group said a lack of Swahili interpreters was a barrier to their ability to fully utilize healthcare. As Zahi described, having an interpreter makes it easier to communicate with and be understood by providers, and the absence of interpreters often has an impact on both the timing and the quality of visits:

*“The experience goes well if there’s a Swahili translator. In their absence, I do not receive good services because I have a hard time communicating with the provider. When I schedule appointments, they say a translator will be available, only to have none [when I] arrive. Other times, they tell me when I’m scheduling that a translator is unavailable, so the appointment is canceled or postponed until a translator is available.”*  
—Zahi, 26, female, employer insured

Availability of interpreter services for patients is an organization-level factor that can affect the ability of Rockford immigrant populations who primarily speak languages other than English to fully utilize healthcare.

### **3) COVID-19 and Telehealth**

As the COVID-19 pandemic restructured healthcare services, the changes affected how some of the participants described the quality of the care they received. For example, Spanish-speaking community members described being unable to be accompanied by a family member during visits due to COVID-19 restrictions on how many people could be in a room—a particular issue for those wanting language

***“Yes, I found [telehealth] to be helpful. It beats going out to appointments.”***

Michelle, 56, on positive telehealth experiences

***“I don’t know that I necessarily trust the diagnosis over the phone. . . . You’re not getting your full doctor visit and [they’re not] checking you out.”***

Dion, 35, on reasons for hesitance in utilizing telehealth

support:

*“Parents who do not speak another language . . . cannot be there with the [patient]. They have to wait outside the building.”*

—Martin, 25, male, employer insured

During the pandemic, providers begin using telehealth, an option that community members shared mixed feelings about. Some indicated satisfaction with telehealth, particularly for mental health services or appointments that did not require a physical visit:

*“The only [appointment] I had via telephone because of COVID was in reference to anxiety. . . . It was fine. It was pleasant.”*

—Debbie, 55, female, Medicaid

*“Yes, I found [telehealth] to be helpful. It beats going out to appointments.”*

—Michelle, 56, female, employer insured

Other community members said they had never heard of telehealth and had never been offered it as an option. Some of the participants had no interest in it, saying it is not the same as truly seeing the healthcare provider:

*“I don’t know that I necessarily trust the diagnosis over the phone. . . . You’re not getting your full doctor visit and [they’re not] checking you out, making sure everything’s good, [so] you’re not even getting a good reading on what could potentially be the problem.”*

—Dion, 35, male, employer insured

*“I still prefer to see someone . . . With the issues that I’m having currently, it would be a far better situation.”*

—Dave, 52, male, Medicaid and VA insured

***“I think the [Rockford] Parks Department does a great job. You know, there’s quite a few places around here to just get out and get some sunshine.”***

Dion, 35, on public recreational resources in Rockford

Discussions about telehealth with immigrant populations highlighted their belief that receiving healthcare services requires physically visiting the healthcare provider:

*“One of my children got sick. . . . I wasn’t sure what it was, and the pandemic had just begun. So his appointment was virtual, and I don’t feel as sure that they are prescribing the correct medication, because basically they are guessing what the child has, because they are not physically checking . . . vital signs. It is more difficult for me to have to pay a co-payment if it is virtual versus physical, because I feel more confident that [the provider] will do the job correctly if it is physical. But if it is virtual, doctors basically guess what you have because they are not there checking.*

*—Hermy, 28, female, employer insured*

*“The truth is, when you are face to face with the doctor or the nurse, they can determine that you are really sick by how you look, how you walk, how your body language tells them a lot. On the phone they cannot tell.”*

*—Princess, 56, female, uninsured*

## **Challenges Related to Social Determinants of Health**

Understanding the health conditions of Rockford community members, as well as how they prevent and manage health concerns, requires understanding the conditions in which they are born, live, work, and play. These conditions affect their health and general quality of life. Participants in the community-input sessions often talked about health in relation to resources that either exist or are lacking in their communities, their access to these resources, and their ability to fully utilize them.

***“They like to play. We take him to the park, but he wants more people with him. He needs a team, he needs a coach.”***

Suzan, 47, on the need for affordable youth recreational programming in Rockford

***“Get rid of all the junk food. There’s too many. There’s too much.”***

Serenity, 27, on the perception that Rockford is a food desert

## **1) Untapped Potential of Parks and Social Spaces**

Participants described the many parks in Rockford as community assets that create opportunities for people to spend time outside with friends and family, taking walks and playing.

*“I think the [Rockford] Parks Department does a great job. You know, there’s quite a few places around here to just get out and get some sunshine.”*

—Dion, 35, male, employer insured

*“We go to the park, and we’ll be by ourselves. . . . We do family things.”*

—Sarah, 25, female, Medicaid

However, many of the participants said that the parks are underutilized because the community is insufficiently engaged. Many said that they are unable to afford a gym membership and instead would like more to be done with the parks, such as holding community sports activities there. One participant said that she took her 14-year-old son to community centers to keep him busy and active and busy but had to stop because of the expense:

*“If there’s any way to make something for his age. They like to play. We take him to the park, but he wants more people with him. He needs a team, he needs a coach.”*

—Suzan, 47, female, Medicaid

## **2) Food Access**

For participants, maintaining good health includes eating healthy foods. However, some said that Rockford lacks healthy food options. They described Rockford as a food desert, with easy access only to unhealthy food:

*“We certainly have enough submarine sandwich places around the neighborhood and . . . the town, but we don’t have a lot of*

***“There could be more access to fresh farmer’s markets around the community that maybe weren’t just on the weekends, when a lot of people are working.”***

Ashley, 32, on desired community resources to address Rockford’s status as a food desert

*good healthy food access places available.”*  
—Amanda, 74, bi-gender, Medicaid/  
Medicare

*“Get rid of all the junk food. There’s too many. There’s too much.”*  
—Serenity, 27, female, Medicaid

*“I don’t think we have any healthy stores . . . in Rockford. . . . I don’t think we have Whole Foods. I don’t think we have any healthy food store, actually, anywhere.”*  
—Sarah, 25, female, Medicaid

The abundance of unhealthy food close to their homes is a particular issue for those on stricter diets due to chronic illness or an elevated risk of developing a chronic condition. One participant recently diagnosed with high cholesterol said that fast food is more accessible because it is a “quick meal.” This sentiment was echoed by a participant who expressed the effects of poor access to healthy food options:

*“I feel like in the low-income community there can be food deserts and not a lot of access to quality food, which leads to a lot of other issues that affect the community.”*  
—Ashley, 32, female, VA insured

The cost of healthy food options was not lost on the participants, who acknowledged that healthy food may be expensive but said they still would like to have accessible options. In addition to stores that sell healthy food, many community members would like access to farmer’s markets:

*“There could be more access to fresh farmer’s markets around the community that maybe weren’t just on the weekends, when a lot of people are working.”*  
—Ashley, 32, female, VA insured

***“I feel she’s missing a lot of teaching, a lot of languages, a lot of basic learning [not being in day care]. But what can I do?”***

Stephanie, 29, on developmental disadvantages for children whose parents can’t afford childcare

### **3) Childcare Burden**

Community members mentioned that a lack of childcare services in Rockford affects families and is particularly burdensome for single mothers. Childcare was a necessity for a young mother who needed to attend a doctor’s visit but was unable to bring her children to the appointment:

*“I was denied healthcare . . . only because they only allowed 1 person, 1 guest, [inside]. But when it’s only me and my 3 kids, we all have to come because I don’t have a babysitter. I don’t have those resources.”*  
—Sarah, 25, female, Medicaid

Working mothers often have to turn to family for childcare or make other plans. Stephanie shared that she had to quit her job to look after her daughter while her ex-husband worked. When she returned to work, she put her name on a waiting list for a day care, and her name is still there after more than a year. She added that even if she finally makes it to the top of the list, she may not be able to afford the costs:

*“It’s \$44 a day for the day care, so I’m looking at about \$800 to get her in.”*  
—Stephanie, 29, female, Medicare

The barriers to sustainable day care in Rockford mean Stephanie must leave her daughter with her mother. Although her mother’s availability is helpful, Stephanie acknowledged that her child’s development may be affected by not attending day care:

*“I feel she’s missing a lot of teaching, a lot of language, a lot of basic learning [not being in day care]. But what can I do?”*  
—Stephanie, 29, female, Medicare

Sarah said she takes her children to the YMCA’s Kids’ Time Before & After School program before

***“She would regularly play with paint that’s chipping from the walls.”***

Victor, 36, on his child’s health condition caused by harmful environmental factors

going to work, and she pays for the services out of pocket:

*“[Childcare] is unpaid at my job . . . so, I pay for Y care \$100 each week. Every week. They take \$100 for him and \$100 for her. So \$200.”*

—Sarah, 43, female, Medicare

Mothers said that the burden of childcare falls solely on them; in some cases, they must choose not to work because they cannot afford to pay for childcare. In addition to the lack of affordable childcare services in Rockford, the range of services is narrow. One mother mentioned that the hours of the day care currently available to her are limited and don’t align with her working hours.

#### **4) Environmental Health**

The participants emphasized the importance of a clean environment, in both their homes and their neighborhoods. However, some community members reported issues with the cleanliness of their environment. Trash on the road and overfilled bins and dumpsters makes them question the sanitation measures of the city. Afghan immigrants described Rockford’s water as “not healthy, oily, having a rusty color, and smelling bad.” Congolese immigrants also mentioned issues with cleanliness in their homes that was actively contributing to their health outcomes. Victor, for example, said that foreign particles had been detected in his body during a regular visit to the doctor:

*“The healthcare provider suspected there was something was contaminating my home, so they sent personnel to inspect the premises. They also consulted the landlord, who carried out cleaning and maintenance, and my condition improved.”*

—Victor, 36, male, Medicaid

Another participant shared that contaminants in her home may be linked to her child’s “fluctuating blood pressure.” One mother’s healthcare provider has emphasized the need to improve sanitation in the



***“Many times, there are [resources], but the information is not there. The people who benefit from this information are just a few.”***

Princess, 56, on the need for better dissemination of information about community events and resources

home, especially in chairs and along windows. Despite her efforts to improve sanitation in her home, her child still struggles with the condition. Victor shared that his child also suffers the same fluctuating blood-pressure condition, which could be associated with lead from paint:

*“She has the same condition and would regularly play with paint that’s chipping from the walls.”*

—Victor, 36, male, Medicaid

### **5) Lack of Information**

A significant concern of community members is not knowing where or how to access information about community events and resources such as free health-related activities or health-management and wellness resources. Multiple the participants agreed that community members are unaware of events in Rockford:

*“Many times, there are [resources], but the information is not there. The people who benefit from this information are just a few. I think they [should]. . . post it more, post it more.”*

—Princess, 56, female, uninsured

Many of the participants also noted a lack of social connection in the community, particularly since the start of the pandemic. Rockford community members said that they rely on one another to obtain information through word-of-mouth. However, the pandemic has made it more difficult:

*“It’s very hard when you’re kind of new in the area, when you’re not rubbing elbows with other people, to learn the ropes and the way of getting around.”*

—Paula, 69, female, Medicare/Medicaid

In the spirit of information being passed on by word of mouth, during a focus group, a Rockford

***“They neglect to think about a lot of older people like myself [who] can’t afford to have internet.”***

Gail, 75, on challenges accessing healthcare information due to age and inability to pay for internet services

***“But now my medications are getting to where it’s one minute they cover it and one minute they don’t. I mean, what happened?”***

James, 45, on difficulty tracking developments in public insurance coverage

team member learned about the ability to access the YMCA with a medical card, information relayed to other community members during subsequent input sessions:

*Dan: “Maybe like swimming therapy . . . I would definitely be open to it.*

*Interviewer: Apparently you can use the Y with your medical card. That’s what I’m told.*

*Dan: I can use that and go in there for free and then use the [facilities]? That’s good information to pass along.”*

*—Dan, 54, male, Medicaid*

Some community members discussed the lack of health-related information. This included COVID-19 vaccination locations, services (including transportation) their health insurance offers, and changes in their health insurance coverage. One participant mentioned how accessing information via the internet presented challenges:

*“They neglect to think about a lot of older people like myself [who] can’t afford to have internet, and even if you could afford to buy a computer, you can’t afford to pay the monthly rate. Everything was, ‘Go to such-and-such dot com and sign up for your shots.’”*

*—Gail, 75, female, Medicare*

*“But now my medications are getting to where it’s one minute they cover it and one minute they don’t. I mean, what happened?”*

*—James, 45, male, Medicaid*

### **What Rockford Residents Want**

Recommendations from community members reflected two primary themes: community building and improved dissemination of information to the community.

***“A nice recreational center would offer everything: Doctor’s appointments, a gym, day care, something like that. A long time ago, it used to be like that.”***

Lynette, 56, on desire for prominent public health facilities and resources in Rockford

## **1) Community Building**

Many of the participants said that their personal health depends on the social health of the community, including the ability to socialize and connect with others. This has diminished during the COVID-19 pandemic. In addition to increasing activities in the parks, community members recommended community and family events to foster social engagement among residents and promote activity and health. More opportunities for the Rockford community to connect would also foster conversations about mental health, which many community members feel is a major issue in Rockford:

*“It’s important to promote body positivity within the community and really trying to have conversations about what ‘healthy’ looks like in different individuals, because there is really this kind of widespread idea of what healthy looks like.”*

—Sam, 28, transgender man, Medicaid

*“I would like an organized program for people able to go, almost like a gym but more like an organized community where it can be outside in the summer.”*

—Sarah, 25, female, Medicaid

*“A nice recreational center would offer everything: doctor’s appointments, a gym, day care, something like that. A long time ago, it used to be like that.”*

—Lynette, 56, female, Medicaid

Several participants noted a decline in community connectedness, which they believe contributed to isolation and community violence. They recommended reinvestment in communities to foster engagement as a way to improve both individual and community health.

## **2) Dissemination of Information**

Another challenge for Rockford community

***“More information.”***

***“More resources are needed, especially for bilingual families.”***

***“Reaching out to people more.”***

***“Targeting schools to educate more.””***

Various Rockford participants on health information needs in the community

members is knowing where to find information about health and healthcare, transportation, and other topics—and then being able to access it. According to the participants, such information should be shared by insurance companies and healthcare providers, and through mass media, the internet, and community organizations such as schools. Information availability would help mitigate barriers to accessing or utilizing healthcare and improve healthcare experiences. Better dissemination of information would be particularly beneficial to immigrants, who may be new to the city or country and need access to a variety of resources. Rockford community members would benefit greatly from timely and easy-to-understand information about their insurance, including covered services, co-payments, and medication coverage:

*“More information, like if a site exists to gather information [from] or resources just like a community center for health or something that people can go to and ask for . . . like Rockford Health Center, where you can go for information or something like that.”*

*—Arielle, 30, female, uninsured*

*“More resources are needed, especially for bilingual families, because there are resources that are available, but Hispanics don’t always know about them, so they miss out on the opportunity to participate.”*

*—Hermy, 28, female, employer insured*

*“Most of the older ones or [disabled] people are at home, most of them probably got a TV. So TV would be the best place to start. And then most are . . . getting Medicare help. . . . Medicare should be telling them what’s available to them. . . . You might see something that goes down the streets saying ‘paratransit’ . . . and they say, ‘Hmm that’s a new company,’ not knowing that it’s*

*for people that can't get around.”  
—Barbara, 79, female, Medicare*

*“[There should be] more resources. Get them out there more some type of way, reaching out to people more about resources. Targeting schools to educate more. How can I say it, communication with your physicians? Have them direct you to someone in your community that can help you when they're not around, [to] have more resources, I might say.”  
—Sandra, 50, female, Medicaid*

# Summary of Rockford Community Input

## Healthcare Access

- a) There is a need for more dental, vision and mental health care providers, especially those who accept public insurance.
- b) The need to travel within and outside of Rockford for health services presents challenges for those with transportation barriers. Some residents, including veterans and the transgender population often travel to Chicago or Madison for necessary care.
- c) The cost of healthcare leads to avoidance or delays by many residents. This includes out-of-pocket costs associated with receiving care (e.g., deductibles, co-payments, medications) as well as lack of knowledge about costs and fears of receiving a bill that is not affordable.
- d) Despite having a low income or a disability, some residents are not eligible for public insurance because they are not “poor enough” or “sick enough” to qualify.

## Healthcare Quality

- a) Disruptions in the relationship between providers and patients due to personnel changes interfered with patients’ ability and desire to build trust with providers.
- b) Participants frequently felt as if doctors did not take their healthcare issues, symptoms, or emotions seriously.
- c) LGBTQ+ residents reported discriminatory, dismissive, and transphobic interactions with providers.
- d) Non-English-speaking residents described various experiences regarding care. For example, lack of Swahili interpreters was a barrier to Congolese immigrants’ ability to fully utilize healthcare.

