



UH Avon Rehabilitation Hospital 2017 COMMUNITY HEALTH NEEDS ASSESSMENT REPORT

University Hospitals' (UH) long-standing commitment to the community spans over 150 years. This commitment has grown and evolved through significant thought and care in considering our community's most pressing health needs. One way we do this is by conducting a periodic, comprehensive Community Health Needs Assessment ("CHNA") for each UH hospital facility.

Through our CHNA, UH has identified the greatest health needs among each of our hospital's communities, enabling UH to ensure that our resources are appropriately directed toward outreach, prevention, education and wellness opportunities where the greatest impact can be realized.

The following document is a detailed CHNA for University Hospitals Avon Rehabilitation Hospital ("UH Avon Rehabilitation Hospital").

UH Avon Rehabilitation Hospital opened in 2016, as a freestanding, state-of-the-art acute inpatient rehabilitation hospital dedicated to the treatment and recovery of individuals who have experienced a variety of conditions. These include, but are not limited to, stroke, trauma, brain injury, spinal cord injury, neurological conditions, amputations, orthopedic injury and other rehabilitation diagnoses.

Adopted by University Hospitals, June 20, 2017.

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INTRODUCTION TO REPORT

This report identifies and assesses community health needs in the areas served by UH Avon Rehabilitation Hospital in accordance with regulations promulgated by the Internal Revenue Service pursuant to the Patient Protection and Affordable Care Act (ACA), 2010. This CHNA was adopted by University Hospitals on June 20, 2017.

This is the first UH Avon Rehabilitation Hospital community health needs assessment (CHNA) in response to that federal government regulation. The 2017 UH Avon Rehabilitation Hospital CHNA will serve as a foundation for developing an implementation strategy, required by the regulation, to address those needs that (a) the hospital determines it is able to meet in whole or in part; (b) are otherwise part of its mission; and (c) are not met (or are not adequately met) by other programs and services in the hospital's service area.

Objectives: CHNAs seek to identify priority health status and access issues for particular geographic areas and populations by focusing on the following questions:

- **Who** in the community is most vulnerable in terms of health status or access to care?
- **What** are the unique health status and/or access needs for these populations?
- **Where** do these people live in the community?
- **Why** are these problems present?

The question of how the hospital can best use its limited charitable resources to assist communities in need will be the subject of the hospital's implementation strategy. To answer these questions, this assessment considered multiple data sources, some primary (interviews with hospital and community leaders) and some secondary (regarding demographics and health status indicators).

UH Avon Rehabilitation Hospital's CHNA took into account input from persons and organizations representing the broad interests of the community through interviews with community leaders, hospital leaders, and public health commissioners. Each of these gave their individual and collective assessments of the strengths and limits of community health services and identified the gaps in health needs within the community.

This report addresses the following broad topics:

- Economic issues facing the hospital's primary and secondary service areas (e.g., poverty, unemployment);
- Community issues (e.g., crime);
- Health status indicators (e.g., morbidity rates for various diseases and conditions, and mortality rates for leading causes of death);
- Health access indicators (e.g., uninsured rates);
- Health disparities indicators; and
- Availability of health care facilities and resources.

Written Comments

Individuals are encouraged to submit written comments on this Community Health Needs Assessment (CHNA) to CommunityBenefit@UHhospitals.org.

1 The Patient Protection and Affordable Care Act (Pub. L. 111-148) added section 501(r) to the Internal Revenue Code, which imposes new requirements on nonprofit hospitals in order to qualify for an exemption under Section 501(c)(3), and adding new reporting requirements for such hospitals under Section 6033(b) of the Internal Revenue Code.

EXECUTIVE SUMMARY

UH Avon Rehabilitation Hospital by the Numbers

- 8 ZIP codes comprise the hospital's primary service area.
- Service area population, 2015, 358,607.
- 66.9% of inpatient discharges originate from the primary service area; 22.2% of inpatient discharges originate from the secondary service area.
- Almost two-thirds (63%) of patients admitted in 2016 were senior citizens.
- The dominant payer category for inpatients in 2016 was Medicare (74.5%).
- Close to half (48.8%) of inpatients treated in 2016 were receiving rehabilitation services because of a stroke or other neurological condition or trauma.
- The hospital's service area is majority White (90.1%). African Americans comprise only 4.9% of those living in the service area, but 31.5% of those living below the poverty line within the service area.
- There exists a wide range of health status and access challenges across the community.

This assessment focuses on the priority problems that impact the overall health of the UH Avon Rehabilitation Hospital community.

UH Avon Rehabilitation Hospital's primary and secondary service areas are almost exclusively contained within Cuyahoga and Lorain counties. Key findings from analyses of that population are as follows.

Poverty and unemployment in the area create barriers to access (to health services, healthy food and other necessities) and thus contribute to poor health.

Cuyahoga County's unemployment rate of 6.7% places it 24th highest in Ohio and Lorain County's unemployment rate of 7.2% ranks 16th highest in Ohio compared to Ohio's 88 counties.

Alcohol is related to injury as well as several disease states. The percent of Cuyahoga and Lorain county residents who report excessive drinking is higher than average compared to other Ohio counties.

Lorain County's violent crime rate is slightly higher than Ohio counties overall; Cuyahoga County has one of the highest violent crime rates in the state.

Priority Health Needs

After careful analysis of both qualitative and quantitative data, UH Avon Rehabilitation Hospital identified several categories of health needs that impact the community served by the hospital but has selected obesity as its priority for the 2017–2018 period.

CHNA Collaboration

UH Avon Rehabilitation Medical Center worked closely with The Center for Health Affairs, the leading advocate for Northeast Ohio hospitals, to complete the 2017 CHNA. The Center advocates on behalf of 36 hospitals in six counties. University Hospitals Health System, Inc. retained The Center for Health Affairs to assist in quantitative and qualitative data collection and analysis and to ensure the entire community served by the hospital was captured. More information about The Center for Health Affairs is provided in Appendix A.

