

2022 Driscoll Health System Community Health Needs Assessment



Authorization

In the fall of 2021, Dr. Isabel Araiza was contracted by Driscoll Health System to conduct a community health needs assessment of 31 Coastal Bend counties for 2022. The following deliverable is in fulfillment of said contract.

This report has been produced for the 31-county service area of Driscoll Health System by Dr. Isabel Araiza, Principal Investigator, and Brittany Stoker-Garcia, Research Associate. Funding was provided through a contract with Driscoll Health System.

Copyright 2022

All or portions of this report may be duplicated in support of public education, grant writing, research, or planning efforts. Citations made should include the sources: Driscoll Health System, Dr. Isabel Araiza, and Brittany Stoker-Garcia.

Table of Contents

Authorization	iii
List of Tables and Figures	v
Executive Summary.....	1
Driscoll Health System Service Area Counties	5
Introduction: Background and Purpose.....	6
Methodology.....	8
Findings	9
Hospital Data.....	9
Patient Demographics.....	11
Health Findings	14
Clinic Data	31
Quick Care	33
Specialty Centers.....	35
COVID-19 Impacts	45
How Healthy Are We?.....	47
What Factors Contributed to These Outcomes?	48
Stakeholder Focus Groups	56
Individual-Level Concerns	56
Community-Level Concerns	58
Physical Environment Concerns.....	59
How Can We Improve Our Community’s Health?	61
Limitations	64
References	66
Appendix A. University of Wisconsin Population Health Institute: County Health Attributes	68
Appendix B. Heat Maps.....	73
Appendix C. Focus Group Questions.....	79

List of Tables and Figures

Figure 1. Map of Driscoll Health System Service Area Counties.....	5
Table 1. 2022 County Health Outcomes Rankings for DHS Service Area.....	7
Figure 2. Map of Driscoll Children’s Hospital Service Area Counties.....	10
Figure 3. DCH Visit Frequencies by Service Area	11
Figure 4. Crosstabulation of Racial Identity by Gender for DCH.....	12
Figure 5. DCH Patients’ Age Distribution by Age Categories	12
Figure 6. Payors for DCH Visits.....	13
Figure 7. Top Payor Trends by Age Category	13
Figure 8. DHS Visit Type Frequencies.....	14
Figure 9. Map of ED Visit Frequencies by Zip Code for State	15
Figure 10. CPT Code Frequencies for ED.....	16
Figure 11. CPT Codes by Age Categories for ED.....	17
Table 2. Top Ten ED Primary Diagnoses	18
Table 3. Distribution of Top Ten ED Primary Diagnoses by Age Categories	19
Table 4. Top Ten ED Secondary Diagnoses	20
Table 5. Distribution of Top Ten ED Secondary Diagnoses by Age Categories.....	21
Table 6. CPT Code Frequencies for Inpatients	22
Table 7. Top Ten Inpatient Diagnosis Related Groups (DRGs).....	23
Table 8. Distribution of Top Ten Inpatient Primary Diagnoses by Age Categories	23
Table 9. Top Ten Inpatient Secondary Diagnoses.....	24
Table 10. Distribution of Top Ten Inpatient Secondary Diagnoses by Age Categories.....	24
Table 11. CPT Code Frequencies for Outpatients	25
Table 12. Top Ten Outpatient Primary Diagnoses	26
Table 13. Distribution of Top Ten Outpatient Primary Diagnoses by Age Categories	26
Table 14. Top Ten Outpatient Secondary Diagnoses.....	27
Table 15. Distribution of Top Ten Outpatient Secondary Diagnoses by Age Categories.....	28
Figure 12. Visit Frequencies by Clinic Type for Orthopedic and Rehabilitation.....	29
Table 16. Top Ten Primary Diagnoses for Orthopedic and Rehabilitation	30
Table 17. Top Ten Secondary Diagnoses for Orthopedic and Rehabilitation	30

Figure 13. Driscoll Health System Service Area	31
Table 18. Description of Service Regions	32
Figure 14. Frequency Distribution of Quick Care Visits by Location	33
Figure 15. Visit Frequencies by Age Categories for Quick Care Clinics	34
Table 19. Number of Clinic Visits by Specialty Type	35
Table 20. Frequency Distribution of Gender by Specialty Type.....	36
Table 21. Top Ten Perinatology Primary Diagnoses	38
Table 22. Distribution of Top Ten Cardiology Primary Diagnoses by Age Categories	39
Table 23. Top Ten Primary Diagnoses for General Surgery	40
Table 24. Top Five General Surgery Primary Diagnoses by Gender for Patients <1 Year Old	40
Table 25. Top Five General Surgery Primary Diagnoses by Gender for Patients 1-4 Years Old	41
Table 26. Top Five Psychiatry Primary Diagnoses.....	43
Table 27. Top Five Diabetes Services Primary Diagnoses	44
Table 28. ED Visit Frequencies for Pre and Post COVID-19	46
Figure 16. Top ED Principal Diagnoses Frequencies for Pre and Post COVID-19.....	46
Figure 17. COVID-19 Diagnosis Frequencies by Age Categories for ED	47
Table 29. 2021 Health Outcomes for Nation, State, and DHS Counties	48
Table 30. 2021 Measures for Health Behaviors for Nation, State, and DHS Counties	49
Table 31. 2021 Measures for Clinic Care for Nation, Texas, and DHS Counties	50
Table 32. 2021 Measures for Social and Economic Factors for Nation, Texas, and DHS Counties	51
Table 33. 2021 Physical Environment Conditions for Nation, Texas, and DHS Counties.....	53
Table 34. Pearson r % Hispanic Children Living in Poverty with CHR&R Data.....	54

Executive Summary

Driscoll Health System commissioned a community health needs assessment. The resulting report is based on data from the time period of September 1, 2018 through August 31, 2021 from Driscoll Children's Hospital (including inpatient, outpatient, and emergency department data) and Driscoll Health System quick care clinics and specialty centers. Additionally, data from County Health Ranking and Roadmaps provided by the University of Wisconsin Public Health Institute in collaboration with the Robert Wood Johnson Foundation and a series of focus groups with community stakeholders organized by Driscoll Health Plan's Community Outreach Department were utilized.

This report details the access to and utilization of healthcare services in Driscoll Health System's 31-county service area. This executive summary highlights the needs of the community as supported by the data, privileging areas in which Driscoll Health System can affect change. The executive summary is organized into four themes: Preventable Hospital Use, Managing Chronic Illnesses, Addressing Mental Health Issues, and Recommendations.

Preventable Hospital Use

Hospitals are just one component of health care systems; they are meant to be continuously available to provide acute care, treat complex conditions, and handle emergent health issues. The data revealed Driscoll Children's Hospital often tends to non-urgent and/or preventable health issues.

➤ **Non-Urgent Emergency Department Use**

- 27.9% of emergency department (ED) visits were labeled "non-urgent" or "less urgent." These visits could be treated in a doctor's office.
- 36% of ED visits by infants less than one year old were "non-urgent" or "less urgent."
- 30% of ED visits by children ages 1-4 were "non-urgent" or "less urgent." This age category comprises more than one out of every three ED visits.

➤ **Preventable Health Issues**

- Constipation (ranked 7th for ED primary diagnoses and 8th for outpatient secondary diagnoses) can be preventable as it is often caused by behaviors like not drinking enough water, not eating enough fiber, and/or not exercising enough.
- Dehydration ranked 5th for inpatient and outpatient primary diagnoses (and appeared in the top ten for most age categories). It ranked 2nd for outpatient secondary diagnoses. Dehydration is caused by not drinking enough fluids or losing more fluids than one is taking in and can be a function of climate, physical activity, and diet.

- Kidney and urinary tract infections was the 6th most prevalent inpatient diagnosis group.
- Phimosis (when the foreskin can't be retracted from the tip of the penis) can sometimes be a function of hygiene. This was the 4th highest outpatient primary diagnosis and most frequent diagnosis at the general surgery specialty center (where it was a top diagnosis for boys from infancy through pre-teen years).
- Tooth decay was the number one outpatient diagnosis, comprising 8.5% of all visits. Common causes of tooth decay are frequent snacking, consuming sugary foods/drinks, poor dental hygiene, and not getting enough fluoride.

Managing Chronic Illnesses

- **Obesity** became a prevalent inpatient secondary diagnosis for children by age 5 and persisted through all other age categories. At the general surgery specialty center, morbid obesity was among the top five diagnoses for girls (ages 11-17) and boys (ages 14-17).
- **Diabetes** was the 2nd highest ranked group of inpatient diagnoses. Among perinatology specialty centers, gestational diabetes ranked 5th; unspecified diabetes ranked 9th; and preexisting diabetes ranked 10th.
- **Asthma** is among the top ten primary diagnoses for inpatients (ranked 7th), outpatients (ranked 7th), and emergency department patients (ranked 6th). It is also a top secondary diagnosis (ranked 1st for the emergency department, 2nd for inpatient, and 5th for outpatient).

Addressing Mental Health Issues

- **Suicidal ideation** was the 8th highest primary diagnosis for ED patients ages 11-13 years and jumps to the 2nd highest for ages 14-17 years. In terms of absolute numbers, ED visits for suicidal ideation increased by 6.9% during the post COVID-19 period (March 2020 through August 2021). But, when the number of ED visits is controlled for, the rise in suicidal ideation diagnoses is striking. The number of suicidal ideation primary diagnoses following the start of the pandemic was almost 58% higher than the rate prior to the pandemic. In other words, had the proportion of suicidal ideation rates remained consistent, we would expect approximately 197 cases during the post-pandemic period. Instead, there were 311 cases.
- **Anxiety disorder** ranked 5th among inpatient secondary diagnoses.
- **Attention-deficit hyperactivity disorder (ADHD)** ranked 9th among emergency department secondary diagnoses and 8th among inpatient secondary diagnoses. It was among the top ten secondary diagnoses for children ages 5-10 years, 11-13 years, 14-17 years, and 18+ years old.

Recommendations

The following recommendations aim to address the most pressing needs of the community as outlined above. Effective implementation of these recommendations may produce broad, lasting benefits for community members and stakeholders as well as healthcare professionals.

Ensure Families and Children Have Medical Homes

Having a medical home reduces the use of emergency rooms for preventable visits and reduces the likelihood of hospitalization. People with medical homes are more likely to participate in general screenings, have continuity of care, and adhere to treatment. Having a medical home has also been shown to help with the management of chronic conditions like asthma, diabetes, and mental illness.

Refine Education Initiatives

Many hospital visits can be avoided by educating caregivers (i.e., parents/guardians) regarding the importance of seemingly innocuous practices. Teaching caregivers specific strategies to ensure children are getting enough water, fiber, and exercise to avoid issues related to dehydration, constipation, and urinary tract infections may reduce hospital visits connected to those issues. Providing caregivers with instructions for proper diaper changing practices may help reduce issues related to phimosis and urinary tract infections. Helping to educate parents about the importance of consuming fluoridated water and brushing teeth with fluoridated toothpaste may reduce the rate of visits for—and level of severity of—dental caries. A proactive, in-person/conversational approach may be more effective than solely providing reading material to be consumed at home.

Expand and Assess Social Work and Community Health Advocate Usage

Adherence to treatment regimens to address an illness or manage a chronic disease can require multiple steps, resources, and literacies. This may be challenging for people with limited incomes and education. DHS has a community health workers program specifically trained for asthma management and provides 24/7 social work coverage for hospital and emergency department patients. An analysis of participation rates and best practices engaging patients may be helpful. Given the increase in mental health-related diagnoses, expanding these services to include identifying patients struggling with mental health issues and connecting them with services may be warranted.

Partner with Community Stakeholders for Outdoor Programs and Community Building

Many of the issues families face that lead them to seek care and/or affect their ability to continue treatment regimens are factors outside the healthy system's locus of control and the families it serves. Access to quality food, exercise, and having a sense of belonging all promote healthy living. Enhancing partnerships with school districts and programs like Head Start, City Parks and Recreation, Texas AgriLife, and the USDA to encourage child-centered activities that get children outdoors, physically active, and interacting with others can help meet multiple needs simultaneously.

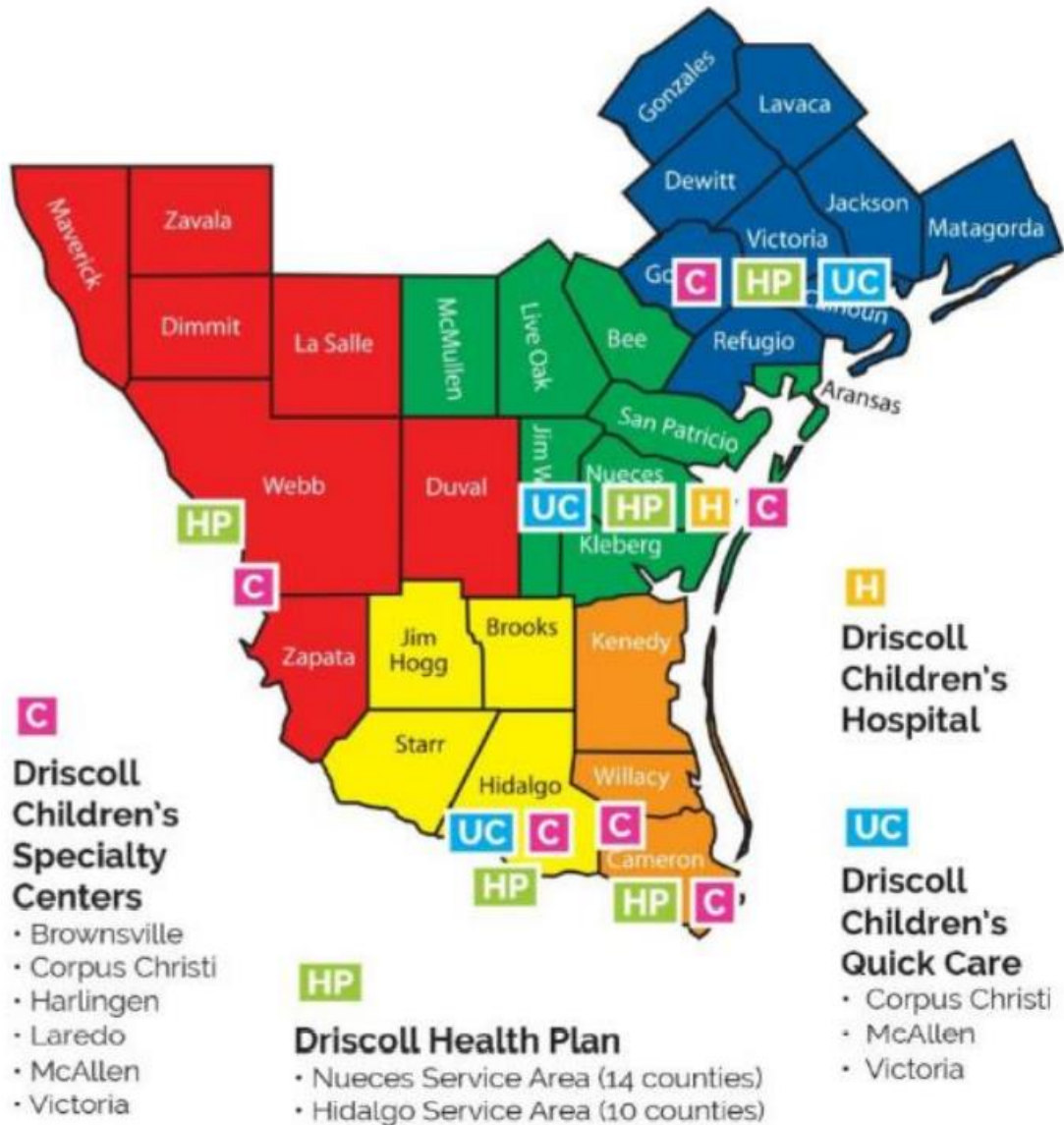
Sponsor Front-Line Community Stakeholder Meet-and-Greet Workshops

Many families DHS serves are economically vulnerable. There are a wide range of organizations that exist to help children and families meet their needs; however, this network is decentralized. Many frontline community stakeholders who participated in the focus groups spoke of wishing they knew more about other organizations—what they do, what they offer, and who they serve. Sponsoring regular meet-and-greet workshops with front line stakeholders can help stakeholders become familiar with one another's work and establish networks and relationships. This can help front line workers effectively connect families to the goods and services they need/are entitled to. Increased access to programs could provide families the critical support they need to avoid preventable hospitalizations, acute illness, and/or crisis related to the management of chronic conditions and mental health issues.

Driscoll Health System Service Area Counties

Driscoll Health System (DHS) serves 31 counties spanning 33,000 square miles in South Texas. Figure 1 below maps the components that comprise DHS: Driscoll Children’s Hospital, Driscoll Children’s Quick Care, Driscoll Children’s Specialty Centers, and Driscoll Health Plan.

Figure 1. Map of Driscoll Health System Service Area Counties



Introduction: Background and Purpose

Health care professionals in direct contact with community members seeking care often develop a strong, informal assessment of the major issues with which communities. The challenge with informal assessments is they lack a process that guards against bias and/or sampling problems, which can lead to inaccurate generalizations. A community health needs assessment (CHNA) is a systematic approach to assessing overall health outcomes, health factors, and health needs of a community.

Tax exempt hospitals are required to conduct a community health needs assessment within their communities every three years. No standard set of questions or data must be used when conducting a community health needs assessment as they should be community specific—relevant to people, as well as the social and environmental conditions within which they live their lives, with the goal of developing a plan to address the unmet needs of a community (CDC 2019).

The University of Wisconsin Public Health Institute and the Robert Wood Johnson Foundation collaborated to produce the County Health Ranking and Roadmaps (CHR&R) program, which rank the health of nearly every county in the country. There are two primary rankings: health outcomes and health factors. These data can help us understand the relative health of communities as well as the conditions that can have an impact on health outcomes. The goal of CHR&R is to have local communities use the data to engender support for initiatives that create healthier communities and address disparities in both health outcomes and environmental conditions that contribute to the disparities observed.

Table 1 shows the County Health Outcomes Relative Ranking for each county Driscoll Health System serves. The health outcome rankings are calculated using measures that address length of life measures (premature death, life expectancy, premature age-adjusted mortality, child mortality, and infant mortality rates) and quality of life indicators (percent of people reporting poor/fair health, average number of poor physical health days, average number of poor mental health days, low birthweight, frequent physical distress, frequent mental distress, and diabetes) of the people living within a county. These measures provide a standard way to quantify how healthy a county is and see where improvements can be made. The table organizes the counties Driscoll Health System serves in descending rank. Counties with lower values in the table have better health outcomes.

Table 1. 2022 County Health Outcomes Rankings for DHS Service Area

County	2022 Health Outcomes Rank (Out of 244 Counties Ranked)	Net Change from 2019 Rank	Percent
Lavaca	27	-6	11
Live Oak	52	+50	21
Calhoun	64	-23	26
Goliad	67	+67	27
Webb	75	+77	31
Victoria	77	+15	32
Jackson	88	-33	36
Hidalgo	96	-28	39
Nueces	101	+44	41
Gonzales	107	+34	44
Cameron	114	+17	47
Refugio	117	+78	48
San Patricio	139	+12	57
DeWitt	143	-43	59
Zapata	154	+33	63
La Salle	158	+15	65
Matagorda	159	+62	65
Kleberg	160	+17	66
Maverick	164	-28	67
Bee	195	-51	80
Willacy	202	-5	83
Starr	208	-8	85
Jim Hogg	212	-73	87
Dimmit	227	-77	93
Duval	229	+14	94
Jim Wells	232	-6	95
Aransas	235	-41	96
Zavala	239	-2	98
Brooks	244	-6	100
Kenedy	NR	NR	N/A
McMullen	NR	NR	N/A

Note: Missing values are common for individual measures. Not all counties (especially smaller counties) compile data on each of the approximately 30 measures used to calculate the ranking score, or their sample sizes are too small for any meaningful comparison. PHI substitutes the state average for missing values in the calculation of rankings, an accepted technique for the treatment of missing data. The 2022 Rankings include deaths attributable to COVID-19 from 2020.

Of the 31 counties Driscoll Health System serves, only two counties' scores are in the top quarter of all Texas county rankings. Almost one third of the counties that Driscoll serves (ten of the 31 counties) have health outcome ranks that place them among the lowest quarter of county rankings. Overall, seventeen of the 31 counties (55%) Driscoll Health System serves have health outcome scores that rank in the bottom half of Texas counties. Fourteen of the 31 counties ranked higher in 2020 compared to 2019

with Webb County having the largest rank increase (+77). Conversely, fifteen counties' ranks decreased with Dimmit County's rank dropping the most (-77).

Utilizing local hospital data and focus group findings allows us to better contextualize these county health outcome ranks. The 2022 Driscoll Health System Community Health Needs Assessments (CHNA) involved analyses of both hospital data (categorized as inpatient, outpatient, emergency department, and clinic data) and data collected during six focus groups conducted with community stakeholders. Drawing on analyses of patient data across different departments within the hospital system as well as patient data organized by service location, this report provides the community with information to help prioritize community health care needs and engender support from local stakeholders to work collaboratively to develop evidence-informed initiatives to improve communities' health.

Methodology

Driscoll Health System provided emergency department, inpatient, outpatient, and clinic data that were collected from September 1, 2018 through August 31, 2021. These data were used to determine patterns of health care utilization and prevalence of disease. The data primarily focused on patient visits; as such, some cases may be repeat patients. Files with emergency department, inpatient, and outpatient data contained the following information: home zip code, patient's home county, discharge date, patient's age, patient's gender, patient's race/ethnicity, discharge disposition, DRG, DRG disposition, CPT code, CPT description, primary diagnosis code, primary diagnosis description, financial class, primary insurance, and the patient's guarantor's employment status. Additionally, separate files were sent containing secondary diagnoses for each of the data sets. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26.0.

Definitions of Terms

Patient Visit Type: emergency department, inpatient, outpatient (orthopedic/rehabilitation visits were analyzed separately), and clinic.

Gender: self-reported data indicating whether the patient identifies as Male, Female, or Unknown. Because only three visits from the entire data set were coded as Unknown, this category was excluded from the final report as this sample size precludes statistical significance.

Race/Ethnicity: a six-category variable constructed using two separate variables— "Race" and "Ethnicity"—from the original files. Patients were coded as Hispanic if they reported their ethnicity as Hispanic regardless of the racial category reported. This operationalization of Hispanic is a standard practice in social science literature. Native Americans self-identified as Native American or American Indian and indicated that they were not Hispanic ethnically. Those coded as Black indicated they were Black and Non-Hispanic. Those who are labeled Asian self-identified as Asian or Pacific Islanders and

reported being non-Hispanic. Non-Hispanic Whites were those who indicated they were white and non-Hispanic. The category “Other” contains all other patients who were not identified by these categories.

Age Categories: patient age was originally reported in days and reflected the exact age of the patient on their visit date. These data were converted to years which were recoded into the following age categories: <1, 1-4, 5-10, 11-13, 14-17, and 18+. These delineations were utilized to examine possible differences in patient characteristics and diagnoses based on life course groupings. Less than one year captures neonatal patients, newborns, and infants under one year of age. Ages 1 through 4 group pre-school aged children. Elementary schooling typically encompasses ages 5 through 10, followed by middle school (ages 11 through 13), and high school (ages 14 through 17). All those 18 years of age and older were grouped as adults.

Financial Status: indicates how visits were paid. The seven classifications were: Commercial, Commercial Managed Care, Federal/State Program, Medicaid, Medicare, Private Traditional, and Self Pay. For each type of patient visit, Chi-square tests were conducted to determine if there were significant variations in how patient visits were paid by the age category of the patient.

Findings

Data are categorized as general hospital data (including emergency department, inpatient, and outpatient data) and clinic data. Findings for each category are structured and presented similarly. Demographic descriptions of the patients being served are provided followed by health-related findings. Impacts from the COVID-19 virus are examined in a dedicated section following hospital and clinic data findings. Finally, prevalent themes that emerged from a series of focus groups conducted with community stakeholders are shared.

Hospital Data

Driscoll Children’s Hospital serves 27 counties in South Texas (Figure 2). The primary service area includes eight counties: Aransas, Bee, Jim Wells, Kleberg, Live Oak, McMullen, Nueces, and San Patricio. The secondary service area excludes the primary service area and includes nineteen counties: Brooks, Calhoun, Cameron, DeWitt, Dimmit, Duval, Goliad, Hidalgo, Jim Hogg, Kenedy, La Salle, Maverick, Refugio, Star, Victoria, Webb, Willacy, Zapata, and Zavala.

Figure 2. Map of Driscoll Children’s Hospital Service Area Counties

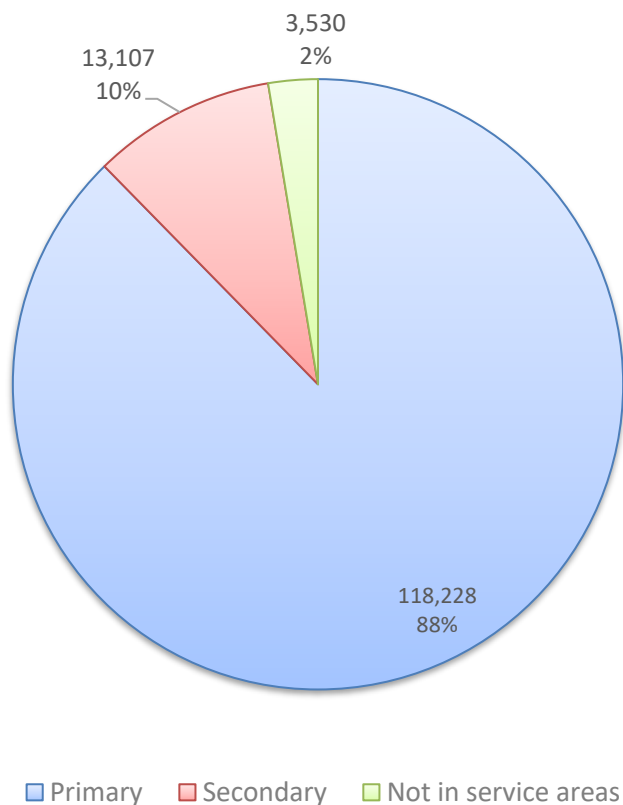


Hospital data was received from Driscoll Children’s Hospital (DCH) for the time period of September 1, 2018 through August 31, 2021. This data was broken into three subcategories for analysis: inpatient, outpatient (excluding orthopedic/rehabilitation visits), and emergency department. Overall, there were 9,941 inpatient visits, 21,888 outpatient visits, and 103,486 emergency department visits resulting in a total of 134,865 patient visits to Driscoll Children’s Hospital during this time frame.