## **Social Determinants of Health**

- a) Parks are valuable resources in Rockford but they are underutilized.
- b) Some residents described Rockford as a food desert in which unhealthy food options are abundant, but healthy food options are unavailable or inaccessible.
- c) A lack of affordable childcare services in Rockford forces challenging tradeoffs for mothers with young children (e.g., paying for childcare to be able to work or attend an appointment).
- d) Some residents expressed concerns about household environmental hazards, such as safe water and lead paint.
- e) Community members reported they didn't know where or how to access information about community events and health resources.

## **Community Recommendations**

- a) Community members recommended community and family events to foster social connection and health among residents.
- b) Participants recommended wide dissemination of information on healthcare and community resources, including by health care providers, insurers, schools, etc.

## 4: Synthesized findings from the data analyses and the community conversations to define transformation opportunities for stimulating outpatient care access and reducing the social barriers to care and treatment

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What emerges from the combination of the analysis of hospital utilization data and the inventory of concerns expressed by residents in community conversations is strong indication of a need to improve the accessibility and affordability of healthcare (primary, specialty, and behavioral), improve patient-provider interactions and, in parallel, to make improvements in the physical and social environment in order to better prevent disease, access needed care, and adhere to treatment. Doing so will require healthcare systems in Rockford to reach out beyond the walls of their hospitals and into communities. It will also require community residents and organizations in Rockford to become more engaged in health and healthcare. In other words, the effort will entail finding a middle ground where healthcare systems and communities work together to prevent disease and promote care engagement.

To this end, the combined analysis suggests that transformation efforts need to concentrate on *clinic-community linkages* to provide patient-centered, culturally-competent and community-based primary and secondary care and wraparound services to help people manage chronic illnesses, mental illnesses, and substance use disorders and reduce social-determinant-of-health barriers to care and treatment.

Clinic-community linkages can leverage the treatment expertise of healthcare systems, the on-the-ground knowledge gained via community engagement and partnership with community-based organizations to

provide more accessible, patient-centered care, support a more holistic approach to chronic disease management, restore trust in the healthcare system, and increase engagement in healthcare.

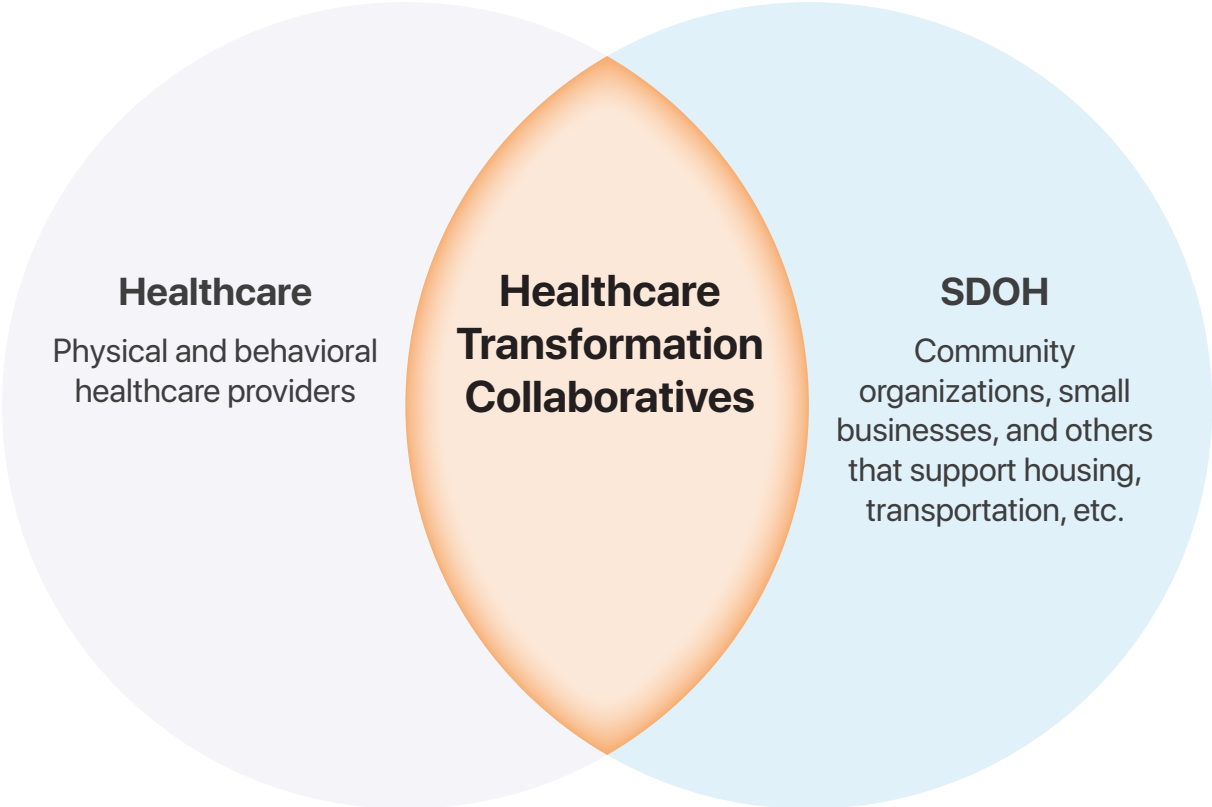
More specifically, clinic-community initiatives should be guided by the following objectives:

1. *Incentivize clinic-community linkages* in order to address physical health, behavioral health, and social needs in a coordinated, accessible fashion within communities.
2. *Promote collaborative care models* for chronic illnesses, including mental illnesses and substance use disorders (for example, health homes and coordinated care models).
3. *Build capacity* for clinic-community linkages and collaborative, relationship-based care models.
4. *Promote care engagement* via awareness of services and navigation support.
5. *Continuously groom clinic-community linkage services* to reduce and eliminate barriers to care.

**HFS' Healthcare Transformation Collaboratives project is designed to incentivize these clinic-community linkages (see Figure 12).** Over time, investments in these linkages will address the need for access to quality, patient-centered services where people live, work, and play and, ultimately, will help drive greater health in communities.



Figure 12



# Limitations and Opportunities for Future Research

The analyses in this report demonstrate an imperative need to expand access to outpatient care and, in parallel, reduce the barriers to that care (that is, address the social determinants that make it difficult to access that care), in particular for bipolar disorders, depressive disorders, substance use disorders, and key ACSCs (hypertension, diabetes, asthma/COPD, and heart disease). However, some limitations related to the data and community input affected the execution of this research, and these limitations are described in this section.

## Data Limitations

### *Limited Variables Available in Noninstitutional Data*

The data obtained under the data-use agreement (see Appendix A) includes:

- institutional data that consists of inpatient admissions, outpatient visits, and ED visits in hospital/medical center systems
- noninstitutional data that consists of outpatient visits to independent healthcare providers
- a recipient data file that contains date of birth, sex, race, and zip code information for Medicaid enrollees in each study area

The lack of specificity in the noninstitutional data impaired what analysis could achieve. For example, providers are classified broadly as “physicians” or “nurse practitioners” with no further specialty-based classifications available in the data. Also, some provider addresses are billing addresses, which may differ from service-providing addresses. Although some addresses were confirmed as

service-providing ones, others could not be verified. In upcoming years, HFS is scheduled to move to an improved and expanded database that will contain deeper data on provider types, locations, and diagnoses. Improved data will allow more detailed analyses of outpatient utilization trends and the relationship between hospital-level care and outpatient utilization.

In addition, technical issues related to file size and other delays prevented analysis of FY2019 and FY2020 noninstitutional data for compiling updated figures for outpatient care before and after hospitalization for mental disorders, substance use disorders, and ACSCs.

### *Limited Patient-Level Demographic Data*

The Medicaid institutional data set contains patient-level healthcare encounter data. For each encounter, the data contain the following key fields: the patient’s unique recipientID code, the patient’s admission and discharge dates, diagnosis (ICD-10 code), and whether the encounter was for an ED visit, an inpatient hospital admission, renal

visit, or an outpatient service encounter. In a related recipient table, joined by the “recipientID” code, the data contained the following fields for each patient: date of birth, sex, race, and zip code. The data on race is limited because the collection of race data is not required. As a result, race is listed as “unknown” in approximately 20% of the records. In addition, segmentation and analysis by ethnicity was not possible since information on ethnicity is not in the data. Detailed patient-level data would allow analyses to better determine those patient populations most closely associated with negative outcomes and help inform targeted interventions.

#### *Need for Patient-Level Social-Determinant-of-Health Data*

The absence of patient-level information on social, cultural, and economic characteristics, health-related behaviors, and other social-determinant-of-health characteristics is another constraint. Its absence limits understanding how specific aspects of the patient’s lived experience drive the observed health outcomes. Associating patient-level utilization and other health outcome data with patient-level social-determinant-of-health factors would provide insight into what specific factors drive negative (and positive) health outcomes and where to focus interventions. It is recommended that the State of Illinois invest in mechanisms that allow the association of patient-level Medicaid utilization data with patient-level social-determinant-of-health data.

#### *Need for Hyper-Local Neighborhood Social-Determinant-of-Health Data*

Local neighborhood data on social determinants of health would help contextualize patient-level healthcare

utilization and health outcomes and provide insight into structural barriers to good health and health-related quality of life. Having such hyper-local data would strengthen the State’s ability to identify social-determinant-of-health drivers of disparities in healthcare utilization and inequities in health outcomes across populations. It is recommended that the State invest in mechanisms that allow the association of hyper-local social-determinant-of-health data with patient-level utilization and health outcome data.

#### *Need for Patient-Level Comorbidity Data*

Information on the presence of other health conditions at the time of a clinical encounter would help take case mix into account when comparing patients and patient populations with respect to healthcare utilization and health outcomes. Limitations in data access to secondary diagnoses prevented analyses related to comorbidities.

#### *Lack of Maternal-Child Health Outcomes Assessment*

This report does not assess maternal-child health outcomes, which are known to be disparate in Illinois and a priority for HFS. Using HFS-provided data, a preliminary analysis of key adverse pregnancy outcomes (such as stillbirth and premature birth) was conducted. However, analyses were thwarted by important data limitations:

- There’s no infant-to-mother record linkage in the data. The lack of linkage from infant-to-mother records presented the additional challenge of determining an appropriate denominator for birth outcomes (for example, the total number of births).
- Prenatal care visits were not identifiable in the provided outpatient data. This meant that even if rates of adverse maternal-

child health outcomes could have been estimated, it would still not have been possible to trace associations of these outcomes back to inadequate prenatal care.

The effects of these data limitations were such that attempts to assess rates of premature birth and stillbirths across these study areas yielded implausibly low numbers of adverse events and rates that were orders of magnitude lower than published national rates. The data team was unable to ascertain whether these estimates had been distorted by missing data, coding errors, or other data problems in the count of adverse outcomes or total births. In the end, these data concerns led to the decision to not include analyses of maternal-child health in this report. With enhanced data sets and a methodology for connecting mother with babies in the data, a future assessment of poor outcomes in pregnancy, and with newborns, could be done.

#### *Unavailability of Hospitalization Data by Insurance Status for PQI Comparison Rates*

We analyzed Medicaid utilization data for ACSCs as an indicator of healthcare delivery gaps in selected study areas. For ACSC PQIs, we compared study area PQI rates for Medicaid enrollee hospitalizations with national PQI rates for the general population. This analysis was informative and indicative of healthcare delivery gaps in the study areas. However, additional benchmarks are needed for comparison—specifically, national PQI rates for Medicaid recipients, Illinois PQI rates, and Illinois Medicaid PQI rates.

Despite the data and community-input limitations explained here, there are meaningful and conclusive analyses in this report that highlight very important issues. Furthermore, the analyses contained in this report can serve as benchmarks for measuring outcomes of transformation interventions. These benchmarks can also be used to assess the impact wrought by COVID-19, hospital closures, and other changes in healthcare delivery systems.

## **Opportunities for Future Research**

# Appendices

# Appendix A:

## Approach to Analyzing Medicaid Utilization Data

### About Medicaid Utilization Data

The team tasked with updating data analyses from the report published in February 2021 focused on FY2019–2020 Medicaid patient-level utilization data. Patient-level utilization data was obtained from the Illinois Department of Healthcare and Family Service (HFS) under a data-use agreement (DUA) executed jointly by HFS and University of Illinois Chicago (UIC) legal counsels. Data was stored in a secure server. To further protect the data, access to that server was limited to a small number of selected members of the research team, each of whom completed required security training. Information flow in and out of the server was further severely restricted by IT technology.

Under the DUA, the team received 3 data sets: institutional data, noninstitutional data, and a “recipient file.”

#### *Institutional Utilization Data (FY2019 and FY2020)*

This data set contained Medicaid recipients’ healthcare encounters (inpatient admissions, outpatient visits, and emergency department [ED] visits) at hospital/medical center systems.

Key fields in this data set included the following:

- hospital system provider name (system in which the healthcare encounter occurred)
- zip code of hospital system provider (where the healthcare encounter occurred)
- recipient ID (unique Medicaid recipient code)
- recipient zip code (indicating home address of recipient)
- service type (inpatient, outpatient, or renal)
- ER indication (indicates if the encounter is a visit to the emergency room of the institution; variables for this are “ER visit” and “other”)
- admission and discharge dates
- ICD-10 code and description (principal diagnosis for the encounter)
- diagnosis related group (DRG) code

#### *Noninstitutional Utilization Data*

*(FY2018 only; data for FY2019 and FY2020 not available due to file size)*

The noninstitutional data contained Medicaid recipients’ outpatient visits to independent healthcare providers. Key fields in this data set included the following:

- provider type and description
- category of service and description
- provider zip code
- recipient ID (unique Medicaid recipient code)
- recipient zip code (indicating home address of recipient)

- behavioral health indication (indicates if the encounter is for behavioral healthcare)
- service date
- ICD-10 code and description (principal diagnosis for the encounter)

### *Recipient File Data*

This data set contained sex, date of birth, and race data for unique recipient IDs. A couple of notes about recipient data:

- Race data does not include ethnicity, so mentions of “white” as race include Latinx.
- Age at time of encounter was derived from recipient date of birth.

The FY2019 and FY2020 institutional data file and recipient file represent all inpatient hospitalization encounters in these fiscal years for all Medicaid recipients living in the zip codes of the areas defined in this study (specifically, all recipients with home zip codes within the study areas)—in other words, the data track inpatient hospital utilization by Medicaid recipients living in the study areas, regardless of where that care took place.

## **Approach to Medicaid Utilization Data Analysis**

### *Non-Prescriptive Approach to Data Analysis*

At no point during this research did HFS direct an analytic framework that the UIC team should follow, or identify questions or hypotheses the research team must pursue. The research team worked in complete independence and reported results and findings to HFS as they became available.

### *Data-First, Data-Driven Analysis Approach*

Most analyses are hypotheses driven, in the sense that they begin with specific questions and hypotheses and then analyses are framed broadly to address those questions. In contrast, this project was predominantly data driven. The team approached the data analytics in this project with no previously formed hypothesis. Using this “data-first” (rather than question-first) approach, the team let the data analytics bring up the questions and topics of interest. The team then used further data analytics to gain insight into these questions and topics. It bears noting that the statistical results reported here are mostly descriptive rather than inferential.

### *Analytics Approach: Descriptive Statistics, Bivariate Associations, and Logistic Regressions*

Descriptive statistics is the primary analytics approach used for this study. Aggregated summaries provided in this report are expressed as percentages, rates, averages, medians, and such. For example, since the data may include multiple encounters for one Medicaid recipient (for example, multiple visits to a healthcare provider, ED visits, and/or inpatient hospital stays) for one health condition, a numerator for the rate could be the number of encounters (which counts multiple encounters of a single patient) or the number of unique recipients. Similarly, the denominator to calculate the rate could be the overall population in the region or the number of Medicaid enrollees in the region. Each such calculation in the analyses was done after careful consideration of all these aspects by subject-area scholars.

*Descriptive statistics:* After getting to know the data sets by reviewing the fields and variables, running histograms of variables, and doing basic data cleaning and new data creation (for example, patient age at time of the patient encounter), the data analytics team produced an initial set of descriptive statistics. For the institutional data set, initial analyses included looking at the distribution of demographic data and the distribution of healthcare encounters by hospitals. Figures 13 to 19 exhibit the charts for the following analyses:

- for inpatient hospitalizations, distribution of ages, sex, and races of patients by study area (excluding Chapter 21 data)
- for ED visits, distribution of ages, sex, and races of patients by study area (excluding Chapter 21 data)
- market share of hospitals receiving Medicaid patients by study area

Other descriptive statistics, such as frequency distributions of disease chapters and blocks, are found in the "Detailed Findings" section of this report.