DESCRIPTION OF PROCESS AND METHODS

A. Definition of Service Area (Community Served by the Hospital)

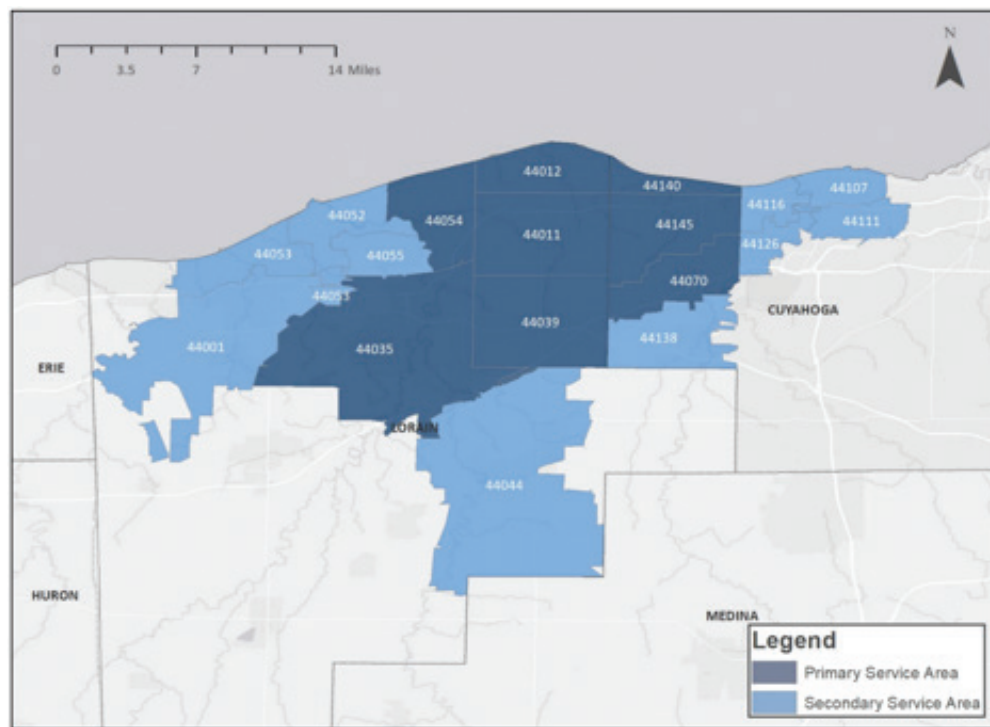
To determine the service area for UH Avon Rehabilitation Hospital, home ZIP code data for patients admitted to UH Avon Rehabilitation Hospital was analyzed. Based on its location within Lorain County, Ohio, we can describe UH Avon Rehabilitation Hospital's primary service area as Avon and the seven communities immediately surrounding it. In 2016, two-thirds (66.9%) of inpatients served were residents of those eight communities, as illustrated in [Table 1: UH Avon Rehabilitation Hospital's Primary Service Area](#).

An important goal of the Community Health Need Assessment process is to identify populations that are not being adequately served. It is difficult to determine what proportion of the population requires inpatient rehabilitation services; however, we can use the population size of the target ages for each community as a rough proxy for 'demand' of services to see if any municipalities' population is over or under-served. Also in Table 1, we show the number and proportion of UH Avon Rehabilitation Hospital inpatients in 2016 and also the population over age 45 within each contiguous community.

The greatest proportion of inpatients served by UH Avon Rehabilitation Hospital in 2016 were residents of Elyria (118, or 24.5% of all inpatients). Likewise, Elyria is one of the larger population centers in Lorain County and has the greatest number of residents over age 45 among the contiguous primary service area municipalities. While we would expect Elyria to be home to the greatest proportion of UH Avon Rehabilitation's patients, Elyria is actually over-represented within the patient population for UH Avon Rehabilitation Hospital. While 24.5% of the patient population were residents of Elyria, only 15.4% of the total population of the target region are residents of Elyria. Some communities, however, appear to be *under*-represented – specifically, their population would suggest that we would expect a greater proportion of patients to be admitted to UH Avon Rehabilitation Hospital than currently are. Municipalities for which this holds true include Westlake, North Olmsted and Bay Village. We cannot account for this difference, but highlight those communities as *potentially* being under-served in terms of inpatient rehabilitation services. However, these municipalities may not be under-served, but rather, individuals in those communities may be choosing to seek rehabilitative services at other facilities.

There are seven communities that comprise UH Avon Rehabilitation Hospital's secondary service area, as shown in [Table 2: UH Avon Rehabilitation Hospital's Secondary Service Area and Other](#). The city of Lorain, which is not contiguous to Avon, was the resident community for a significant proportion of patients (6.2%). The city of Lorain has the largest older population of any municipality within Lorain County (25,601 residents over age 45, and 94% of UH Avon Rehabilitation Hospital's discharges in 2016 were over age 45) and this likely explains its population's large use of UH Avon Rehabilitation Hospital despite it not being geographically close. Looking more broadly at where UH Avon Rehabilitation Hospital draws its patient population from, we can include the more western ZIP codes within the city of Cleveland, and also Lakewood, Rocky River, Grafton, Olmsted Falls and Amherst as the Hospital's "secondary service area." Taken together, the primary and secondary service areas comprise the resident communities for 88% of UH Avon Rehabilitation Hospital's patients in 2016, illustrated in [Figure 1: Map of UH Avon Rehabilitation Hospital's Service Areas](#). The remaining inpatients come from other communities in Northeast Ohio.

FIGURE 1: MAP OF UH AVON REHABILITATION HOSPITAL'S SERVICE AREAS
 THE REMAINING INPATIENTS COME FROM OTHER COMMUNITIES IN NORTHEAST OHIO.



Prepared by: The Center for Health Affairs, May 2017

TABLE 1: UH AVON REHABILITATION HOSPITAL'S PRIMARY SERVICE AREA

Municipality	Number of Inpatients	Percent of Inpatients	Population Over Age 45	Percent of Population Over Age 45
Elyria	118	24.5%	21,799	15.4%
North Ridgeville	51	10.6%	12,715	9.0%
Westlake	39	8.1%	15,545	11.0%
Avon Lake	38	7.9%	10,150	7.2%
Avon	25	5.2%	7,800	5.5%
North Olmsted	23	4.8%	15,428	10.9%
Sheffield Lake/Village	19	3.9%	3,865	2.7%
Bay Village	9	1.9%	7,294	5.2%
Total	322	66.9%	94,596	66.9%

TABLE 2: UH AVON REHABILITATION HOSPITAL'S SECONDARY SERVICE AREA AND OTHER

Municipality	Number of Inpatients	Percent
Secondary Service Area		
Lorain	30	6.2%
Cleveland	15	3.1%
Lakewood	13	2.7%
Rocky River	12	2.5%
Grafton	11	2.3%
Olmsted Falls	11	2.3%
Amherst	10	2.1%
Other	61	12.2%

B. Introduction to Data Analysis

This report analyzed both primary and secondary data to draw conclusions regarding the priority health needs of the population within the UH Avon Rehabilitation Hospital community.