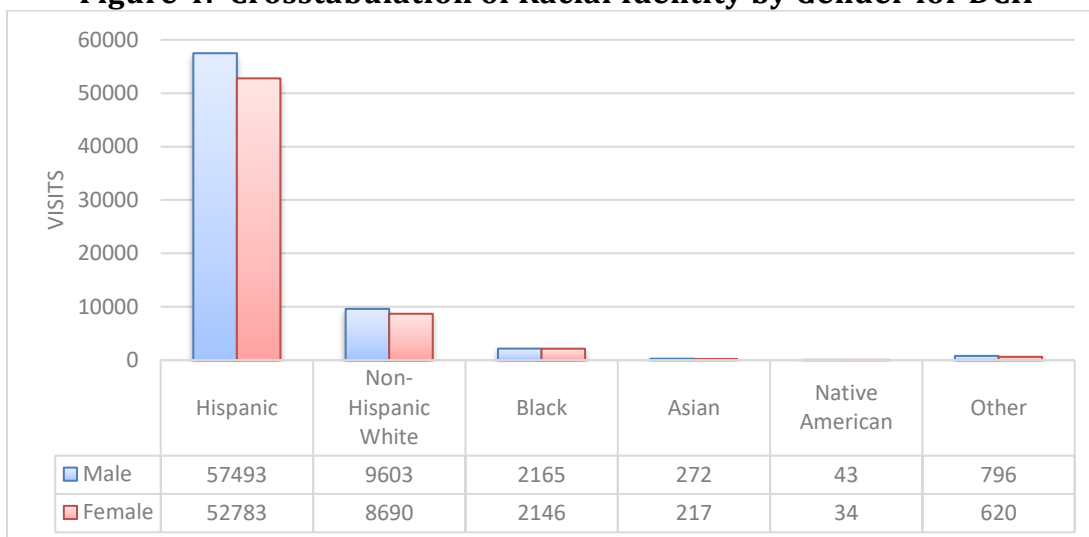
Patient Demographics

The following section provides a look at the patient population for DCH including where they come from, their age; race/ethnicity; and gender, and how their visits were paid.

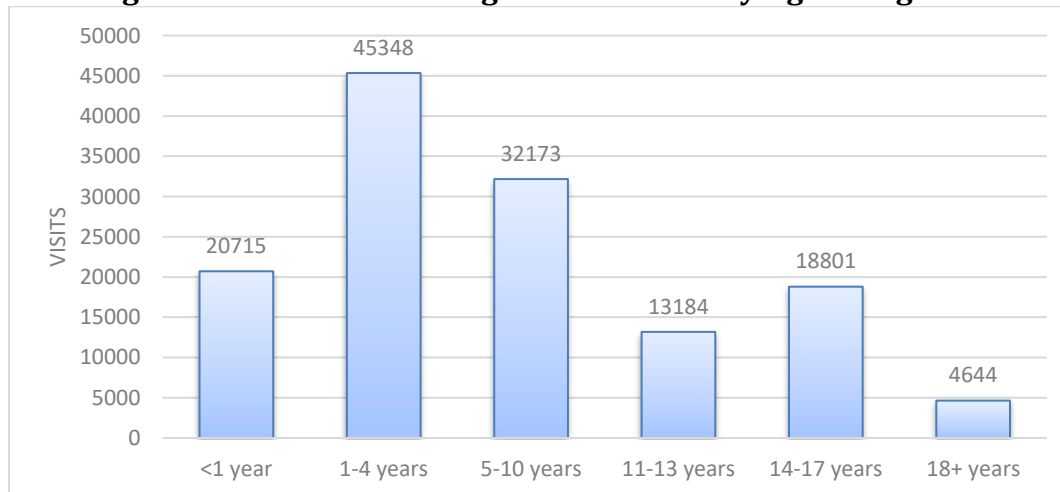
Figure 3. DCH Visit Frequencies by Service Area



From September 1, 2018 through August 31, 2021, 88% of the 134,865 visits to Driscoll Children's Hospital (excluding orthopedic/rehabilitation visits) were from patients residing in the primary service area (Figure 3). Ten percent (13,107) were from the secondary service area leaving only two percent (3,530) visiting from outside both service areas.

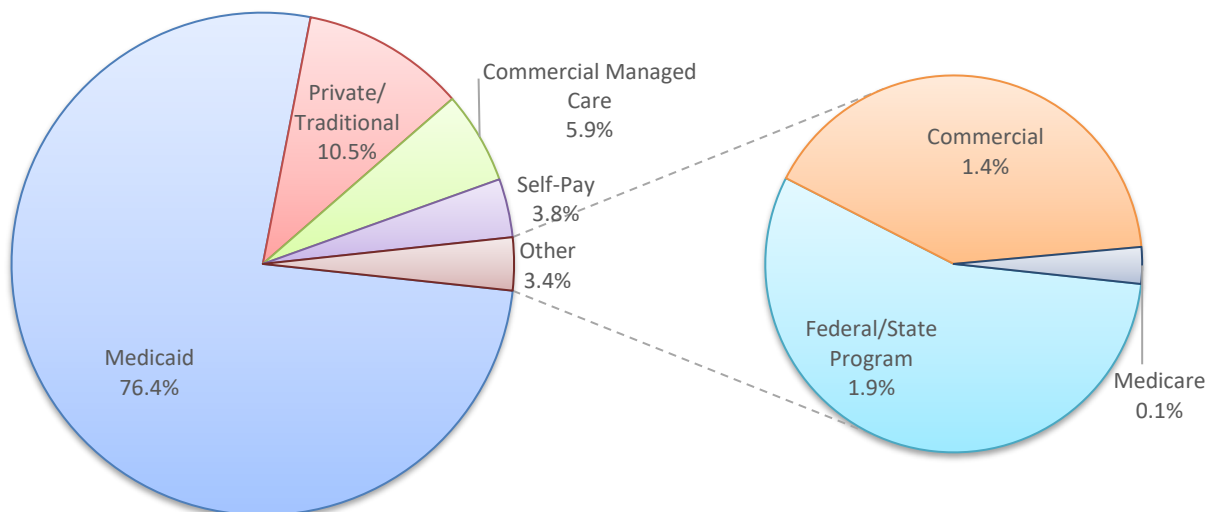
Figure 4. Crosstabulation of Racial Identity by Gender for DCH

Males comprised 52% of all hospital visits (Figure 4). For every racial category, more visits were by males than females. Hispanics constituted 81.8% of all visits. Non-Hispanic Whites were 13.6% of all visits, Blacks were 3.2%, and Asians were less than one half of a percentage point (0.4%). These racial-ethnic distributions look very similar to the racial-ethnic distributions of children in Nueces County.

Figure 5. DCH Patients' Age Distribution by Age Categories

DCH patients' ages ranged from newborn (0 days) to 88.63 years. The mean patient age was 6.96, with a standard deviation of 6.08 years. This means 68% of visits were by patients between the ages of approximately 10 months and 13 years of age. The largest age category of DCH visits was patients between the ages of 1 and 4; more than one out of every three hospital visits were members of this age category (Figure 5). The next largest age category was those between the ages of five and ten; they comprised nearly a quarter (24%) of all hospital visits. More than 15% of visits were for patients less than one year old, and only 3.4% of visits were by those 18 years of age or older.

Figure 6. Payors for DCH Visits



The most prevalent way of paying for DHS visits—regardless of age category—was Medicaid (Figure 6). More than three quarters (76.4%) of all visits were paid by Medicaid. The proportion of visits paid by Medicaid decreases as the age categories increase. For example, 84.2% of patients under the age of one had their visits paid by Medicaid. For the age category 11-13, the proportion of visits paid by Medicaid decreases to 72.6%. Those age 18 and older had the lowest proportion paid by Medicaid (58.6%). This pattern aligns with previous research which has demonstrated that those with young children are more likely to have lower incomes and more likely to be eligible for means-tested insurance programs like Medicaid. The next most likely source of payments were private/traditional sources (10.6%).

Figure 7. Top Payor Trends by Age Category

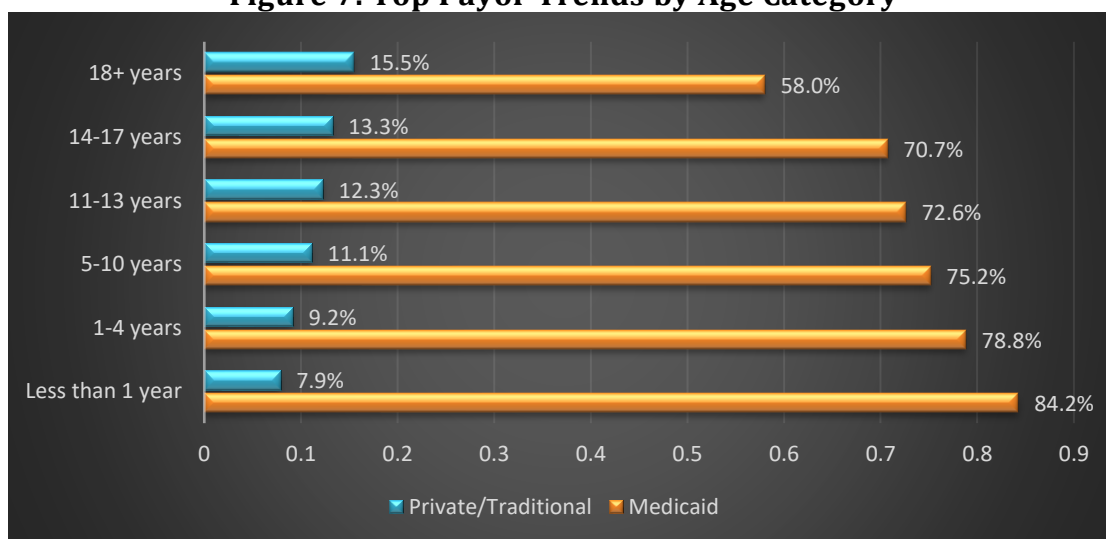
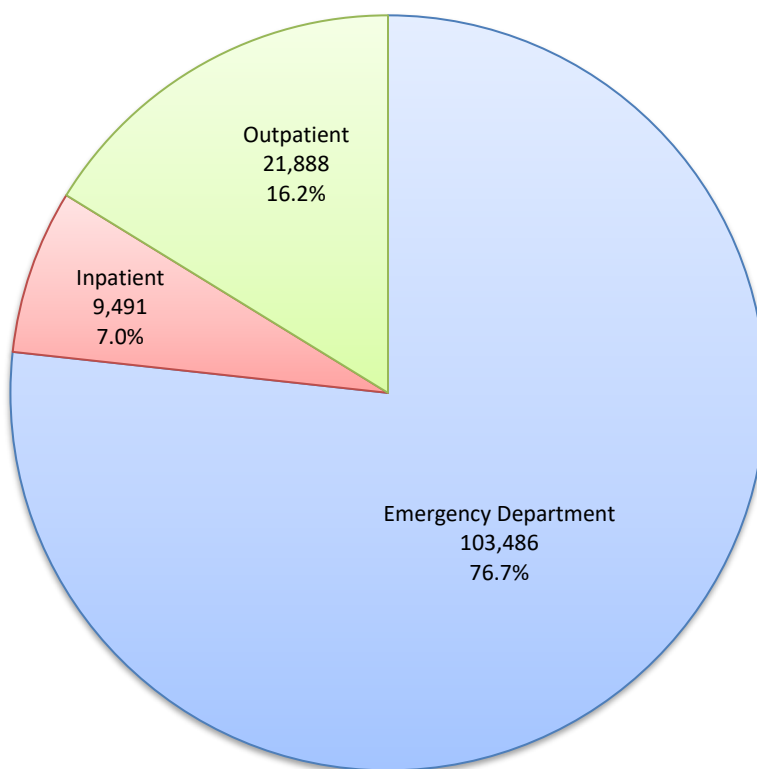


Figure 7 above displays the shift in utilization of the top two payors—Medicaid and private/traditional—across age categories. As patient age increases, the proportion of visits paid by Medicaid declines while the proportion of visits paid by private/traditional sources increases.

Health Findings

The following sections provide a look at health-related findings from each of DCH's visit types: emergency department (ED), inpatient, and outpatient. Orthopedic and rehabilitation visits are types of outpatient care; however, they were analyzed separate from other outpatient data to avoid skewing findings due to the highly repetitious nature of these treatment types.

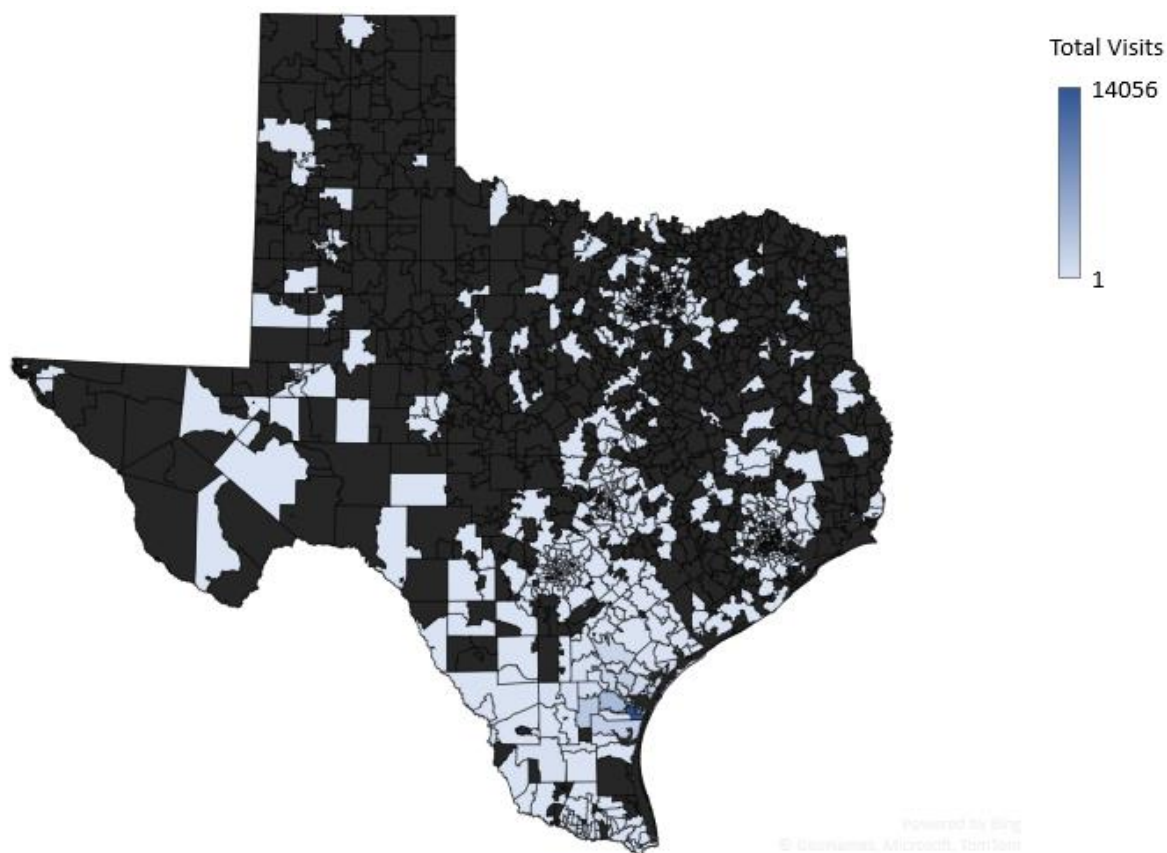
Figure 8. DHS Visit Type Frequencies



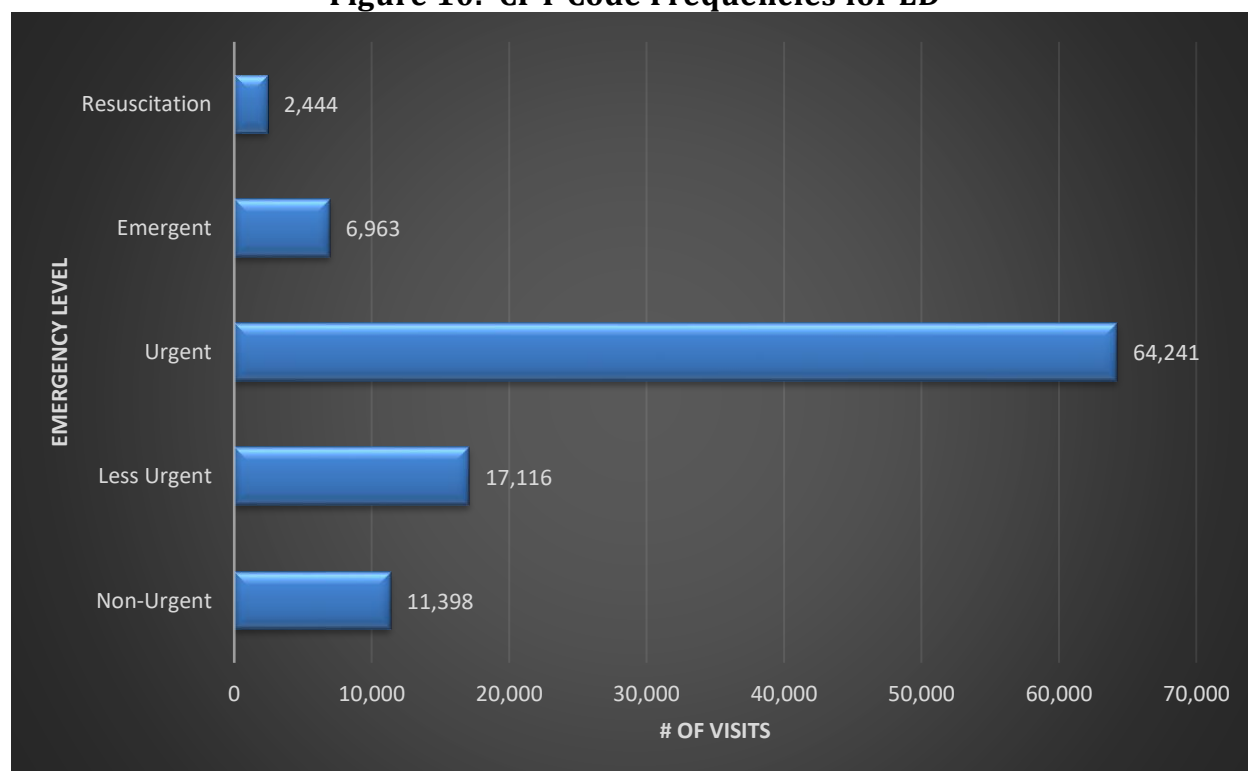
Over three-quarters of visits (76.7%) were to the emergency department (Figure 8). Of the remaining visits, 16.2% were outpatient and 7% were inpatient.

Emergency Department Analyses

Figure 9. Map of ED Visit Frequencies by Zip Code for State

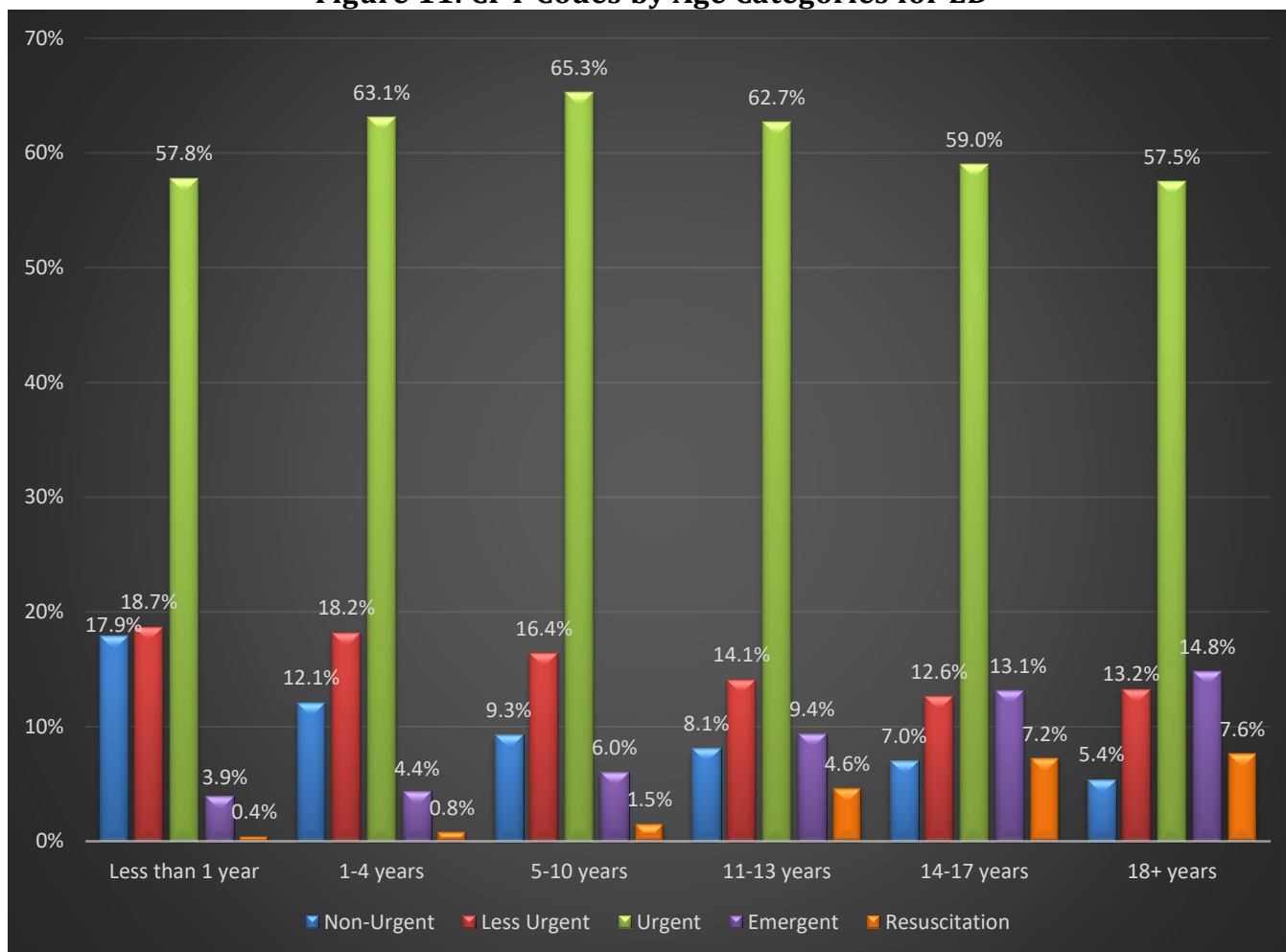


This section examines the severity of ED visits as well as top primary and secondary diagnoses overall and by age categories. Of the 103,486 visits to the ED during this period, 94.1% were by patients residing in DCH’s primary service area, 3.6% were from the secondary service area, and only 2.4% were from outside the service area. In terms of in-state visits overall, patients came from a total of 733 zip codes and 145 counties (Figure 9). The demographic make-up of patients visiting the ED largely mirrors the overall demographic profile of Driscoll Children’s Hospital patients. The mean ED patient age was 6.89 years, with a standard deviation of 6.10 years. This means 68% of visits were by patients between the ages of approximately 9 months and 13 years of age. Visit frequencies were similar for males (50.8%) and females (49.2%). For every racial-ethnic category except Black, slightly more males than females visited the ED. Almost half (49.7%) of all ED visits were by children under the age of five. Over three-quarters (77.9%) of all ED visits were paid for by Medicaid.

Figure 10. CPT Code Frequencies for ED

CPT codes indicate the level of severity of a patient's condition when they are seen in the emergency department. More than a quarter of ED visits were either non-urgent or less urgent (Figure 10). More than half of ED visits were deemed urgent, meaning patients were stable but needed multiple types of resources to either investigate or treat the patients' condition. Just over six percent (6.7%) were coded as emergent, indicating a critical problem at high risk of deterioration. The most severe code—resuscitation: needing immediate life-saving interventions without delay—was only applied to 2.4% of visits. Taken together, the number of visits constituting the two most severe levels of emergencies (9,407) is still less than the number of non-urgent visits (11,398). Utilizing the ED for non-urgent medical care may indicate some patients lack a medical home. Decreasing non-urgent visits would free up ED resources for true emergencies.

Figure 11. CPT Codes by Age Categories for ED



The severity of emergency department visits varied significantly by age category (Figure 11). Patients under the age of one were the most likely group to visit the ED for non-urgent matters. Over a third (36.6%) of all visits by children under the age of one were for less urgent or non-urgent issues. As the age category increased, so did the proportion of emergent and resuscitation cases, though these cases constituted a small proportion (9.1% combined) of all ED visits.

Table 2. Top Ten ED Primary Diagnoses

Rank	Code	Description	Frequency	Percent
1	J06.9	Acute upper respiratory infection, unspecified	13,906	13.4
2	K52.9	Noninfective gastroenteritis and colitis, unspecified	4,106	4.0
3	B34.9	Viral infection, unspecified	3,792	3.7
4	J10.1	Influenza due to other identified influenza virus with other respiratory manifestations	3,676	3.6
5	J02	Acute pharyngitis	3,525	3.4
6	J45	Asthma	2,313	2.2
7	K59.00	Constipation, unspecified	2,298	2.2
8	Z53.21	Procedure and treatment not carried out due to patient leaving prior to being seen by health care provider	2,203	2.1
9	R50.9	Fever, unspecified	1,840	1.8
10	J05.0	Acute obstructive laryngitis (croup)	1,573	1.5
Total Top Ten Codes			39,232	37.9
Total All Other Codes			64,254	62.1
Total			103,486	100

These top ten diagnoses accounted for over a third (37.9%) of all emergency department visits. Half of the top ten diagnoses were respiratory illnesses, accounting for 63.7% of the top ten diagnoses. The most prevalent primary diagnosis for all ED visits was acute upper respiratory infection, unspecified (13.4%). Two other conditions—pharyngitis and obstructive laryngitis—are classified as acute conditions. It is worth noting that the eighth-ranked diagnosis indicates the patient left prior to being seen by a health care provider.