*Bivariate associations:* The data analytics team also investigated bivariate associations, such as associations between health conditions (that is, principal diagnosis codes represented by chapter, block, or ICD-10 code) and localities (zip codes and study areas). More specifically, the team compared rates, percentages, averages, and medians across zip codes, age groups, race and study areas. Included in the "Detailed Findings" section of this report are the key bivariate associations that drove insights about the utilization data: inpatient admission diagnosis blocks by resource intensiveness defined by hospital readmission.

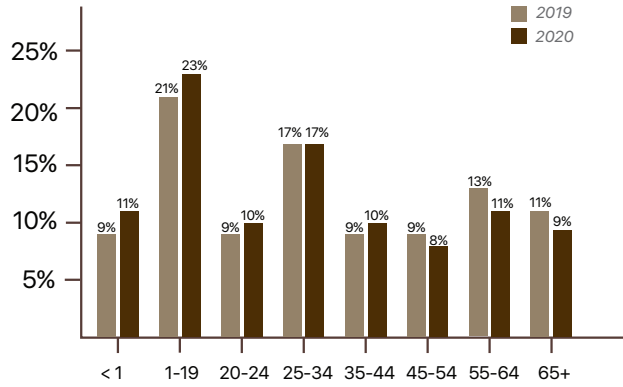
*Logistic regressions:* The data analytics team also performed a limited set of advanced inferential statistical analysis using bivariable and multivariable regression analyses. Regression analyses were used to understand Medicaid patients' demographic characteristics most associated with diseases of interest: bipolar and depressive disorders, and alcohol and opioid use disorders, and ACSCs. This task required first singling out those patients with a principal diagnosis of the key disease groups and conditions (1 vs. 0) in the utilization data for any type of encounter (inpatient hospitalization, ED visit, or outpatient visit). For example, if a patient had at least one depressive disorder diagnosis, the outcome variable for the depressive disorder was flagged as 1. If the patient had 2 or more depressive disorder diagnoses, the outcome of the depressive disorder was still flagged as 1. The same process was followed for the other key diseases. Patients with multiple diagnoses were included in more than one logistic regression. For example, if a patient had both a bipolar and a depressive disorder diagnosis, that patient was included in logistic regressions for both conditions. The covariate for the logistic regression included the demographic covariates available in the data, these being age, race, and sex.

See Appendix B, "Additional Analyses for Selected Disease Groups and Conditions," for tables containing the results of the logistic regressions for bipolar and depressive disorders, and alcohol and opioid use disorders, and ACSCs.

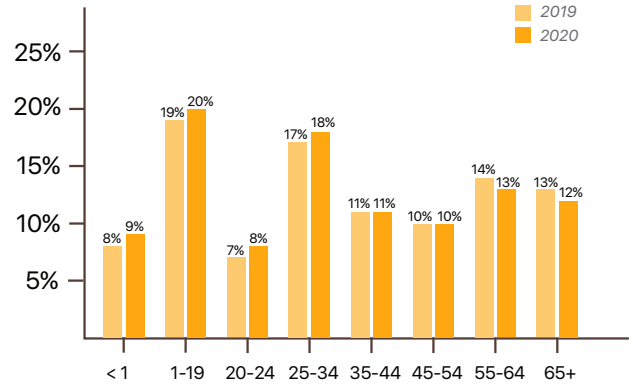


Figure 13: Inpatient Hospitalizations—Distribution of Ages of Patients by Study Area

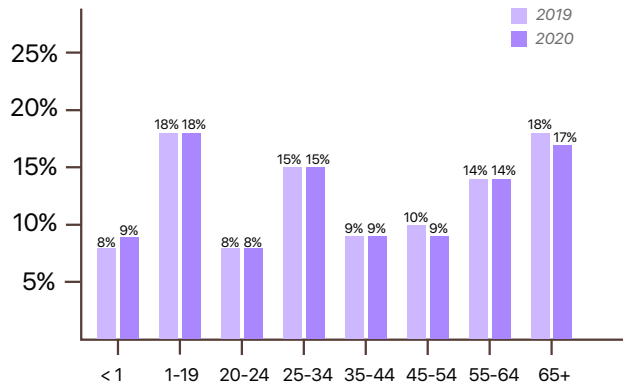
**Danville**



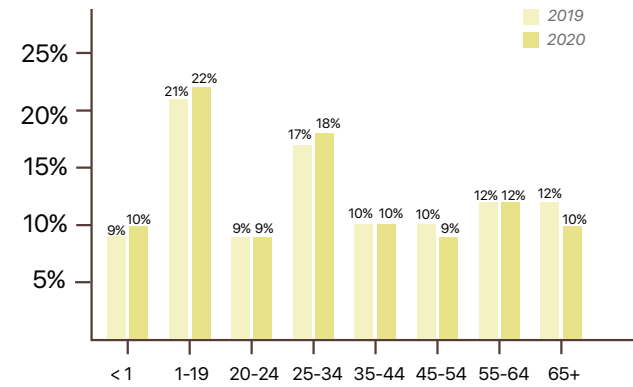
**East St. Louis**



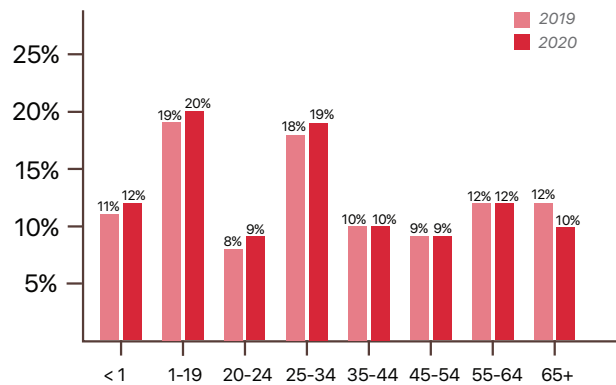
**Marion Health Region**



**Peoria**

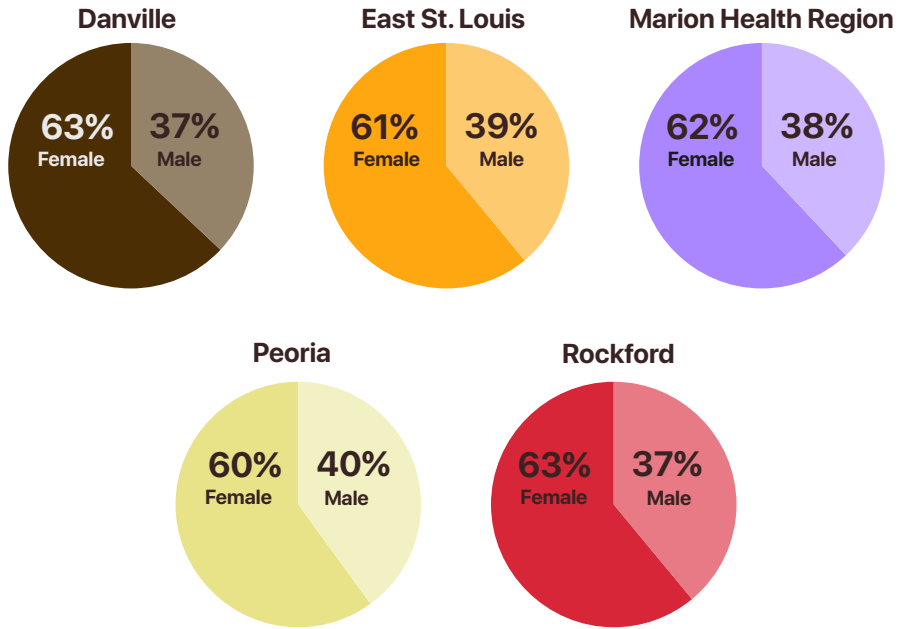


**Rockford**



**Figure 14: Inpatient Hospitalizations—Distribution of Sex of Patients by Study Area**

**2019**



**2020**

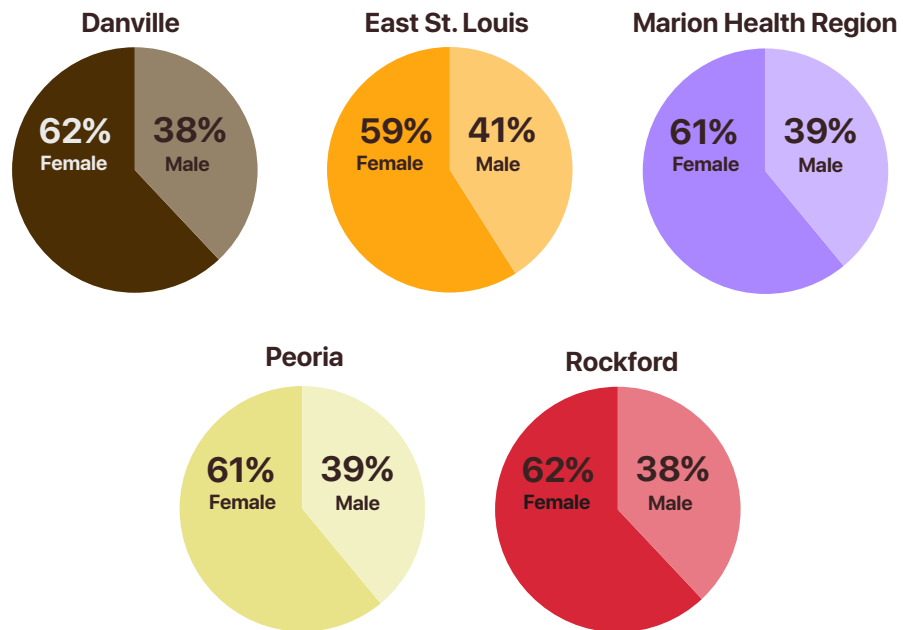
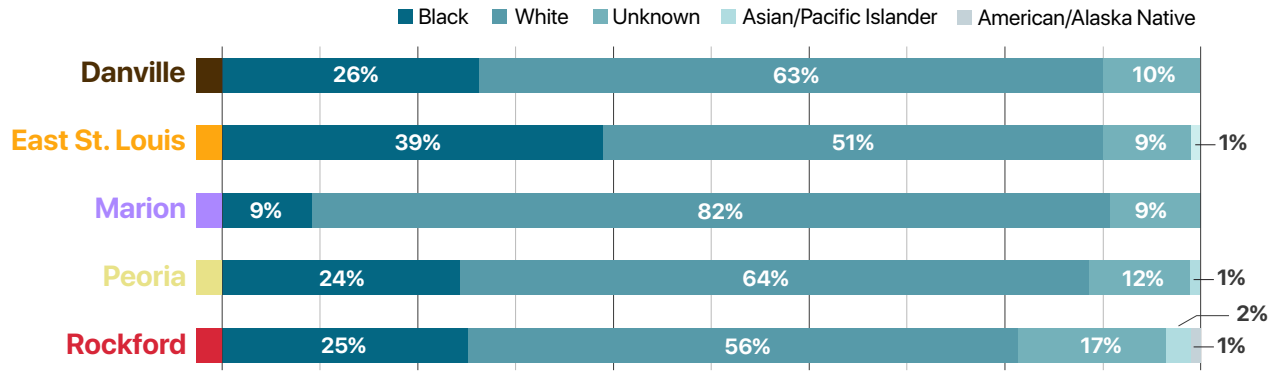
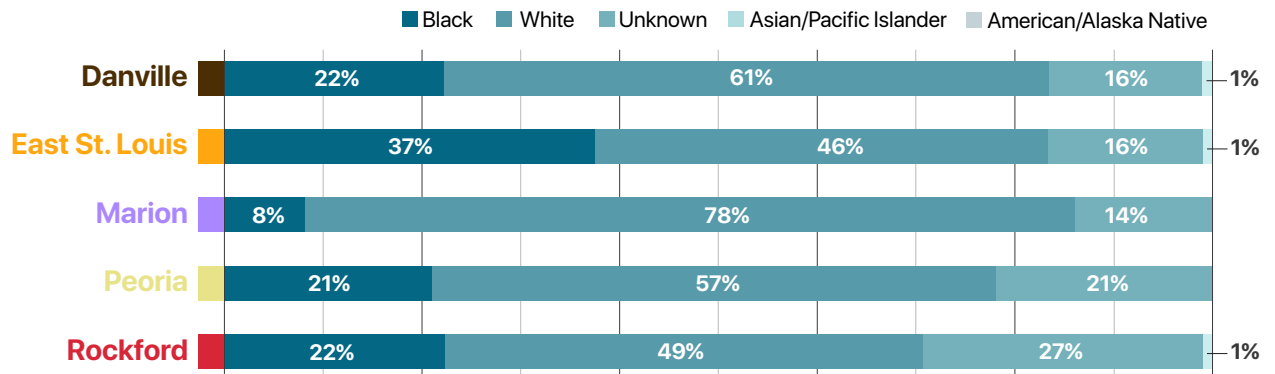


Figure 15: Inpatient Hospitalizations—Distribution of Races of Patients by Study Area

2019



2020



**Figure 16: Emergency Department Visits—Distribution of Ages of Patients by Study Area**

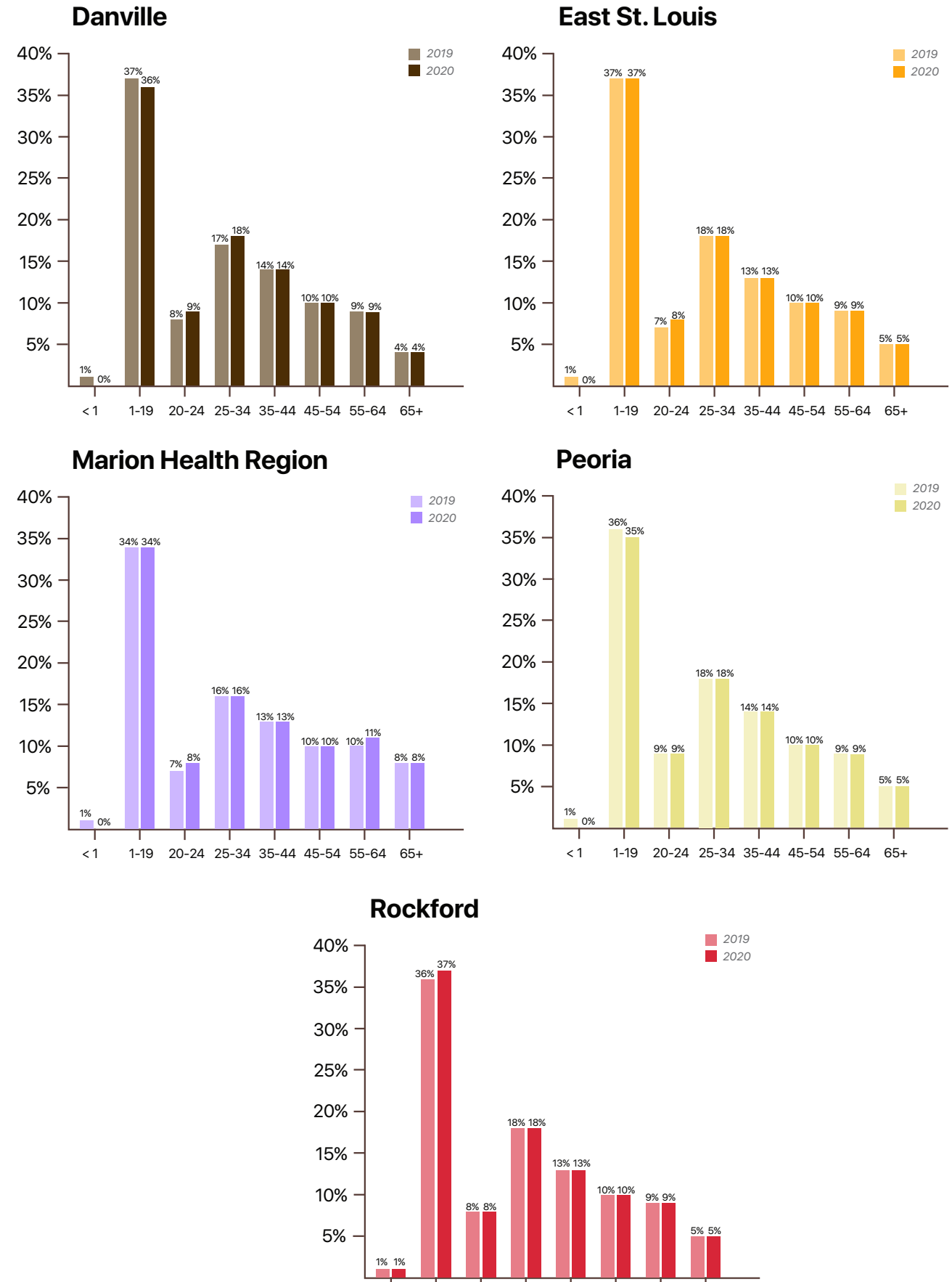


Figure 17: Emergency Department Visits—Distribution of Sex of Patients by Study Area