Primary Data

There was one main source of primary data:

A. Qualitative Data

- Interviews were conducted with 14 hospital and community leaders including individuals representing public health, behavioral health and government agencies.

Hospital and Community Leader Interviews

UH Avon Rehabilitation Hospital developed a list of hospital leaders from UH Avon Rehabilitation Hospital, UH Elyria Medical Center and UH St. John Medical Center. From that comprehensive list, The Center for Health Affairs completed 9 telephone interviews from March 2017 to April of 2017. All interviewees were told the purpose of the interviews. A copy of the community leader interview leader guide can be found in Appendix B. In addition, key themes from interviews conducted with five public health, behavioral health and government leaders in 2015 were also incorporated into the summary (indicated by asterisks).

Listed below are the hospital and community leaders who were interviewed:

* **Holly Brinda**, *Mayor*,
The City of Elyria

Jen Brown, *Lead Case Manager*,
UH Avon Rehabilitation Hospital

* **Dave Covell**, *Health Commissioner*,
Lorain County General Health District

Loreen Dickson, *Case Management & Social Work Manager*, UH Elyria Medical Center

Jason DiGuilio, *Controller*,
UH Avon Rehabilitation Hospital

* **Elaine Georgas**, *Executive Director*,
Alcohol & Drug Addiction Services of Lorain County

Andrew Goldfrach, *Chief Executive Officer*,
UH Avon Rehabilitation Hospital

* **Bryan Jensen**, *Mayor*,
The City of Avon

Katie Kasper, *Chief Clinical Officer*,
UH Avon Rehabilitation Hospital

Amy Krueger, *Case Management Manager*,
UH St. John Medical Center

Tom LaMotte, *Physical Therapist Manager*,
Rehabilitation Services, UH Elyria Medical Center

Pam Lanter, *Board Certified Clinical Specialist in Neurologic Physical Therapy, Manager*, Rehabilitation Services,
UH St. John Medical Center

Tom Lopiensky, *Business Development Director*,
UH Avon Rehabilitation Hospital

* **Charles Neff**, *Executive Director*,
The Lorain County Board of Mental Health

The following is a summary of key themes that emerged from interviews with hospital and community leaders.

Vulnerable Populations

Elderly patients were frequently identified as a vulnerable patient population, particularly elderly patients who live alone and do not have family living in the area. Several interviewees noted that the elderly population continues to grow. Also mentioned was a concern that elderly patients aren't always able to receive the ideal amount of rehabilitative services because their insurance doesn't authorize sufficient rehabilitation services. For these individuals, it can be challenging to ensure a safe and functional discharge from the hospital.

Individuals interviewed overwhelmingly cited low-income patients, particularly those with Medicaid and the uninsured, as vulnerable patient populations. While many mentioned that Medicaid has increased access to care, there is a concern about the impact that a potential repeal of the Affordable Care Act could have on the low-income population that currently has Medicaid coverage.

Patients with behavioral health needs were also cited as a vulnerable patient population. A lack of sufficient psychiatry services was mentioned as a key challenge. Several interviewees cited a recent increase in patients they rehabilitate who also need drug rehabilitation services once they are discharged. The hospital discharges this type of patient and hopes they receive the drug rehabilitation services needed.

Stakeholders cited increased numbers of patients of all ages who lack community or family support once they are discharged from the hospital. A case manager for UH Avon

Rehabilitation Hospital estimates that 40 percent of their patients are released without assurance of needed post-discharge assistance. It was shared that a network of the family often isn't in place for various reasons (e.g. family members working multiple jobs or working later in their lives).

The lack of family and community support can impede post-discharge recovery for patients. Support is often needed for transportation to outpatient appointments, or to the pharmacy to pick up needed medications after they are discharged. Lack of proper post-discharge support often leads to readmissions.

Some patients are very vulnerable because they do not have a home to return to once they are discharged from the hospital. UH Avon Rehabilitation Hospital has treated 15 homeless individuals in the past year and sometimes has a social worker follow the homeless post-discharge.

Key Health Needs and Potential Solutions

Several key health needs in the community were identified.

Transportation

A lack of sufficient transportation resources once a patient is discharged from the hospital was consistently mentioned as a top health need. This complicates patients' ability to see their physicians for follow-up appointments and also makes it difficult for patients to get their medications from the pharmacy. Also mentioned was the impact that transportation challenges have on an individual's ability to access fresh, healthy food.

In terms of resources that could be harnessed to address transportation needs, several interviewees described wanting to bring back a service in Lorain County that was funded by the county that used to provide community transport for low-income patients. Some churches help their parishioners with transportation, which was described as helpful. UH St. John Medical Center's service for transporting patients that live within six miles of the hospital was also cited as a helpful community resource.

One interviewee suggested that UH Avon Rehabilitation Hospital could partner with other UH hospitals to help increase the rehabilitation hospital's ability to dispense all medications a patient needs before they leave the hospital. Making use of ExpressScripts or mail order medications was also mentioned as a potential solution for individuals who have transportation challenges once they are discharged from the hospital. Tied to the issue of medications, many

cited the need for primary care providers to do medication management follow-up and education with patients discharged from UH Avon Rehabilitation Hospital.

Behavioral Health

The need for behavioral health services for some patients was consistently mentioned as a barrier to effective care. There is a general lack of capacity in UH Avon Rehabilitation Hospital's community for behavioral health services. Hospital employees have a challenging time making referrals for patients that need behavioral health services because there aren't a sufficient number of providers with availability at the time of need. Stakeholders cited an acute shortage of psychiatrists and psychiatric beds (long-term residential care) and a similar shortage of neurologists, leading to long wait times for initial appointments.

In addition, stakeholders told us that many patients suffer from depression and that suicide is a key concern in the community particularly among middle-aged white males who have the highest number of completed suicides. Lack of available mental health services impacts these patients' ability to obtain adequate care.

Included in the shortage of mental health services is the very low availability of addiction services in the general community surrounding UH Avon Rehabilitation. Many interviewees cited struggles for patients to obtain inpatient services to treat their addictions. Even if services are available, insurance coverage is often insufficient to meet patients' specific needs. For those who are able to go through a drug treatment program, sober housing is also limited in the community.

Finally, stakeholders identified the need to better educate all healthcare providers about what mental illness is (e.g. how to recognize it) and then know where to funnel patients. Education for families regarding how to cope with behavioral health conditions of their family members was also cited as a health need.