Table 3 (see next page) shows whether the most prevalent primary diagnoses for all ED visits were also among the top ten most prevalent primary diagnoses within each age category. Shaded cells indicate the diagnosis was among that age category's top ten primary diagnoses.

Table 3. Distribution of Top Ten ED Primary Diagnoses by Age Categories

Rank	Code	Description	<1	1-4	5-10	11-13	14-17	18+
1	J06.9	Acute upper respiratory infection, unspecified						
2	K52.9	Noninfective gastroenteritis and colitis, unspecified						
3	B34.9	Viral infection, unspecified						
4	J10.1	Influenza due to other identified influenza virus with other respiratory manifestations						
5	J02	Acute pharyngitis						
6	J45	Asthma						
7	K59.00	Constipation, unspecified						
8	Z53.21	Procedure/treatment not carried out; patient left prior to being seen by health care provider						
9	R50.9	Fever, unspecified						
10	J05.0	Acute obstructive laryngitis (croup)						

A shaded cell indicates the diagnosis was present in that age category's top ten primary diagnoses

The top three diagnoses—acute upper respiratory infection, noninfective gastroenteritis and colitis, and viral infection—were among the top ten diagnoses for all age categories. Of note, Z53.21 (procedure or treatment was not carried out due to patient leaving prior to being seen) was also among the top ten primary diagnoses for all age categories. Asthma was a top diagnosis for every age category except those less than one year old. Fever was a primary diagnosis for those under one, one through four, and those five through ten years of age.

Over the life course, the types of illness that result in a perceived need for emergency care change. For example, croup only appeared in the top ten primary diagnoses for children under five, and fever only appeared for those under eleven. Other noteworthy trends occurred for each of age group. From infancy through elementary years, children's top diagnoses were largely respiratory illnesses. Mental health-related diagnoses began appearing in pre-teen and teen-aged groups. Suicidal ideations was the eighth highest primary diagnosis for patients ages 11-13 years and jumped to the second highest for ages 14-17 years. These findings correspond with a recent report from the Centers for Disease Control and Prevention that showed suicide rates among people between the ages of 10 and 14 nearly tripled between 2007 to 2017 (Curtin and Heron 2019). A diagnosis of COVID-19 only appeared in the top ten primary diagnoses for those ages 11-13 years, 14-17 years, and 18 years or older (ranked 10th, 7th, and 5th respectively).

In addition to a primary diagnosis, many patients received a secondary diagnosis or diagnoses during their visit. In all, there were 189,741 secondary diagnoses assigned to ED patients for this period. Table 4 presents the top secondary diagnoses for emergency department patients.

Table 4. Top Ten ED Secondary Diagnoses

Rank	Code	Description	Frequency	Percent
1	J45.909	Unspecified asthma, uncomplicated	4,996	2.6
2	R50.9	Fever, unspecified	4,820	2.5
3	Z79.899	Other long term (current) drug therapy	4,723	2.5
4	Z20.822	Contact with and (suspected) exposure to COVID-19	4,462	2.4
5	R11.10	Vomiting, unspecified	4,445	2.3
6	Z88.0	Allergy status to penicillin	3,677	1.9
7	R09.81	Nasal congestion	3,414	1.8
8	J06.9	Acute upper respiratory infection, unspecified	3,155	1.7
9	F90.9	Attention-deficit hyperactivity disorder, unspecified type	2,829	1.5
10	R05	Cough	2,650	1.4
Total for Top Ten			39,171	20.6
Total All Other Codes			150,570	79.4
Total			189,741	100

Asthma, fever, and acute upper respiratory infection were also among the top primary diagnoses. A new diagnosis—contact with and (suspected) exposure to COVID-19—was the fourth most prevalent secondary diagnosis for ED visits. Please note this diagnosis was created in response to the pandemic and was only assigned to patients after March 11, 2020.

Table 5. Distribution of Top Ten ED Secondary Diagnoses by Age Categories

Rank	Code	Description	<1	1-4	5-10	11-13	14-17	18+
1	J45.909	Unspecified asthma, uncomplicated						
2	R50.9	Fever, unspecified						
3	Z79.899	Other long term (current) drug therapy						
4	Z20.822	Contact with and (suspected) exposure to COVID-19						
5	R11.10	Vomiting, unspecified						
6	Z88.0	Allergy status to penicillin						
7	R09.81	Nasal congestion						
8	J06.9	Acute upper respiratory infection, unspecified						
9	F90.9	Attention-deficit hyperactivity disorder, unspecified type						
10	R05	Cough						

A shaded cell indicates the diagnosis was present in that age category's top ten secondary diagnoses

Only one secondary diagnosis—Contact with and (suspected) exposure to COVID-19—is among the top ten secondary diagnoses for all age groups (Table 5). Asthma, other long term (current) drug therapy, and allergy to penicillin are among the most prevalent secondary diagnoses for all age categories except patients under the age of one. Attention-deficit hyperactivity disorder appears once children reach school age and persists as a top secondary diagnosis through adulthood.

High Frequency Emergency Department Users

Matsumoto, et. Al (2017) note that most urban hospitals define high frequency users as patients who use the emergency department four times or more per year; they argue that such a metric is inappropriate for rural communities. For rural communities, they suggest using patients who visit an emergency department six or more times a year or identifying the most frequent emergency department users who account for 3-10% of emergency department visits. Others have identified very high frequency users as patients who visit an emergency department ten times or more per year. Waldner (2014) points out that high frequency users are not a monolithic group. While some patients may be using the ED as a primary care source; high frequency users often have varied complex physical, mental, and social needs and should be viewed in their individual contexts.

An analysis of ED visits revealed that patients who visited the ED four times or more accounted for 16.8% of all ED visits for fiscal year 2019; that percentage was just over 13% for fiscal years 2020 and 2021. Patients with six visits or more per year comprised 5.3%, 5.3%, and 3.7% of all patients visits for fiscal years 2019, 2020, and 2021, respectively. Very high frequency users—those with ten or more visits—comprised less than one percent of ED visits per fiscal year (0.5% for 2019, 0.3% for 2020, and 0.5% for 2021). Only 34 patients fit the definition of very high frequency users.

A closer look at the thirty-four very high frequency users revealed roughly 52% of those patients were female, 32 of the 34 were Hispanic, and all but one had their visits paid by Medicaid. Twenty-four (70.5%) were under the age of five; eight (23%) were over the age of 15. For these very high frequency users, the top primary diagnoses were acute upper respiratory infection (19.8%); viral infection (4.9%); constipation (3.6%); and suicidal Ideation (5.7%). These diagnoses fit three clear typologies of conditions: acute physical, preventable physical, and mental health crises.

Inpatient Analyses

Inpatient hospitalizations account for the smallest proportion (7%) of patient types serviced by Driscoll Children’s Hospital with 9,491 visits from September 1, 2018 through August 31, 2021. The majority of inpatients are from the primary service area (58.5%). Of the remaining visits, 37.6% were by patients from the secondary service area, and 3.9% reside outside of the service area.

The demographic make-up of inpatients largely mirrors the overall demographic profile of Driscoll Children’s Hospital patients. The mean inpatient age was 6.67 years, with a standard deviation of 6.53 years. This means 68% of visits were by patients between the ages of approximately one month and 13.2 years of age. Visit frequencies were higher for males (55.3%) than females (44.7%). For every racial-ethnic category except Black, slightly more males than females were inpatients. Over 81% of visits were by patients who identified as Hispanic; the next largest racialized category was Non-Hispanic Whites (14.7%). Over half (52.4%) of all visits were by children under the age of five. Nearly three-quarters (72.2%) of all inpatient visits were paid for by Medicaid.

Table 6. CPT Code Frequencies for Inpatients

CPT CODES	CPT Description	DCH Description	Frequency	Percent
99281	Non-Urgent	Emergency Level 1	3	<0.01
99282	Less Urgent	Emergency Level 2	6	0.1
99283	Urgent	Emergency Level 3	669	7.0
99284	Emergent	Emergency Level 4	1,854	19.5
99285	Resuscitation	Emergency Level 5	2,331	24.6
Null		Null	4,628	48.8
Total			9,491	100*

*Does not total to 100, due to rounding

Nearly half of inpatients did not have a CPT code (Table 6). The majority of those with a CPT code had Emergency and Trauma Center Check-In Types. As anticipated, the proportion of inpatients with CPT codes increases as the severity of the Emergency Level increases. Emergency Level 5 had the greatest proportion (24.6%).

Table 7. Top Ten Inpatient Diagnosis Related Groups (DRGs)

Rank	Group	Description	Frequency	Percent
1	APR138	Bronchiolitis and RSV pneumonia	463	4.9
2	APR420	Diabetes	296	3.1
3	APR696	Other chemotherapy	248	2.6
4	APR233	Appendectomy with complex principal diagnosis	212	2.2
5	APR139	Other pneumonia	210	2.2
6	APR463	Kidney and urinary tract infections	207	2.2
7	APR640	Normal newborn or neonate with other problem	200	2.1
8	APR053	Seizure	191	2.0
9	APR182	Other peripheral vascular procedures	173	1.8
10	APR141	Asthma	168	1.8
Total Top 10 Groups			2,368	24.9
Total All Other Groups			7,123	75.1
Total			9,491	100

Diagnosis Related Groups (DRGs) represent groups of diagnoses that fall within the same category. This provides a broad overview of the types of conditions for which patients seek treatment. Respiratory issues including Bronchiolitis and RSV pneumonia, other pneumonia, and asthma top the list (Table 7). Diabetes is ranked second (3.1% of visits) followed by chemotherapy (2.6%). Each of these groupings represents numerous principal diagnoses. Table 8 below provides a closer look at the top ten inpatient primary diagnoses and shows whether they are also among the top ten most prevalent conditions within each of the age categories.

Table 8. Distribution of Top Ten Inpatient Primary Diagnoses by Age Categories

Rank	Code	Description	<1	1-4	5-10	11-13	14-17	18+
1	J21	Acute bronchiolitis						
2	Z51.11	Encounter of antineoplastic chemotherapy						
3	K35.3	Acute appendicitis						
4	E10.10	Type 1 diabetes mellitus with ketoacidosis without coma						
5	E86.0	Dehydration						
6	Q21	Congenital malformations of cardiac septa						
7	J45	Asthma						
8	P59	Jaundice						
9	Q25	Congenital malformations of great arteries						
10	K56.41	Fecal impaction						

A shaded cell indicates the diagnosis was present in that age category's top ten primary diagnoses

Overall, the distribution of primary diagnoses follows expected life course patterns. Acute bronchiolitis only appeared in the top ten for patients under five years old. Cardiovascular diagnoses (including heart defects) were present in the top ten for children under five years old. Type 1 diabetes was a top ten diagnosis among all patient groups excluding the youngest two. Dehydration appeared as a top ten diagnosis for every age group. Chemotherapy was in the top ten for each age group except those less than one year old.

Table 9. Top Ten Inpatient Secondary Diagnoses

Rank	Code	Description	Frequency	Percent
1	Z79	Long term (current) drug therapy	2,832	7.2
2	J45	Asthma	1,198	3.0
3	Z88	Allergy status to drugs	1,161	2.9
4	F43.0	Acute stress reaction	997	2.5
5	F41	Anxiety disorder	863	2.2
6	E66.9	Obesity, unspecified	808	2.0
7	Z68.54	Body mass index [BMI] >= 95th percentile for age	717	1.8
8	F90.9	Attention-deficit hyperactivity disorder, unspecified type	673	1.7
9	F80.9	Developmental disorder of speech and language, unspecified	584	1.5
10	H69.83	Other specified disorders of Eustachian tube, bilateral	556	1.4
Total for Top Ten			10,389	26.3
Total All Other Codes			29,152	73.7
Total			39,541	100

The top ten secondary diagnoses represent just over one-quarter (26.3%) of all secondary diagnoses (Table 9). Long term (current) drug therapy accounts for 7.2% of all secondary diagnoses followed by asthma (3.0%). Two diagnoses related to obesity (3.8% combined) made the top ten. Additionally, two diagnoses related to mental health—acute stress reaction and anxiety disorder—appear. Attention-deficit hyperactivity disorder was ranked seventh (1.7%).

Table 10. Distribution of Top Ten Inpatient Secondary Diagnoses by Age Categories

Rank	Code	Description	<1	1-4	5-10	11-13	14-17	18+
1	Z79	Long term (current) drug therapy						
2	J45	Asthma						
3	Z88	Allergy status to drugs						
4	F43.0	Acute stress reaction						
5	F41	Anxiety disorder						
6	E66.9	Obesity, unspecified						
7	Z68.54	Body mass index [BMI] >= 95th percentile for age						
8	F90.9	Attention-deficit hyperactivity disorder, unspecified type						
9	F80.9	Developmental disorder of speech and language, unspecified						
10	H69.83	Other specified disorders of Eustachian tube, bilateral						

A shaded cell indicates the diagnosis was present in that age category's top ten secondary diagnoses

Long term (current) drug therapy was the only top secondary diagnosis present across all age categories. Asthma and anxiety disorder was present for all groups except those under one year old. The two diagnoses related to obesity were present in all but the two youngest groups.

Outpatient Analyses

Outpatients include those admitted for day surgery, urgent care, orthopedics, and rehabilitation. Due to the repetitious nature of orthopedic and rehabilitative visits, this subset of outpatients will be discussed separately from all other outpatients. Excluding orthopedic and rehabilitation outpatients, there were a total of 21,888 outpatient visits from September 1, 2018 through August 31, 2021, which account for 16.2% of all visits to Driscoll Children’s Hospital. The majority of outpatients are from the primary service area (70%). Of the remaining visits, 26.8% were by patients from the secondary service area, and only 3.2% reside outside of the service area.

The demographic make-up of outpatients largely mirrored the overall demographic profile of Driscoll Children’s Hospital patients. The mean outpatient age was 7.44 years, with a standard deviation of 5.75 years. This means 68% of visits were by patients between the ages of approximately 1.7 years and 13.2 years of age. Visit frequencies were higher for males (57.3%) than females (42.7%). For every racial-ethnic category, slightly more males than females were inpatients. Over 78% of visits were by patients who identified as Hispanic; the next largest racialized category was Non-Hispanic Whites (17%). Nearly 60% of all visits were by children between the ages of one and ten years old. Medicaid continued to be the most frequently utilized payment source for visits (70.7%) followed by private/traditional insurance plans (15.6%).

Table 11. CPT Code Frequencies for Outpatients

CPT CODES	CPT Description	DCH Description	Frequency	Percent
99281	Non-Urgent	Emergency Level 1	2	<0.01
99282	Less Urgent	Emergency Level 2	7	<0.01
99283	Urgent	Emergency Level 3	1,340	6.1
99284	Emergent	Emergency Level 4	3,338	15.3
99285	Resuscitation	Emergency Level 5	2,420	11.1
Null		Null	14,781	67.5
Total			21,888	100

Just over two-thirds (68.7%) of outpatients did not have a CPT code (Table 11). Those without a CPT code primarily had Elective as their Chick-In Type. Over a quarter (26.4%) of outpatient visits were classified as Emergent or Resuscitation.

Table 12. Top Ten Outpatient Primary Diagnoses

Rank	Code	Description	Frequency	Percent
1	K02	Dental caries	1,853	8.5
2	J35	Chronic diseases of tonsils and adenoids	723	3.3
3	H69.83	Other specified disorders of Eustachian tube, bilateral	533	2.4
4	N47.1	Phimosis	388	1.8
5	E86.0	Dehydration	375	1.7
6	K35.80	Unspecified acute appendicitis	373	1.7
7	J45	Asthma	327	1.5
8	K52.9	Noninfective gastroenteritis and colitis, unspecified	193	0.9
9	J21.0	Acute bronchiolitis due to respiratory syncytial virus	191	0.9
10	K40.90	Unilateral inguinal hernia, without obstruction or gangrene, not specified as recurrent	169	0.8
Total for Top Ten			5,125	23.4
Total All Other Codes			16,763	76.6
Total			21,888	100

The top ten outpatient primary diagnoses accounted for 23.4% of all outpatient diagnoses (Table 12). Respiratory system diagnoses including acute bronchiolitis, asthma, and chronic diseases of tonsils and adenoids top the list. Digestive system diagnoses including tooth decay, appendicitis, gastroenteritis and colitis, and inguinal hernia were also prevalent. Many of the top diagnoses—including tooth decay, phimosis, and dehydration—may be prevented with proper education and hygienic practices.

Table 13. Distribution of Top Ten Outpatient Primary Diagnoses by Age Categories

Rank	Code	Description	<1	1-4	5-10	11-13	14-17	18+
1	K02	Dental caries						
2	J35	Chronic diseases of tonsils and adenoids						
3	H69.83	Other specified disorders of Eustachian tube, bilateral						
4	N47.1	Phimosis						
5	E86.0	Dehydration						
6	K35.80	Unspecified acute appendicitis						
7	J45	Asthma						
8	K52.9	Noninfective gastroenteritis and colitis, unspecified						
9	J21.0	Acute bronchiolitis due to respiratory syncytial virus						
10	K40.90	Unilateral inguinal hernia, without obstruction or gangrene, not specified as recurrent						

A shaded cell indicates the diagnosis was present in that age category's top ten primary diagnoses

Table 13 displays the frequency distribution of the top ten outpatient primary diagnoses for the total sample broken down by age category. Overall, the distribution of the primary diagnoses codes followed expected life course patterns. Acute bronchiolitis only appeared in the top ten for age groups less than one. Dehydration appeared as a top ten diagnosis for all but one age group. Asthma ranked highest

among children ages 1 through 10. Tooth decay occurred in the top ten primary diagnoses for all age groups except children less than one year old.

The following section examines secondary diagnoses. Not all outpatients had secondary diagnoses; in the case that a patient has multiple secondary diagnoses, there is no rank order in terms of severity. Overall, there were 61,506 secondary diagnoses for outpatients.

Table 14. Top Ten Outpatient Secondary Diagnoses

Rank	Code	Description	Frequency	Percent
1	Z79.899	Other long term (current) drug therapy	2,165	3.5
2	E86.0	Dehydration	990	1.6
3	Z20.822	Contact with and (suspected) exposure to COVID-19	775	1.3
4	Z79.51	Long term (current) use of inhaled steroids	666	1.1
5	J45.909	Unspecified asthma, uncomplicated	602	1.0
6	Z93.1	Gastrostomy status	561	0.9
7	E87.6	Hypokalemia	555	0.9
8	B97.89	Constipation, unspecified	551	0.9
9	K95.00	Other viral agents as the cause of diseases classified elsewhere	551	0.9
10	Q21.1	Atrial septal defect	540	0.9
10*	Z82.5	Family history of asthma and other chronic lower respiratory diseases	540	0.9
Total for Top Ten			8,496	13.8
Total All Other Codes			53,010	86.2
Total			61,506	100

*Two diagnoses tied for the tenth rank

Several diagnoses present in the top primary list, including asthma and dehydration, also appear as top secondary diagnoses. Contact with and (suspected) exposure to COVID-19 ranked third (1.3%).

Table 15. Distribution of Top Ten Outpatient Secondary Diagnoses by Age Categories

Rank	Code	Description	<1	1-4	5-10	11-13	14-17	18+
1	Z79.899	Other long term (current) drug therapy						
2	E86.0	Dehydration						
3	Z20.822	Contact with and (suspected) exposure to COVID-19						
4	Z79.51	Long term (current) use of inhaled steroids						
5	J45.909	Unspecified asthma, uncomplicated						
6	Z93.1	Gastrostomy status						
7	E87.6	Hypokalemia						
8	B97.89	Constipation, unspecified						
9	K95.00	Other viral agents as the cause of diseases classified elsewhere						
10	Q21.1	Atrial septal defect						

A shaded cell indicates the diagnosis was present in that age category's top ten secondary diagnoses

Other long term (current) drug therapy and dehydration were in the top ten secondary diagnoses for all age categories (Table 15). Asthma also appeared in the top ten for every group except those 1-4 years old and those less than one year old. Contact with and (suspected) exposure to COVID-19 was a top secondary diagnosis for every group except infants under one year old.

Orthopedic and Rehabilitation Analyses

Orthopedic and rehabilitation patients are classified as outpatients. However, due to the high volume of visits per patient for these services, discussion for these subcategories has been separated from other outpatients. There were 23,524 orthopedic and rehabilitation patients resulting in 231,866 visits from September 1, 2018 through August 31, 2021. Of those visits, 84.5% were classified as rehabilitation; 13.9% were clinic (i.e., orthopedic) visits. The vast majority (94.8%) of visits took place at clinics located in Corpus Christi. The rest took place at clinics in McAllen (2.1%), Brownsville (1.0%), Laredo (0.3%), and Victoria (0.0%--only 59 visits).

Figure 12. Visit Frequencies by Clinic Type for Orthopedic and Rehabilitation

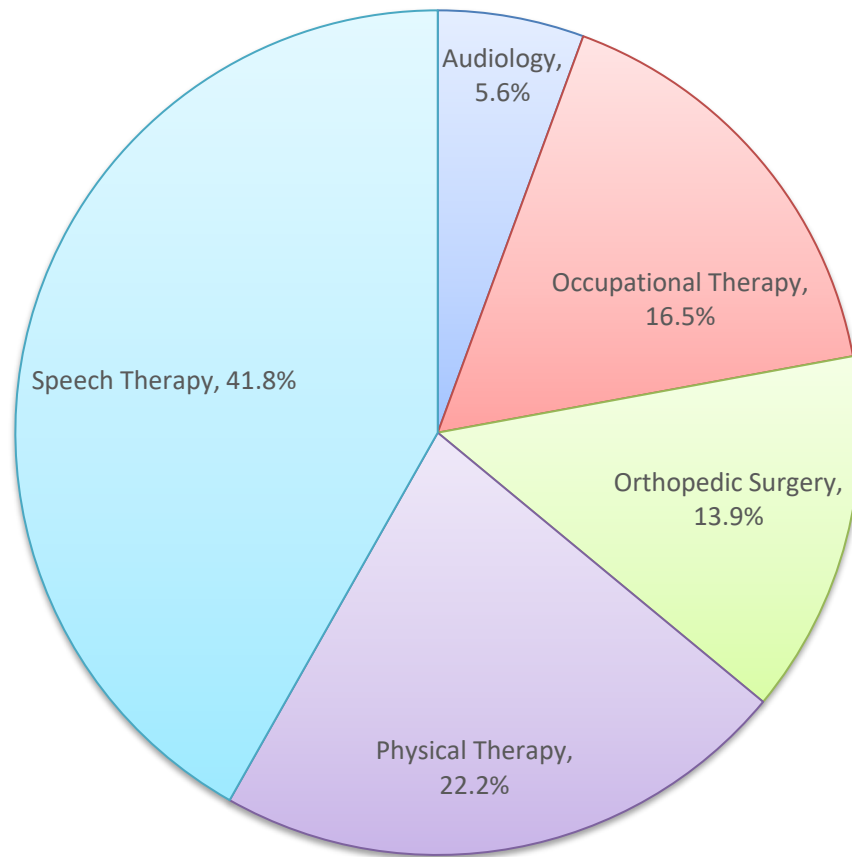


Figure 12 displays visit frequencies by clinic type for Orthopedic and Rehabilitation. The largest proportion of visits was for speech therapy (41.8%) followed by physical therapy (22.2%). Occupational therapies and orthopedic visits had similar frequencies (16.5% and 13.9%, respectively), and audiology accounted for 5.6% of all visits.

Table 16. Top Ten Primary Diagnoses for Orthopedic and Rehabilitation

Rank	Code	Description	Frequency	Percent
1	F80	Specific developmental disorders of speech and language	62,299	26.9
2	F82	Specific developmental disorder of motor function	6,509	2.8
3	R62.0	Delayed milestone in childhood	6,391	2.8
4	F84.0	Autistic disorder	6,290	2.7
5	P22.0	Respiratory distress syndrome of newborn	6,278	2.7
6	Z47.89	Encounter for other orthopedic after care	4,853	2.1
7	R62.50	Unspecified lack of expected normal physiological development in childhood	3,749	1.6
8	R47.9	Unspecified speech disturbances	2,751	1.2
9	R63.3	Feeding difficulties	2,539	1.1
10	F88	Other disorders of psychological development	2,219	1.0
Total for Top Ten			103,878	44.8
Total All Other Codes			127,988	55.2
Total			231,866	100

Speech-related disorders occupy two of the top ten diagnoses ranks and amount to 28.1% of all primary diagnoses (Table 16). Autistic disorder ranks fourth (2.7%). Encounter for orthopedic after-care accounts for 2.1% of visits. Overall, the patterns among top diagnoses were anticipated given the proportions of each specialty represented in visit frequencies.

Table 17. Top Ten Secondary Diagnoses for Orthopedic and Rehabilitation

Rank	Code	Description	Frequency	Percent
1	F80	Phonological disorder	3,872	3.9
2	Z98.890	Other specified postprocedural states	2,367	2.4
3	F84.0	Autistic disorder	1,292	1.3
4	Z79.899	Other long term (current) drug therapy	1,155	1.2
5	Q21.1	Atrial septal defect	1,085	1.1
6	R62.50	Unspecified lack of expected normal physiological development in childhood	1,008	1.0
7	R62.0	Delayed milestone in childhood	965	1.0
8	M62.81	Muscle weakness (generalized)	903	0.9
9	F88	Other disorders of psychological development	843	0.8
10	Z98.1	Arthrodesis status	820	0.8
Total for Top Ten			14,310	14.3
Total All Other Codes			85,532	85.7
Total			99,842	100

There were 99,842 secondary diagnoses for orthopedic and rehabilitation visits (Table 17). Half of the top secondary diagnoses were also among the top 10 primary diagnoses: phonological disorder (3.9%), Autistic Disorder (1.3%), lack of expected normal physiological development (1.0%), delayed milestone (1.0%), and other disorders of psychological development (0.8%).