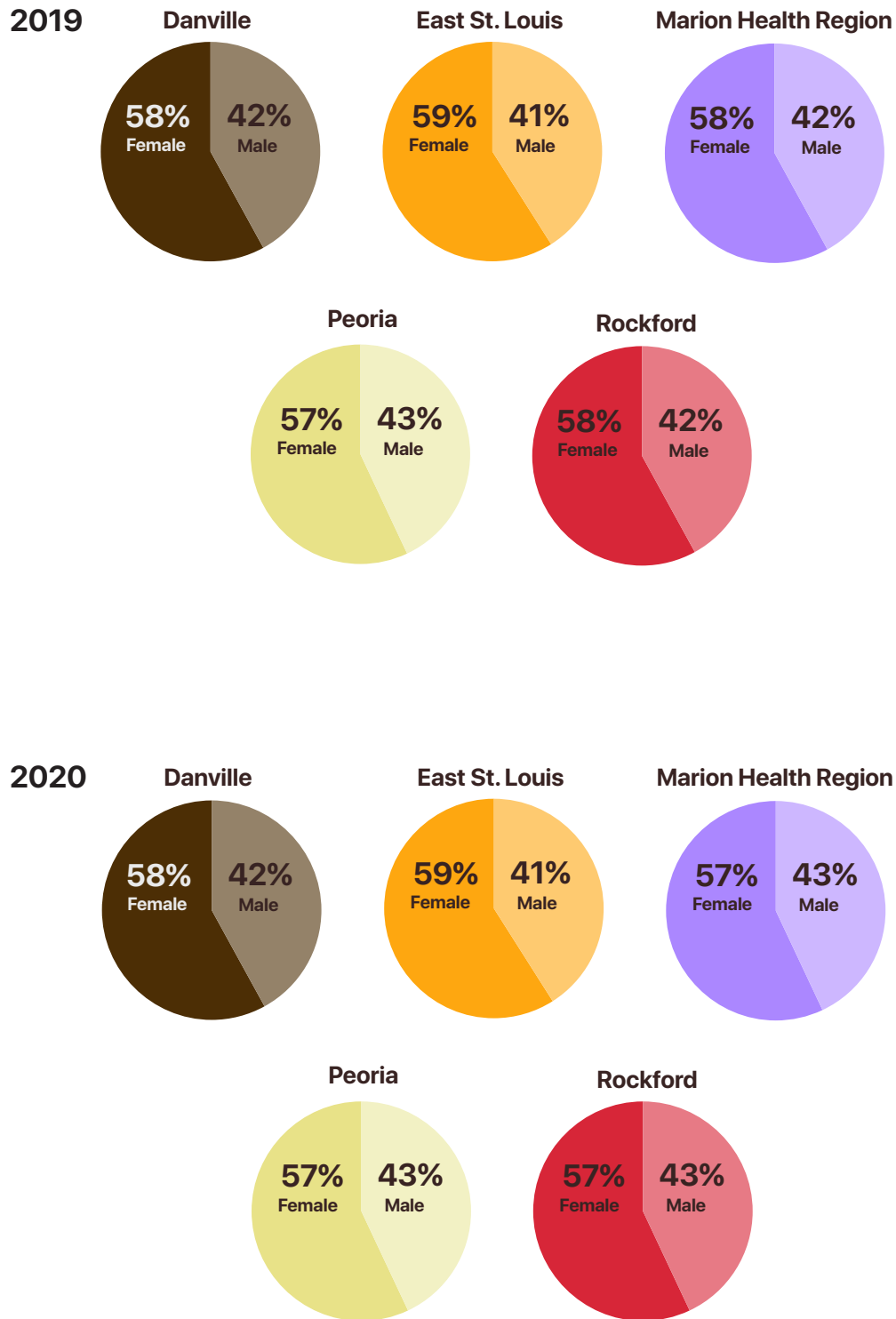
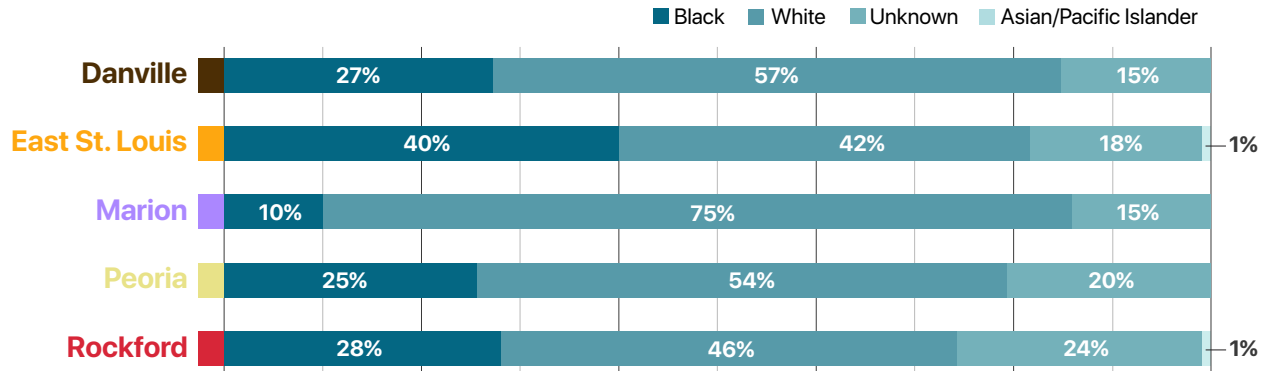
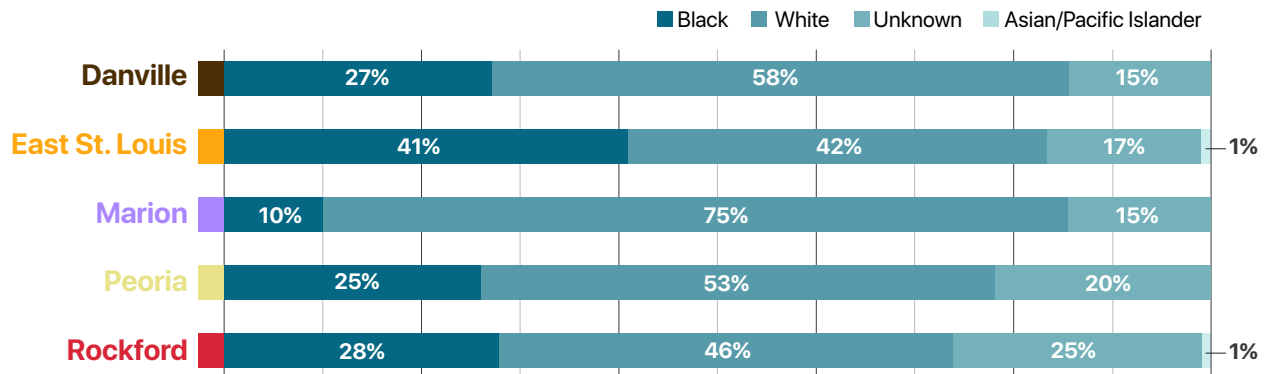


Figure 18: Emergency Department Visits—Distribution of Races of Patients by Study Area

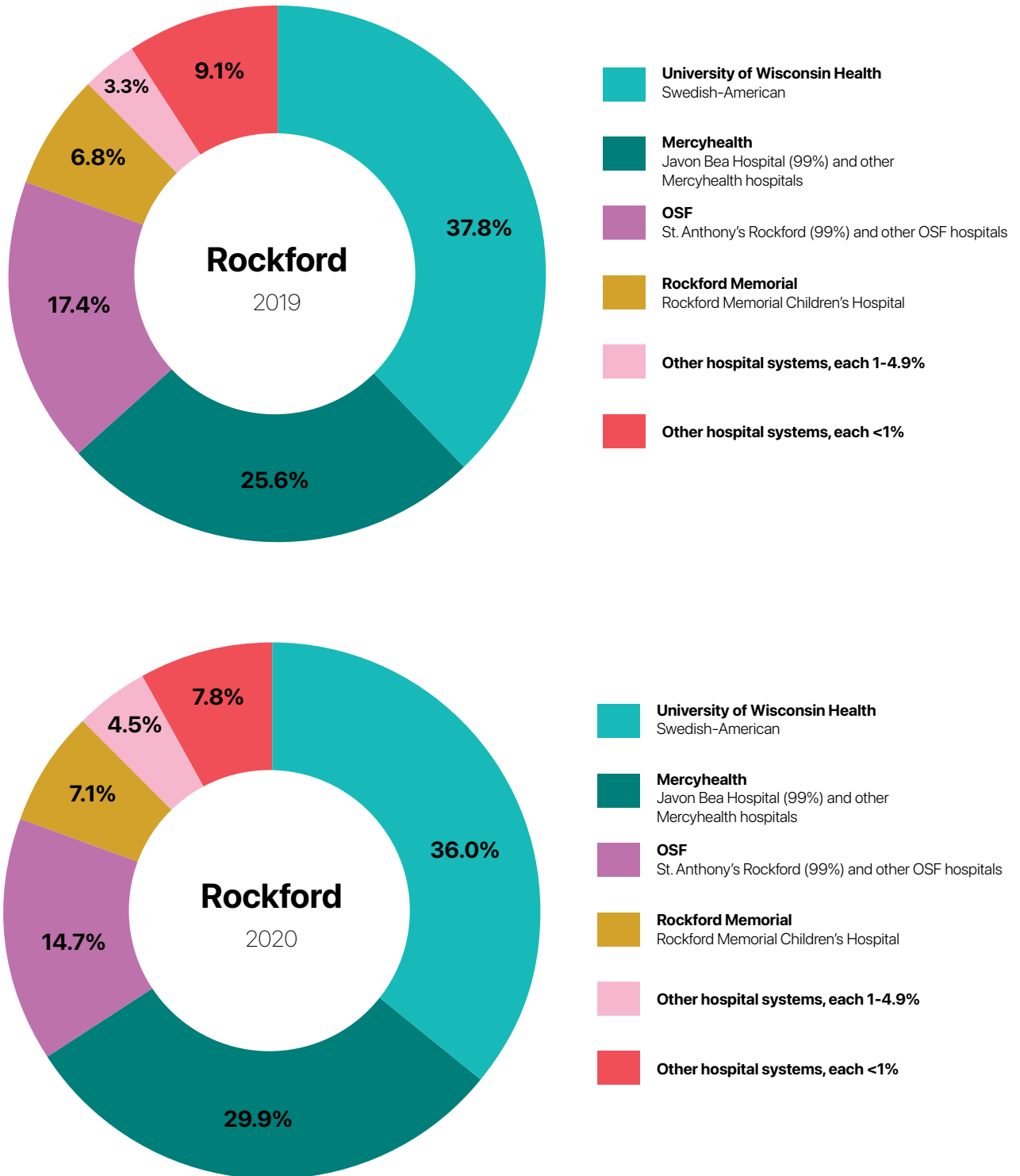
2019



2020



**Figure 19: Estimated Share of Rockford Medicaid Enrollees Admitted to the Hospital**  
 (Share of hospitals receiving Medicaid enrollees who live in the Rockford study area as patients for FY2019 and FY2020)



# Appendix B:

## Additional Analyses for Select Disease Groups and Conditions

### Bipolar, Depressive, Opioid Use and Alcohol Use Disorders

After identifying the key disease groups and conditions (mental illnesses, psychoactive substance use disorders, and ACSCs), the data analytics team conducted additional analyses to develop a fuller understanding of these conditions.

For mental illness analyses, the research team focused on bipolar and depressive disorders for 2 reasons. First, these disorders represented the bulk of the mood [affective] disorders block, which was the most frequent and resource intensive of the disease blocks in the hospital utilization data. Second, these disorders are responsive to outpatient care treatment that can keep people out of the hospital.

For psychoactive substance use disorder analyses, the research team focused on opioid use disorder (OUD) and alcohol use disorders (AUD), since they represented the majority of the disorders in the psychoactive substance use disorders block and are outpatient-treatable.

Multivariate logistic regressions were performed to determine the population characteristics most associated with patients with bipolar, depressive, opioid use and alcohol use disorders. Tables 8–11 contain the results of the logistic regressions for these disorders. Variables highlighted in red represent a population characteristic statistically associated with the diagnosis (meaning the odds ratio and confidence level lower limit are  $\geq 1$  and the p-value is  $< 0.05$ ).

(Note: In the logistic regression tables that follow, AmericanIN/AN = American Indian/American Native, Asian/PI = Asian/Pacific Islander, Other/UNK = Other/Unknown, AUD = Alcohol Use Disorder, and OUD = Opioid Use Disorder.)



## Summary of Population Characteristics Most Associated with Patients with Depressive Disorders

- Teenagers, age 12–19 in all areas
- Young adults, age 20–24 in Danville and Peoria

**Table 8: Population Characteristics Associated with Depressive Disorder Patients (FY2019 and FY2020 Data Combined)**

DEPRESSION_Danville			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	2.37	1.43	3.93	<0.001
15 to 19.9	25 to 34.9	2.54	1.70	3.80	<0.001
20 to 24.9	25 to 34.9	1.62	1.05	2.50	<0.05
35 to 44.9	25 to 34.9	0.83	0.53	1.30	0.41
45 to 64.9	25 to 34.9	0.6	0.39	0.92	<0.05
>65	25 to 34.9	0.17	0.05	0.56	
<b>RACE</b>					
AmericanIN/AN	White	0.88	0.12	6.49	0.89
Asian/PI	White	0.81	0.11	5.95	0.83
Black	White	0.51	0.36	0.73	<0.001
Other/Unknown	White	0.6	0.39	0.93	<0.05
<b>SEX</b>					
Female	Male	0.78	0.60	1.01	0.06

DEPRESSION_E. St. Louis			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	1.92	1.55	2.37	<0.001
15 to 19.9	25 to 34.9	2.06	1.73	2.46	<0.001
20 to 24.9	25 to 34.9	1.11	0.90	1.37	0.31
35 to 44.9	25 to 34.9	0.91	0.76	1.08	0.27
45 to 64.9	25 to 34.9	1.03	0.89	1.20	0.68
>65	25 to 34.9	0.52	0.39	0.68	<0.001
<b>RACE</b>					
AmericanIN/AN	White	1.65	0.92	2.97	0.09
Asian/PI	White	0.33	0.12	0.88	<0.05
Black	White	0.46	0.41	0.52	<0.001
Other/Unknown	White	0.63	0.53	0.75	<0.001
<b>SEX</b>					
Female	Male	0.82	0.74	0.91	<0.001

Table 8 Continued

DEPRESSION_Marion HR			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
<b>12 to 14.9</b>	<b>25 to 34.9</b>	<b>1.37</b>	<b>1.12</b>	<b>1.67</b>	<b>&lt;0.01</b>
<b>15 to 19.9</b>	<b>25 to 34.9</b>	<b>1.89</b>	<b>1.63</b>	<b>2.20</b>	<b>&lt;0.001</b>
20 to 24.9	25 to 34.9	1.13	0.97	1.35	0.11
35 to 44.9	25 to 34.9	0.93	0.80	1.07	0.3
45 to 64.9	25 to 34.9	0.61	0.53	0.70	<0.001
>65	25 to 34.9	0.47	0.38	0.57	<0.001
<b>RACE</b>					
American/IN/AN	White	1.6	0.87	2.95	0.13
Asian/PI	White	0.62	0.23	1.67	0.34
Black	White	0.67	0.56	0.80	<0.001
Other/Unknown	White	0.88	0.75	1.03	0.1
<b>SEX</b>					
Female	Male	0.97	0.88	1.06	0.48

DEPRESSION_Peoria			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
<b>12 to 14.9</b>	<b>25 to 34.9</b>	<b>2.37</b>	<b>1.89</b>	<b>2.98</b>	<b>&lt;0.001</b>
<b>15 to 19.9</b>	<b>25 to 34.9</b>	<b>2.71</b>	<b>2.27</b>	<b>3.24</b>	<b>&lt;0.001</b>
<b>20 to 24.9</b>	<b>25 to 34.9</b>	<b>1.4</b>	<b>1.15</b>	<b>1.71</b>	<b>&lt;0.001</b>
35 to 44.9	25 to 34.9	0.92	0.77	1.11	0.39
45 to 64.9	25 to 34.9	0.81	0.68	0.95	<0.05
>65	25 to 34.9	0.35	0.25	0.49	<0.001
<b>RACE</b>					
American/IN/AN	White	0.69	0.25	1.87	0.46
Asian/PI	White	0.49	0.18	1.33	0.16
Black	White	0.51	0.44	0.59	<0.001
Other/Unknown	White	0.6	0.51	0.72	<0.001
<b>SEX</b>					
Female	Male	1.1	0.99	1.23	0.08