To help address the need for behavioral health services, UH Avon Rehabilitation Hospital is partnering with a local outpatient psychology practice that comes in to the facility to provide services. There were several resources that were specifically mentioned that address behavioral health needs in the community including the Nord Center and The LCADA Way, formerly known as the Lorain County Alcohol and Drug Abuse Services, Inc. One individual was concerned about whether or not there was sufficient funding for all of these helpful community resources.

Insufficient Financial Resources

For some patients, not having sufficient financial resources to get the rehabilitative services they need was mentioned as a barrier to care. Even for patients with insurance, sometimes insurance plans don't authorize the care that their healthcare providers feel is necessary to ensure a complete recovery. This is a problem that has worsened over time as insurance plans have added more cost sharing requirements to their plans – a trend which some mentioned was unsustainable. In addition, medications for Medicare patients were also mentioned as often being a problem because they sometimes aren't covered, or they are expensive and treatment plans sometimes have to be adjusted because of inability to pay for medications. However, Medicaid expansion was mentioned as having helped increase access to care.

One interviewee also mentioned the high degree of food insecurity in the community, which causes people to have to make difficult choices between paying for food or paying for needed healthcare services. In this calculus, individuals frequently choose paying for food but the consequence is that their medical condition doesn't get treated and their overall health deteriorates. Poor nutrition often lengthens patients' recovery time.

In terms of how healthcare providers in the community are helping to address the health needs of low-income individuals, UH Elyria's navigator program and UH Avon Rehabilitation Hospital's case managers were mentioned as helping to connect patients with primary care providers, comply with treatment plans and receive services post-discharge. Also, Lorain County Health and Dentistry and the Lorain County Free Clinic were mentioned as providers that help meet the needs of low-income individuals in the community.

Chronic Disease

A high prevalence of chronic disease, particularly diabetes and obesity, was also noted as another key health need. Finding ways to educate individuals about the building blocks that comprise a healthy diet and healthy lifestyle for optimum cardiovascular health is important. This need was mentioned as being particularly acute for patients from Elyria. The nonprofit sector was described as being essential to helping educate patients with chronic diseases and help them navigate an increasingly complex healthcare environment. Preventive medicine was also mentioned as essential to helping ensure individuals receive regular screenings to catch diseases at an early stage.

Initiatives Working to Improve Patient Health

The presence of a new rehabilitation facility, UH Avon Rehabilitation Hospital, in the community is helping to improve access to rehabilitative services, according to interviewees. The staff at UH Avon Rehabilitation Hospital are proud to be helping patients recover in the most appropriate setting. UH Avon Rehabilitation Hospital's provision of 3-hours per day / 5-days per week of therapy is working to help patients get rehabilitated. Patients receive physical and occupational therapy, and sometimes speech therapy.

UH Avon Rehabilitation Hospital's interdisciplinary approach to rehabilitation was also mentioned as being effective. Patients are able to practice in a therapy gym that includes a complete kitchen and laundry facility. The hospital also has an outdoor space where patients can practice maneuvering on different surfaces (e.g. gravel driveway). A small apartment is also available in which patients can practice being self-sufficient overnight, which really helps give patients high confidence levels before they are discharged from the hospital.

UH Avon Rehabilitation Hospital's free Parkinson's, brain injury and stroke monthly support group is also working to help patients. Additional marketing was identified as a way to help spread the word about this resource since the majority of participants currently learn about this resource through word-of-mouth.

Also mentioned as working to improve the health of patients is case managers doing daily rounds with the medical director. This provides a focus on putting patients first and also ensures that patients are "heard." UH Avon Rehabilitation Hospital's case management department was frequently cited as being very creative at finding ways to connect patients with resources available out in the community.

Recommended Initiatives

When asked to identify specific initiatives they would recommend to address the most pressing access or health status problems in the community if unlimited resources were available, many interviewees mentioned directing resources to address transportation needs, including providing more in-home services.

In terms of behavioral health, some interviewees mentioned that if they had unlimited resources they would add additional behavioral health facilities for all patient populations, but particularly for children. One interviewee suggested they would like to see UH get more involved in addressing behavioral health needs and hire more doctors trained in neuropsychology.

Others mentioned wanting to see additional education and wellness programs for the diabetic population.

Another interviewee suggested providing help to patients with their co-pays would be where they would direct additional funds. Also, having the hospital set aside resources for emergency services was also mentioned as an additional strategy to meet the needs of low-income patients.

Also mentioned was increasing the supply of primary care physicians available for follow-up care, hiring additional case managers and improving communication between UH Avon Rehabilitation Hospital providers and primary care providers.

And, finally, providing additional stroke prevention services was also suggested as a role hospitals in the community could play.

Secondary Data

There were several sources of secondary data:

- 5-year American Community Survey estimates, U.S. Census Bureau.
- Labor Market Indicators, State of Ohio, March 2017.
- County Health Rankings & Roadmaps, a Robert Wood Johnson Foundation program.

Information Gaps

To the best of The Center for Health Affairs' knowledge, no information gaps have affected UH Avon Rehabilitation Hospital's ability to reach reasonable conclusions regarding community health needs.

C. Demographic Characteristics of UH Avon Rehabilitation Hospital's Service Area

Based only on the 2016 patient census, we can consider 15 different ZIP codes the hospital's service area. Those ZIP codes are: 44001, 44011, 44012, 44035, 44039, 44044, 44053, 44054, 44055, 44070, 44107, 44116, 44138, 44140 and 44145.

The estimated total population in 2015 for these combined ZIP codes was 358,607 according to U.S. Census Bureau data, and shown in [Table 3: Demographic Characteristics of UH Avon Rehabilitation Center's Service Area](#).

Of those residents:

- 21.6% are under age 18, and significantly fewer (16.2%) are aged 65 and older.
- The hospital's service area is strong majority White. Only 9.8% of the general population is a race other than White. African Americans comprise the largest proportion of racial minorities (4.9%) within the service area.
- The educational level of the population in the service area mirrors that of the region overall. Adults are about evenly split among those at the high school level or less (36.3%), some college, or a two-year degree (31.7%) or a 4-year degree or more (32.0%).

The population within the service area shows a lower level of poverty (10.6%) than either of the two counties as a whole: Cuyahoga County (11.6%) and Lorain County (14.6%). Unemployment rates for both counties are among the highest within Ohio's 88 counties (Cuyahoga, 6.7%, 24th highest in Ohio; Lorain, 7.2%, 16th highest in Ohio). In 2015, the uninsured rate in Cuyahoga County was 9.4% and the uninsured rate in Lorain County was 7.6%.