Clinic Data

Figure 13. Driscoll Health System Service Area



Driscoll Health System serves 31 South Texas counties spanning 33,000 square miles with a cumulative population of nearly 2.6 million. For context, this area is geographically larger than six states (New Hampshire, Massachusetts, New Jersey, Connecticut, Delaware, and Rhode Island)—and is twice as large as Switzerland. The vastness of this territory has critical implications.

Referencing Figure 13, there are five color-differentiated sets of counties in which DHS’s clinics are grouped. For this report, these groups are referred to as “regions” and given the following labels: Primary, Northeast, West, Southwest, and South. Table 18 (below) defines these regions geographically and displays clinic availability information.

Table 18. Description of Service Regions

	PRIMARY	NORTHEAST	WEST	SOUTHWEST	SOUTH
COUNTIES	Nueces, Kleberg, Jim Wells, Live Oak, Bee, San Patricio, McMullen, Aransas	Refugio, Goliad, DeWitt, Victoria, Calhoun, Gonzales, Matagorda, Lavaca, Jackson	Maverick, Zavala, Dimmit, La Salle, Webb, Duval, Zapata	Jim Hogg, Brooks, Starr, Hidalgo	Kenedy, Willacy, Cameron
SQUARE MILES	7,476	9,030	11,652	4,892	4,006
POPULATION	570,369	240,837	382,088	937,456	463,945
CAP/SQ.MI.	76.29	26.67	32.79	191.63	115.81
# CLINICS/ SPECIALTIES	35	12	16	18	19
CLINICS PER SQ.MI.	1:213	1:752	1:728	1:272	1:211
CLINICS PER POPULATION	1:16,296	1:20,070	1:23,881	1:52,081	1:24,418
# SPECIALTIES OFFERED	24	9	13	11	13
QUICK CARE	Yes	Yes	No	Yes	No

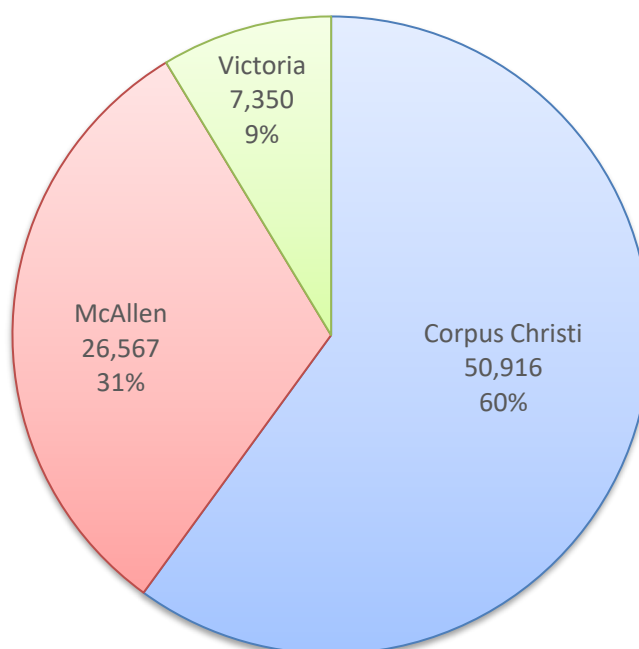
Driscoll Children’s quick care centers are located in Corpus Christi, McAllen, and Victoria. DHS also has several specialty centers located in Brownsville, Corpus Christi, Harlingen, Laredo, McAllen, and Victoria. From September 1, 2018 through August 31, 2021, collectively, there were 337,973 visits to the aforementioned quick care clinics and specialty centers. A quarter of all clinic visits were to a quick care. The three quick care clinics are located in the Primary region (Corpus Christi in Nueces County), the Northeast region (Victoria in Victoria County), and the Southwest region (McAllen in Hidalgo County). Among all clinic visits in the Primary region, 25.4% were to the Corpus Christi quick care. Almost 50% of clinic visits in the Northeast were to the Victoria quick care; in the Southwest region 18.8% of visits were to the McAllen quick care.

Twenty-four of the 25 types of specialty care DHS provides are offered in the Primary region; ten types of specialty care (otolaryngology, dermatology, psychology, behavioral health, CARE, sports medicine, infectious diseases, cardiothoracic surgery, and diabetes services) are offered only in the Primary region. Given the expansiveness of the service area, the distance to specialty centers may be prohibitive for those living furthest away from them.

There are two distinct challenges faced by smaller communities within the West, South, and Southwest regions: low population density and challenges associated with rurality (geographic isolation, lack of public transportation, poor infrastructure, lower educational attainment levels and income levels, and higher rates of unemployment) exacerbate the issue of access to care.

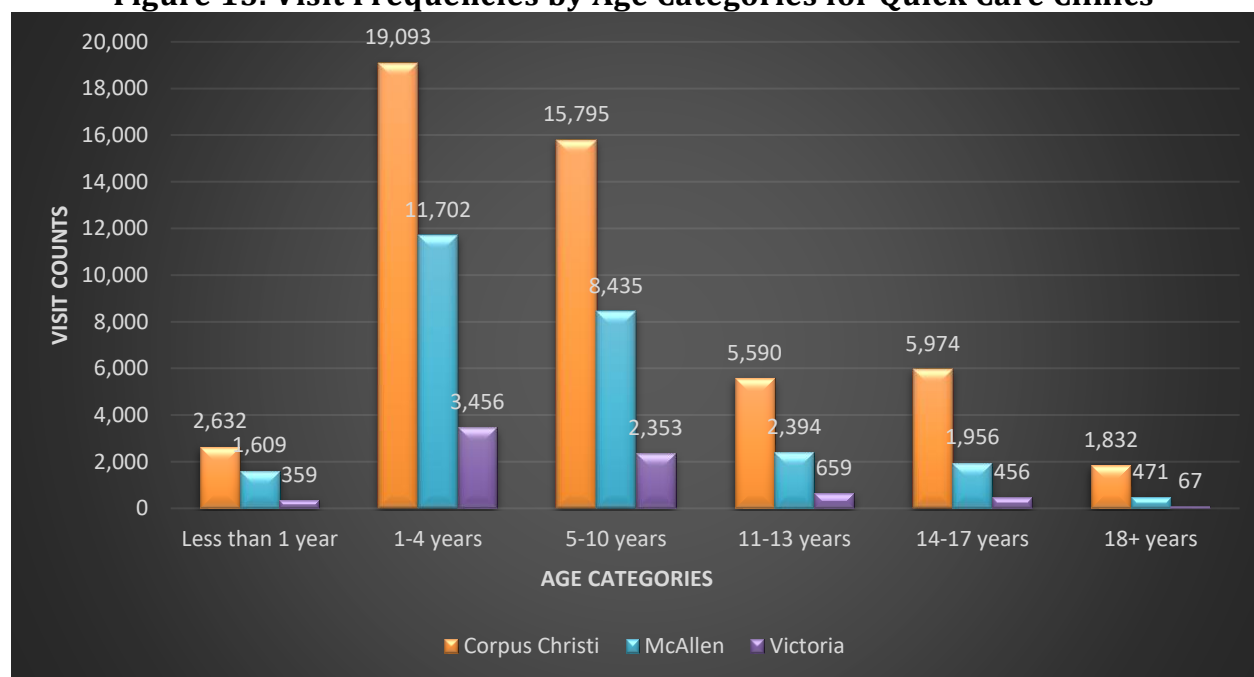
Quick Care

Figure 14. Frequency Distribution of Quick Care Visits by Location



There were 84,833 visits to the three quick care clinics combined. About 60% of those visits were to the Corpus Christi quick care in the Primary region (Figure 14). The remaining 40% of visits were to the McAllen (31%) and Victoria (9%) quick care clinics. In terms of geographical diversity among patients, the Corpus Christi quick care had visits from a far larger range of zip codes (643) compared to the McAllen (170 zip codes) and Victoria (124 zip codes) quick cares (see Maps 2, 5, and 8; Appendix B). There were strong consistencies across the types of top primary diagnoses at quick care clinics. All three clinics shared seven of their ten top primary diagnoses—fever, acute upper respiratory infection, pharyngitis, influenza, otitis media, and noninfective gastroenteritis and colitis. Additionally, vomiting appeared as a top primary diagnosis for two quick care clinics.

Figure 15. Visit Frequencies by Age Categories for Quick Care Clinics



There was a significant difference in the distribution of age categories for the three quick cares (Figure 15). Almost half (47%) of Victoria’s visits were by patients between the ages of one and four, while just over a third (37.5%) of Corpus Christi’s visits were between ages one and 4. The Corpus Christi quick care had a significantly greater percentage (11.7%) of visits by individuals between the ages of 14 and 17 compared to both McAllen (7.4%) and Victoria (6.2%). Similarly, the proportion of visits to the Corpus Christi quick care by patients who were ages 18 or older was 3.6%—double the rate of those visiting the McAllen clinic and four times as many as those visiting the Victoria clinic.

The Corpus Christi quick care was the only one to have a higher proportion of visits by females. Just under half of the visits to the Corpus Christi clinic were by males (49.7%) while just over half of McAllen and Victoria quick care visits were by males (50.2% and 51.3% respectively).

There were significant racial differences among patients of the three quick care clinics. Although the majority of visits to all three clinics were by Hispanics, the proportion of that majority varied significantly. At the McAllen quick care, 97.2% of visits were by Hispanic patients; nearly eight in ten (79%) of the Corpus Christi quick care visits were by Hispanic patients; and less than two-thirds (65.8%) of Victoria quick care visits were by Hispanics. The Victoria clinic had the highest proportion of Non-Hispanic White (26.4%) and Black (5.3%) patient visits, relative to the other quick care clinics.

How visits were paid also varied significantly different among the three clinics. Those visiting the Victoria quick care were more likely to have their visit paid for by commercial (3.6%) or commercial managed care institutions (12.3%) than those visiting the quick care clinics in Corpus Christi (1.9%, 9.2%, respectively) and McAllen (1.6%, 6.8%, respectively). The McAllen quick care had the highest proportion of visits paid for by Medicaid (71.7%) followed by the Corpus Christi (64%) and Victoria (62.7%) clinics.

Specialty Centers

This section focuses on specialty center patients for the entire Driscoll Health System. Specialty centers are located in Brownsville, Corpus Christi, Harlingen, Laredo, McAllen, and Victoria. There were over 250,000 visits to Driscoll Health System's 25 different specialty center types. Table 19 shows the number visits per type of specialty in descending order.

Table 19. Number of Clinic Visits by Specialty Type

Specialty Type	Frequency	Percent
Perinatology	61,874	24.4
Cardiology	28,007	11.1
General Surgery	18,079	7.1
Neurology	16,057	6.3
Gastroenterology	14,642	5.8
Plastic Surgery	13,157	5.2
Hematology & Oncology	12,145	4.8
Otolaryngology	10,835	4.3
Nephrology	10,499	4.1
Pulmonary	10,267	4.1
Urology	10,063	4.0
Endocrinology	9,638	3.8
Dermatology	9,186	3.6
Psychiatry	6,038	2.4
Rheumatology	4,086	1.6
Genetics	4,032	1.6
Behavioral Health	3,451	1.4
Neurosurgery	2,981	1.2
Sports Medicine	2,278	0.9
Neonatology	2,065	0.8
Diabetes Services	1,943	0.8
Psychology	753	0.3
CARE	741	0.3
Infectious Diseases	247	0.1
Cardiothoracic Surgery	76	0.0
Total	253,140	100

Nearly half (48.9%) of all visits to specialty centers were to clinics focusing on four specialties: perinatology (24.4%), cardiology (11.1%), general surgery (7.1%), and neurology (6.3%). Nearly one out of every four visits (24.4%) were to a perinatology specialty center. Perinatology and general surgery specialty centers can be found in each of the five service regions. There is neither a cardiology nor a neurology specialty center located in the South service area. Of the ten specialty centers with the least

visits, seven are in a single region; six of those specialties (sports medicine, Diabetes services, psychology, CARE, infectious diseases, and cardiothoracic surgery) are in the Primary region.

When looking at the visits to specialty centers overall, there were more female visits (58.8%) compared to males (41.2%), but these aggregates conceal significant variation across the specialty types. Table 20 below shows the percent of male and female visits for each specialty center type in descending order from specialty types with the most similarity in the proportion of male and female visits to the specialty types with the most gender imbalance.

Table 20. Frequency Distribution of Gender by Specialty Type

Specialty Type	% Male	% Female	% Difference	Majority
Sports Medicine	49.7	50.3	0.6	Female
Gastroenterology	50.7	49.3	1.4	Male
Plastic Surgery	50.8	49.6	1.6	Male
Cardiology	50.9	49.1	1.8	Male
Nephrology	52.9	47.1	5.8	Male
Neurosurgery	53.2	46.8	6.4	Male
Diabetes Services	45.9	54.1	8.2	Female
Endocrinology	45.4	54.6	9.2	Female
Neurology	54.7	45.3	9.4	Male
CARE	55.1	44.9	10.2	Male
Dermatology	44.2	55.8	11.8	Female
Neonatology	56.4	43.6	12.8	Male
Psychiatry	56.8	43.2	13.6	Male
Hematology & Oncology	57.4	42.6	14.8	Male
Infectious Diseases	57.5	42.5	15.0	Male
Otolaryngology	57.8	42.2	15.6	Male
Cardiothoracic Surgery	42.1	57.9	15.8	Female
Genetics	59.1	40.9	19.8	Male
Pulmonary	61.7	38.3	23.4	Male
Urology	63.2	36.8	26.4	Male
Psychology	65.1	34.9	30.2	Male
General Surgery	66.5	33.5	33.0	Male
Rheumatology	24.6	75.4	50.6	Female
Behavioral Health	76.8	23.2	53.6	Male
Perinatology	0.0	100	100	Female
Overall	41.2	58.8	17.6	Female

Four specialty types (sports medicine, cardiology, gastroenterology, and plastic surgery) have very similar proportions of male/female visits with less than a two-percentage point differential. Perinatology visits (which were 24% of all specialty visits) were exclusively by females. Five other specialty types (diabetes services, endocrinology, dermatology, cardiothoracic surgery, and rheumatology) had dramatically larger proportion of visits by females. For the remaining 15 specialty types, we see

significantly more male visits with there being 30.2% more males than females receiving psychology services, 33% more male visits in general surgery, and over 50% more male visits for behavioral health.

Nearly 83% of all visits were by Hispanics; 13.6% were Non-Hispanic Whites. Black, Asian, Native American, and other individuals comprised the remaining 4.3% of patient visits. Neonatology had the highest proportion (93.2%) of Hispanics, and the CARE specialty type had the lowest (68.8%). Conversely, CARE had the greatest proportion (25%) of Non-Hispanic White visits, followed by diabetes services (24.4%) and sports medicine (24%). Cardiothoracic surgery had the greatest percentage of visits by Black patients (6.6%).

The age distribution of patients varies substantially by specialty type. Some specialties have a high proportion of visits from patients four years old and under including neonatology (100%), cardiothoracic surgery (85.6%), and CARE (73.4%), which was anticipated given the nature of the specialty. Similar trends were observed among other specialty types for different age categories. For instance, the proportion of visits by patients ages 14 and older was greatest for perinatology (100%), sports medicine (61%), and diabetes services (59.4%).

Of the 25 specialty types, only one—sports medicine—did not have a significant relationship between age and the way in which visits were paid. The two youngest age categories (patients less than one and patients one to four years of age) tended to have the highest proportion of visits paid by Medicaid, with that proportion decreasing as the patient age increases. The lowest proportion of visits paid by Medicaid was for patients aged 18 and older. These findings are consistent with literature demonstrating that families with young children are much more likely to be receiving government assistance than families with older children (Presser 2009).

Specialty Centers and Primary Diagnoses

Given the breadth of Driscoll Health System's services and the size of the service area, this health needs assessment focuses on the top specialty types with the most visits (perinatology, cardiology, and general surgery) as well as specialty types related to mental health (psychiatry) and diabetes services.

Perinatology

There were 61,874 perinatology visits from six clinics combined. Each region in the service area has a clinic with perinatology services provided, making it one of the most accessible service types offered. Table 21 (next page) displays the top perinatology diagnoses overall.

Table 21. Top Ten Perinatology Primary Diagnoses

Rank	Description	Frequency	Percent
1	Supervision of elderly multigravida, third trimester	5,889	9.5
2	Supervision of elderly multigravida, second trimester	4,539	7.3
3	Abnormal ultrasonic findings on antenatal screening of mother	3,295	5.3
4	Maternal care for other (suspected) fetal abnormality and damage, not applicable or unspecified	3,221	5.2
5	Gestational diabetes mellitus in pregnancy, unspecified control	3,009	4.9
6	Maternal care for unspecified type scar from previous cesarian delivery	2,228	3.6
7	Supervision of pregnancy with history of preterm labor, third trimester	1,758	2.8
8	Supervision of pregnancy with history of pre-term labor, second trimester	1,652	2.7
9	Unspecified diabetes mellitus in pregnancy third trimester	1,435	2.3
10	Preexisting type 2 diabetes mellitus, in pregnancy, third trimester	1,425	2.3
Total for Top Ten		28,451	46.0
Total All Other Codes		33,423	54.0
Total		61,874	100

The top ten perinatology primary diagnoses are relatively consistent across all regions except for some notable differences. In the Northeast region, “Maternal care for (suspected) chromosomal abnormality in fetus, not applicable or unspecified” is the fifth most prevalent primary diagnosis; this diagnosis does not appear in the top ten for any other region, though it is ranked eleventh for the Primary region. For the West and Southwest regions, “Abnormal biochemical finding in antenatal screening of mother” was ranked fifth (3.4%) and ninth (2.3%) respectively; this diagnosis ranked eleventh (2.3%) for the South region. In the Northeast region, “Endocrine Nutritional and Metabolic diseases, complicating pregnancy, second trimester” is ranked eleventh (2.3%). Diabetes is in the top ten primary diagnoses for three regions, yet the only diabetes services specialty center is in the Primary region.

Cardiology

Overall, there were 28,007 cardiology visits. Just over 38% of those visits were by patients under the age of 5; only 12.6% of visits were by adults. Cardiology specialty centers are located in Corpus Christi, Victoria, McAllen, Rio Grande, Laredo and Eagle Pass. The South region is the only one to not have a cardiology specialty center, yet 865 visits (3.1% of all visits) to cardiology specialty centers came from Cameron (780), Willacy (74), and Kenedy (11) counties. Table 22 below shows whether the top ten primary diagnoses for cardiology patients overall also appeared in the top ten for each of the age categories.

Table 22. Distribution of Top Ten Cardiology Primary Diagnoses by Age Categories

Rank	Code	Description	<1	1-4	5-10	11-13	14-17	18+
1	Q21.1	Atrial septal defect						
2	R01.1	Cardiac murmur, unspecified						
3	Q21.0	Ventricular septal defect						
4	R07.9	Chest Pain						
5	R01.0	Cardiac murmur, benign and innocent						
6	I10	Essential primary hypertension						
7	R55	Syncope and collapse						
8	Z87.74	Personal history of congenital malformations of heart and circulatory system						
9	Q23.1	Congenital insufficiency of aortic value						
10	R00.2	Palpitations						

A shaded cell indicates the diagnosis was present in that age category's top ten secondary diagnoses

Half of the top ten diagnoses among patients from all age categories were related to issues present at birth. Chest pain and palpitations first appeared in the top ten primary diagnoses for patients ages 5-10. Essential primary hypertension ranked 6th among the top ten diagnoses overall and was ranked seventh among 11–13-year-olds. For 14–17-year-olds, this was the second most frequent primary diagnosis; it ranked first for those 18 and older. Unlike congenital issues, hypertension is often due to obesity, family history, and an unhealthy diet. This condition can be reversible with medications and lifestyle changes. Among cardiology visits for those 18 and older, three of the top ten primary diagnoses were related to gestational diabetes.

General Surgery

General surgery is a specialty type available in all five regions. Patients utilizing these services are from more than 65 Texas counties and beyond. Overall, there were 18,079 general surgery visits.

Table 23. Top Ten Primary Diagnoses for General Surgery

Rank	Description	Frequency	Percent
1	Phimosis	1,555	8.6
2	Other specified postprocedural states	886	4.9
3	Acquired absence of other specified parts of digestive tract	560	3.1
4	Other disorders of the prepuce	452	2.5
5	Morbid (severe) obesity due to excess calories	434	2.4
6	Retractile testis	434	2.4
7	Pilonidal cyst without abscess	416	2.3
8	Unilateral inguinal hernia, without obstruction or gangrene, not specified as recurrent	380	2.1
9	Umbilical hernia without obstruction or gangrene	380	2.1
10	Unspecified undescended testicle, unilateral	362	2.0
Total for Top Ten		5,858	32.4
Total All Other Codes		12,221	67.6
Total		18,079	100

Table 23 above shows the top ten primary diagnoses for general surgery overall. The clearly gendered nature of many of the diagnoses (e.g., phimosis, retractile testis, undescended testicle) prompted closer examination of the procedures including sorting the data by both gender and age categories. Table 24 below displays the top five primary diagnoses for male visits and the top five primary diagnoses for female visits in each age category.

Table 24. Top Five General Surgery Primary Diagnoses by Gender for Patients <1 Year Old

Rank	Description	% Male Visits	Rank	Description	% Female Visits
1	Phimosis	37.0	1	Umbilical hernia without obstruction or gangrene	8.3
2	Other specified postprocedural states	10.4	2	Gastrostomy status	6.8
3	Unilateral inguinal hernia, without obstruction or gangrene, not specified as recurrent	4.2	3	Congenital absence, atresia, and stenosis of anus without fistula	5.0
4	Other disorders of prepuce	3.9	4	Gastroschisis	3.5
5	Congenital absence, atresia, and stenosis of anus without fistula	2.7	5	Umbilical granuloma	3.3
Cumulative % Top Five Diagnoses		58.3	Cumulative % Top Five Diagnoses		26.8

A total of 2,529 general surgery visits were recorded for patients less than one year of age. Visits were dominated by male infants (84.2%); females comprised less than 15% of general surgery visits. More than one-third of general surgery visits by infant male patients are for phimosis. Two of the top five procedures for male infants (which account for more than 40% of their visits) are related to abnormalities associated with the penis. Congenital absence, atresia, and stenosis of anus without fistula is a top diagnosis for both male and female infants. Both male and female infants have a hernia in their top five primary diagnoses. Interestingly, the top five primary diagnoses for male infants account for nearly 60% of all this group's general surgery visits while the top five primary diagnoses for female infants comprise less than 26.8% of this group's visits to general surgery. Female infants have more varied reasons for needing general surgery visits.

Table 25. Top Five General Surgery Primary Diagnoses by Gender for Patients 1-4 Years Old

Rank	Description	% Male Visits	Rank	Description	% Female Visits
1	Phimosis	11.7	1	Umbilical hernia without obstruction or gangrene	8.3
2	Other specified postprocedural states	7.6	2	Feeding difficulties	6.8
3	Retractile testis	5.2	3	Gastrostomy status	5.0
4	Other disorders of prepuce	4.6	4	Congenital absence, atresia, and stenosis of anus without fistula	3.5
5	Unspecified undescended testicle, unilateral	4.1	5	Other specified noninflammatory disorders of vulva and perineum	3.3
Cumulative % Top Five Diagnoses		35.5	Cumulative % Top Five Diagnoses		26.0

For boys, phimosis and disorders of the prepuce continued to rank among the top five diagnoses. Two new top diagnoses for boys—retractile testis and undescended testicle—are both related to the testes. Female visits also show some consistency with umbilical hernia; gastrostomy; and congenital absence, atresia, and stenosis of the anus without fistula still ranked among the top five diagnoses. Feeding difficulties is ranked second and other specified noninflammatory disorders of the vulva and perineum is ranked fifth. For male and female toddlers (but especially for males) between the ages of one and four, issues related to the reproductive system led those children to be general surgery patients.

Ages 5-10 Years Old

More than 70% of all visits by patients ages 5-10 years old were by males. The top five primary diagnoses remain unchanged from those for males ages 1-4 years old though the rank order changed; the proportion of visits accounted for by the top five diagnoses was also very similar between the two age categories. For visits by females ages 5-10 years old, umbilical hernia without obstruction or gangrene is the only recurring top diagnosis (ranked third; 3.3% of diagnoses). Acquired absence of other specified parts of digestive tract is the top diagnosis (7.1%). Precocious puberty is ranked second

(3.3%), localized swelling, mass and lump, neck, is fourth (2.5%), and fifth is fistula of stomach and duodenum (2.5%).

Ages 11-13 Years Old

Males continue to have disproportionately higher visit rates though their proportion is smaller than the previous cohorts (61.1% of visits). For males, four of the top five primary diagnoses persist. The top diagnoses for males in this age cohort is acquired absence of other specified parts of digestive tract (7.9%). While this diagnosis was not among the top five diagnoses for the previous age cohorts, it was ranked sixth among males ages 5-10 years old. For females, all five top diagnoses are different from the previous age group. Like their male counterpart, acquired absence of other specified parts of digestive tract (7.0%) is their top diagnosis. Pilonidal cyst without abscess is second (4.6%), morbid obesity due to excess calories is third (3.0%), hidradenitis suppurativa is fourth (2.8%), and neoplasm of uncertain behavior of skin is fifth (2.1%). Two of these top five diagnoses are issues related to the epidermis.

Ages 14-17 Years Old

This is the first age cohort in which female visits exceeded male visits (1,741 compared to 1,716). Not only are their numbers similar, four of their top five diagnoses are also the same. Pilonidal cyst without abscess is ranked first for both (6.6% for males and 9.9% for females). Acquired absence of other specified parts of digestive tract is ranked second for males (6%) and fourth for females (5.2%). Morbid obesity due to excess calories, is third for males (4.7%) and second for females (8.2%). The fifth diagnoses are different: other specified postprocedural states (4%) for males; bariatric surgery status (4.1%) for females.