DEPRESSION_Rockford			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
<b>12 to 14.9</b>	<b>25 to 34.9</b>	<b>3.13</b>	<b>2.39</b>	<b>4.10</b>	<b>&lt;0.001</b>
<b>15 to 19.9</b>	<b>25 to 34.9</b>	<b>3.44</b>	<b>2.76</b>	<b>4.28</b>	<b>&lt;0.001</b>
20 to 24.9	25 to 34.9	1.17	0.89	1.54	0.25
35 to 44.9	25 to 34.9	1.14	0.90	1.43	0.26
45 to 64.9	25 to 34.9	1	0.81	1.23	0.96
>65	25 to 34.9	0.38	0.25	0.57	<0.001
<b>RACE</b>					
American/IN/AN	White	1.41	0.69	2.90	0.34
Asian/PI	White	0.37	0.16	0.83	0.05
Black	White	0.62	0.53	0.74	<0.001
Other/Unknown	White	0.7	0.59	0.84	<0.001
<b>SEX</b>					
Female	Male	0.87	0.76	0.99	0.05

## Summary of Population Characteristics Most Associated with Patients with Bipolar Disorders

- Native Americans in Danville and the Marion Health Region

**Table 9: Population Characteristics Associated with Bipolar Disorder Patients (FY2019 and FY2020 Data Combined)**

Bipolar_Danville			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0.26	0.08	0.87	<0.05
15 to 19.9	25 to 34.9	0.78	0.43	1.40	0.4
20 to 24.9	25 to 34.9	0.9	0.52	1.55	0.7
35 to 44.9	25 to 34.9	1.1	0.71	1.71	0.65
45 to 64.9	25 to 34.9	0.49	0.30	0.79	<0.01
>65	25 to 34.9	0	0.00	INF	0.98
<b>RACE</b>					
AmericanIN/AN	White	4.48	1.35	14.92	<0.05
Asian/PI	White	0	0.00	INF	0.96
Black	White	0.67	0.44	1.00	0.52
Other/Unknown	White	0.76	0.38	1.52	0.43
<b>SEX</b>					
Female	Male	0.71	0.51	0.99	<0.05

Bipolar_E. St. Louis			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0.54	0.33	0.88	<0.05
15 to 19.9	25 to 34.9	1.14	0.84	1.54	0.39
20 to 24.9	25 to 34.9	0.84	0.61	1.16	0.29
35 to 44.9	25 to 34.9	1.01	0.79	1.29	0.95
45 to 64.9	25 to 34.9	0.66	0.52	0.83	<0.001
>65	25 to 34.9	0.25	0.15	0.42	<0.001
<b>RACE</b>					
AmericanIN/AN	White	1.03	0.33	3.25	0.09
Asian/PI	White	1.35	0.60	3.04	0.47
Black	White	0.37	0.30	0.45	<0.001
Other/Unknown	White	0.51	0.36	0.71	<0.001
<b>SEX</b>					
Female	Male	0.86	0.72	1.02	0.08

Table 9 Continued

Bipolar_Marion HR			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0.61	0.38	0.05	<0.05
15 to 19.9	25 to 34.9	1.13	0.85	1.49	0.41
20 to 24.9	25 to 34.9	0.89	0.67	1.20	0.45
35 to 44.9	25 to 34.9	1.05	0.84	1.33	0.65
45 to 64.9	25 to 34.9	0.66	0.53	0.82	<0.001
>65	25 to 34.9	0.3	0.21	0.44	<0.001
<b>RACE</b>					
AmericanN/AN	White	2.93	1.38	6.28	<0.01
Asian/PI	White	0.95	0.24	3.86	0.94
Black	White	0.59	0.43	0.82	<0.01
Other/Unknown	White	0.56	0.40		<0.01
<b>SEX</b>					
Female	Male	0.91	0.77	1.06	0.21

Bipolar_Peoria			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0.66	0.39	1.11	0.11
15 to 19.9	25 to 34.9	1.2	0.86	1.68	0.27
20 to 24.9	25 to 34.9	1.28	0.95	1.73	0.10
35 to 44.9	25 to 34.9	0.91	0.69	1.20	0.50
45 to 64.9	25 to 34.9	0.67	0.52	0.88	<0.01
>65	25 to 34.9	0.19	0.10	0.37	<0.001
<b>RACE</b>					
AmericanN/AN	White	1.02	0.25	4.14	0.98
Asian/PI	White	0.38	0.05	2.71	0.33
Black	White	0.54	0.42	0.69	<0.001
Other/Unknown	White	0.58	0.41	0.82	<0.01
<b>SEX</b>					
Female	Male	0.87	0.72	1.05	0.14

Bipolar_Rockford			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0.73	0.43	1.25	0.25
15 to 19.9	25 to 34.9	1.08	0.75	1.54	0.67
20 to 24.9	25 to 34.9	0.98	0.69	1.40	0.91
35 to 44.9	25 to 34.9	1.09	0.82	1.45	0.53
45 to 64.9	25 to 34.9	0.82	0.63	1.07	0.14
>65	25 to 34.9	0.15	0.07	0.33	<0.001
<b>RACE</b>					
AmericanN/AN	White	1.81	0.73	4.44	0.19
Asian/PI	White	0.26	0.06	1.05	0.06
Black	White	0.61	0.48	0.78	<0.001
Other/Unknown	White	0.64	0.47	0.88	<0.01
<b>SEX</b>					
Female	Male	0.64	0.53	0.78	<0.001

## Summary of Population Characteristics Most Associated with Patients with Opioid Use Disorder

*While no particular characteristic is statistically associated with OUD, low odds ratios of women compared to men indicate that being female is likely a protective factor in terms of OUD.*

**Table 10: Population Characteristics Associated with Opioid Use Disorder Patients (FY2019 and FY2020 Data Combined)**

OUD_Danville		Odds Ratio	Confidence Interval (95%)		P-Value
Group	Compared To		Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.99
15 to 19.9	25 to 34.9	0.11	0.01	0.82	<0.05
20 to 24.9	25 to 34.9	0.28	0.08	0.95	<0.05
35 to 44.9	25 to 34.9	0.92	0.49	1.75	0.8
45 to 64.9	25 to 34.9	0.34	0.16	0.70	<0.01
>65	25 to 34.9	0	0.00	INF	0.99
<b>RACE</b>					
American/IN/AN	White	3.48	0.46	26.43	0.22
Asian/PI	White	0	0.00	INF	0.99
Black	White	0.61	0.31	1.20	0.15
Other/Unknown	White	0	0.00	INF	0.98
<b>SEX</b>					
Female	Male	0.44	0.26	0.76	<0.01

OUD_E. St. Louis		Odds Ratio	Confidence Interval (95%)		P-Value
Group	Compared To		Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.97
15 to 19.9	25 to 34.9	0.03	0.01	0.12	<0.001
20 to 24.9	25 to 34.9	0.39	0.25	0.61	<0.001
35 to 44.9	25 to 34.9	0.98	0.78	1.25	0.88
45 to 64.9	25 to 34.9	0.28	0.21	0.37	<0.001
>65	25 to 34.9	0.015	0.00	0.11	<0.001
<b>RACE</b>					
American/IN/AN	White	0.84	0.21	3.43	0.81
Asian/PI	White	0.61	0.15	2.47	0.48
Black	White	0.21	0.15	0.28	<0.001
Other/Unknown	White	0.29	0.15	0.55	<0.001
<b>SEX</b>					
Female	Male	0.39	0.32	0.48	<0.001

Table 10 Continued

OUd_Marion HR			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.98
15 to 19.9	25 to 34.9	0.036	0.00	0.26	<0.001
20 to 24.9	25 to 34.9	0.38	0.20	0.75	<0.01
35 to 44.9	25 to 34.9	1.07	0.73	1.55	0.73
45 to 64.9	25 to 34.9	0.43	0.29	0.65	<0.001
>65	25 to 34.9	0.025	0.00	0.18	<0.001
<b>RACE</b>					
AmericanN/AN	White	1.47	0.20	10.57	0.7
Asian/PI	White	0	0.00	INF	0.99
Black	White	0.92	0.55	1.54	0.74
Other/Unknown	White	0.72	0.31	1.64	0.43
<b>SEX</b>					
Female	Male	0.55	0.40	0.75	<0.001

OUd_Peoria			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.98
15 to 19.9	25 to 34.9	0	0.00	INF	0.98
20 to 24.9	25 to 34.9	0.22	0.07	0.72	<0.05
35 to 44.9	25 to 34.9	1.13	0.68	1.90	0.63
45 to 64.9	25 to 34.9	0.63	0.37	1.07	0.85
>65	25 to 34.9	0.081	0.01	0.60	<0.05
<b>RACE</b>					
AmericanN/AN	White	0	0.00	INF	0.99
Asian/PI	White	0	0.00	INF	0.99
Black	White	0.46	0.25	0.83	<0.05
Other/Unknown	White	0.73	0.26	2.02	<0.01
<b>SEX</b>					
Female	Male	0.7	0.46	1.07	0.09

OUd_Rockford			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.98
15 to 19.9	25 to 34.9	0.037	0.01	0.27	<0.01
20 to 24.9	25 to 34.9	0.25	0.11	0.58	<0.01
35 to 44.9	25 to 34.9	0.95	0.64	1.41	0.78
45 to 64.9	25 to 34.9	0.34	0.22	0.53	<0.001
>65	25 to 34.9	0.26	0.12	0.58	<0.001
<b>RACE</b>					
AmericanN/AN	White	2.02	0.49	8.31	0.33
Asian/PI	White	0	0.00	INF	0.99
Black	White	0.41	0.26	0.63	<0.001
Other/Unknown	White	0.55	0.29	1.07	0.07
<b>SEX</b>					
Female	Male	0.39	0.28	0.55	<0.001

## Summary of Population Characteristics Most Associated with Patients with Alcohol Use Disorder

- Adults age 35–64 in East St. Louis and Rockford
- Native Americans in the Marion Health Region

**Table 11: Population Characteristics Associated with Alcohol Use Disorder Patients (FY2019 and FY2020 Data Combined)**

<b>AUD_Danville</b>				<b>Confidence Interval (95%)</b>		
<b>Group</b>	<b>Compared To</b>	<b>Odds Ratio</b>	<b>Lower Limit</b>	<b>Upper Limit</b>	<b>P-Value</b>	
<b>AGE</b>						
12 to 14.9	25 to 34.9	0	0.00	INF	0.98	
15 to 19.9	25 to 34.9	0.077	0.01	0.58	<0.05	
20 to 24.9	25 to 34.9	0.57	0.23	1.41	0.22	
35 to 44.9	25 to 34.9	1.1	0.59	1.99	0.78	
45 to 64.9	25 to 34.9	1.44	0.86	2.41	0.16	
>65	25 to 34.9	0.13	0.02	1.00	0.05	
<b>RACE</b>						
AmericanIN/AN	White	0	0.00	INF	0.99	
Asian/PI	White	2.06	0.27	15.40	0.48	
Black	White	0.98	0.62	1.55	0.93	
Other/Unknown	White	0.98	0.39	2.48	0.96	
<b>SEX</b>						
Female	Male	0.3	0.20	0.46	<0.001	

<b>AUD_E. St. Louis</b>				<b>Confidence Interval (95%)</b>		
<b>Group</b>	<b>Compared To</b>	<b>Odds Ratio</b>	<b>Lower Limit</b>	<b>Upper Limit</b>	<b>P-Value</b>	
<b>AGE</b>						
12 to 14.9	25 to 34.9	0.035	0.00	0.25	<0.001	
15 to 19.9	25 to 34.9	0.23	0.12	0.43	<0.001	
20 to 24.9	25 to 34.9	0.45	0.07	0.73	<0.01	
35 to 44.9	25 to 34.9	1.49	1.15	1.92	<0.01	
45 to 64.9	25 to 34.9	1.37	1.09	1.73	<0.01	
>65	25 to 34.9	0.4	0.24	0.67	<0.05	
<b>RACE</b>						
AmericanIN/AN	White	1.82	0.67	4.97	0.24	
Asian/PI	White	0	0.00	INF	0.98	
Black	White	0.83	0.69	0.99	<0.01	
Other/Unknown	White	0.46	0.27	0.77	<0.001	
<b>SEX</b>						
Female	Male	0.31	0.26	0.37	<0.001	

Table11 Continued

AUD_Marion HR			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.93
15 to 19.9	25 to 34.9	0.28	0.17	0.48	<0.001
20 to 24.9	25 to 34.9	0.56	0.37	0.85	<0.01
35 to 44.9	25 to 34.9	1.29	1.00	1.67	0.05
45 to 64.9	25 to 34.9	1.05	0.83	1.33	0.67
>65	25 to 34.9	0.23	0.14	0.39	0.99
<b>RACE</b>					
AmericanN/AN	White	3.48	1.62	7.49	<0.01
Asian/PI	White	0	0.00	INF	0.98
Black	White	0.93	0.68	1.26	0.64
Other/Unknown	White	0.99	0.67	1.47	0.97
<b>SEX</b>					
Female	Male	0.39	0.32	0.47	<0.001

AUD_Peoria			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0.036	0.01	0.26	<0.01
15 to 19.9	25 to 34.9	0.19	0.09	0.38	<0.001
20 to 24.9	25 to 34.9	0.76	0.51	1.12	0.16
35 to 44.9	25 to 34.9	1.33	1.02	1.75	0.16
45 to 64.9	25 to 34.9	1.23	0.96	1.57	<0.05
>65	25 to 34.9	0.29	0.16	0.53	<0.001
<b>RACE</b>					
AmericanN/AN	White	0.54	0.00	3.86	0.53
Asian/PI	White	0.45	0.06	3.25	0.43
Black	White	0.89	0.71	1.10	0.27
Other/Unknown	White	0.61	0.39	0.96	<0.05
<b>SEX</b>					
Female	Male	0.33	0.07	0.40	<0.001

AUD_Rockford			Confidence Interval (95%)		P-Value
Group	Compared To	Odds Ratio	Lower Limit	Upper Limit	
<b>AGE</b>					
12 to 14.9	25 to 34.9	0	0.00	INF	0.98
15 to 19.9	25 to 34.9	0.17	0.06	0.47	<0.001
20 to 24.9	25 to 34.9	0.52	0.28	0.98	0.05*
35 to 44.9	25 to 34.9	1.75	1.24	2.46	<0.01
45 to 64.9	25 to 34.9	1.62	1.18	2.21	<0.01
>65	25 to 34.9	0.29	0.14	0.62	<0.01
<b>RACE</b>					
AmericanN/AN	White	0	0.00	INF	0.99
Asian/PI	White	0.49	0.16	1.54	0.22
Black	White	0.55	0.42	0.73	<0.001
Other/Unknown	White	0.37	0.21	0.64	<0.001
<b>SEX</b>					
Female	Male	0.31	0.24	0.39	<0.001