As illustrated in [Table 4: Economic Status of Population in Service Area](#), those in the service area most likely to be living under the poverty line were:

- Children under age 18 (15.6%), particularly children under age 5 (17.8%) and younger adults aged 18-34 (14.0%). Senior citizens, as a group, are less likely to be living under the poverty line (7.0%) than the total population of the service area.
- Females are somewhat more likely to be living in poverty (11.8%) than males (9.4%).

- Race is strongly associated with economic status in the hospital's service area. Almost one-third (31.5%) of African Americans were living in poverty in 2015, three times that of their White counterparts in the service area (9.1%). Those of Hispanic or Latino descent fare better economically (14.9%) than African Americans (31.5%), but worse than White individuals (9.1%).

TABLE 3: DEMOGRAPHIC CHARACTERISTICS OF UH AVON REHABILITATION CENTER'S SERVICE AREA

Total Population:	358,607
Age:	
Under 18 years	21.6%
18 to 64 years	62.2%
65 years and over	16.2%
Race:	
White alone	90.1%
Black or African American alone	4.9%
American Indian or Alaska Native alone	0.1%
Asian alone	1.5%
Some other race alone	0.7%
Two or more races	2.6%
Hispanic/Latino descent:	
Hispanic or Latino origin (of any race)	4.6%
White, not of Hispanic or Latino descent	86.9%
Educational Attainment	
Population 25 years and over:	
Less than high school graduate	7.7%
High school graduate (includes equivalency)	28.6%
Some college, associate's degree	31.7%
Bachelor's degree or higher	32.0%

Source: 5-year American Community Survey estimates, U.S. Census Bureau.

- Educational attainment is also strongly associated with economic status. In the hospital's service area, only 8.6% of the adults over age 25 were living under the poverty line in 2015. Those with less than a high school degree were the most likely to be living in poverty (22.9%), and those with at least a 4-year degree were very unlikely to be living under the poverty line (3.5%).

TABLE 4: ECONOMIC STATUS OF POPULATION IN SERVICE AREA

	Percent Below Poverty Line
Total Population	10.6%
By Age:	
Under 18 years	15.6%
Under 5 years	17.8%
5 to 17 years	14.9%
18 to 64 years	9.8%
18 to 34 years	14.0%
35 to 64 years	7.8%
65 years and over	7.0%
By Gender:	
Male	9.4%
Female	11.8%
By Race:	
White alone	9.1%
Black or African American alone	31.5%
American Indian and Alaska Native alone	11.0%
Asian alone	10.9%
Some other race alone	11.5%
Two or more races	25.0%
By Hispanic/Latino descent status:	
Hispanic or Latino origin (of any race)	14.9%
White alone, not Hispanic or Latino	8.9%
By Educational Attainment:	
Population 25 years and over	8.6%
Less than high school graduate	22.9%
High school graduate	10.0%
Some college, associate's degree	8.9%
Bachelor's degree or higher	3.5%

Source: Labor Market Indicators, State of Ohio, March 2017.

D. UH Avon Rehabilitation Hospital Patients Served

UH Avon Rehabilitation Hospital provided inpatient rehabilitation services to 481 patients in 2016. This number is inclusive of patients who were admitted to the hospital starting January 26, 2016 and those who were discharged by December 31, 2016.

Of those 481 patients, 50 percent were male and 50 percent were female. Patients ranged in age from 17 to 102, with an average (median) age of 71. Almost two-thirds (63.4%) of 2016 patients were senior citizens, as shown in [Table 5: Age of UH Avon Rehabilitation Hospital's Discharged Patients, 2016](#). Almost all of the remaining patients were between the ages of 46 and 65 (30.1%).

As shown in [Table 6: Injury Categories of Inpatients](#), almost half of inpatients in 2016 (48.8%) were receiving rehabilitation services primarily because of a stroke (23.5%) or other neurological condition or trauma. Another 26.7% received services related to an orthopedic condition.

The median length of stay for all patients in 2016 was 10 days; the mean was 11.5, as illustrated in [Table 7: Payer Categories, Inpatients 2016](#). Stays ranged from 1 to 44 days. There were no significant differences for length of stay based on age or gender. The injury categories with the longest average (mean) length of stay were traumatic spinal cord injury (29 days) and stroke (13.9 days).

The dominant payer category for inpatients in 2016 was Medicare (74.5%). Few patients were insured through a commercial payer (13.3%) or through Medicaid (11.9%). In [Table 8: Inpatient Treatment Program Category, by Payer Category](#), we show the percentages of the various treatment categories by payer category to see if gaps exist. A gap would be suggested if the proportion of those patients within a certain treatment category is significantly higher for those with commercial insurance (HMO or PPO) than those with Medicaid. For this analysis, the group sizes are small, limiting our ability to draw conclusions; however, we do not see any differences large enough to suggest a gap. Therefore, for example, patients with Medicaid appear to be served in equal proportions to those with commercial insurance.

It is difficult to compare patients with commercial insurance versus those with Medicaid because those two groups are comprised of very different age distributions, and most of the treatment categories are strongly associated with age.

TABLE 5: AGE OF UH AVON REHABILITATION HOSPITAL'S DISCHARGED PATIENTS, 2016

Age Group	Percent
35 and younger	3.3%
36-45	3.1%
46-55	10.8%
56-65	19.3%
66-75	25.4%
76-85	24.7%
Over age 85	13.3%
Total	100%

TABLE 6: INJURY CATEGORIES OF INPATIENTS

	Number of Inpatients	Percent of Inpatients
Stroke (R01)	113	23.5%
Neurological (R06)	44	9.1%
Nontraumatic Brain Injury (R03)	42	8.7%
Traumatic Brain Injury (R02)	21	4.4%
MMT, no brain or spinal cord injury (R17)	15	3.1%
Subtotal:	235	48.8%
Replacement of Lower Extremity Joint (R08)	27	5.6%
Fracture of Lower Extremity (R07)	25	5.2%
Nontraumatic Spinal Cord Injury (R05)	13	2.7%
Amputation, Lower Extremity (R10)	6	1.2%
Traumatic Spinal Cord Injury (R04)	2	0.4%
Other Orthopedic (R09)	56	11.6%
Subtotal:	129	26.7%
Cardiac (R14)	39	8.1%
Pulmonary (R15)	3	0.6%
Rheumatoid, other arthritis (R13)	2	0.4%
Miscellaneous (R20)	73	15.2%
Total	481	100%