Ages 18+ Years Old

Most visits by adult patients were by females (56.4%). Males and females shared four of the top five diagnoses, three of which have been observed in the top diagnoses for younger age groups. Those recurring top diagnoses were bariatric surgery status (ranked first for both males and females), morbid obesity due to excess calories, and pilonidal cyst without abscess. Other specified disorders of the skin and subcutaneous tissue was ranked third for both male and female visits. Scrotal varices was ranked fifth for males while maternal care for other (suspected) fetal abnormality and damage was fourth for females. The top five diagnoses for adult males comprise only 28.8% of all visits for this cohort while the top five visits for adult females constitute 38.6% of all their visits.

Sub analysis of general surgery visits by age cohort and gender revealed male visits dominate general surgery in children's early years. Parity was reached between the genders in the 14-to-17-years-old cohort; then, in the 18 year and older group, female visits exceeded male visits substantially. It is remarkable how consistent the dominant issues were for males from the youngest cohort to patients ages 14-17 years old. Many of the issues that brought male patients (from infancy to adolescence) to general surgery were related to the male reproductive system. Females did not have the same type of consistency; while some dominant issues persisted from one cohort to another, there was substantial variation overall. Diagnoses ranged from issues pertaining to the female reproductive system, their

digestive system, skin conditions, and obesity among others. Only in the cohort of patients ages 14-17 years do we see similarities among the top issues bringing males and females to visit general surgery.

Psychiatry

There were 6,038 psychiatry visits overall. Psychiatry specialty centers are only in Corpus Christi and Laredo. Just over 78% of psychiatry visits were by patients living within the Primary region (where the Corpus Christi specialty center is located), and 11.5% of visits were by people from the West region (where the Laredo specialty center is located). A Chi-square test comparing pre and post COVID-19 psychiatry visits did not show a significant difference in the visits between the two periods of time. Just over a quarter (25.7%) of all psychiatry visits were made by children ages 5-10 years old, and just under a quarter (24.9%) of visits were by adolescents ages 11-13 years old. The largest proportion (43.5%) of psychiatry visits were by patients between the ages of 14 and 17 years old.

Table 26. Top Five Psychiatry Primary Diagnoses

Rank	Code	Description
1	F90.2	Attention-deficit hyperactivity disorder, combined type
2	F41.1	Generalized anxiety disorder
3	F33.2	Major depressive disorder, recurrent severe without psychotic features
4	F84.0	Autistic disorder
5	F33.1	Major depressive disorder, recurrent moderate

Attention-deficit hyperactivity disorder was the top diagnosis for visits by males (64.1%) and females (49.5%) in the 5-10 years old age category; for males (62%) and females (27.7%) between the ages of 11 and 13 years old; and for males (44.3%) between the ages of 14 and 17 years old. Though this was not the top diagnosis for females between 14 and 17 years old, it was ranked third (11.7%).

Generalized anxiety disorder ranked first for females ages 14-17 years old (18.5%). It was the second most frequent diagnosis for females ages 5-10 years (7.2%); it also ranked second for visits by males ages 14-17 years old. Generalized anxiety ranked third for visits by both males and females ages 11-13 years old.

Major depressive disorders ranked high for adolescent females. Major depressive disorder, recurrent severe without psychotic features ranked second for females ages 11-13 years old (12.8%) and for females between ages 14 and 17 (17%). Major depressive disorder, recurrent moderate ranked fourth for females ages 14-17 years old (8.1%). These two diagnoses were second and third for visits by adult females, comprising 18.7% of all psychiatry visits for this group.

While depressive disorders ranked particularly high for females, autistic disorder ranked high for males. Autistic disorder was ranked second for males between the ages of one and four (22.6%) and males between the ages of five and ten (6.9%). It ranked third for males between the ages of 11 and 13 (5.5%) and those between the ages 14 and 17 (5.4%).

Diabetes Services

There were 1,943 visits for diabetes services. While the diabetes services specialty center is located in the Primary region (Corpus Christi), patients to the center came from more than 24 counties. Table 27 below shows the top five primary diagnoses for visits to the diabetes specialty center.

Table 27. Top Five Diabetes Services Primary Diagnoses

Rank	Code	Description	Percent
1	E10.65	Type 1 diabetes mellitus with hyperglycemia	37.2
2	E10.9	Type 1 diabetes mellitus without complications	20.5
3	E11.9	Type 2 diabetes without complications	15.5
4	E11.65	Type 2 diabetes mellitus with hypoglycemia without coma	11.7
5	E10.649	Type 1 diabetes mellitus with hypoglycemia without coma	1.3
% Total Diabetes Services Visits			86.3

Of the 290 visits by patients ages 5-10 years old, over 80% of primary diagnoses were related to Type 1 diabetes mellitus (T1DM). Of the 467 visits by patients ages 11-13 years old, almost 62% of the visits were by females. For visits by both males and females in this age category, the top two primary diagnoses remained T1DM with hyperglycemia and T1DM without complications, but their proportion of primary diagnoses dropped to just over 62%. The next two diagnoses comprised nearly a quarter of primary diagnoses and were related to Type 2 diabetes (T2DM)—a form of diabetes that is associated with lifestyle. There were 825 diabetes services visits by teenagers between the ages of 14 and 17. Males accounted for 48.3% of those visits; females, 51.7%. While T1DM with hyperglycemia was still the top ranked primary diagnosis for this cohort, it only constituted 35% of the males' primary diagnoses and 39.9% of females' diagnoses. For both male and female visits in this age group, diagnoses related to T2DM comprised approximately one-third of all visits. The percentage of diabetes service visits related to T2DM for those ages 18 and over is similar to those for visit by patients ages 14-17 years old. While many focus on lifestyle choices as a cause of diabetes, data from the diabetes services specialty center demonstrates that T1DM constitutes a greater portion of the patient population. According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), scientist suspect the causes of T1DM are related to environmental and genetic factors.

Summative Statement

Driscoll Health System's expansive scope of specialty centers poses a challenge for issuing a declarative, summative statement that captures the needs, complexity, and diversity of experiences and resources across the communities DHS serves. Data show that DHS's quick care clinics received patients for episodic ailments that needed attention. There are only three quick care clinics across 33 counties and over more than 33,000 square miles; and those clinics are not necessarily in the most populated regions.

The South and Southwest regions combined have more than 1.2 million people, and only one quick care clinic is located in those two adjacent service areas. In the West, the most sparsely populated service area, there is no quick care clinic. Given the distance patients must travel for care, medical assistance at a quick care clinic may not be sought unless an ailment appears to be a crisis. This also applies to specialty centers. The Primary region is the only location for many specialty centers. The data show that many people travel far distances to get medical attention for their children. Distance is clearly a barrier to treatment for many; the magnitude of that barrier is compounded for families with limited resources. Additionally, the diversity of specialty centers in the Primary region is unmatched by any of the other regions. One challenge that must be considered regarding access to care is that many people living in the West, Southwest, and South regions will also have to cross border checkpoints to get to many of the specialty centers, which can be a barrier to access for children who may come from families that have mixed political statuses. This may be a consideration that affects some families' decisions when it comes to seeking medical care.

COVID-19 Impacts

On March 11, 2020, the World Health Organization declared COVID-19 a pandemic. To examine the impact COVID-19 had on Driscoll Health System and the communities it serves, separate analyses were performed by defining data as either pre COVID-19 (from September 1, 2018 through March 10, 2020) or post COVID-19 (from March 11, 2020 through August 31, 2021) and comparing findings from these periods.

It is important to note that the creation and systematic usage of COVID-19 related diagnosis codes does not necessarily coincide with the March 10th pandemic declaration. As such, capturing COVID-19 impacts requires closely examining changes across certain diagnoses (e.g., spikes or dips in respiratory-related illness diagnoses inconsistent with prior years). At Driscoll Children's Hospital, COVID-19 was assigned as the primary diagnosis for 1,439 visits. Over 92% of these diagnoses were for ED visits; thus, much of the following analyses focus on the ED.

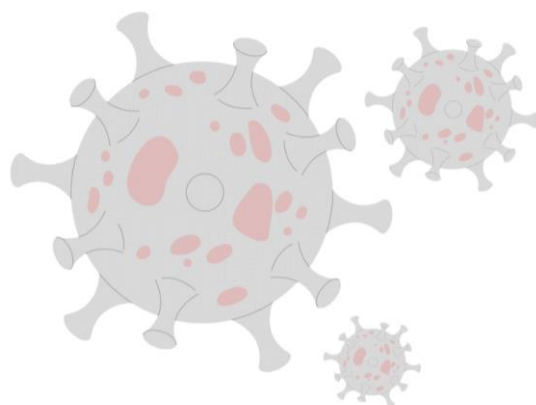
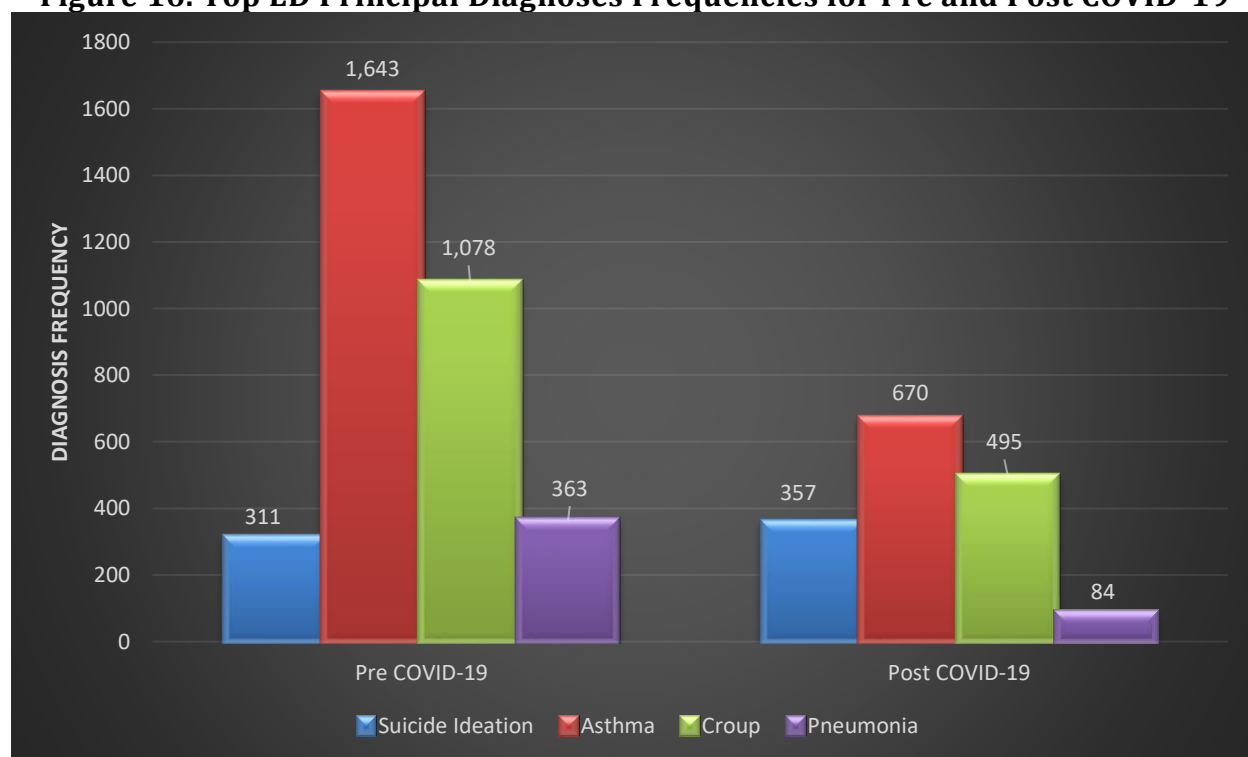


Table 28. ED Visit Frequencies for Pre and Post COVID-19

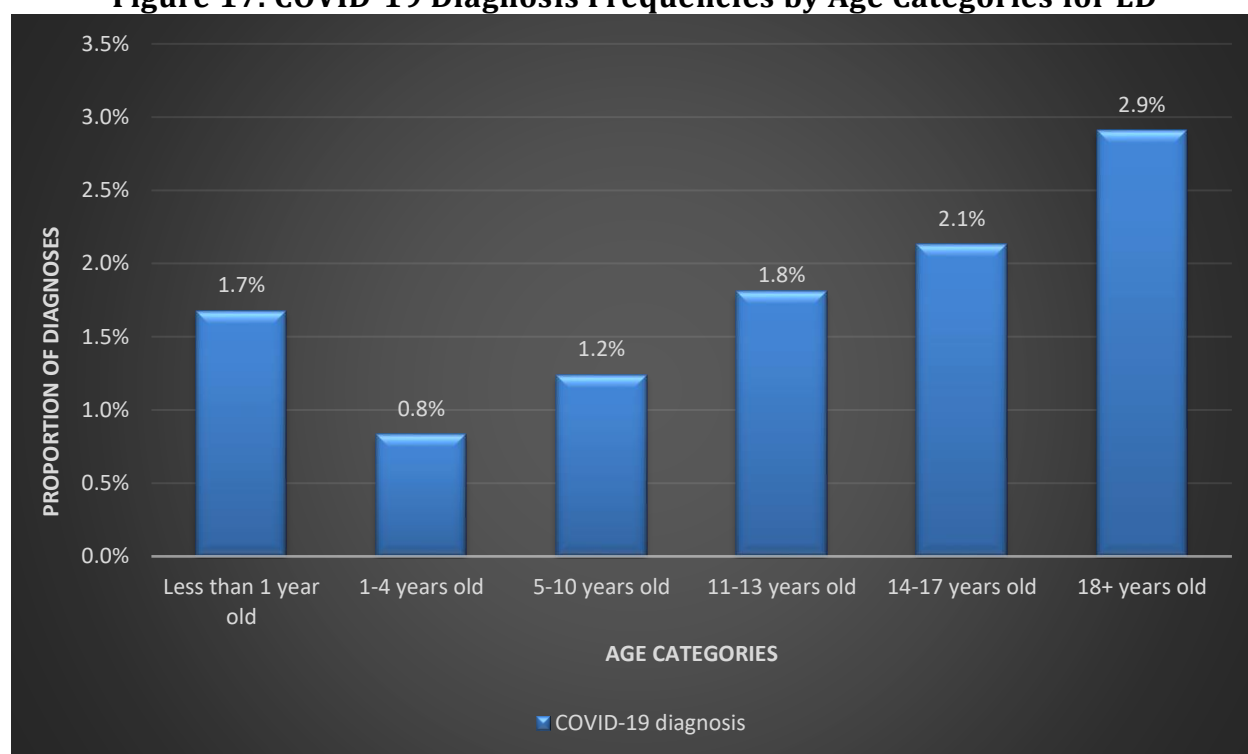
Daily Visits	Pre COVID-19	Post COVID-19
Range	60-198	22-168
Median	120	81
Mean	115.7	73.1

COVID-19 had measurable impacts on emergency department usage at Driscoll Children’s Hospital. Pre COVID-19, the mean daily visits to the ED was 115.7 with a range of 60-198 visits per day. By contrast, the mean daily visits to the ED dropped by 36.8% to 73.1 for the post COVID-19 period; the range for this period was 22-168 daily visits.

Figure 16. Top ED Principal Diagnoses Frequencies for Pre and Post COVID-19

There were several significant differences observed between the pre and post COVID-19 periods including dramatic shifts in top ED diagnoses frequencies (Figure 16). Suicide ideation diagnoses increased by 6.9%. Conversely, asthma, croup, and pneumonia diagnoses decreased by 42.1%, 37.1%, and 62.4% respectively.

Figure 17. COVID-19 Diagnosis Frequencies by Age Categories for ED



The age groups with the highest proportion of COVID-19 diagnoses were 11-13 years old, 14-17 years old, and 18 years and older (Figure 17). Apart from patients less than one year old, the data showed an increasing proportion of COVID-19 diagnoses as the age group increased.

How Healthy Are We?

The University of Wisconsin Public Health Institute and the Robert Wood Johnson Foundation collaborated to produce the County Health Ranking and Roadmaps (CHR&R) program, which rank the health of nearly every county in the country. There are two primary rankings: health outcomes and health factors. These data can be used to understand relative health of communities as well as the conditions that can have an impact of health outcomes. The goal of CHR&R is to have local communities use the data to engender support for initiatives that create healthier communities and address disparities in both health outcomes and environmental conditions that contribute to the disparities observed.

In examining the differences in health outcomes, we can get a sense of the relative health of the communities DHS serves. The data presented in Table 29 (next page) are median values for the counties included in each area. It is important to note the CHR&R tend to focus on measures related to adults whereas DHS's patient population is overwhelmingly children. What follows below are a series of tables

that provide an overview of important characteristics within the counties Driscoll Health System serves. This portion of the health needs assessment concludes with a report of correlations that show the nature of the relationships between some key indicators and the percent of Hispanic children living in poverty within counties DHS serves. Unlike adults, children do not have power, authority, or resources to make choices for themselves. They live their lives embedded in families and communities that have a direct impact their life chances.

Table 29. 2021 Health Outcomes for Nation, State, and DHS Counties

Measure	Description	US Overall	Texas Overall	All DHS Counties	DHS Primary	DHS Secondary
Premature Death	Years of potential life lost before age 75 per 100,000	6,900	6,620	8,038	9,019	7,946
Poor/Fair Health	Percent of adults reporting poor or fair health	17	18.7	28.9	25.1	33.4
Poor Physical Health Days	Average # of Physically unhealthy days	3.7	3.8	4.7	4.5	4.9
Poor Mental Health Days	Average # of Poor Mental Health Days	4.1	3.8	4.5	4.4	4.6
Low Birthweight	% of live births with weight <2500 grams	8	8.4	8.3	8.9	8.2

For nearly every health outcome presented in the table, counties within the Driscoll service areas have poorer outcomes than Texas and the United States. The DHS premature death value (8,038) is 21.4% higher than Texas’s overall premature death value (6,620), and DHS’s primary service area premature death value (9,019) is 36.2% higher than Texas’s overall value (6,620). DHS counties also have a greater proportion of adults reporting poor/fair health. Nationally, 17% of adults report having poor or fair health; for Texas, that percentage is 18.7%. For DHS’s entire service area, 28.9% of adults report being in poor/fair health. The rate for the secondary service area is worse with 33.4% reporting fair/poor health—nearly double the rate for the United States. When looking at the average number of physically unhealthy days and the average number of poor mental health days, again, the outcomes for the counties DHS serves are worse. In fact, the only measure where DHS counties are like the state and national average are the percent of low birthweight babies. Overall, DHS counties have poorer health outcomes than the state’s and nation’s averages.

What Factors Contributed to These Outcomes?

Health outcomes are affected by a range of individual, group, and community-level attributes. The University of Wisconsin Population Health Institute (PHI) highlight health behaviors, clinical care, social/economic indicators, and the physical environment as having a significant impact on the health outcomes of individuals and communities. Using information about these indicators, PHI developed a

Health Factor ranking for nearly every county in the country. Texas has 254 counties, but eleven of their counties are unranked due to their small population size and lack of information. Thus, the total number of ranked counties in Texas is 243. Two of the 31 counties Driscoll Health System serves are among the unranked. The overall Health Factors of the ranked counties DHS serves ranged from a high of 55 (Goliad) to a low of 243 (Starr). Seven of the ten counties with the lowest health factor rankings are counties served by DHS (Starr, 243, Willacy 242, Maverick 240, Zavala 239, Brooks 238, Zapata 236, and Hidalgo 234). Notably, four counties DHS serves are in the poorest 10% of health outcomes, and only one county, Lavaca (20), is ranked among the top ten percent of counties in health outcomes. In 2019, nearly half of the counties DHS served were among the ten percent of Texas counties with the worst health outcomes score. In 2021, nearly two-thirds (20 out of 31) of the counties DHS serves fell into the middle range (25-75 percentile) of health outcomes in the state of Texas.

Health Behaviors

In a highly individualistic society, individual-level attributes tend to garner the most attention when trying to understand group differences. This holds true for health outcomes. Table 30 shows a comparison of health behaviors for the nation, state, and counties served by DHS.

Table 30. 2021 Measures for Health Behaviors for Nation, State, and DHS Counties

Measure	Description	# of Counties	US Overall	Texas Overall	DHS Counties	DHS Primary	DHS Secondary
Adult Smoking	% of adults who are current smokers	31	17%	14.2%	18.3 %	17.3%	18.6%
Adult Obesity	% of adults who report BMI \geq 30	31	30%	31.4%	32.2%	33.5%	31.2%
Physical Inactivity	% of adults aged 20+ who report no leisure time for physical activity	31	23%	23.2%	25.1%	25.0%	25.5%
Excessive Drinking	% of adults who report binge or heavy drinking	31	19%	19.0%	17.7%	18.7%	15.9%
Sexually Transmitted Infections	# of newly diagnosed chlamydia cases per 100,000 pop	29	539.9	517.6	395.5	648.9	389.3
Teen Birth Rates	# of birth per 1,000 females age 15-19	29	21	31.4	47.4	36.8	48.8

These data demonstrate that the counties outside the primary services areas have median health behaviors that look marginally “better” than the median health behaviors values for those counties within the primary service area except for the teen birth rate. While the median teen birth rate is lower for the primary county area, counties outside the primary area are much higher (36.8 vs 48.8). The sexually transmitted infection rate (the number of newly diagnosed chlamydia cases per 1000,000 population) is substantially higher within the primary service counties compared to those outside (648.9 verses 389.3, respectively). The median values for counties inside and outside the primary service areas demonstrated a similar proportion of adults ages 20 and over had no leisure time for physical activity.

Clinical Care

In addition to individual behaviors, access to clinical care has a substantive impact on keeping a community and its members healthy. It is among these factors that major disparities can be seen among the counties DHS serves and the state and national averages. Table 31 presents a comparison of indicators of clinical care for the nation, state, and DHS service areas.

Table 31. 2021 Measures for Clinic Care for Nation, Texas, and DHS Counties

Measure	Description	# of Counties	US Overall	TX Overall	DHS Counties	DHS Primary	DHS Secondary
Uninsured	% of population under the age of 65 without health insurance	31	10	20	20.1	19.7	20.3
Primary Care Physicians	Ratio of population to primary care physicians	27	1320:1	1640:1	2644:1	3289.5:1	2611:1
Dentists	Ratio of population to dentists	29	1400:1	1680:1	3375:1	2681:1	3650:1
Mental Health Providers	Ratio of population to mental health providers	29	380:1	830:1	2943:1	1641:1	3375:1
Preventable Hospital Stays	# of hospital stays for ambulatory-care sensitive conditions per 1,000 Medicare enrollees	29	4236	4793	5681	4504	5970
Flu Vaccines	% of Medicare enrollees who receive an influenza vaccine	31	48%	46%	38%	37.5%	38%
Mammography Screening	% of Medicare enrollees ages 65-74 that receive mammography screening	30	42%	37%	31%	34%	29.5%

The uninsured rate for the counties DHS serves is nearly twice the national rate. The United States has an uninsured rate of 10% while the median uninsured rate for the counties DHS serves is 20.1%. The disparities with professional health care providers are even more problematic. For DHS's entire service area, the median ratio of population to primary care physicians is 61% greater than the Texas ratio, but the ratio for DHS primary services area is double the Texas ratio. For dentists, the median ratio of DHS's entire service area is more than two times Texas's ratio. For mental health service providers, it is even worse. While the ratio for Texas is one medical health professional for every 830 people, that ratio is 2,943:1 for the entire DHS service area. There are three times more people per mental health care professional in DHS's entire service area. The disparity is not quite as pronounced for the primary service area with one health care professional for every 1,641 people. In the secondary service area, the ratio is worse. The ratio of population per mental health providers is 1:3,375— 406.7% of the Texas ratio. When people within DHS's service area are in need of health care professionals (whether they are primary care physicians, dentists, or mental health providers), they have less access to health care.

Social and Economic Factors

Socioeconomic factors can have a profound impact not just on an individual but also on the community within which an individual lives. The more resources an individual or household has, the greater the

ability for that individual/household to act affirmatively on its behalf. When a community has high concentrations of poverty, low income, and low educational attainment, those communities tend to have less resources that benefit the entire community. Both the public and private sectors are compromised when a community lacks economic diversity and resources. First, public institutions are not able to pool resources (e.g., fees and taxes) to adequately fund and maintain their public institutions like schools, hospitals, parks, libraries, and infrastructure. Second, in economically distressed communities, the members of the community do not have enough disposable income to spend in the private sector limiting the growth and investment in the private sector. When community members lack social capital in the form of a well-educated population, the type of investments directed at those communities is limited and narrow in scope. Table 32 compares the social and economic factors of the counties DHS services with the state and national characteristics.

Table 32. 2021 Measures for Social and Economic Factors for Nation, Texas, and DHS Counties

Measure	Description	# of Counties	US Overall	TX Overall	DHS Counties	DHS Primary	DHS Secondary
High School Graduation	% of 9th grade cohort that graduates in 4 years	31	88	83.6	75.4	79.2	68.5
Some College	% of adults ages 25-44 with some post-secondary education	31	66	62.0	44.5	46.4	44.5
Child Poverty	% of children under the age of 18 in poverty	31	17	19.2	27.8	25.5	28.7
Income Inequality	Ratio of household income at the 80 th percentile to income at the 20 th percentile	31	4.9	4.8	5.3	5.3	5.3
Unemployment Rate	% of population age 16 and older unemployed but seeking work	31	3.7	3.5	4.3	4.3	3.7
Children in Single Parent Household	% of children that live in a household headed by a single parent	31	26	26.3	31.2	28.6	31.6
Social Associations	# of membership associations per 10,000 ppl	31	9.3	7.5	5.5	6.9	5.0
Violent Crime rates	# of violent crime offenses per 100,000 pop	31	386	420.3	320.1	418.9	312.4

Median high school graduation rates for DHS areas (68.5% for the secondary service area, 79.2% for the primary service area) are below the state (83.6%) and national (88%) rates. The proportion of adults with some college is also about a third lower than the state and national percentages. Even more problematic are the median child poverty rates for the DHS counties relative to the state and national rates. The median child poverty rate for DHS counties is 25.5% for the primary service area and 28.7% for the secondary service area compared to 19.2% for Texas and 17% for the U.S. The median income inequality ratio is also substantially higher for all the counties served by DHS. While employment rates are quite low, they do not capture the proportion of people who wish to be working more hours but are unable to find such work; these individuals are far more likely to live in households with incomes below the poverty line (Dalaker 2021). This is particularly problematic when one considers that most people

access health care through their employer, and part-time employees are less likely to have access to health insurance and to participate in health insurance plans if/when health plans are available via their workplace. (DeVaney and Anong 2007). The educational attainment and unemployment rate of adults in addition to income inequality in a community are particularly important for children's life chances, as children have neither the autonomy nor the ability to directly shape their material conditions.