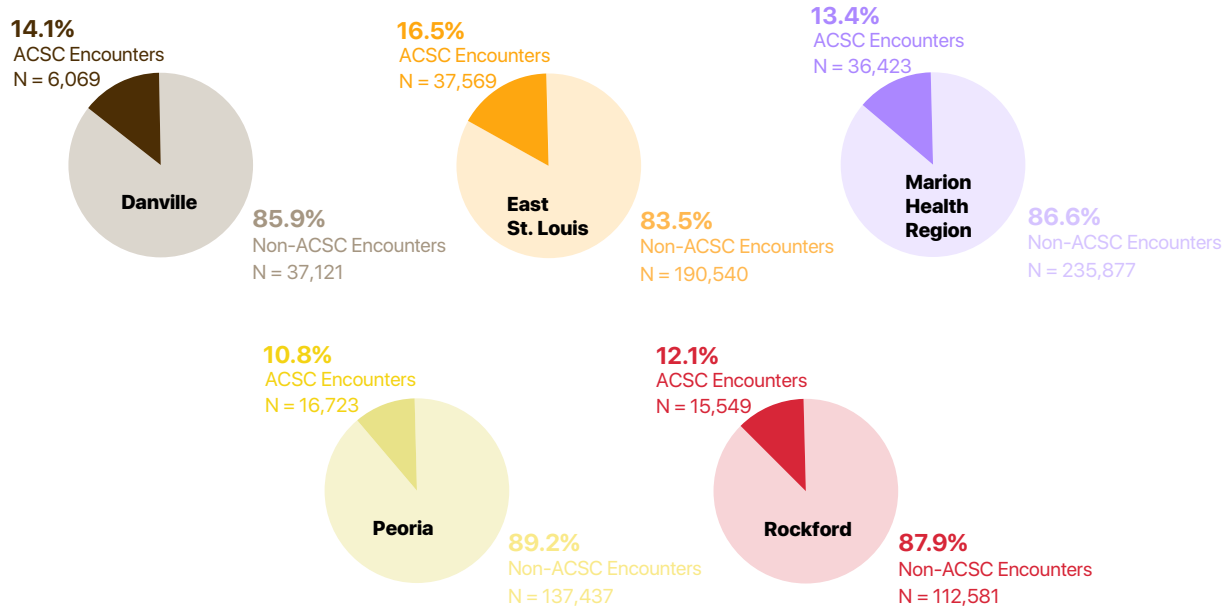


## Ambulatory Care Sensitive Conditions

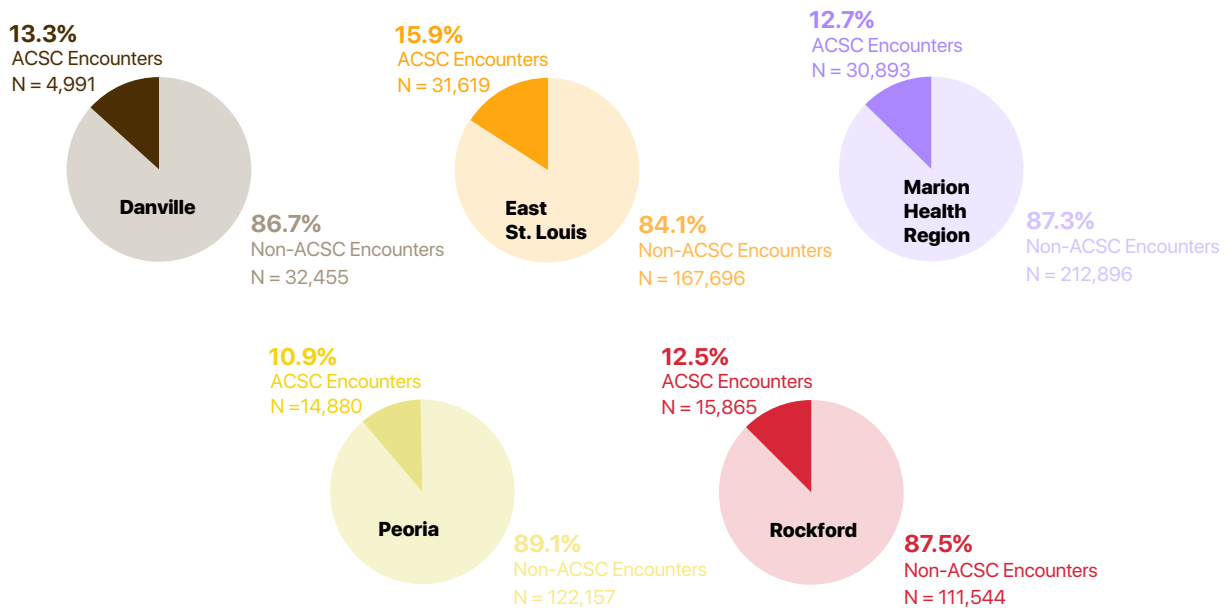
ACSCs, which are health conditions for which good outpatient care can potentially prevent the need for hospitalization or early intervention can prevent complications or more severe disease (27) and they are some of the most frequent and resource-intensive conditions in the FY2019 and FY2020 Medicaid institutional data. In fact, ACSCs account for approximately 10–17% of all care encounters in the institutional data across the study areas (see Figure 20).

Figure 20: Distribution of Care Encounters for ACSCs and Non-ACSCs by Study Area

### 2019



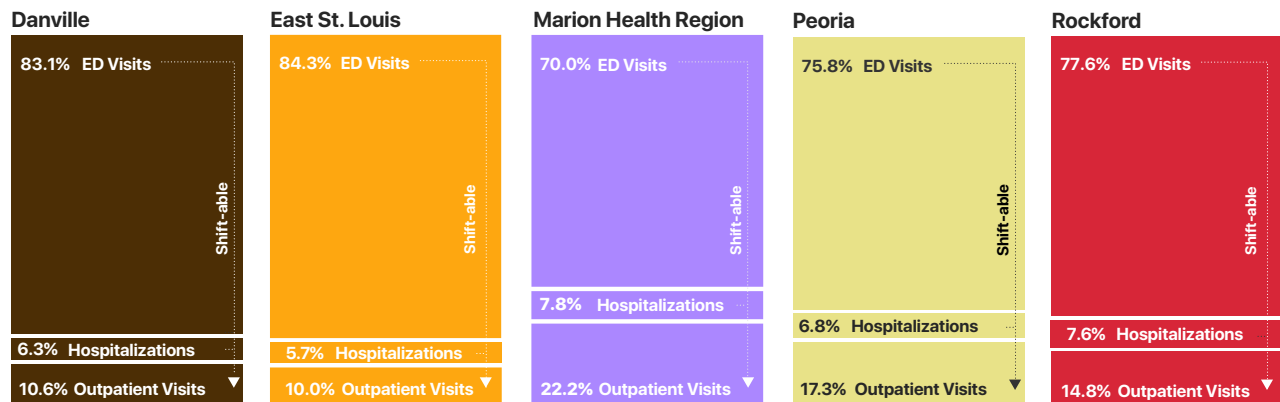
### 2020



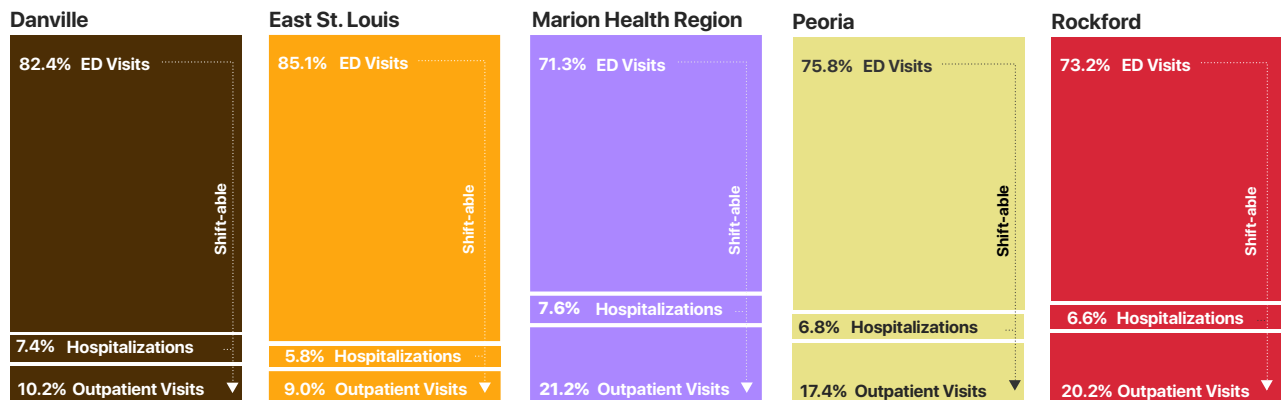
A majority of ACSC care encounters take place in the ED or the hospital as opposed to outpatient settings, adding evidence to the lack of outpatient resources in each of the areas under study (see Figure 21).

**Figure 21: Distribution of Point of Care Encounters for ACSCs by Study Area**

**2019**



**2020**



AHRQ developed Preventative Quality Indicators (PQIs), measures based on ACSC hospital inpatient discharge data and designed to identify outpatient care quality and access issues, including appropriate follow-up care after hospital discharge. These benchmarks for healthcare accessibility and quality are based on a subset of the ACSC codes for hospital admissions in the John Billings algorithm (28). Specifically, PQIs use data from hospital discharges to identify admissions that might have been avoided through access to high-quality outpatient care. In other words, while PQIs are based on hospital inpatient data, they provide insight into the quality of the healthcare ecosystem outside hospitals and in the community by measuring preventable complications that occur in a given population (in a community or region) (29). Four composite PQIs and several disease-specific PQIs make up the composite measures.

*Composite PQIs:*

- PQI 90 Composite combines hospitalizations diagnoses for all PQIs below
- PQI 91 Acute is a composite indicator of acute, episodic hospitalization diagnoses and is composed of the following disease-specific acute PQIs:
  - PQI 11 Bacterial Pneumonia Admission Rate
  - PQI 12 Urinary Tract Infection Admission Rate
- PQI 92 Chronic is a composite indicator of chronic disease hospitalizations and is comprised of the following disease-specific chronic PQIs:
  - PQI 01 Diabetes Mellitus, Short-Term Complications Admission Rate
  - PQI 03 Diabetes Mellitus, Long-Term Complications Admission Rate
  - PQI 05 COPD or Asthma, Older Adults (40+) Admission Rate
  - PQI 07 Hypertension Admission Rate
  - PQI 08 Congestive Heart Failure Admission Rate
  - PQI 10 Dehydration Admission Rate
  - PQI 14 Uncontrolled Diabetes Mellitus Admission Rate
  - PQI 15 Asthma, Younger Adults (18–39) Admission Rate
  - PQI 16 Rate of Lower Extremity Amputation among Patients with Diabetes
- PQI 93 Diabetes Mellitus Hospitalization Composite is a combined measure of diabetes-related PQIs:
  - PQI 01 Diabetes Mellitus, Short-Term Complications Admission Rate
  - PQI 03 Diabetes Mellitus, Long-Term Complications Admission Rate
  - PQI 14 Uncontrolled Diabetes Mellitus Admission Rate

Population characteristics associated with PQI composite measures were computed and appear in Tables 12 to 15.

(Note: In the logistic regression tables that follow, AmerIN/AN = American Indian/American Native, Asian/PI = Asian/Pacific Islander, and Other/UNK = Other/Unknown.)

**Summary of Population Characteristics Most Associated with PQI 90, a composite of all PQI measures:**

- Adults, age 40 and over
- Black people in all areas except the Marion Health Region

**Table 12: Population Characteristics Associated with PQI 90, Overall ACSC Composite (FY2019 and FY2020 Data Combined)**

PQI 90_Danville Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	3.41	3.07	3.78	<.0001
<b>65-74</b>	<b>18-39</b>	5.37	4.70	6.13	<.0001
<b>75 or older</b>	<b>18-39</b>	5.99	5.23	6.85	<.0001
<b>RACE</b>					
<b>AmerN/AN</b>	<b>White</b>	1.65	0.74	3.69	0.22
<b>Asian/PI</b>	<b>White</b>	0.93	0.66	1.29	0.66
<b>Black</b>	<b>White</b>	1.57	1.44	1.71	<.0001
<b>Other/UNK</b>	<b>White</b>	1.38	1.21	1.59	<.0001
<b>SEX</b>					
<b>Male</b>	<b>Female</b>	1.00	0.92	1.08	0.99

PQI 90_E. St. Louis Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	3.81	3.32	4.36	<.0001
<b>65-74</b>	<b>18-39</b>	5.52	4.65	6.56	<.0001
<b>75 or older</b>	<b>18-39</b>	4.61	3.80	5.59	<.0001
<b>RACE</b>					
<b>AmerN/AN</b>	<b>White</b>	1.76	0.96	3.26	0.069
<b>Asian/PI</b>	<b>White</b>	0.71	0.33	1.52	0.37
<b>Black</b>	<b>White</b>	1.41	1.25	1.59	<.0001
<b>Other/UNK</b>	<b>White</b>	1.31	1.00	1.72	0.050
<b>SEX</b>					
<b>Male</b>	<b>Female</b>	1.00	0.90	1.11	0.98

Table 12 Continued

PQI 90_Marion HR Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	3.47	3.05	3.95	<.0001
65-74	18-39	5.80	5.00	6.73	<.0001
75 or older	18-39	6.42	5.51	7.49	<.0001
<b>RACE</b>					
AmerN/AN	White	2.14	1.14	4.01	0.018
Asian/PI	White	0.79	0.33	1.88	0.59
Black	White	1.15	0.99	1.34	0.070
Other/UNK	White	0.85	0.63	1.14	0.27
<b>SEX</b>					
Male	Female	1.04	0.95	1.14	0.36

PQI 90_Peoria Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	4.32	3.56	5.24	<.0001
65-74	18-39	6.20	4.86	7.91	<.0001
75 or older	18-39	8.99	6.98	11.58	<.0001
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	0.75	0.27	2.13	0.59
Black	White	1.41	1.20	1.64	<.0001
Other/UNK	White	1.05	0.75	1.48	0.79
<b>SEX</b>					
Male	Female	0.86	0.74	0.99	0.036

NR = Not reported due to small sample size/unstable estimate

PQI 90_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	3.34	2.79	4.01	<.0001
65-74	18-39	5.48	4.31	6.95	<.0001
75 or older	18-39	6.63	5.18	8.49	<.0001
<b>RACE</b>					
AmerN/AN	White	0.98	0.48	2.01	0.95
Asian/PI	White	0.68	0.37	1.25	0.21
Black	White	1.48	1.27	1.74	<.0001
Other/UNK	White	1.03	0.80	1.32	0.84
<b>SEX</b>					
Male	Female	0.96	0.83	1.10	0.56

**Summary of Population Characteristics Most Associated with PQI 91, a composite of acute PQI measures:**

- Adults, age 40 and over
- Females in East St. Louis, the Marion Health Region and Peoria

**Table 13: Population Characteristics Associated with PQI 91, ACSC Acute Composite (FY2019 and FY2020 Data Combined)**

PQI 91_Danville Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	8.32	4.07	16.98	<.0001
<b>65-74</b>	<b>18-39</b>	9.01	3.79	21.43	<.0001
<b>75 or older</b>	<b>18-39</b>	19.40	8.68	43.37	<.0001
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	NR	NR	NR	NR
Black	White	0.85	0.51	1.41	0.52
Other/UNK	White	0.86	0.31	2.42	0.78
<b>SEX</b>					
Female	Male	1.40	0.91	2.14	0.12

NR = Not reported due to small sample size/unstable estimate

PQI 91_E. St. Louis Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	4.64	3.36	6.40	<.0001
<b>65-74</b>	<b>18-39</b>	6.52	4.46	9.53	<.0001
<b>75 or older</b>	<b>18-39</b>	10.85	7.49	15.73	<.0001
<b>RACE</b>					
AmerN/AN	White	0.47	0.06	3.46	0.46
Asian/PI	White	0.70	0.17	2.93	0.62
Black	White	0.96	0.77	1.20	0.72
Other/UNK	White	0.91	0.50	1.65	0.75
<b>SEX</b>					
<b>Female</b>	<b>Male</b>	1.31	1.06	1.62	0.01

Table 13 Continued

PQI 91_Marion HR Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	3.42	2.68	4.36	<.0001
65-74	18-39	6.59	5.07	8.58	<.0001
75 or older	18-39	9.78	7.57	12.64	<.0001
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	0.73	0.17	3.05	0.66
Black	White	0.59	0.42	0.82	0.0017
Other/UNK	White	0.69	0.39	1.21	0.19
<b>SEX</b>					
Female	Male	1.25	1.07	1.46	0.0049

NR = Not reported due to small sample size/unstable estimate

PQI 91_Peoria Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	3.68	2.42	5.60	<.0001
65-74	18-39	6.73	4.11	11.00	<.0001
75 or older	18-39	12.57	7.88	20.06	<.0001
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	0.65	0.09	4.83	0.68
Black	White	0.80	0.56	1.15	0.23
Other/UNK	White	0.83	0.40	1.71	0.61
<b>SEX</b>					
Female	Male	1.53	1.13	2.08	0.0055

NR = Not reported due to small sample size/unstable estimate

PQI 91_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	2.75	1.91	3.95	<.0001
65-74	18-39	5.72	3.70	8.84	<.0001
75 or older	18-39	8.88	5.89	13.40	<.0001
<b>RACE</b>					
AmerN/AN	White	0.48	0.07	3.50	0.47
Asian/PI	White	0.56	0.17	1.79	0.32
Black	White	0.90	0.65	1.23	0.49
Other/UNK	White	1.07	0.69	1.66	0.75
<b>SEX</b>					
Female	Male	1.13	0.86	1.47	0.38

**Summary of Population Characteristics Most Associated with PQI 92, a composite of chronic PQI measures:**

- Adults, age 40 and over
- Black people in all areas
- Males in the Marion Health Region

**Table 14: Population Characteristics Associated with PQI 92, ACSC Chronic Composite (FY2019 and FY2020 Data Combined)**