TABLE 7: PAYER CATEGORIES, INPATIENTS 2016

Payer Category	Number of Inpatients	Percent of Inpatients	Mean Length of Stay
HMO/PPO	64	13.3%	10.63
Medicare	299	62.2%	11.43
Medicare HMO	59	12.3%	12.66
Medicaid	17	3.5%	11.35
Medicaid HMO	32	6.7%	12.28
Medicaid Pending	8	1.7%	10.50
Workers Compensation	2	0.4%	7.50
Total	481	100.0%	11.49

TABLE 8: INPATIENT TREATMENT PROGRAM CATEGORY, BY PAYER CATEGORY

	Commercial HMO/PPO N=64	Medicaid N=49	Medicare N=358	Other N=10	Total N=481
Stroke (R01)	29.7%	22.4%	22.6%	20.0%	23.5%
Miscellaneous (R20)	7.8%	12.2%	17.0%	10.0%	15.2%
Other Orthopedic (R09)	4.7%	10.2%	13.1%	10.0%	11.6%
Neurological (R06)	3.1%	12.2%	10.1%	0.0%	9.1%
Nontraumatic Brain Injury (R03)	14.1%	14.3%	7.3%	0.0%	8.7%
Cardiac (R14)	7.8%	2.0%	8.9%	10.0%	8.1%
Replacement of Lower Extremity Joint (R08)	12.5%	6.1%	4.5%	0.0%	5.6%
Fracture of Lower Extremity (R07)	3.1%	2.0%	5.3%	30.0%	5.2%
Traumatic Brain Injury (R02)	3.1%	4.1%	4.7%	0.0%	4.4%
MMT, no brain or spinal cord injury (R17)	4.7%	4.1%	2.5%	10.0%	3.1%
Nontraumatic Spinal Cord Injury (R05)	4.7%	2.0%	2.2%	10.0%	2.7%
Amputation, Lower Extremity (R10)	3.1%	6.1%	0.3%	0.0%	1.2%
Pulmonary (R15)	0.0%	0.0%	0.8%	0.0%	0.6%
Rheumatoid, other arthritis (R13)	1.6%	0.0%	0.3%	0.0%	0.4%
Traumatic Spinal Cord Injury (R04)	0.0%	2.0%	0.3%	0.0%	0.4%
Total	100%	100%	100%	100%	100%

E. Key Health Metrics for Cuyahoga and Lorain Counties

Uncontrolled diabetes, smoking tobacco, abusing alcohol and lack of exercise are all risk factors associated with strokes. The most common treatment category for UH Avon Rehabilitation Hospital patients in 2016 was stroke. Many other patients were receiving rehabilitation services because of an injury. In [Table 9: Cuyahoga and Lorain Counties, Key Health Metrics \(Incidence & Z-Score\), 2016](#), we show the incidence of the key behaviors related to both stroke and increased likelihood of injury for Cuyahoga and Lorain counties.

As part of this analysis we include Z-scores, which are commonly used to indicate how a measure relates to the other overall, or normed, measure. The Z-scores used below relate each county's measure to all 88 of Ohio's counties. A positive Z-score indicates a higher-than-average score for a county in Ohio; a negative Z-score indicates a lower-than-average score for a county in Ohio.

- In terms of most of the health measures related to stroke (smoking, obesity, physical inactivity, and access to exercise opportunities) the counties where UH Avon Rehabilitation Hospital is located are either better than or *on par* with other Ohio counties. The large exception to that is excessive drinking.
- Alcohol is not only related to several disease states, including strokes, it is also related to injury. Both Lorain and Cuyahoga counties compare poorly to other Ohio counties in terms of the proportion of adults who report excessive drinking. Of particular concern are the relatively higher rates of alcohol-impaired driving deaths.
- Also related to injury is violent crime. Lorain County's violent crime rate is slightly higher than Ohio counties overall. Cuyahoga County's violent crime rate, however, suggests it is among the counties with the highest violent crime rates in the state.

TABLE 9: CUYAHOGA AND LORAIN COUNTIES, KEY HEALTH METRICS (INCIDENCE & Z-SCORE), 2016

	County	Cuyahoga County	Lorain County
Adult smoking	Percent Smokers	19%	20%
	Z-Score	-0.30	0.12
Adult obesity	Percent Obese	30%	29%
	Z-Score	-0.98	-1.26
Physical inactivity	Percent Physically Inactive	24%	22%
	Z-Score	-0.95	-1.57
Access to exercise opportunities	Percent With Access	96%	89%
	Z-Score	-1.57	-1.18
Excessive drinking	Percent Excessive Drinking	18%	18%
	Z-Score	0.63	0.30
Alcohol-impaired driving deaths	Number Alcohol-Impaired Driving Deaths*	130	56
	Number Driving Deaths*	286	111
	Percent Driving Deaths Involving Alcohol-Impairment	45%	50%
	Z-Score	1.57	2.17
Violent Crime Rate	Violent Crime Rate*	589	180
	Z-Score	3.38	0.23
Injury deaths	Number Injury Deaths*	4,287	977
	Z-Score	-0.22	-0.45
Food insecurity	Percent Food Insecure	19%	14%
Limited access to healthy foods	Percent Limited Access	4%	7%
Motor vehicle crash deaths	Motor Vehicle Mortality Rate*	5	8
Homicides	Homicide Rate*	9	3
Firearm fatalities	Firearm Fatalities Rate*	13	8

*Note: Per 100,000
 County Health Rankings & Roadmaps, a Robert Wood Johnson Foundation program.
<http://www.countyhealthrankings.org>

Table 10: Most Prevalent Causes of Death or Impaired Health – Adults, Lorain County and Table 11: Most Prevalent Morbidity – Adults and Youth, Lorain County show the most prevalent types of mortality and morbidity of chronic diseases and other health-impacting events in Lorain County. Cancer is the leading cause of death for adults in Lorain County, followed by coronary heart disease.

Strokes, accidents, diabetes and kidney disease combined to account for fewer deaths than cancer deaths. Note that annually about 226 per 100,000 Lorain County adults are victims of violent crime. Linked to the most common death rates are common habitual behaviors. Almost one-third of Lorain County adults are obese (BMI > 30) and almost one in four are tobacco smokers.

TABLE 10: MOST PREVALENT CAUSES OF DEATH OR IMPAIRED HEALTH – ADULTS, LORAIN COUNTY

	Annual, Per 100,000 adults	U.S. Median, of All Counties
Cancer Deaths	190.3	185.0
Coronary Heart Disease Deaths	131.7	126.7
Stroke Deaths	40.3	46.0
Accidental Deaths (including motor vehicle)*	29	50.8
Motor Vehicle Deaths	8	
Diabetes Deaths	25.6	24.7
Kidney Disease Deaths	14.8	17.5
Violent Crime (homicide, rape, assault)	225.6	199.2

*Note: Accidental death rates in Table 10 are lower than alcohol-impaired driving death rates reported in Table 9 because data in Table 10 reflects deaths which occurred immediately at the scene of the accident, whereas alcohol-impaired driving deaths data in Table 9 reflects deaths occurring within 30 days of the accident.