Physical Environment

The quality of the air we breathe, the water we drink, and the housing in which we shelter creates a foundation upon which all other quality of life indicators are built. The quality of our physical environment can have a profound impact on an entire community's health and well-being. The size of particulates in the air can cause health problems. According to the EPA small particles, those less than 10 micrometers in diameter, pose the greatest problems, affecting both the lungs and the heart. Studies have demonstrated that exposure to particulates can lead to premature death, cardiovascular and respiratory issues. Moreover, people with heart/lung diseases, as well as children and elders, are vulnerable to the adverse impacts of particulates in the air (EPA 2018). As with clean air, access to clean water is fundamental to community health. The Centers for Disease Control and Prevention (CDC) reports that "approximately 19.5 million Americans fall ill every year from pathogens as a result of contaminated drinking water from public water systems" (2017). As with polluted air, children, seniors, and the ill are vulnerable to contaminants in drinking water. Quality of housing and commute issues also have a fundamental impact on our quality of life, as these are the spaces within which we engage in social reproduction—the work necessary to be productive workers and contributing citizens. If our shelter conditions are stress-laden environments, those conditions can adversely impact people's ability to engage in other spheres within the community. Long commute times to work also compromise adults' abilities to participate in the growth, development, and support of youth. The data presented in Table 33 show DHS's counties' physical environment attributes, relative to Texas and the United States.

Table 33. 2021 Physical Environment Conditions for Nation, Texas, and DHS Counties

Measure	Description	# of Counties	US Overall	TX Overall	DHS Counties	DHS Primary	DHS Secondary
Air Pollution	Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5)	23	7.2	7.3	7.5	7.6	7.5
Drinking Water Violations	Indicator of presence of health-related water violations. % = proportion of counties with presence of water violations	31	N/A	60.4%	64.5%	50.0%	69.6%
Severe Housing Problems	% of households with overcrowding, high housing costs, or lack of kitchen or plumbing facilities	23	18	17.4	18.2	16.4	18.7
Food Environment Index	Index of factors that contribute to healthy food environment (0-10)	23	7.8	5.9	6.0	6.6	5.7
Access to Exercise Opportunity	% of population with adequate access to physical activity locations	23	84	80.5	50.9	49.4	57.7
Driving Alone	% of workforce that drives alone to work	23	76	80.5	81.6	81.9	81.6
Long Work Commute	Among workers who commute in their car alone, % community >30 minutes	23	37	38.9	27.7	29.7	25.8

Note: Missing values are common in individual measures. Not all counties, especially smaller counties, will compile data on each of the over thirty measures used to calculate the ranking score or will have a sample size too small for any meaningful comparison. PHI substitutes the state average for missing values in the calculation of rankings; this is a standard, accepted technique for the treatment of missing data.

The average daily density of air pollution in DHS counties is very similar to the state and national averages. The table also shows that, like the rest of Texas, a clear majority of DHS counties experienced health-related water violations.

The quality of the socially constructed environment also impacts people's quality of life. The proportion of DHS counties experiencing severe housing problems is similar to those of Texas overall. Nearly 20% of households in DHS counties experience severe housing problems. Compounding this issue is access to healthy food for communities within the DHS service area. The Food Environment Index score ranges from 0-10, with a zero indicating the worst healthy food environment and a ten indicating the best healthy food environment. The median value for the counties outside of the primary service area was a score of 7.3, which is marginally lower than the score for the primary service area which is 7.45. Five DHS counties, though, have food index scores below five, and 11 counties have food index scores ranging from five to six, suggesting that a substantial portion of the counties' residents' access to food is mediocre. The data also show that roughly a quarter of residents in DHS counties have long commutes (more than 30 minutes) alone.

While DHS counties' physical environments appear similar to state and national attributes, social and economic factors and accessibility to clinic care appear much more problematic for health outcomes. The social and economic characteristics within the counties DHS serves suggest that substantial portions of the populations have such limited resources that their capacity to make choices to enhance their life

chances is constrained by their material conditions. When coupling those limited economic and social resources with a lack of access to health care and health professionals, it becomes apparent that the communities' health outcomes—in general and for the children living in those communities—are compromised, even in the face of good-faith efforts by medical professionals and administrators.

Hispanic Children Living in Poverty

The overwhelming majority of patients Driscoll Health System serves are Hispanic. Statistical tests were run to see if associations existed between the variable “Percent Hispanic Children Living in Poverty” with Health Factors using the data from the 31 counties the Driscoll Hospital System services. The table of correlations is presented below. A Pearson r correlation ranges from -1 to +1, ¹

Table 34. Pearson r % Hispanic Children Living in Poverty with CHR&R Data

Health Factor	Pearson Correlation	p-value
% Reporting poor/fair health (n=25)	.746	<.001
Average number of poor health days (n=25)	.821	<.001
% Completed high school	-.669	<.001
% Unemployment	.491	.01
Income ratio	.545	.004
% Experiencing severe housing problems	.587	.002
Food environment index	-.697	<.001
Social associations	-.699	<.001

Table 34 presents statistically significant associations between the percent of children within a county living in households below the poverty line and county characteristics related to adults' health, economic characteristics, and community characteristics. The percent of Hispanic children living in poverty strongly correlates with the percent of adults reporting they were in poor/fair health ($r=.746$, $p<.001$) and with the average number of days adults experience poor health days ($r=.821$, $p<.001$). As the percent of Hispanic children living in poverty increases, more adults report having poor/fair health and the number of days adults report being in poor physical health increases. According to these correlations, there is an association with the prevalence of poor children and the prevalence of adults experiencing poor health. This is not to say that poor children cause poor adult health; the Pearson r shows a strong association between those attributes in a community but does not imply causation.

¹ When a perfect correlation exists (when knowing one value for one variable allows one to perfectly predict the value of a second variable, the Pearson r will be either +1 or -1. Perfect correlations do not exist in the social sciences. Weak correlations will have an absolute value $<.3$. Moderate correlations will be from $.3$ to $.6$. Strong correlations tend to be greater than $.6$. We determine if the relationship is real or due to chance by looking at p-values. In the social sciences, a significant p-value is $\leq .05$, which means there is a five percent chance or less that the association observed is not real, but attributable to chance. A p-value of $<.001$ means there is less than a one in 1,000 chance that the association observed is not real.

The percent of Hispanic children living in poverty is also significantly and moderately associated with the percent of adults having completed high school in a county ($-.669$, $p<.001$), with the unemployment rate in a county ($.491$, $p=.01$), and with the degree of income inequality ($.545$, $p=.004$). As the percent of Hispanic children living in poverty increases, the proportion of adults in the county who completed high school is lower, the unemployment rate tends to be higher, and the income inequality in the community is greater.

Finally, the Pearson correlation shows that there is a significant association between the percent of Hispanic children living in poverty and percent of households experiencing severe housing problems ($.587$, $p=.002$), the community's food environment index ($-.697$, $p<.001$), and social associations ($-.699$, $p<.001$). As the rate of Hispanic children living in poverty increases, there tends to be more families experiencing severe housing problems, the community's food environment index tends to be lower (indicating that a greater percentage of families do not have access to quality food supplies), and people in the community have less opportunities to participate in community/civic organizations.

Correlations reveal that counties with higher levels of poverty among Hispanic children tend to have:

- more adults experiencing health problems
- fewer people with the social, economic, and cultural capital to enable children to thrive
- greater economic inequality
- greater proportions of people experiencing severe housing problems
- less access to quality food, food sources
- fewer opportunities for people to be active/engaged in their communities.

These issues are particularly challenging for children. For every hour children spend in schools, they nearly five hours in their communities, with families. (Berliner 2007). Studies have demonstrated that parents'/guardians' physical health has an impact on child behavioral development and effective parenting (Cordts, Wilson, and Riley 2020). Living in communities where adults have lower educational attainment levels also means that children are less likely to have adults in their lives that can practice the concerted cultivation expected to aid child development and learning in the classroom (Lareau 2011; 1987). These already economically marginalized children are also more likely to live in substandard housing which can exacerbate health conditions and/or elevate the odds of developing learning disabilities (Rothstein 2004; Furstenburg 2020). The greater the poverty rates for Hispanic children, at the community level, the greater inequality those communities experience, which often includes not having stable access to quality foods—at the community level, not just at the household hold. Moreover, Erik Olin Wright and Joel Rogers (2011) and Eric Klinenberg (2018) point out that greater economic inequality is also associated with a decline in public spaces and civic life, which translates to children having less opportunities to be active in organizations, groups, and activities. Community level resources have a profound impact on children's life experiences and life chances. The issues highlighted in the county health rankings were often discussed by the community stakeholders who participated in the Community Health Needs Assessment Focus Groups.

Stakeholder Focus Groups



Six focus groups were conducted with community stakeholders to ensure this report accurately conveys not just health issues present in medical data but also those perceived and experienced by members of the community. Each group consisted of 10-13 participants who were recruited by Driscoll Health Plan's Community Outreach Department. Participants were selected based on their role within their communities; those selected included healthcare professionals, social workers, school staff, Driscoll Health Panelists, and others with strong community ties and awareness of the needs therein. Participants were categorized based on two factors: whether the county they lived in and/or served was urban or rural and whether their community was in a border or non-border county. For the purposes of these focus groups, urban communities are those whose 2020 Census populations were at least 50,000; border counties are those that share at least one geographical boundary with Mexico.

The same questions were asked in each focus group. These questions pertained to perceived existing health and wellness resources available to the community; barriers to accessing healthcare and maintaining health; and possible solutions for removing barriers and improving health outcomes in the community. Both researchers coded the data from focus groups independently, then worked collaboratively to synthesize, organize, and present the themes identified. Community stakeholders' comments often reflected concerns highlighted in the County Health Rankings section of this report. Their comments were organized into four themes: Individual-Level Concerns, Community-Level Concerns, Physical Environment Concerns, and Solutions to Improve Meeting Needs.

Individual-Level Concerns

Health

Stakeholders in each focus group discussed concerns for the physical and mental health of the community members they serve. They highlighted how COVID-19 exacerbated public issues they were already seeing in their communities. They identified obesity as an issue. Families and children were experiencing stress, "lots of depression," "lots of anxiety," and suicidal ideation. They pointed out that COVID-19 left families and children isolated and frustrated. They perceived more issues relate to family violence and abuse because adults were economically stressed and children were not in school, which would give parents a respite and give children something productive to do. They were concerned that children were exposed to cyber bullying. They also noted that health care was quite costly, and in some

instances, doctors would schedule follow-up visits that “lasted two minutes,” leaving parents wondering what the point or benefit of such doctor visits was.

Income

Stakeholders also highlighted the economic challenges many families faced, pointing out that the modest/low incomes of families often severely limit/impact their choices and behaviors. They talked about people having limited incomes and issues with housing ranging from families living in unsanitary conditions to being vulnerable to flooding, sewage back up, insulation problems, and mold/mildew issues. They spoke of the high cost of substandard housing and families’ needs for rental assistance and/or an expansion of affordable housing programs as there is a long wait list. They pointed out that many people had non-standard work schedules and needed to work when—and as much as—they could. Stakeholders pointed out the cost of health care was prohibitive. Often, parents were faced with making choices about paying bills or filling prescriptions. Stakeholders noted that because people lived in rural communities or in areas where there were a limited number of health care professionals, people would have to travel far distances to see a health care professional. This was an extreme hardship for people who did not own a (reliable) vehicle or who had to have enough money for gas; participants noted how much more expensive fundamental goods, like gas, had become recently. They also pointed out that having to travel far distances for hourly wage workers was also problematic because they could lose hours of work time, which would have a negative impact on their wages. They brought up people being uninsured, underinsured, or having a high deductible/copay. These issues resulted in multiple consequences. They discouraged people from seeing a health care provider, filling a prescription, or taking their children to well-visit checks. They self-diagnosed, using an internet search engine. They self-medicated or shared medications with others. Living near the border offered alternative for others; people could make a trip to a pharmacy or a doctor in Mexico.

Literacy

Stakeholders asserted that literacy levels, along with limited understanding of how to navigate bureaucracies, were major barriers to people getting the assistance they needed. To get assistance, people are often required to complete paperwork. This entails reading and understanding of processes. Participants reported helping parents and guardians with filling out paperwork/applications. In nearly every focus group, participants discussed people’s lack of awareness, saying, they [the families they were working with] did not know how to ask questions, what questions to ask, or how to advocate for themselves. They expressed concern about language barriers. For some, that barrier was being a Spanish-speaker or a Spanish-reader in a non-border community. For others, it was simply comprehension. In one focus group, a participant pointed out that literacy levels among adults can be close to a fifth grade reading level, so materials (flyers, pamphlets, information packets) need to be created so that such individuals can have access to information. This issue is not just a matter of being able to read; it is also related to being able to understand. Stakeholders expressed concerned that even though everyone in a doctor’s office or at an agency was speaking English, the community member may not actually be understanding what the authority figure is saying and may not know how to ask clarifying/follow-up questions. They expressed concern about individuals needing to be “tech savvy” to complete paperwork. In other words, it isn’t enough to be able to read and write to fill out paperwork to

get access to programs. People need to be comfortable and able to interface with websites, online surveys, and digital documents. This applies to more than older individuals and communities where internet access/speeds are problematic.

Status

In more than one focus group, participants also expressed concern for mixed political status households and families. Having a family member who may not have a legal status in the United States or who may have a legal status but not be a U.S. citizen can also be a barrier to people seeking assistance. These families may be concerned about calling attention to their vulnerable family members. They may forego applying for assistance for which they or their family member(s) qualify or to which they may be entitled to avoid jeopardizing the status or opportunity for their vulnerable family member. Focus group members noted that some families chose to err on the side of caution, foregoing much-needed assistance, or access to programs or benefits, to “protect” loved ones who were not citizens.

Habits

Stakeholders also pointed out that people had unhealthy habits, expressing concern that people were not physically active. Lack of physical activity was mentioned during multiple focus groups. Additionally, on more than one occasion, focus group participants talked about people “popping Maruchan [ramen noodle soup] in the microwave.” For some, this may be because it is quick, convenient, and cheap. For others, this food choice is made by a child at home alone, because the adults are at work and eating food like this feels safer than a child using a stove top. Others talked or nodded affirmatively about underage drinking, vaping, and substance abuse. They talked about children spending hours on social media or video gaming, especially during the COVID-19 shut down, but also because there are not things to do within their communities.

Community-Level Concerns

Dearth of Health Care Professionals and Services

The unavailability of health care services and health care professionals was especially pronounced in rural communities. One focus group participant said many residents in rural communities do not have medical homes. Rural residents may have to travel 10-20 miles to a larger local town to go to a clinic or general practitioner. Others pointed out that residents, especially in rural areas but not exclusively, must drive hours to see a specialist. They also noted that many of the health care professionals/facilities have long wait times before people can get in to be seen. Additionally, when they do have to travel to see a doctor, residents must be prepared to wait hours before being seen. This also means residents have to make accommodations because they may be away from home—do they pack food to eat? Budget to buy a meal/meals? Make arrangements for afterschool pick up? Participants spoke about having no or limited resources for indigent care, no mental health providers nearby, or not enough mental health providers. Participants mentioned long waitlists for therapy or adolescent psychiatry and over-burdened professionals who can provide those services. Participants stated there were no specialists in the rural

communities they worked in. Even urban communities need more health care providers—especially specialists. Focus group participants also pointed out there were limited facilities and providers offering non-standard/evening/weekend hours of operation as well as limited number of mobile clinics.

Transportation

The lack of health care professionals in communities requires that people travel long distances to get access to medical care. Many participants said public transportation, especially for rural communities, was a big issue. There are set schedules and limited public transportation trips to and from rural communities. Even for families with access to a vehicle, there may only be one vehicle for the household (meaning traveling for care may conflict with other transportation needs).

A Void of How to Prevent Illness/Promote Health Programs

“We need to educate” was a common theme. There was a particular focus on this in the aftermath of COVID-19. After the outbreak, programming was discontinued and/or people have reservations about congregating in places where there will be crowds, thereby limiting their opportunities to participate in health promoting behaviors (like vaccination clinics, health fairs/screenings). Additionally, focus group participants highlighted some programming that is needed. For example, during a discussion about food pantries, a participant noted that food pantries distribute the food they get. People will receive food (like a pound of walnuts) but may not necessarily know how to prepare or incorporate the donated item into meals. Right now, there is not a way to provide households with suggestions, recipe options, and preservation strategies. Others pointed out that people will say what not to eat, but that parents/guardians and children needed to be informed about the consequences of choosing quick/easy/cheap/filling meals and snacks. With diabetes being such a major concern in communities, focus group participants emphasized that diabetes prevention programs need to focus more on incorporating families and children into prevention/management programs. Focus group members also pointed out that stress management classes/training is sorely needed, especially in the age of COVID; people need tips about how to constructively manage the stress they are experiencing. Focus group participants also emphasized the need to offer professional development for school counselors and educators to help families that have experienced deaths and severe disruptions due to the pandemic.

Physical Environment Concerns

Public Spaces

Focus group participants contended that some of the individual-level problems around inactivity and spending too much time on social media were a function of communities not having enough things for people to do or not having safe environments for people to be in. Multiple groups discussed needing to have exercise classes and activities in communities. Victoria was cited as an example where people in the community could go to the local park and participate in Yoga, Zumba, and meditation classes. Others pointed out that their communities needed centers where people could have access to computers or the internet. Others discussed a need for recreation centers for kids and families. Still others pointed out

that a community may have an outdoor space, but it is little more than an empty field. One individual said that you cannot expect people to spend time at a park that has nothing to do. Others pointed out that local parks had no shade. Some noted that local parks were not safe spaces for children and family.

Food Deserts

Several participants pointed out that many places were essentially food deserts with no grocery stores in their communities. The closest thing they had to a grocery store would be a dollar general store in the next town over or someone in their community had a “living room tiendita.” This limits the type and quality of food people have access to. Others noted that the quality of food offered at the schools was also an area of concern, and some programs that offered children food were no longer available.

Physical Infrastructure

Physical infrastructure pertains to the structures in place that (should) support the functioning of households as well as the private and public sectors of an economy. These structures relate to having an adequate and potable water supply, a way to deal with waste and sewage, electric grids, roads, and broadband/internet access. In several focus groups, issues related to accessing clean water were raised. Focus group members talked about communities having old water pipes that rupture, forcing communities into water boils and trips to purchase bottled water. Another recurring issue was limited internet access in communities, which was devastating for children and learning when the COVID-19 pandemic compelled school districts to close their campuses. Additionally, communities sought to introduce telemedicine to increase accessibility to health care, which was not necessarily an option—especially in rural communities—because there was not strong enough or extensive enough broadband to institute such practices.

Environmental Concerns

Some participants addressed environmental concerns directly; for others, environmental concerns became apparent as they discussed concerns with other issues like quality housing or people needing to be active. When the prevalence of asthma in communities across the service area was brought up, some focus group participants made a direct reference to the air quality of communities. Multiple participants raised concerns about pollutants in the air and voiced concern about what refineries were releasing that could be contributing to the asthma rates. Other individuals pointed out that there were communities prone to flooding, which then lead to a cascading effect of other issues like sewage contamination. Still others discussed the Texas Freeze of 2021 and how homes are not prepared for such extreme weather events, leading to ruptured water pipes and housefires originating from space heaters. Others spoke of high arsenic levels in local water supplies being a major concern. Others pointed to the heat of South Texas summers and how communities have not adequately planned how to manage that heat (like providing shade, water, misting sites) so that people can use/recreate in public spaces.

The fourth theme, Solutions to Improve Meeting Needs, is incorporated in the final section, How Can We Improve Our Health. As non-medical individuals interacting with community members outside of a hospital or health professional setting, they offered keen insights into the recurring problems within the communities they served. They had a clear sense of what was effective, what they were doing well, and what needed to change so that children and families’ needs can be better served.

How Can We Improve Our Community's Health?

Meeting People Where They Are: Going into Communities

The dearth of health care professionals and facilities in wide expanses of the territory DHS serves warrants consideration of coordinating with other health care systems to offer a predictable mobile clinic schedule, especially for rural communities. Focus group participants noted that getting children their vaccinations was more difficult post-COVID. They also spoke of families who do not bring their infants/toddlers to wellness visits. In missing these wellness checks, some children's health/developmental issues were not identified until much later than they would have been had they gone to wellness checks. Additionally, access to and cost of transportation is a significant barrier. Multiple participants advocated for a mobile clinic in the communities in which they work.

A possible alternative to a mobile clinic could be partnering with schools to offer periodic services on campuses. Driscoll Hospital System hosts specialty clinics and doctors in/near their hospital campus. DHS could consider developing MOUs with school districts. Many communities, especially rural ones, do not have budgets to support building social infrastructures like parks, recreation centers, etc. Schools serve as a de facto community/civic center of sorts where people from across the community congregate in a shared space. Schools in some areas established MOUs so people could access teleservices; this could be an option worth exploring to help keep people healthy or to increase the probability of identifying issues when they are nascent rather than having to first address them when they are at a crisis level.

Increase Access to Quick Care Services

A review of the top ten primary diagnoses at quick care facilities across the service area revealed many of the issues compelling guardians to bring children to quick care centers are rapid onset, episodic conditions. Quick care centers can see patients in a relatively timely manner, and visit costs are far lower than in an emergency room. Throughout the 33,000 square miles DHS serves, there are only three quick care clinics in the entire area, with one quick care clinic located in a geographic space (McAllen) that is home to more than one million people.

Take Steps to Address Preventable, Manageable Conditions

There are many episodic and chronic health conditions confronting the people within DHS's service area. Drawing on the observations made from the data collected for this health needs assessment, we have focused on four health care issues for which recommendations have been provided.

Phimosis was a prevalent diagnosis in outpatient services and general surgery clinics. Moreover, phimosis was a top diagnosis in all age categories for males into their teenage years and brought male infants to general surgery clinics at much higher rates than female infants. An education program targeting parents of male newborns, toddlers, and young children should be considered to help inform parents how best to care for male infants, toddlers, and children to prevent this condition.

Asthma continues to be a major chronic health issue of concern. Because of the strength of association between having a medical home and emergency department use, taking steps to ensure patients have a medical home is important (Diedhiou 2010). DHS's asthma management strategy of employing

community health workers who work with families to help them manage their child's disease are lauded, as is DHS's decision to hire an Asthma Coordinator who is tasked to go into communities and schools to educate the public on how to avoid triggers that cause flare ups. This work should be continued as asthma diagnoses are still prevalent throughout hospital data. There may likely be triggers in the larger communities that also play a role in the prevalence of asthma that are outside the domain of a family home or school campus. More work needs to be done to understand how pollutants/emissions from heavy industry may be playing a role in the prevalence of this disease.

Mental Health emerged as a concern across multiple data sources—the county health rankings, focus group discussions, and the hospital data. Efforts to recruit/retain mental health professionals should be pursued to meet the community's needs. It is equally important to consider what can be done to prevent people from reaching a state of mental crisis. Social isolation, lack of security, and stressed communities all have an impact on parents' and children's efficacy and well-being. Humans are social beings. Children need things to do, activities and groups to be a part of, and people to help them process their experiences from living through a pandemic. Sponsorship of programs/activities that help satisfy these conditions may be a sound investment of resources.

Diabetes is a major issue in primary and secondary diagnoses throughout the hospital data. It is worth noting that diabetes has origins in environmental, genetic, and social conditions. Many communities lack the social infrastructure and activities or the financial resources that would enable children and families to be active. According to the focus group discussions, diabetes prevention and/or management programs often focus on individual habits rather than taking into consideration how to engage in diabetes management strategies that are inclusive of the families and children living with the person(s) who have diabetes. Focus group sessions noted that fast, convenient food is often unhealthy, and there are communities in the service region that are food deserts, making access to healthy food—and making healthy food choices—a challenge. Supporting programs that marry all these problems could create healthy conditions for people and communities. Working in collaboration with community partners like Texas A&M AgriLife to establish community gardens could help people be active, develop a sense of community, and have access to better quality food, which could help ameliorate some of the conditions that contribute to diabetes and the complications that accompany it.

Fostering Collaboration and Networks to Assist Vulnerable Populations

Many of the issues that contribute to illness are beyond the control of the individual, their immediate communities, and the hospital/doctor's office setting. Driscoll Health Plan's Community Outreach Department has cultivated strong supportive relationships with a wide array of non-profit, governmental, and educational organizations and agencies. Many of these organizations provide critical services and safety nets to the communities they serve. Currently, there is no centralized location where community members and partners can learn about each other's programs, services, parameters, and goals. Though many groups and people (especially those interacting face-to-face with the community) collaborate with one another and direct families to resources/programs, the focus group discussions assert the process through which people learn about other programs/services is informal. Several focus group members noted they would like to know more about what other groups are doing and what those other groups can provide for people/families in need. One participant noted that there was so much

need in the areas they serviced, that groups were better off cooperating with one another instead of competing.