PQI 92_Danville Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	4.47	3.19	6.27	<.0001
<b>65-74</b>	<b>18-39</b>	5.52	3.48	8.74	<.0001
<b>75 or older</b>	<b>18-39</b>	5.69	3.46	9.36	<.0001
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	NR	NR	NR	NR
<b>Black</b>	<b>White</b>	1.80	1.37	2.37	<.0001
Other/UNK	White	0.80	0.39	1.62	0.53
<b>SEX</b>					
Male	Female	0.86	0.66	1.12	0.27

NR = Not reported due to small sample size/unstable estimate

PQI 92_E. St. Louis Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
<b>40-64</b>	<b>18-39</b>	3.43	2.96	3.97	<.0001
<b>65-74</b>	<b>18-39</b>	4.88	4.06	5.88	<.0001
<b>75 or older</b>	<b>18-39</b>	3.22	2.59	4.01	<.0001
<b>RACE</b>					
<b>AmerN/AN</b>	<b>White</b>	2.19	1.17	4.10	0.014
Asian/PI	White	0.73	0.31	1.74	0.48
<b>Black</b>	<b>White</b>	1.56	1.37	1.77	<.0001
<b>Other/UNK</b>	<b>White</b>	1.43	1.07	1.91	0.017
<b>SEX</b>					
Male	Female	1.07	0.96	1.20	0.23



Table 14 Continued

PQI 92_Marion HR Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	3.05	2.62	3.55	<.0001
65-74	18-39	4.18	3.50	5.00	<.0001
75 or older	18-39	3.57	2.94	4.32	<.0001
<b>RACE</b>					
AmerN/AN	White	3.03	1.58	5.79	0.0009
Asian/PI	White	0.80	0.28	2.29	0.68
Black	White	1.41	1.18	1.69	0.0002
Other/UNK	White	0.93	0.66	1.30	0.67
<b>SEX</b>					
Male	Female	1.20	1.08	1.34	0.0007

PQI 92_Peoria Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	4.31	3.48	5.34	<.0001
65-74	18-39	5.62	4.27	7.38	<.0001
75 or older	18-39	6.84	5.10	9.16	<.0001
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	0.80	0.25	2.61	0.71
Black	White	1.59	1.34	1.89	<.0001
Other/UNK	White	1.12	0.77	1.64	0.55
<b>SEX</b>					
Male	Female	0.94	0.80	1.10	0.41

NR = Not reported due to small sample size/unstable estimate

PQI 92_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	3.40	2.78	4.17	<.0001
65-74	18-39	4.94	3.78	6.47	<.0001
75 or older	18-39	5.11	3.83	6.81	<.0001
<b>RACE</b>					
AmerN/AN	White	1.21	0.57	2.58	0.62
Asian/PI	White	0.77	0.39	1.51	0.45
Black	White	1.69	1.42	2.01	<.0001
Other/UNK	White	1.00	0.75	1.34	1.00
<b>SEX</b>					
Male	Female	0.98	0.84	1.15	0.83

**Summary of Population Characteristics Most Associated with PQI 93, a composite of diabetes measures:**

- Males in the Marion Health Region
- Middle-age (40–64) adults and adults 75 and older in Peoria
- Black, male adults age 65–74 in Rockford

**Table 15: Population Characteristics Associated with PQI 93, Diabetes Hospitalization Composite (FY2019 and FY2020 Data Combined)**

PQI 93_Danville Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	1.51	0.91	2.52	0.11
65-74	18-39	0.59	0.18	1.97	0.39
75 or older	18-39	0.80	0.24	2.67	0.71
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	NR	NR	NR	NR
Black	White	0.90	0.52	1.55	0.71
Other/UNK	White	0.87	0.27	2.84	0.82
<b>SEX</b>					
Male	Female	1.49	0.92	2.41	0.11

NR = Not reported due to small sample size/unstable estimate

PQI 93_E. St. Louis Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	1.14	0.92	1.41	0.23
65-74	18-39	1.02	0.72	1.44	0.91
75 or older	18-39	0.63	0.39	1.02	0.060
<b>RACE</b>					
AmerN/AN	White	0.42	0.06	3.05	0.39
Asian/PI	White	1.30	0.40	4.23	0.66
Black	White	1.16	0.94	1.44	0.17
Other/UNK	White	1.22	0.75	1.97	0.42
<b>SEX</b>					
Male	Female	1.21	0.99	1.47	0.064

Table 15 Continued

PQI 93_Marion HR Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	1.03	0.84	1.26	0.79
65-74	18-39	0.69	0.50	0.96	0.03
75 or older	18-39	0.31	0.19	0.52	<.0001
<b>RACE</b>					
AmerN/AN	White	0.88	0.21	3.64	0.85
Asian/PI	White	1.53	0.36	6.39	0.56
Black	White	1.28	0.95	1.72	0.11
Other/UNK	White	0.88	0.52	1.50	0.64
<b>SEX</b>					
Male	Female	1.86	1.54	2.25	<.0001

PQI 93_Peoria Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	1.94	1.43	2.63	<.0001
65-74	18-39	1.60	0.98	2.63	0.063
75 or older	18-39	1.76	1.01	3.05	0.046
<b>RACE</b>					
AmerN/AN	White	NR	NR	NR	NR
Asian/PI	White	NR	NR	NR	NR
Black	White	1.20	0.89	1.62	0.23
Other/UNK	White	1.40	0.80	2.44	0.24
<b>SEX</b>					
Male	Female	1.02	0.78	1.34	0.87

NR = Not reported due to small sample size/unstable estimate

PQI 93_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
40-64	18-39	1.29	0.95	1.74	0.099
65-74	18-39	1.69	1.08	2.64	0.021
75 or older	18-39	0.82	0.43	1.57	0.54
<b>RACE</b>					
AmerN/AN	White	0.43	0.06	3.13	0.40
Asian/PI	White	0.92	0.28	2.97	0.88
Black	White	1.67	1.25	2.23	0.0005
Other/UNK	White	0.98	0.59	1.63	0.95
<b>SEX</b>					
Male	Female	1.74	1.33	2.28	<.0001

A majority of hospital-level care for ACSCs take places in the ED. PQIs are measures for ACSC hospitalizations. For ED visits, ACSCs can be categorized as acute, chronic, or avoidable (30). Table 16 lists the conditions included in each of these categories. Population characteristics associated with PQI composite measures were computed and appear in Tables 17–19.

(Note: In the logistic regression tables that follow, AmerIN/AN = American Indian/American Native, Asian/PI = Asian/Pacific Islander, and Other/UNK = Other/Unknown.)

**Table 16: Diseases Comprising Acute, Chronic, and Avoidable ACSCs**

<b>ACUTE</b>	<b>CHRONIC</b>	<b>AVOIDABLE</b>
Bacterial Pneumonia	Angina	Congenital syphilis
Bronchitis	Asthma	Failure-to-thrive
Cellulitis	Chronic obstructive pulmonary disease (COPD)	Dental conditions
Seizure (non-epileptic)	Congestive heart failure (CHF)	Vaccine preventable
Dehydration	Diabetes	Nutritional deficiencies
Gastroenteritis, noninfective	Grand mal status and other, epileptic convulsions	
Hypoglycemia	Hypertension	
Kidney/urinary infection	Tuberculosis (non-pulmonary)	
Pelvic inflammatory disease	Tuberculosis (pulmonary)	
Severe ear, nose, and throat infections		
Skin grafts with cellulitis		

## Summary of Population Characteristics Most Associated with Acute ACSC ED Visits

- In general, children younger than 12 and teenagers age 12–19
- Young adults age 20–24 in the Marion Health Region and Rockford
- Females in East St. Louis, the Marion Health Region, Peoria, and Rockford

**Table 17: Population Characteristics Associated with Acute ACSC ED Visits (FY2019 and FY2020 Data Combined)**

ACUTE_Danville Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
<b>&lt; 1 y</b>	<b>25 to 34.9</b>	<b>3.73</b>	<b>3.12</b>	<b>4.46</b>	<b>&lt;.0001</b>
<b>1 to 2.9</b>	<b>25 to 34.9</b>	<b>4.01</b>	<b>3.42</b>	<b>4.71</b>	<b>&lt;.0001</b>
<b>3 to 5.9</b>	<b>25 to 34.9</b>	<b>3.76</b>	<b>3.17</b>	<b>4.47</b>	<b>&lt;.0001</b>
<b>6 to 11.9</b>	<b>25 to 34.9</b>	<b>2.88</b>	<b>2.45</b>	<b>3.38</b>	<b>&lt;.0001</b>
<b>12 to 14.9</b>	<b>25 to 34.9</b>	<b>1.36</b>	<b>1.06</b>	<b>1.74</b>	<b>0.017</b>
<b>15 to 19.9</b>	<b>25 to 34.9</b>	<b>1.10</b>	<b>0.91</b>	<b>1.32</b>	<b>0.32</b>
<b>20 to 24.9</b>	<b>25 to 34.9</b>	<b>0.90</b>	<b>0.75</b>	<b>1.07</b>	<b>0.22</b>
<b>35 to 44.9</b>	<b>25 to 34.9</b>	<b>0.92</b>	<b>0.79</b>	<b>1.07</b>	<b>0.28</b>
<b>45 to 64.9</b>	<b>25 to 34.9</b>	<b>0.77</b>	<b>0.67</b>	<b>0.89</b>	<b>0.0004</b>
<b>65 or older</b>	<b>25 to 34.9</b>	<b>0.62</b>	<b>0.45</b>	<b>0.85</b>	<b>0.0033</b>
<b>RACE</b>					
<b>AmerN/AN</b>	<b>White</b>	<b>0.53</b>	<b>0.19</b>	<b>1.47</b>	<b>0.22</b>
<b>Asian/PI</b>	<b>White</b>	<b>0.43</b>	<b>0.15</b>	<b>1.19</b>	<b>0.10</b>
<b>Black</b>	<b>White</b>	<b>0.93</b>	<b>0.84</b>	<b>1.03</b>	<b>0.15</b>
<b>Other/UNK</b>	<b>White</b>	<b>0.96</b>	<b>0.86</b>	<b>1.09</b>	<b>0.55</b>
<b>SEX</b>					
<b>Female</b>	<b>Male</b>	<b>1.09</b>	<b>1.00</b>	<b>1.19</b>	<b>0.041</b>

Table 17 Continued

ACUTE_E. St. Louis Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	3.40	3.16	3.66	<.0001
1 to 2.9	25 to 34.9	3.50	3.29	3.74	<.0001
3 to 5.9	25 to 34.9	3.26	3.05	3.48	<.0001
6 to 11.9	25 to 34.9	2.23	2.09	2.37	<.0001
12 to 14.9	25 to 34.9	1.47	1.35	1.60	<.0001
15 to 19.9	25 to 34.9	1.30	1.21	1.39	<.0001
20 to 24.9	25 to 34.9	1.03	0.97	1.11	0.34
35 to 44.9	25 to 34.9	0.86	0.81	0.91	<.0001
45 to 64.9	25 to 34.9	0.65	0.62	0.69	<.0001
65 or older	25 to 34.9	0.50	0.45	0.56	<.0001
<b>RACE</b>					
AmerN/AN	White	1.11	0.86	1.42	0.43
Asian/PI	White	1.05	0.84	1.31	0.68
Black	White	0.94	0.91	0.98	0.0042
Other/UNK	White	1.00	0.95	1.04	0.88
<b>SEX</b>					
Female	Male	1.12	1.08	1.15	<.0001

ACUTE_Marion HR Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	3.45	3.17	3.75	<.0001
1 to 2.9	25 to 34.9	3.85	3.58	4.14	<.0001
3 to 5.9	25 to 34.9	3.29	3.05	3.54	<.0001
6 to 11.9	25 to 34.9	2.11	1.96	2.27	<.0001
12 to 14.9	25 to 34.9	1.06	0.95	1.19	0.28
15 to 19.9	25 to 34.9	1.12	1.04	1.21	0.0046
20 to 24.9	25 to 34.9	1.12	1.04	1.21	0.0029
35 to 44.9	25 to 34.9	0.85	0.79	0.91	<.0001
45 to 64.9	25 to 34.9	0.71	0.67	0.75	<.0001
65 or older	25 to 34.9	0.76	0.70	0.83	<.0001
<b>RACE</b>					
AmerN/AN	White	0.84	0.61	1.16	0.29
Asian/PI	White	0.69	0.44	1.07	0.095
Black	White	0.96	0.90	1.02	0.20
Other/UNK	White	1.04	0.99	1.10	0.13
<b>SEX</b>					
Female	Male	1.02	0.99	1.06	0.23

Table 17 Continued

ACUTE_Peoria Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	3.41	3.05	3.80	<.0001
1 to 2.9	25 to 34.9	3.94	3.56	4.37	<.0001
3 to 5.9	25 to 34.9	3.12	2.80	3.48	<.0001
6 to 11.9	25 to 34.9	1.83	1.64	2.04	<.0001
12 to 14.9	25 to 34.9	1.21	1.04	1.40	0.013
15 to 19.9	25 to 34.9	1.10	0.99	1.22	0.079
20 to 24.9	25 to 34.9	1.08	0.98	1.19	0.11
35 to 44.9	25 to 34.9	0.88	0.80	0.96	0.0053
45 to 64.9	25 to 34.9	0.67	0.61	0.73	<.0001
65 or older	25 to 34.9	0.65	0.55	0.77	<.0001
<b>RACE</b>					
AmerN/AN	White	0.82	0.51	1.32	0.42
Asian/PI	White	0.92	0.58	1.46	0.73
Black	White	0.99	0.92	1.05	0.69
Other/UNK	White	1.01	0.95	1.09	0.69
<b>SEX</b>					
Female	Male	1.13	1.07	1.18	<.0001

ACUTE_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	3.25	2.90	3.64	<.0001
1 to 2.9	25 to 34.9	4.18	3.77	4.63	<.0001
3 to 5.9	25 to 34.9	3.53	3.16	3.94	<.0001
6 to 11.9	25 to 34.9	2.44	2.19	2.71	<.0001
12 to 14.9	25 to 34.9	1.54	1.33	1.79	<.0001
15 to 19.9	25 to 34.9	1.15	1.02	1.29	0.021
20 to 24.9	25 to 34.9	1.12	1.00	1.25	0.042
35 to 44.9	25 to 34.9	0.89	0.81	0.98	0.019
45 to 64.9	25 to 34.9	0.72	0.66	0.79	<.0001
65 or older	25 to 34.9	0.61	0.51	0.72	<.0001
<b>RACE</b>					
AmerN/AN	White	0.74	0.50	1.10	0.14
Asian/PI	White	1.25	0.98	1.59	0.073
Black	White	1.02	0.96	1.09	0.44
Other/UNK	White	1.01	0.95	1.09	0.69
<b>SEX</b>					
Female	Male	1.06	1.01	1.12	0.020

## Summary of Population Characteristics Most Associated with Chronic ACSC ED Visits

- Adults age 35 and older in all areas, children and teens in Danville (age 3–14), children age 3–11 in East St. Louis, and children age 6–11 in Rockford
- Blacks in all areas
- Males in East St. Louis, the Marion Health Region, Peoria, and Rockford

**Table 18: Population Characteristics Associated with Chronic ACSC ED Visits (FY2019 and FY2020 Data Combined)**

CHRONIC_Danville Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	0.18	0.07	0.44	0.0002
1 to 2.9	25 to 34.9	1.14	0.80	1.60	0.47
<b>3 to 5.9</b>	<b>25 to 34.9</b>	<b>1.66</b>	<b>1.19</b>	<b>2.30</b>	<b>0.0026</b>
<b>6 to 11.9</b>	<b>25 to 34.9</b>	<b>2.01</b>	<b>1.51</b>	<b>2.66</b>	<b>&lt;.0001</b>
<b>12 to 14.9</b>	<b>25 to 34.9</b>	<b>1.55</b>	<b>1.04</b>	<b>2.31</b>	<b>0.033</b>
15 to 19.9	25 to 34.9	0.89	0.64	1.24	0.48
20 to 24.9	25 to 34.9	0.87	0.64	1.18	0.38
<b>35 to 44.9</b>	<b>25 to 34.9</b>	<b>1.82</b>	<b>1.46</b>	<b>2.27</b>	<b>&lt;.0001</b>
<b>45 to 64.9</b>	<b>25 to 34.9</b>	<b>3.89</b>	<b>3.21</b>	<b>4.71</b>	<b>&lt;.0001</b>
<b>65 or older</b>	<b>25 to 34.9</b>	<b>4.14</b>	<b>3.12</b>	<b>5.49</b>	<b>&lt;.0001</b>
<b>RACE</b>					
AmerN/AN	White	0.60	0.14	2.48	0.48
Asian/PI	White	0.46	0.11	1.90	0.28
<b>Black</b>	<b>White</b>	<b>1.31</b>	<b>1.15</b>	<b>1.50</b>	<b>&lt;.0001</b>
Other/UNK	White	0.97	0.77	1.21	0.77
<b>SEX</b>					
Male	Female	1.10	0.98	1.23	0.12