Source, U.S. Centers for Disease Control and Prevention, 2015

TABLE 11: MOST PREVALENT MORBIDITY – ADULTS AND YOUTH, LORAIN COUNTY

	Lorain County	U.S. Median, of All Counties
Adults:	Percent Morbidity	
Obesity	29.4%	30.4%
Smokers	22.7%	21.7%
Older adult depression	14.8%	12.4%
Older adult asthma	5.0%	3.6%
Alzheimer’s disease	11.3% (among older adults)	10.3% (among older adults)
Preterm births	11.7%	12.1%
Youth:		
Teen Births	3.8% of births	4.2% of births

*Source, U.S. Centers for Disease Control and Prevention, 2015

F. Vulnerable Populations

Medically underserved areas/populations are areas or populations designated by the U.S. Department of Health and Human Services' Health Resources and Services Administration (HRSA) as having insufficient primary care providers, a high infant mortality rate, high poverty or a high elderly population.

Federally Qualified Health Centers (FQHCs) are community-based organizations that provide comprehensive primary care and preventive care, including health, oral, and mental health/substance abuse services to persons of all ages, regardless of their ability to pay or health insurance status. There are multiple FQHCs in UH Avon Rehabilitation Hospital's service area.

In addition, pinpointing food desert locations in a hospital's service area can help to identify areas with insufficient access to healthy and affordable food. According to the U.S. Department of Agriculture, food deserts are defined as "urban neighborhoods and rural towns without ready access to fresh, healthy and affordable food." Rather than having grocery stores in these communities, there may be no food access or limited access to healthy, affordable food options.

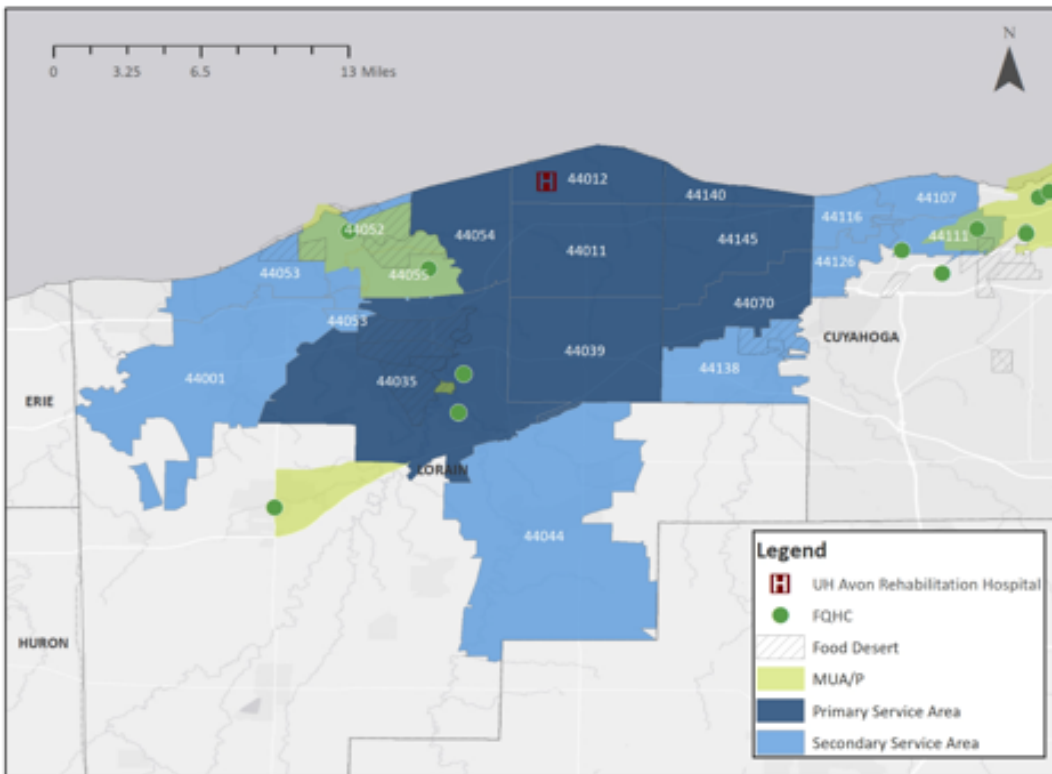
The Food Desert Locator, created by the U.S. Department of Agriculture's Economic Research Service, is a web-based mapping tool that pinpoints food desert locations in the U.S.

The map in Figure 2: Medically Underserved Areas/Populations, FQHCs and Food Deserts: UH Avon Rehabilitation Hospital overlays medically underserved areas and food deserts in Lorain County and a portion of Cuyahoga County to determine areas that may have the highest need for services. To provide further context, the map also pinpoints the location of the FQHCs in UH Avon Rehabilitation's service area. Roughly 16.5% of the Lorain County population lives in a census tract that is considered to be a medically underserved area. In Lorain County, 11.5% of the population lives in a census tract that is considered to be a food desert and 5.2% of the population lives in a census tract that considered to be both a food desert and a medically underserved area.

Evaluation of Impact

This is the first CHNA for UH Avon Rehabilitation Hospital, therefore no evaluation of the impact of previous community health improvement initiatives is available for this report.

FIGURE 2: MEDICALLY UNDERSERVED AREAS/POPULATIONS, FQHCs AND FOOD DESERTS: UH AVON REHABILITATION HOSPITAL



Prepared by: The Center for Health Affairs, June 2017

CONCLUSIONS

A. Priority Health Needs

Poor health status can result if a complex interaction of challenging social, economic, environmental and behavioral factors combined with a lack of access to care is present. Addressing the more common “root” causes of poor community health can serve to improve a community’s quality of life and to reduce mortality and morbidity. Figure 3: Community Health Needs Identified in 2017 CHNA, describes the community health needs identified through the 2017 CHNA. Those needs that the hospital plans to help address during 2017-2018, at least in part, are noted. After careful analysis of both qualitative and quantitative data, UH Avon Rehabilitation Hospital identified one broad priority health need that impacts the community served by the hospital which is **obesity**.