It is recommended that community stakeholder meet-and-greet workshops be held quarterly. Front line workers from the wide array of agencies and organizations with which DHS has established relationships who work directly with children and families, should be encouraged to attend these events. There, they can learn about the different agencies and programs (including missions, goals, and eligibility requirements) and meet one another. During these workshops, people from different groups can be placed into teams and given scenarios where they can strategize as a team to develop a resource guide, identifying possible agencies that address the needs presented in the scenario. These collaborative workshops can culminate with people presenting their resource guides, thus sharing their knowledge with all in attendance. These breakout sessions will serve multiple purposes: structuring a task that requires collaboration, sharing their knowledge and expertise through that process, and building contacts/relationships with other community workers outside their own organization.

Learning is a process, not just an event. This is why such workshops should be done quarterly. Workshop themes can shift to reflect the needs/concerns for the groups. For example, during the focus group discussions, it was clear that groups developed a diverse range of effective outreach strategies. One could envision a meet-and-greet where groups highlighted their best outreach practices. One group spoke of hosting summer movies and conducting their outreach at those events. Another group spoke about their organization's use of social media, Instagram, Pinterest, and QR codes. Yet another group spoke of creating "principal packets" to ensure that information gets sent home from school with children. Ensuring these meet-and-greet workshops are regularly implemented would foster networks, skill building, and knowledge bases for those who are doing community work, and in that process, help children and families gain access to resources that can help them lead healthier lives.

Limitations

This section details observations and reflections that provide context for the format of the 2022 CHNA and may be useful for future assessments.

Extensive research has documented gender and race/ethnicity disparities in health and health issues. Sociodemographic characteristics of the patient population were only examined in terms of overall frequencies. When sub-analyses of the population's visits and diagnoses were conducted for the hospital data, only sub-analyses by age categories were conducted; sub-analyses were not conducted uniformly for gender nor race/ethnicity.

Guarantor's employment status data was initially requested. Sociologically speaking, work is more than just the activity people do to earn money to pay their bills. Work has a profound impact on the way people live, the choices they make, the values they emphasize, the concerns they have, and the constraints with which they grapple. It was anticipated that occupational status of the guarantor might significantly relate to variations in the types of health issues that bring patients to the hospital system. Upon review of the employment data, the diversity in responses proved too problematic to engage with.

Driscoll Health System administration expressed interest in obesity (among other issues). Upon review of the data, it appeared issues pertaining to obesity were recorded when they were striking and related to other conditions. For example, BMIs placing patients in the top 95th percentile or severe, morbid obesity and "obesity that created complications for pregnancy" were both secondary diagnoses. To ascertain the prevalence of obesity among DHS patients, having access to the height and weight of patients would enable investigators to calculate patients' BMIs and classify them into one of six BMI categories that range from underweight to Class III obesity. Those data were not available for this CHNA. This should be revisited in preparation for future CHNAs given the concerns of medical professionals.

Another issue related to location explored only in the focus groups for this CHNA—though it is critical to community health— is rurality. Research shows that people living in rural communities have significantly lower educational attainment and income levels than their urban counterparts; rural communities also have higher rates of poverty, unemployment, and disability than do urban communities (Foutz, Artiga, Garfield 2017). Research examining access to health care after the passage of the Affordable Care Act says that health care in rural communities in states that did not accept Medicaid expansion saw their accessibility to health care decrease. Adam Searing (2018) of Georgetown University's Health Policy Institute's Center for Children and Families reported that between 2010-2018, there were six states that had at least five rural hospital closures, with Texas having the most closures: 15. The Kaiser Family

Foundation created an interactive county map based on the Index of Relative Rurality; the index ranges from zero (indicating the lowest level of rurality) to one (indicating the most rural). The rationale and methods for creating the index and its benefits are discussed by Waldorf and Kim (2018). For the 27 counties DHS serves, IRR scores ranged from a low of .32 for Hidalgo County to a high of .71 for Kenedy County. The median IRR score was .52. Given research that demonstrates the challenges rural communities face and the fact that 24 of the 27 counties served by DHS are classified as rural, conducting sub-analyses of the hospital data by rurality could be valuable in shaping recommendations.

For each of the different departments and clinic locations, an overview of the patient population's socio-demographic characteristics was provided. In future reports, the investigators would like to provide additional context for that information. For example, providing a brief overview of socio-demographic characteristics of the general population and the child populations of the community areas reported by the American Community Survey (ACS), which is an on-going yearly survey conducted by the Census Bureau, would enable CHNA readers to consider whether the hospital patient system "looked like" the broader community. An Appendix of page table summaries of important ACS information—like population size, population breakdown by race and Hispanic origin, income measures (per capita income in months, median household income, and poverty), unemployment rates, and uninsured rates—would be beneficial.

References

- Berliner, D. 2007. "Our Impoverished View of Education Research," Pp 487-515 in *Sociology of Education: A Critical Reader* Edited by Alan Sadovnik NY Routledge
- Centers for Disease Control. 2018. "Community Health Assessments & Health Improvement Plans." Retrieved December 27, 2021 (<https://www.cdc.gov/publichealthgateway/cha/plan.html>).
- Cordts, Katrina M. P., Anna C. Wilson, and Andrew R. Riley. 2020. "More than Mental Health: Parent Physical Health and Early Childhood Behavior Problems. *Journal of Developmental and Behavioral Pediatrics* 41(4): 265-271.
- Curtin, Sall C. and Melonie Heron. 2019. "Death Rates Due to Suicide and Homicide Among Persons Aged 10-24: United States, 2000-2017." *NCHS Data Brief* 352 (October):1-8. U.S. Department of Health and Human Services. Retrieved March 5, 2022 (<https://www.cdc.gov/nchs/products/databriefs.html>).
- Dalaker, Joseph. 2021. *Underemployment, Recession, and Poverty* (CRS Report Number. R46939). Retrieved April 20, 2022 (<https://sgp.fas.org/crs/misc/R46939.pdf>).
- DeVaney, Sharon A and Sophia T. Anong. 2007. "Likelihood of Having Employer Sponsored Health Insurance." Retrieved May 2, 2022 (<https://www.bls.gov/opub/mlr/cwc/the-likelihood-of-having-employer-sponsored-health-insurance.pdf>).
- Diedhiou, A, JC Probst, JW Hardin, AB Martin, and S Xirasagar. 2010. "Relationship Between Presence of a Reported Medical Home and Emergency Department Use among Children with Asthma." *Medical Care Research and Review* 67(4):450-475.
- Environmental Protection Agency. 2018. "Health and Environmental Effects of Particulate Matter (PM)" Retrieved February 9, 2022 (<https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm>).
- Foutz, Julia, Samantha Artiga, and Rachel Garfield. 2017. "Issue Brief: The Role of Medicaid in Rural America." The Henry J. Kaiser Family Foundation. Menlo Park, CA:1-12.
- Furstenberg, Frank. 2020. Diverging Development: The Not-So-Invisible Hand of Social Class in the United States, in Reisman, B.J. (Ed.), *Families as They Really Are*. Pp. 276-294. New York: W.W. Norton & Company.
- Klinenberg, Eric. 2018. *Palaces for the People: How Social Infrastructure Can Help Fight Inequality, Polarization, and the Decline of Civil Life*. New York: Crown.

- Lareau, Annette. 2011. *Unequal Childhoods: Race, Class, and Family Life, with an Update a Decade Later*. California: University of California Press.
- Lareau, Annette. 1987. "Social Class Differences in Family-School Relationships: The Importance of Cultural Capital." *Sociology of Education* 60(2):73-85. doi:10.2307/2112583.
- Matsumoto, C. L., O'Driscoll, T., Madden, S., Blakelock, B., Lawrance, J., and Kelly, L. 2017. "Defining 'high-frequency' emergency department use: Does one size fit all for urban and rural areas?" *Canadian family physician Medecin de famille canadien*, 63(9):e395–e399.
- McConville, Shannon, Maria C. Raven, Sarah H. Sahhagh, and Renne Y. Hsia. 2018. "Frequent Emergency Department Users: A Statewide Comparison Before and After the Affordable Care Act Implementation." *Health Affairs* 37(6). Retrieved May 20, 2022. (<https://doi.org/10.1377/hlthaff.2017.0784>).
- Presser, Harriet. 2009. "The Economy that Never Sleeps." Pp. 387-395 in *Family in Transition, 15th Edition*. Edited by: Jerome Skolnick and Arlene Skolnick. Boston, MA: Pearson.
- Rothstein, R. 2004. *Class and Schools: Using Social, Economic, and Educational Reform to Close the Black White Achievement Gap*. Washington, DC.
- Searing, Adam. 2018. "More Rural Hospitals Closing in States Refusing Medicaid Coverage Expansion." Washington, D.C: Center for Children & Families of the Georgetown University Healthy Policy Institute. Retrieved April 17, 2022 (<https://ccf.georgetown.edu/2018/10/29/more-rural-hospitals-closing-in-states-refusing-medicaid-coverage-expansion/>).
- Waldner, Amy, Maria Raven, Danielle Lazar, and Jessie Pines. 2014. "Redefining Frequent Emergency Department Users." *Urgent Matters* 1(1): 1-5.
- Waldorf, B. and A. Kim. 2018. "The Index of Relative Rurality (IRR): US County Data for 2000 and 2010." Purdue University Research Repository. doi:10.4231/R7959FS8
- Wright, Erik Olin and Joel Rogers. 2011. *American Society: How It Really Works*. New York: W. W. Norton and Company.

**Appendix A. University of Wisconsin Population Health
Institute: County Health Attributes**

	Texas	Aransas (ARA), TX X	Bee (BEE), TX X	Brooks (BRO), TX X	Calhoun (CAH), TX X	Cameron (CAM), TX X	DeWitt (DEW), TX X	Dimmit (DIM), TX X	Duval (DUV), TX X
Health Outcomes									
Length of Life									
Premature death	7,000	12,300	10,000	13,600	8,100	7,400	9,200	10,600	11,500
Quality of Life									
Poor or fair health	● 21%	26%	29%	38%	27%	35%	26%	39%	34%
Poor physical health days	● 3.6	4.6	4.6	5.5	4.4	5.2	4.5	5.6	4.9
Poor mental health days	● 3.9	4.8	4.4	4.8	4.4	4.6	4.6	4.9	4.5
Low birthweight	8%	9%	10%	8%	7%	8%	8%	8%	9%
Health Factors									
Health Behaviors									
Adult smoking	● 15%	21%	19%	19%	18%	16%	19%	20%	17%
Adult obesity	● 34%	36%	42%	44%	40%	42%	38%	44%	43%
Food environment index	● 6.1	5.7	6.5	5.5	5.3	5.6	7.7	4.2	6.1
Physical inactivity	● 27%	36%	37%	44%	36%	38%	35%	45%	40%
Access to exercise opportunities	80%	77%	46%	35%	54%	66%	72%	61%	
Excessive drinking	● 20%	20%	19%	15%	18%	20%	19%	15%	16%
Alcohol-impaired driving deaths	25%	9%	17%	15%	45%	17%	22%	8%	9%
Sexually transmitted infections	● 445.1	259.5	647.9	521.6	427.4	490.8	456.3	444.5	519.9
Teen births	29	34	45	73	48	44	46	44	47
Clinical Care									
Uninsured	21%	25%	19%	19%	20%	31%	20%	20%	22%
Primary care physicians	1,630:1	3,360:1	4,650:1		1,940:1	2,020:1	1,830:1	2,530:1	
Dentists	1,660:1	3,400:1	3,610:1	6,960:1	2,100:1	3,100:1	4,030:1	3,310:1	
Mental health providers	760:1	1,190:1	2,320:1	3,480:1	4,200:1	1,410:1	5,040:1	2,480:1	11,060:1
Preventable hospital stays	4,255	2,606	5,479	7,356	6,266	5,178	4,597	5,647	5,698
Mammography screening	39%	45%	31%	30%	33%	32%	33%	24%	29%
Flu vaccinations	46%	47%	33%	38%	33%	41%	34%	39%	36%
Social & Economic Factors									
High school completion	84%	87%	79%	67%	81%	69%	83%	68%	70%
Some college	63%	50%	44%	40%	50%	49%	43%	48%	47%
Unemployment	● 7.6%	8.5%	9.8%	10.7%	5.8%	10.2%	6.0%	6.4%	12.1%
Children in poverty	19%	31%	26%	45%	21%	35%	28%	34%	32%
Income inequality	4.8	5.3	5.0	8.6	3.7	5.3	5.5	8.4	5.2
Children in single-parent households	26%	37%	27%	41%	24%	34%	14%	49%	36%
Social associations	7.5	4.7	4.6	5.6	9.9	4.9	16.9	6.9	3.6
Violent crime	● 420	477	252	234	512	319	538	85	611
Injury deaths	60	112	71	73	61	35	70	68	82
Physical Environment									
Air pollution - particulate matter	9.0	9.5	9.7	10.4	9.4	10.4	9.5	9.2	10.0
Drinking water violations		No	Yes	No	Yes	Yes	No	No	Yes
Severe housing problems	17%	18%	21%	25%	18%	23%	13%	19%	20%
Driving alone to work	79%	77%	86%	89%	85%	83%	83%	90%	76%
Long commute - driving alone	39%	25%	25%	19%	18%	22%	34%	14%	33%

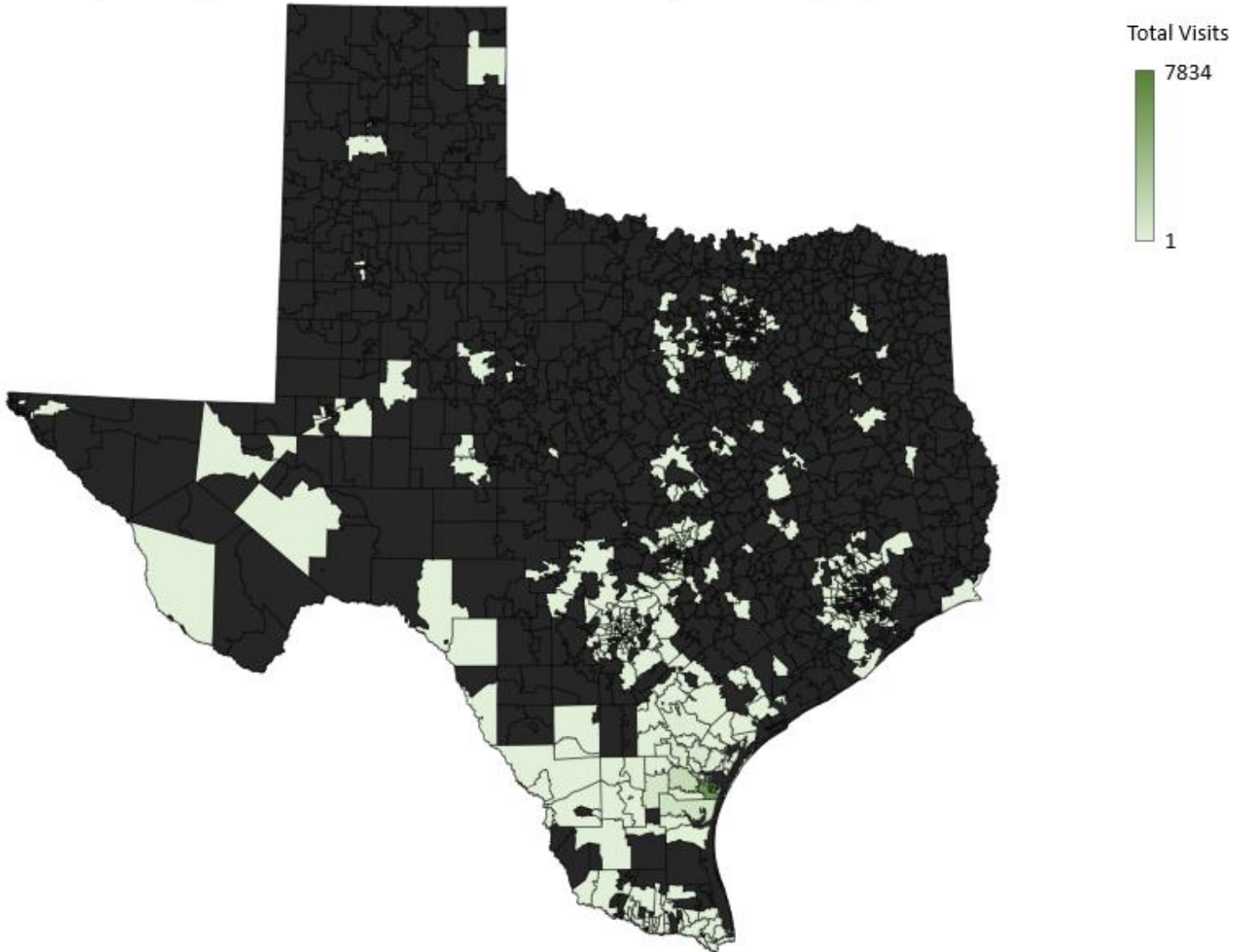
	Texas	Goliad (GOL), TX X	Gonzales (GON), TX X	Hidalgo (HID), TX X	Jackson (JAK), TX X	Jim Hogg (JIH), TX X	Jim Wells (JIW), TX X	Kenedy (KED), TX X	Kleberg (KLE), TX X
Health Outcomes									
Length of Life									
Premature death	7,000	7,500	8,000	6,800	9,300	10,600	11,300		9,900
Quality of Life									
Poor or fair health	● 21%	23%	28%	34%	23%	35%	31%	45%	29%
Poor physical health days	● 3.6	4.1	4.6	5.2	4.1	5.1	4.7	6.4	4.5
Poor mental health days	● 3.9	4.5	4.6	4.6	4.5	4.5	4.4	5.5	4.3
Low birthweight	8%	8%	9%	9%	7%	8%	10%		8%
Health Factors									
Health Behaviors									
Adult smoking	● 15%	17%	18%	16%	18%	18%	17%	25%	16%
Adult obesity	● 34%	37%	40%	48%	38%	44%	41%	44%	41%
Food environment index	● 6.1	7.2	6.4	5.3	7.4	5.4	6.7	4.4	5.7
Physical inactivity	● 27%	31%	37%	37%	31%	42%	38%	50%	36%
Access to exercise opportunities	80%	47%	39%	62%	51%		56%	0%	67%
Excessive drinking	● 20%	19%	18%	15%	20%	16%	17%	15%	17%
Alcohol-impaired driving deaths	25%	27%	21%	33%	36%	20%	15%	0%	12%
Sexually transmitted infections	● 445.1	130.6	460.7	361.5	304.9	365.4	454.5		867.0
Teen births	29	23	44	44	42	50	49		32
Clinical Care									
Uninsured	21%	17%	25%	33%	22%	18%	22%	26%	20%
Primary care physicians	1,630:1		2,600:1	2,160:1	7,380:1	5,200:1	4,500:1	400:0	2,360:1
Dentists	1,660:1	1,910:1	2,620:1	3,540:1	2,970:1	5,180:1	2,890:1	380:0	1,780:1
Mental health providers	760:1	3,810:1	2,620:1	1,420:1	4,950:1		1,120:1	380:0	1,900:1
Preventable hospital stays	4,255	4,833	4,505	5,268	4,058	6,750	4,305		6,169
Mammography screening	39%	36%	30%	33%	33%	23%	30%		36%
Flu vaccinations	46%	42%	37%	45%	39%	33%	40%	38%	34%
Social & Economic Factors									
High school completion	84%	82%	76%	67%	81%	75%	78%	22%	79%
Some college	63%	66%	33%	51%	51%	33%	46%	1%	66%
Unemployment	● 7.6%	7.7%	5.4%	11.6%	5.8%	9.5%	13.0%	5.4%	8.4%
Children in poverty	19%	21%	22%	33%	18%	31%	33%	14%	30%
Income inequality	4.8	6.8	4.6	5.6	4.5	5.4	5.7	2.8	6.9
Children in single-parent households	26%	12%	26%	31%	22%	39%	39%	0%	36%
Social associations	7.5	9.1	12.0	3.5	12.9	0.0	6.2	0.0	7.8
Violent crime	● 420	211	652	312	208	77	583	978	500
Injury deaths	60	84	74	32	74	58	65		51
Physical Environment									
Air pollution - particulate matter	9.0	9.3	9.5	11.5	9.3	10.2	10.3	10.3	11.6
Drinking water violations		No	No	Yes	No	No	Yes	No	Yes
Severe housing problems	17%	8%	17%	25%	16%	18%	17%	10%	20%
Driving alone to work	79%	81%	80%	79%	80%	83%	83%	99%	80%
Long commute - driving alone	39%	58%	35%	23%	41%	29%	42%	19%	25%

	Texas	La Salle (LAS), TX X	Lavaca (LAV), TX X	Live Oak (LIV), TX X	Matagorda (MAG), TX X	Maverick (MAV), TX X	McMullen (MCM), TX X	Nueces (NUE), TX X	Refugio (REF), TX X PEER COUNTY
Health Outcomes									
Length of Life									
Premature death	7,000	8,100	6,700	7,400	9,500	8,300		8,700	8,800
Quality of Life									
Poor or fair health	● 21%	32%	22%	28%	27%	37%	20%	26%	26%
Poor physical health days	● 3.6	4.6	4.1	4.5	4.5	5.3	3.5	4.2	4.4
Poor mental health days	● 3.9	4.2	4.7	4.6	4.6	4.6	3.9	4.2	4.4
Low birthweight	8%	11%	7%	7%	9%	8%		9%	8%
Health Factors									
Health Behaviors									
Adult smoking	● 15%	17%	19%	20%	18%	18%	14%	16%	17%
Adult obesity	● 34%	41%	37%	41%	41%	42%	36%	41%	38%
Food environment index	● 6.1	7.0	7.7	7.4	6.2	5.5	5.9	7.0	6.9
Physical inactivity	● 27%	39%	30%	36%	36%	42%	28%	32%	35%
Access to exercise opportunities	80%		49%	22%	69%	67%	18%	93%	10%
Excessive drinking	● 20%	18%	21%	19%	19%	15%	21%	22%	18%
Alcohol-impaired driving deaths	25%	20%	27%	24%	19%	21%	0%	22%	12%
Sexually transmitted infections	● 445.1	239.4	183.6	245.8	223.8	424.0	0.0	795.8	331.0
Teen births	29	52	30	31	49	56		33	31
Clinical Care									
Uninsured	21%	18%	19%	22%	21%	29%	14%	20%	19%
Primary care physicians	1,630:1		1,440:1	12,210:1	2,620:1	4,190:1	740:0	1,250:1	6,950:1
Dentists	1,660:1		4,040:1	6,160:1	2,830:1	4,490:1	720:0	1,820:1	3,440:1
Mental health providers	760:1	1,880:1	6,740:1	12,320:1	2,450:1	3,430:1	720:0	780:1	6,880:1
Preventable hospital stays	4,255	2,717	5,021	2,511	4,640	5,869	5,381	3,926	4,107
Mammography screening	39%	23%	40%	32%	32%	22%	19%	42%	35%
Flu vaccinations	46%	27%	41%	34%	36%	24%	34%	42%	29%
Social & Economic Factors									
High school completion	84%	65%	86%	78%	82%	61%	89%	84%	83%
Some college	63%	16%	53%	40%	55%	53%	50%	58%	46%
Unemployment	● 7.6%	6.8%	5.2%	7.5%	10.5%	15.0%	2.8%	9.0%	8.2%
Children in poverty	19%	28%	15%	24%	24%	28%	12%	26%	24%
Income inequality	4.8	6.2	4.4	6.0	5.5	6.9	4.7	4.9	4.5
Children in single-parent households	26%	28%	16%	23%	32%	31%	40%	34%	32%
Social associations	7.5	5.3	11.9	10.6	13.4	2.6	0.0	7.4	11.5
Violent crime	● 420	85	154	320	347	179	123	685	336
Injury deaths	60	56	70	71	86	39		71	82
Physical Environment									
Air pollution - particulate matter	9.0	9.3	9.4	9.7	9.6	9.0	9.3	9.7	9.4
Drinking water violations		No	Yes	No	Yes	Yes	No	No	No
Severe housing problems	17%	20%	15%	9%	19%	24%	16%	18%	14%
Driving alone to work	79%	86%	80%	78%	85%	82%	69%	82%	84%
Long commute - driving alone	39%	25%	34%	40%	28%	19%	41%	18%	41%