Table 18 Continued

CHRONIC_E. St. Louis Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	0.15	0.10	0.21	<.0001
1 to 2.9	25 to 34.9	0.74	0.63	0.87	0.0003
3 to 5.9	25 to 34.9	1.30	1.13	1.50	0.0003
6 to 11.9	25 to 34.9	1.49	1.31	1.69	<.0001
12 to 14.9	25 to 34.9	1.00	0.83	1.20	0.96
15 to 19.9	25 to 34.9	0.99	0.86	1.14	0.87
20 to 24.9	25 to 34.9	1.03	0.90	1.17	0.70
35 to 44.9	25 to 34.9	1.89	1.72	2.08	<.0001
45 to 64.9	25 to 34.9	3.24	2.99	3.53	<.0001
65 or older	25 to 34.9	4.00	3.57	4.47	<.0001
<b>RACE</b>					
AmerN/AN	White	1.03	0.68	1.55	0.90
Asian/PI	White	1.21	0.85	1.72	0.30
Black	White	1.38	1.30	1.47	<.0001
Other/UNK	White	1.09	0.99	1.20	0.085
<b>SEX</b>					
Male	Female	1.27	1.20	1.33	<.0001

CHRONIC_Marion HR Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	0.18	0.12	0.28	<.0001
1 to 2.9	25 to 34.9	0.51	0.40	0.64	<.0001
3 to 5.9	25 to 34.9	0.74	0.60	0.90	0.0033
6 to 11.9	25 to 34.9	0.87	0.74	1.03	0.11
12 to 14.9	25 to 34.9	0.81	0.65	1.01	0.064
15 to 19.9	25 to 34.9	0.63	0.53	0.75	<.0001
20 to 24.9	25 to 34.9	1.26	1.10	1.43	0.0007
35 to 44.9	25 to 34.9	1.46	1.31	1.63	<.0001
45 to 64.9	25 to 34.9	3.15	2.88	3.45	<.0001
65 or older	25 to 34.9	4.64	4.20	5.14	<.0001
<b>RACE</b>					
AmerN/AN	White	1.51	1.06	2.15	0.024
Asian/PI	White	0.78	0.42	1.43	0.42
Black	White	1.32	1.21	1.45	<.0001
Other/UNK	White	0.88	0.77	0.99	0.037
<b>SEX</b>					
Male	Female	1.20	1.14	1.27	<.0001

Table 18 Continued

CHRONIC_Peoria Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	0.11	0.07	0.18	<.0001
1 to 2.9	25 to 34.9	0.38	0.28	0.51	<.0001
3 to 5.9	25 to 34.9	0.86	0.68	1.10	0.23
6 to 11.9	25 to 34.9	1.07	0.87	1.32	0.50
12 to 14.9	25 to 34.9	0.69	0.52	0.92	0.012
15 to 19.9	25 to 34.9	0.88	0.73	1.07	0.19
20 to 24.9	25 to 34.9	0.79	0.66	0.94	0.0088
35 to 44.9	25 to 34.9	1.51	1.32	1.72	<.0001
45 to 64.9	25 to 34.9	2.62	2.34	2.93	<.0001
65 or older	25 to 34.9	3.02	2.57	3.55	<.0001
<b>RACE</b>					
AmerN/AN	White	0.84	0.41	1.73	0.64
Asian/PI	White	0.71	0.33	1.54	0.39
Black	White	1.35	1.23	1.49	<.0001
Other/UNK	White	0.98	0.86	1.13	0.78
<b>SEX</b>					
Male	Female	1.24	1.15	1.34	<.0001

CHRONIC_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
< 1 y	25 to 34.9	0.15	0.09	0.24	<.0001
1 to 2.9	25 to 34.9	0.65	0.51	0.83	0.0007
3 to 5.9	25 to 34.9	1.19	0.96	1.49	0.11
6 to 11.9	25 to 34.9	1.25	1.02	1.52	0.031
12 to 14.9	25 to 34.9	0.92	0.69	1.22	0.55
15 to 19.9	25 to 34.9	0.78	0.63	0.96	0.019
20 to 24.9	25 to 34.9	0.96	0.80	1.15	0.63
35 to 44.9	25 to 34.9	1.68	1.47	1.92	<.0001
45 to 64.9	25 to 34.9	2.80	2.50	3.15	<.0001
65 or older	25 to 34.9	3.35	2.83	3.96	<.0001
<b>RACE</b>					
AmerN/AN	White	2.14	1.49	3.07	<.0001
Asian/PI	White	1.02	0.69	1.50	0.92
Black	White	1.47	1.35	1.60	<.0001
Other/UNK	White	1.28	1.14	1.45	<.0001
<b>SEX</b>					
Male	Female	1.13	1.05	1.22	0.0009

## Summary of Population Characteristics Most Associated with Avoidable ACSC ED Visits

- Adults age 21–64
- Blacks in Peoria and Rockford
- Males in East St. Louis, the Marion Health Region, Peoria, and Rockford

**Table 19: Population Characteristics Associated with Avoidable ACSC ED Visits (FY2019 and FY2020 Data Combined)**

AVOIDABLE_Danville Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
21 to 34	< 21	5.58	4.34	7.17	<.0001
35 to 44	< 22	4.27	3.26	5.61	<.0001
45 to 64	< 23	1.87	1.39	2.51	<.0001
65 or older	< 24	0.35	0.11	1.12	0.077
<b>RACE</b>					
AmerN/AN	White	3.17	1.50	6.71	0.0025
Asian/PI	White	0.34	0.05	2.42	0.28
Black	White	1.01	0.86	1.19	0.923
Other/UNK	White	0.88	0.62	1.24	0.451
<b>SEX</b>					
Male	Female	1.08	0.93	1.26	0.327

AVOIDABLE_E. St. Louis Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
21 to 34	< 21	4.18	3.78	4.63	<.0001
35 to 44	< 22	3.44	3.07	3.86	<.0001
45 to 64	< 23	1.47	1.30	1.67	<.0001
65 or older	< 24	0.51	0.36	0.72	0.0001
<b>RACE</b>					
AmerN/AN	White	0.94	0.56	1.58	0.81
Asian/PI	White	0.28	0.10	0.75	0.011
Black	White	1.03	0.97	1.11	0.35
Other/UNK	White	0.95	0.83	1.09	0.47
<b>SEX</b>					
Male	Female	1.12	1.04	1.19	0.0017

Table 19 Continued

AVOIDABLE_Marion HR Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
21 to 34	< 21	5.81	5.20	6.49	<.0001
35 to 44	< 22	4.28	3.79	4.83	<.0001
45 to 64	< 23	1.72	1.51	1.96	<.0001
65 or older	< 24	0.20	0.13	0.31	<.0001
<b>RACE</b>					
AmerN/AN	White	0.98	0.61	1.58	0.95
Asian/PI	White	1.15	0.56	2.33	0.71
Black	White	0.99	0.89	1.09	0.79
Other/UNK	White	0.89	0.77	1.03	0.11
<b>SEX</b>					
Male	Female	1.17	1.09	1.25	<.0001

AVOIDABLE_Peoria Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
21 to 34	< 21	4.78	4.03	5.66	<.0001
35 to 44	< 22	3.53	2.92	4.27	<.0001
45 to 64	< 23	1.69	1.38	2.07	<.0001
65 or older	< 24	0.17	0.06	0.46	0.0004
<b>RACE</b>					
AmerN/AN	White	0.17	0.02	1.19	0.074
Asian/PI	White	0.23	0.03	1.65	0.14
Black	White	1.13	1.01	1.26	0.032
Other/UNK	White	1.20	0.99	1.45	0.064
<b>SEX</b>					
Male	Female	1.38	1.25	1.53	<.0001

AVOIDABLE_Rockford Group	Compared To	Odds Ratio	Confidence Interval (95%)		P-Value
			Lower Limit	Upper Limit	
<b>AGE</b>					
21 to 34	< 21	4.23	3.49	5.13	<.0001
35 to 44	< 22	4.40	3.59	5.40	<.0001
45 to 64	< 23	1.36	1.08	1.71	0.0095
65 or older	< 24	0.48	0.25	0.91	0.026
<b>RACE</b>					
AmerN/AN	White	0.93	0.44	1.97	0.85
Asian/PI	White	1.10	0.60	2.02	0.75
Black	White	1.19	1.06	1.35	0.0043
Other/UNK	White	0.94	0.77	1.16	0.57
<b>SEX</b>					
Male	Female	1.13	1.01	1.27	0.034

# Appendix C:

## Approach to Community Input

Members of University of Illinois Chicago's (UIC) Institute for Healthcare Delivery Design (IHDD) and School of Public Health (SPH), in collaboration with Southern Illinois University School of Medicine Center for Rural Health and University of Illinois College of Medicine Rockford Division of Health Research and Evaluation (all entities together the "CI team"), conducted community-input sessions from February through July 2022 in five regions in Illinois: Danville, the Marion Health Region (MHR), Peoria, the Rockford metropolitan region, and West Cook County. The project teams at the academic institutions reached out to community-based organizations (CBOs) that serve vulnerable populations in each region. Twelve CBOs conducted a total of 24 input sessions and 39 individual interviews. In the end, 230 individuals' voices are represented in the regional reports.

### Community-Input (CI) Goals

1. Support the overall Transform initiative through narratives of community members' health and healthcare experiences to inform Illinois Department of Healthcare and Family Services (HFS).
2. Elevate the use of narratives to inform what questions are asked, how findings are interpreted, and what emerging questions need to be investigated in the future.
3. Demonstrate and enhance methods to solicit community input.
4. Uncover emerging issues for potential directions of the Transform project in the future.
5. Empower community-based organizations with community-input solicitation tools and findings to continuously improve the health of socially vulnerable populations in Illinois.

### Targeted Regions and Communities

In 2020, the UIC and SIU teams conducted community input in four socially vulnerable areas in Illinois: the South Side of Chicago, the West Side of Chicago, South Cook County, and the East St. Louis Metropolitan Area. HFS published these reports on the HFS website in February of 2021. In 2022, the CI team conducted community input in five additional socially vulnerable areas: Danville, the MHR, Peoria, and Rockford, and West Cook County.

Within the five areas under study, the CI team identified the geographic areas or communities with the most vulnerable populations with respect to accessing healthcare and to health outcomes. They completed the identification of these specific geographic areas in consultation with UIC faculty members: Dr. Vincent Freeman (Associate Professor of Epidemiology and Biostatistics, UIC SPH) and Dr. Matt Sweeney (Senior Research Specialist, UIC Institute for Policy and Civic Engagement). Drs. Freeman and Sweeney used

the CDC Social Vulnerability Index to determine priority zip code areas and/or “meaningful communities” (e.g., Cicero in the West Cook region) for the CI team to focus on.

Once priority zip codes were identified, the CI team identified groups of community members in each geographic community who demonstrated characteristics that were priorities of the HFS Transformation program (racial/ethnic groups, women of reproductive age, people with multiple chronic diseases, older adults, people with disabilities, family caregivers, etc.). The team used these population groups to inform the identification of and outreach to potential community partners.

### **Identifying Community Partners**

The CI team identified CBOs that provide services to vulnerable community members with the previously described characteristics. To do this, they used multiple sources of information—including existing health assessments, databases, and resource lists, as well as preexisting connections, referrals from other community-organizations, and internet searches. They excluded healthcare organizations, to ensure the participants would include individuals who face challenges accessing healthcare.

The CI team from each region contacted potential partner CBOs and scheduled meetings with organizations to describe the project, including roles and expectations for the CBOs and the CI team. The interested CBOs then entered a formal partnership with the university. For each interested CBO, the CI team developed a scope of work outlining roles for each party along with a contract between UIC and each partner organization. Because most of the CBOs recruited participants, collected data, provided incentives to participants, and engaged in other activities, the contracts stipulated that UIC would compensate the organizations for their time and the cost of the participant incentives.

### **Community Partner Training**

The CI team provided a series of training sessions to the staffs of the partner CBOs to prepare them for the community-input sessions. This unique feature of UIC’s community-input process was intended to enhance both the capacity of the CBOs (see the “Goals” section, above) and their input-session-facilitation skills. The training included participant-recruitment and focus-group facilitation practices. The CBO staff were able to practice their skills during the training sessions, which were held either in person or online. To allow CBO staffers to revisit training topics and to share information with staff members unable to attend the live training, the training sessions were recorded.

### **The Social or Structural Drivers of Health Framework**

The CI team developed a conceptual framework which integrated the key concepts of the social drivers of health, access to healthcare, and healthcare quality. These provided a

common framework for developing discussion guides, the codebook, and data analysis and interpretation in all 5 regions. The framework also allowed flexibility for each region to adapt its community-input strategy to regional variations and to discover and highlight findings that were unique to the region.

### **Community-Input Focus Groups Led by the CBOs**

After training was completed, the partner CBOs scheduled community-input sessions, recruited participants, and conducted the focus-group sessions. All participants received a gift-card incentive to thank them for participating in a community-input session.

***Participant Recruitment.*** To leverage the community partners' networks of readily available existing relationships, a convenience sampling (a type of non-probability sampling) was taken, using flyers and other promotional materials created by the CI team to recruit session participants. The convenience-sampling approach had the advantage of using the CBOs' existing relationships with community members to recruit community-input participants and to establish some trust with them. A key limitation of convenience sampling is the possibility that people who are not part of the CBO's network could be underrepresented in the sample. This situation limits the ability to make generalizations about residents of the community as a whole. However, in 3 of the 5 regions (Peoria, Rockford, West Cook), partnering with multiple CBOs helped to mitigate this limitation.

***Implementation of Community-Input Sessions.*** Community-partner staffers conducted most of the community-input sessions, using the discussion guide developed by the CI team. The CI team provided technical and note-taking support. However, some CBOs indicated they had insufficient capacity to conduct sessions. In those cases, the UIC team conducted the community-input sessions. The sessions were conducted either in-person or via Zoom, depending on CBO and community preferences as well as COVID-19 restrictions at the time of the sessions. In addition to having a note taker present, all the community-input sessions were audio recorded.

***Regional Adaptations of the Protocol and Procedures.*** The CBOs were allowed to adapt the standard protocol developed by UIC to fit their own communities (e.g., to adjust the community-member recruitment strategy, vary the number of participants in an input session, and have either virtual or in-person sessions).

***Languages.*** To maximize the inclusion of multiple perspectives, focus groups were conducted in 3 languages other than English – as needed (or requested) by the local organizations. The CI team translated the focus-group guide in advance. In all, 2 CBOs conducted 10 sessions in languages other than English:

- **Erie House**, in West Cook County, conducted 7 sessions in Spanish.
- **Winnebago Emerging Small Business Services**, in Rockford, conducted 1 session in Spanish, 1 session in Dari (with Afghani immigrants), and 1 session in Swahili (with Congolese immigrants).

Sessions were facilitated by persons fluent in the relevant language. One session in Rockford was co-facilitated by an English-speaking staff person and a person from the community who was fluent in the non-English language. For the Spanish-language and Swahili-language sessions, focus-group recordings were transcribed in their original language and then translated into English for coding and analysis. For the Dari-language session, translation back to English was conducted in real time and notes were captured in English.

**Individual Interviews.** In Rockford, individual interviews were conducted with 39 community members. Interviews were done for a range of reasons, including limited access to technology for some priority populations, which would have restricted their ability to participate in a Zoom session; an uptick in COVID-19 infections, which restricted in-person gatherings; and the desire to elicit community input from community members who, for health or logistics reasons, were unable to participate in a 90-minute focus group.

### **Data Management and Analytic Strategy**

The community-input sessions' recordings were automatically transcribed using voice-recognition software and corrected by a member of the CI team. The CI team created a codebook using the Social and Structural Drivers of Health Framework that was used to create the focus-group discussion guide. Like the discussion guide, the codebook covered key concepts of the social drivers of health, access to healthcare, and healthcare quality. A subset of CI team members tested and modified the codebook. Once the codebook was finalized, a member of the CI team held 2 training sessions to describe the coding process. Using the codebook, CI team members coded transcripts, created memos, and reviewed notes to analyze the participants' experiences related to health and healthcare in their communities. Through this analytic process, each regional team identified key themes and summarized its findings in the areas of healthcare access, healthcare quality, and other thematic areas related to social determinants of health or community recommendations to address them. All these findings were then compiled into a separate, final community-input report for each region.

In addition, representative participant quotations and stories were pulled and curated to ground the research findings and bring out the human perspective. Through member-checking, the community partners were asked to offer feedback on the data analysis and thematic findings in draft summary reports. Upon publication of this report, community partners will disseminate the project objectives and findings to resident participants and their broader networks of stakeholders.



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