FIGURE 3: COMMUNITY HEALTH NEEDS IDENTIFIED IN 2017 CHNA

Identified Health Need	Priorities for 2017-2018
Vulnerable Populations	
Services for the isolated & elderly	No
Lower income & uninsured	No
Access	
Cost of care	No
Lack community or family support	No
Transportation	No
Chronic Disease	
Obesity	Yes
Diabetes	No
Behavioral health needs	No
Acute Condition	
Neurological condition or trauma	No
Orthopedic condition	No

This priority was selected based on input from the broad interests of the community as well as data regarding hospital discharges and data collection from secondary sources. In particular, the high prevalence of chronic disease. The top five leading causes of death in Lorain County were cancer, heart disease, stroke, accidental death and diabetes. Obesity topped the chart in terms of most prevalent morbidity in adults and youth (29.4%). This information was discussed and vetted with key leaders from the UH Avon Rehabilitation Hospital core team. Participants included the hospital President, Chief Clinical Officer,

Director of Quality, Director of Business Development, Controller and Director, Human Resources.

In addition to the data analysis, obesity was selected by UH Avon Rehabilitation Hospital as the sole priority based on the hospital’s ability to track outcomes; the hospital’s ability to leverage resources with partners and their congruence with county-wide initiatives; the correlation of obesity and the adverse impact as it relates to rehabilitation. The CHNA score sheet used to determine the priority need can be found in Appendix C.

Additionally, the hospital has a unique situation in terms of timing. It has only been open for one year and the three-year reporting period for the University Hospitals system will end in June, 2018. UH Avon Rehabilitation Hospital will participate in the next three-year reporting cycle (2018-2021), which will be a county-wide regional planning process.

B. Resources Available to Address Priority Health Needs within the Community Served by the Hospital

UH Avon Rehabilitation Hospital works with community partners to address the needs identified in its 2017 CHNA. In particular, its case managers diligently refer patients to resources outside the scope of the hospital’s ability to address. The hospital plans to leverage the resources of other UH hospitals in the area and specifically work with the following organizations to address its 2016-2017 priority:

- Avon YMCA
- Cuyahoga County Board of Health
- Elyria YMCA
- LifeCare Ambulance Service
- Lorain County Board of Health
- Local Clergy
- UBER
- Weight Watchers

APPENDIX

A. Qualifications of Consulting Company

The Center for Health Affairs is the leading advocate for Northeast Ohio hospitals. With a rich history as the Northeast Ohio hospital association, dating back to 1916, The Center serves as the collective voice of 36 hospitals spanning six counties.

The Center recognizes the importance of analyzing the top health needs in each community while ensuring hospitals are compliant with IRS regulations governing nonprofit hospitals. Since 2010, The Center has helped hospitals fulfill the CHNA requirements contained within the Affordable Care Act. The Center offers a variety of CHNA services to help hospitals produce robust and meaningful CHNA reports that can guide a hospital's community health improvement activities. Beyond helping hospitals with the completion of timely CHNA reports, The Center spearheads the Northeast Ohio CHNA Roundtable, which brings member hospitals and other essential stakeholders together to spur opportunities for shared learning and collaboration in the region.

The 2017 CHNA prepared for UH Avon Rehabilitation Center was directed by The Center's vice president of corporate communications and vice president of initiatives and analytics, managed by The Center's community outreach director and supported by a project manager. More information about The Center for Health Affairs and its involvement in CHNAs can be found at www.chanet.org.

B. 2017 CHNA Community Leader Interview Guide

Community Health Needs Assessment Survey Questions

Name: _____

Organization: _____

Title: _____

Date: _____

Do we have your permission to list your name in the report?

Questions:

1. Internal: Briefly describe the role you serve at the hospital and the population served by the hospital.

External: Briefly describe the services your organization offers, and the population you serve.

2. Are your services targeted toward a particular geographical area (city, ZIP Code, school, etc.)? Are they county-wide?

3. In your opinion, what is the biggest issue or concern facing the people served by your hospital/agency/in your community? In surrounding counties? Particular age groups (0 – 17, 18 – 44, 45 – 65, 65+)?) (Note: If not health care related, what is biggest health care related issue or concern?)

4. What segment of the population would you describe as your vulnerable population – both in terms of patients and people living in the city in which your hospital is located? What intervention would have the greatest impact in terms of improving their health?

5. Please share any trends seen in the following areas (and where, geographically they are occurring):

a. Demographic – changes in the size, age, racial/ethnic diversity, or other characteristics of the population (particularly those who are “vulnerable”)

b. Economic variables – their impact on health

c. Provider community – physicians, hospitals – who is taking care of the poor?

d. Health status/public health indicators (what illnesses/needs/issues are getting worse or better? Why?)

e. Access to care – why?

6. If residents are leaving the community to receive certain services, what services are not accessible locally? Why do residents need to travel for care? Are people entering the county for services? Why/from where? Particular age groups (0 – 17, 18 – 44, 45 – 65, 65+)?

7. Please discuss the kinds of problems that the people served by your hospital/agency have in accessing health care, mental and behavioral health, and/or social services for themselves and/or their families? (Prompt: In answering this question you may wish to consider the following problems – language barriers, transportation, no health insurance, lack of information on available resources, delays in getting needed care, economic constraints, and/or dissatisfaction with treatment.)

8. What are the community organizations/assets that are or could be working to address these needs?

9. Is there capacity within your organization to serve additional clients? If not, what are the biggest barrier(s) impacting your ability to increase capacity?

10. What role do you see the hospital(s) in your area currently playing to help address the community health issues faced by the low-income people who live here?

What role do you think the hospitals in your area should play?

11. What's working to improve the health of your patients (by your hospital or with other partners)? What would it take to magnify these efforts or patient outcomes?

12. If resources were not a concern, what specific initiative(s) would you recommend to address the most pressing access or health status problems in the community? Why?

C. UH Avon Rehabilitation Hospital Prioritization Score Sheet

Please rate each criterion on a scale of 1 to 3: (1) Unlikely (Mild) (2) Somewhat Likely (Moderate) (3) Very Likely (Severe)					
IDENTIFIED NEEDS	Hospital's ability to meet the Need; Mission-alignment	Ability to track progress; access to data	Magnitude of the health disparity; impact on vulnerable populations	Burden, Scope & Severity of Need	TOTAL
Vulnerable Populations					
Services for the isolated & elderly					
Lower income & uninsured					
Access					
Cost of care					
Lack community or family support					
Transportation					
Chronic Disease					
Obesity					
Diabetes					
Behavioral health needs					
Acute Condition					
Neurological condition or trauma					
Orthopedic condition					