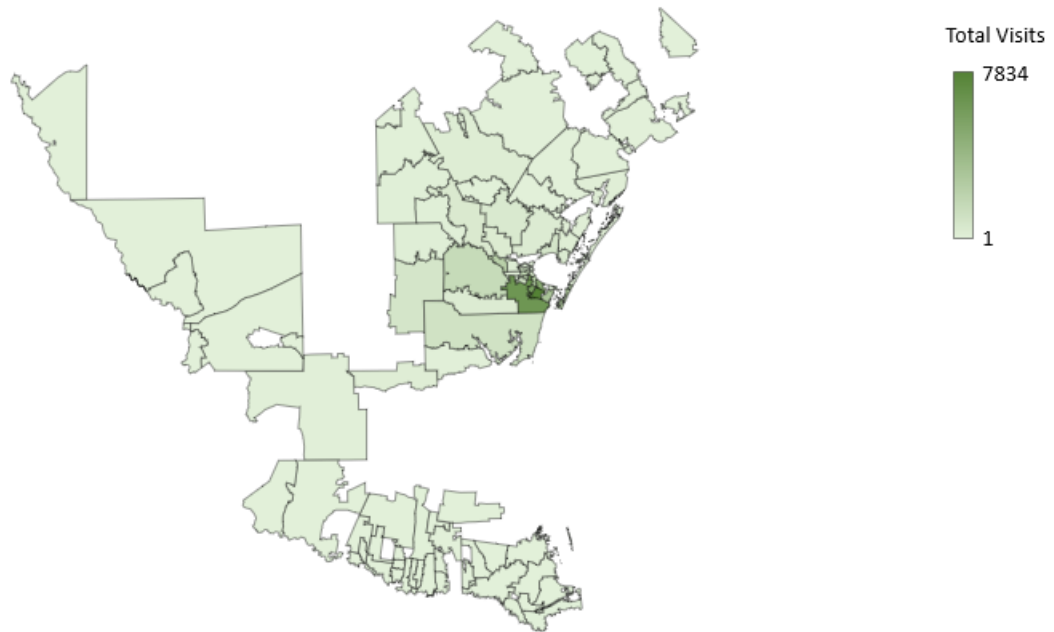
	Texas	San Patricio (SAP), TX X	Starr (STA), TX X	Victoria (VIC), TX X	Webb (WEB), TX X	Willacy (WIA), TX X	Zapata (ZAP), TX X	Zavala (ZAV), TX X
Health Outcomes								
Length of Life								
Premature death	7,000	9,000	8,300	8,500	6,800	9,700	7,800	10,900
Quality of Life								
Poor or fair health	● 21%	28%	42%	25%	34%	38%	38%	40%
Poor physical health days	● 3.6	4.4	5.9	4.2	5.0	5.5	5.5	5.8
Poor mental health days	● 3.9	4.4	5.0	4.4	4.5	4.7	4.8	4.9
Low birthweight	8%	9%	9%	8%	8%	8%	8%	8%
Health Factors								
Health Behaviors								
Adult smoking	● 15%	17%	21%	18%	17%	20%	19%	20%
Adult obesity	● 34%	41%	47%	38%	42%	46%	43%	46%
Food environment index	● 6.1	6.8	4.3	7.2	6.8	4.6	6.2	4.3
Physical inactivity	● 27%	37%	48%	32%	39%	45%	44%	46%
Access to exercise opportunities	80%	62%	34%	73%	92%	11%	25%	
Excessive drinking	● 20%	19%	14%	20%	16%	16%	15%	14%
Alcohol-impaired driving deaths	25%	17%	53%	24%	24%	28%	50%	25%
Sexually transmitted infections	● 445.1	500.5	266.1	506.1	409.2	383.9	253.9	498.3
Teen births	29	38	59	37	52	40	61	50
Clinical Care								
Uninsured	21%	19%	31%	20%	30%	23%	29%	22%
Primary care physicians	1,630:1	3,930:1	4,620:1	1,330:1	3,290:1	3,050:1	14,180:1	11,840:1
Dentists	1,660:1	2,310:1	8,030:1	1,770:1	3,120:1	21,160:1	7,090:1	2,960:1
Mental health providers	760:1	2,580:1	5,360:1	600:1	2,550:1	3,530:1		1,970:1
Preventable hospital stays	4,255	3,362	5,325	5,551	4,850	6,312	6,126	5,327
Mammography screening	39%	40%	24%	42%	27%	23%	25%	21%
Flu vaccinations	46%	41%	28%	51%	37%	49%	36%	26%
Social & Economic Factors								
High school completion	84%	81%	58%	83%	68%	70%	65%	76%
Some college	63%	50%	44%	56%	49%	36%	40%	50%
Unemployment	● 7.6%	10.3%	17.3%	8.3%	8.5%	12.0%	12.4%	14.1%
Children in poverty	19%	22%	35%	24%	30%	34%	40%	39%
Income inequality	4.8	5.2	5.7	4.7	5.4	5.4	6.5	4.6
Children in single-parent households	26%	36%	40%	30%	31%	40%	27%	58%
Social associations	7.5	9.9	2.5	9.2	3.5	4.7	2.1	3.4
Violent crime	● 420	361	263	425	382	731	96	177
Injury deaths	60	66	35	64	43	58	48	60
Physical Environment								
Air pollution - particulate matter	9.0	10.1	11.0	9.7	10.4	10.8	10.2	9.1
Drinking water violations		No	Yes	Yes	Yes	No	Yes	No
Severe housing problems	17%	16%	22%	16%	27%	18%	25%	17%
Driving alone to work	79%	86%	72%	80%	81%	83%	70%	87%
Long commute - driving alone	39%	33%	25%	20%	24%	31%	22%	9%

Appendix B. Heat Maps

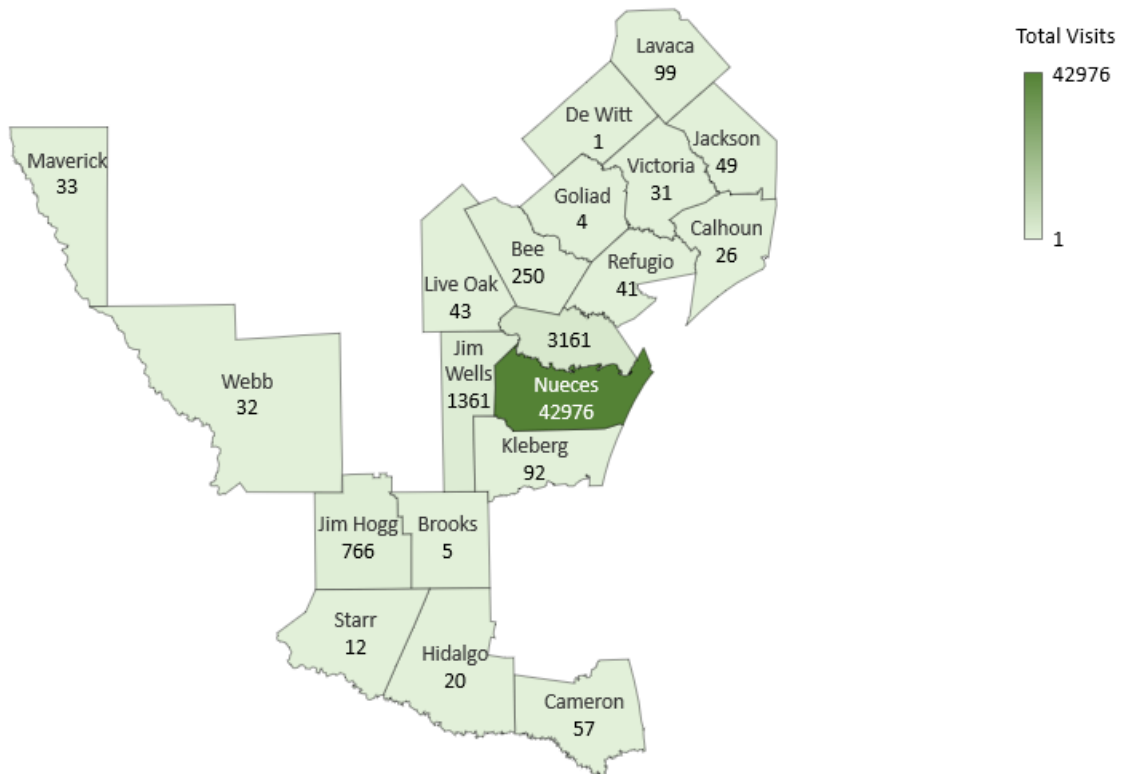
Map 1. Corpus Christi Quick Care Visit Frequencies by Zip Code for State



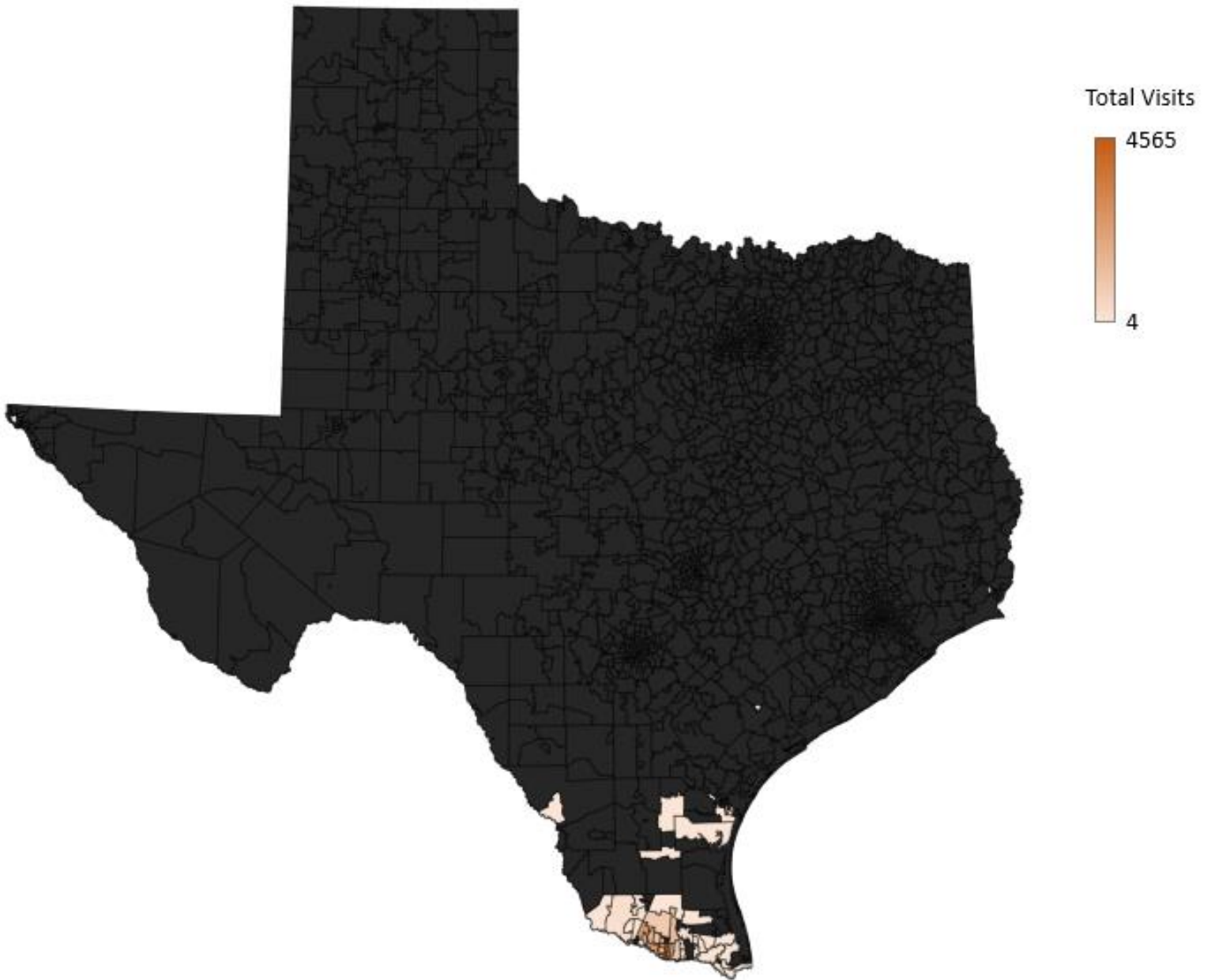
Map 2. Corpus Christi Quick Care Visit Frequencies by Zip Code for Service Area



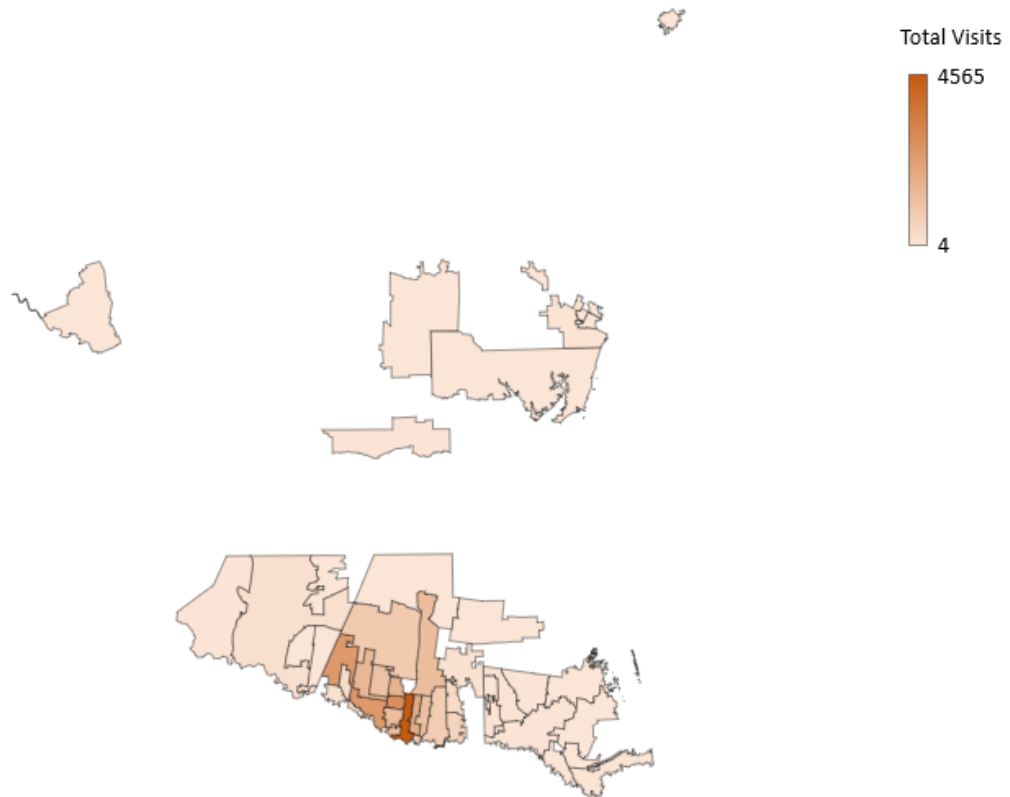
Map 3. Corpus Christi Quick Care Visit Frequencies by County for Service Area



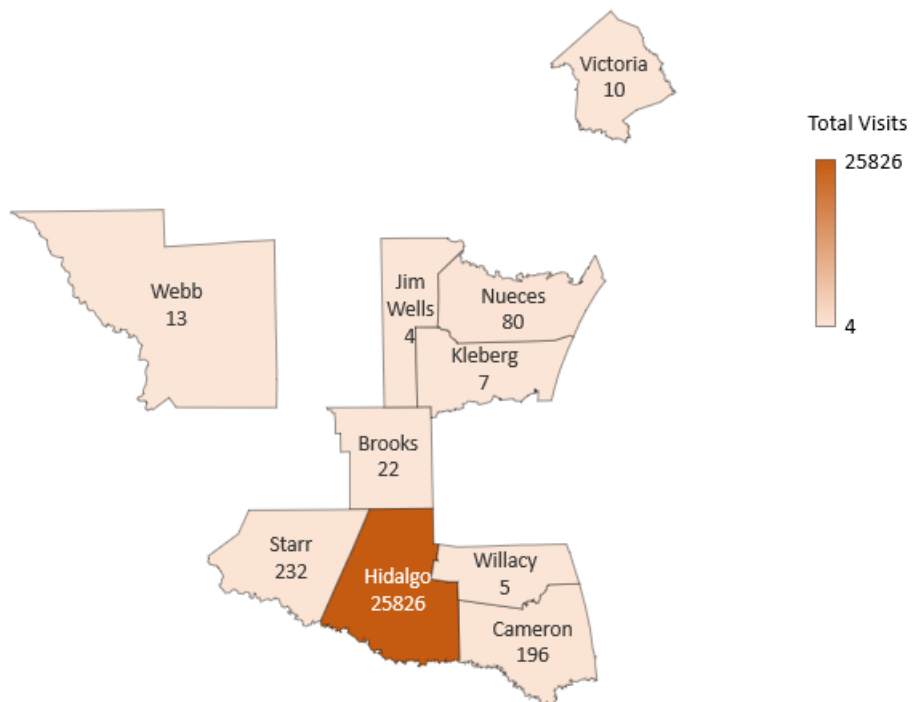
Map 4. McAllen Quick Care Visit Frequencies by Zip Code for State



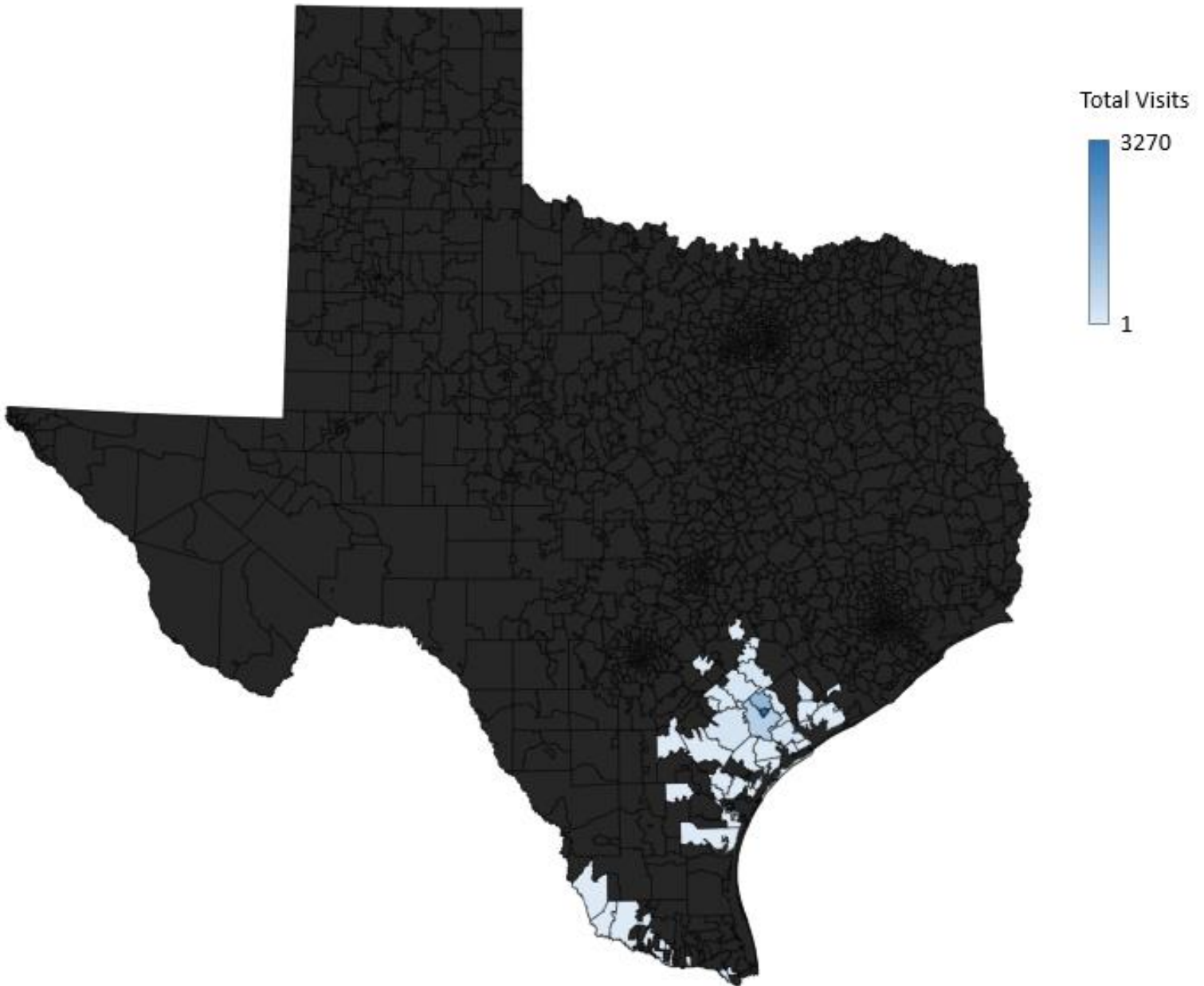
Map 5. McAllen Quick Care Visit Frequencies by Zip Code for Service Area



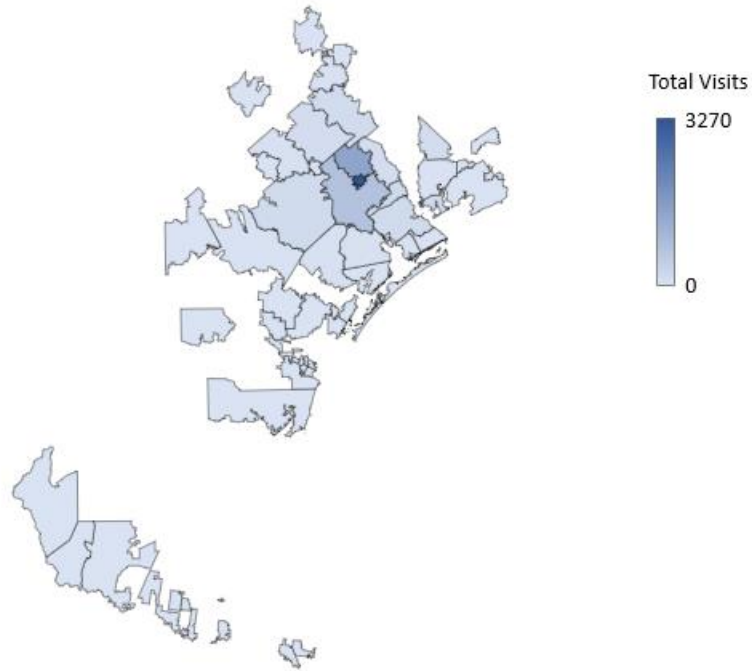
Map 6. McAllen Quick Care Visit Frequencies by County for Service Area



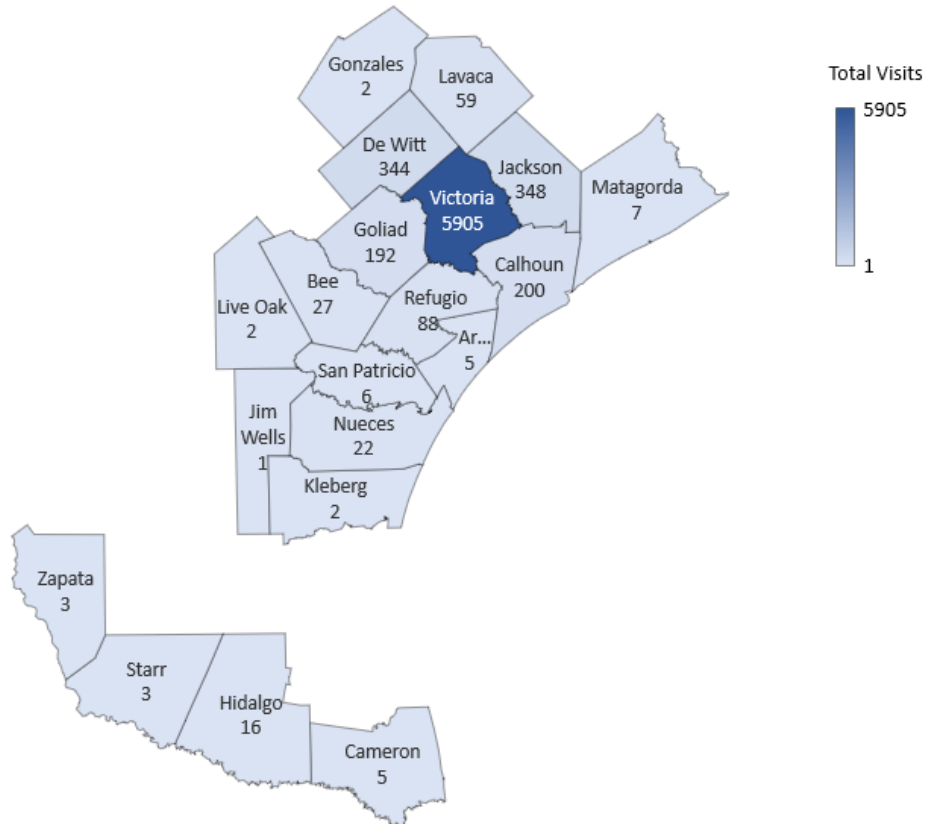
Map 7. Victoria Quick Care Visit Frequencies by Zip Code for State



Map 8. Victoria Quick Care Visit Frequencies by Zip Codes for Service Area



Map 9. Victoria Quick Care Visits Frequencies by County for Service Area



Appendix C. Focus Group Questions

Introduction [5 minutes]

Hello, my name is Isabel Araiza and I am a sociologist at Texas A&M University Corpus Christi. This is my colleague, Brittany Garcia. I've been doing Health Needs Assessments since 2010, and Brittany has been doing Health Needs Assessments since 2016. You all were invited to participate in this focus group because we believe you are in a unique position within communities that allow you to notice patterns about people's health and well-being. We would like to encourage you to think about the health and well-being of people, at a community level, not just at an individual level. We want you to think about the communities and environments within which children and families live their lives. We would like you to reflect on your interactions with the children and families in the region and ask yourself if you notice patterns that are related to children and families' health and well-being.

Before we begin with these questions, we want to remind you that though we may use name and role, any comments you offer here will be kept confidential. We will not disclose anyone's identity. We will not tell anyone who participated in the focus group. What the public will know is that a series of focus groups were conducted. Participants were asked the same set of questions and only themes identified across the focus groups will be shared. Your honesty is valued. While we do not intend to force anyone to speak, we may occasionally call on you to share your ideas. It is our hope that everyone will share their thoughts. If one of the individuals in the group makes a comment and you would like to respond to that person's comment, you are welcome to do so. One of the benefits of a focus group is that hearing other people's perspectives can draw more thoughts/reactions/ideas from others in the group.

This focus group will be focusing on _____ and will last approximately one hour in duration. We are asking you to share your thoughts but also be mindful of allowing others to speak. We have three sets of questions and are planning to spend roughly 15 minutes on each set. We'll share the questions with you, then open the floor your reactions.

Does anyone have any questions?

Okay, let's proceed. Can you please share with us your name and role in the community?

Our first set of questions pertains to keeping people healthy

1. Are there resources/services in these communities that contribute to people's well-being and help people stay healthy? Are those resources/services available to all people in the community or just certain people?
2. If money was not an issue, what kinds of changes or things would you like to see in these communities that you think could contribute to children/families' health and well-being? What do you think needs to be available/more available to children and families to keep them healthy?

Our next set of questions pertains to things in the community that are a threat to health

1. What would you say are the top 3 things in these communities that threaten children's health/well-being and need to be addressed so they may experience better health/less sickness?
2. Are there different threats in different communities? What are they?

The final set of questions relate to things challenging people's ability to get better if/when people get sick

1. What do you think are the main barriers to either seeing or being seen by a health care professional?
2. What do you think are the main barriers to following doctor's recommendations/treatment plans?

As a wrap up, is there anything else you would like to add?

Thank you again for your participation in today's focus group. Before we leave, we would like you to know that you will be receiving an email with a google survey. You may use this form to confidentially share any responses you did not get to include during the focus group. Please submit responses no later than _____. No identifying information will be included in our reports.