



Shriners Children's Ohio Community Health Needs Assessment 2022

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Shriners Children's at a Glance

Shriners Children's® is a health care system with locations in the U.S., Canada and Mexico. Our staff is dedicated to improving the lives of children by providing pediatric specialty care, conducting innovative research, and offering outstanding educational programs for medical professionals. Children up to age 18 with orthopedic conditions, burns, spinal cord injuries, and cleft lip and palate are eligible for care, regardless of the families' ability to pay. Within these broad service lines, many types of care are provided. For example, some locations offer reconstructive plastic surgery, treatment for craniofacial abnormalities, or care for sports injuries. Generally, care is provided until age 18, although, in some cases, it may be extended to age 21. All services are provided in a compassionate and family-centered environment. Our patients are our priority. We take the time to care and to listen. At Shriners Children's, every patient and family can expect respectful, compassionate, expert care.

The mission of Shriners Children's is to:

Provide the highest quality care to children with neuromusculoskeletal conditions, burn injuries, and other special health care needs within a compassionate, family-centered, and collaborative care environment.

Provide for the education of physicians and other health care professionals.

Conduct research to discover new knowledge that improves the quality of care and quality of life of children and families.

This mission is carried out without regard to race, color, creed, sex or sect, disability, national origin, or ability of a patient or family to pay.

Shriners Children's is committed to its' employees and the diverse patient population which Shriners Children's serves. As a result, no person will be discriminated against because of race, religion, color, sex, sexual orientation, gender identity or expression, age, marital status, citizenship, national origin, genetic information, disability or any other protected class as outlined in applicable state or local regulations.

About Shriners Children's Ohio

Shriners Children's Ohio is changing lives every day through innovative pediatric specialty care, research and outstanding medical education. Since 1968, Shriners Children's Ohio changes lives every day through innovative and expert specialty care to children and families with pediatric burns, pediatric plastic surgery needs, and complex wound and skin conditions. Shriners Children's Ohio is a top choice destination because of its expertise in treating these conditions.

Everything we do is designed to make children and their families feel at home. Our family-centered, comprehensive care is focused to meet the physical, functional, cosmetic, and social needs of our patients and families.

Our hospital staff is a team of experts. We walk with the children and their families through their experience and every aspect of their care. We call this Love to the Rescue.

Shriners Children's Ohio is one of only four freestanding hospitals in the country dedicated to the treatment of pediatric burns and specializing in plastic and reconstructive surgery. Our physicians' experience and expertise in pediatric burn treatment, cleft lip and palate, complex wound and skin conditions, and plastic and reconstructive surgery makes Shriners Children's Ohio a first choice for care.

Shriners Children's Ohio is recognized as a verified burn center by the American Burn Association and the American College of Surgeons. This distinction recognizes the immense clinical research done on behalf of our patients, as well as the depth of our support services. Shriners Children's Ohio is the only verified pediatric burn center in Ohio.

Inside Shriners Children's Ohio each day, patients and families say thank you to the Shriners – those men in the red fezzes. Our model for care was imagined and established by the Shriners, the fraternal organization for which the health care system is named. Determined to give all children access to specialized pediatric care, the Shriners opened their first hospital in 1922.

Recognized as leading philanthropy, Shriners Children's has evolved into an international health care system recognized for its devotion to transforming the lives of children through care and research.

Purpose

A Community Health Needs Assessment (CHNA) is a report based on epidemiological, qualitative, and comparative methods that assess the health issues in a hospital organization's community and that community's access to services related to those issues.

The Patient Protection and Affordable Care Act (PPACA) enacted on March 23, 2010, requires not-for-profit hospital organizations to conduct a CHNA once every three taxable years that meets the requirements the Internal Revenue Code 501(r) set forth by the PPACA. The PPACA defines a hospital organization as an organization that operates a facility required by a state to be licensed, registered, or similarly recognized as a hospital; or, a hospital organization is any other organization that the Treasury's Office of the Assistant Secretary ("Secretary") determines has the provision of hospital care as its principal function or purpose constituting the basis for its exemption under section 501(c)(3).

This assessment is designed and intended to meet the IRS needs assessment requirement as it is currently understood and interpreted by Shriners Children's leadership.

Shriners Children's Commitment to the Community

Shriners Children's Ohio is a licensed 7-bed pediatric hospital specializing in the treatment of severe burns and reconstructive surgery. Shriners Children's®--Ohio opened in 1968 and remains committed to providing medical care for children with burn injuries, as well as educating the public about burn prevention, burn care, and providing medical education to physicians interested in burn protocols. The hospital is a leader in acute pediatric burn care and is one of only four freestanding hospitals in the country dedicated to the treatment of pediatric burns.

The hospital has been instrumental in advancing pediatric burn care and survival rates, as well as helping to advance and measure the "quality of life" of the post-burn patient. With extensive in-house follow-up clinics and outreach clinics, we offer a multidisciplinary after-care model designed for better recovery rates. Improved outcomes are measured in terms of patient physical, psychological, and social integration.

The mission for Shriners Children's Ohio remains in alignment with the health care needs of the communities it serves through increasing burn awareness, improving burn injury outcomes, providing reconstructive surgical care, and providing education for both the public and medical community.

Shriners Children's Ohio currently serves the needs of the children that have sustained burn injuries or are in need of reconstructive surgery living in the Midwest, South, Upper Midwest, Plains and Southeast. Shriners Children's Ohio provides education and consultation to the medical community to include emergency departments, medical schools, pediatric practices, family medicine practices, urban and rural health clinics, and school nurses. In the review of the evaluations from previous presentations, it became apparent that medical professionals who provide care to pediatric patients do not receive evidenced-based burn care education on a routine basis.

Shriners Children's Ohio took a proactive approach in fulfilling its educational mission to the community by hiring a full-time Director of Professional Relations. This position was created to provide direct outreach to the medical community in Ohio, Kentucky, West Virginia, Indiana, Illinois, Missouri, Tennessee, Georgia, Florida, North Carolina, and 11 other states. The focus of our educational mission is to make Shriner's educational and outreach programs available to communities in need of training, and to provide the highest level of burn awareness training to the public.

Stakeholders and Target Populations

Because Shriners Children's Ohio is a pediatric burn specialty hospital, physician stakeholders include pediatric burn surgeons, pediatric plastic surgeons, anesthesiologists, and nurse practitioners who work at the hospital along with the network of pediatricians and primary care physicians that refer patients to us.

Certainly SHC owners, the Shriners who send patients to Shriners Children's Ohio, are stakeholders, as well as the rest of the hospital staff who either deliver care or are involved in supportive roles. Shriners Children's Ohio's network of community pediatricians, primary care physicians, and office managers has increased by more than 60 percent since we hired our physician liaison and Director of Professional Relations. Thus, the primary target population are the children in Shriners Children's Ohio catchment area that includes all of Ohio, Kentucky, West Virginia, Indiana, Illinois, Missouri, Tennessee, Georgia, Florida, North Carolina, and 11 other states in the Midwest, Plains and Southeastern seaboard.

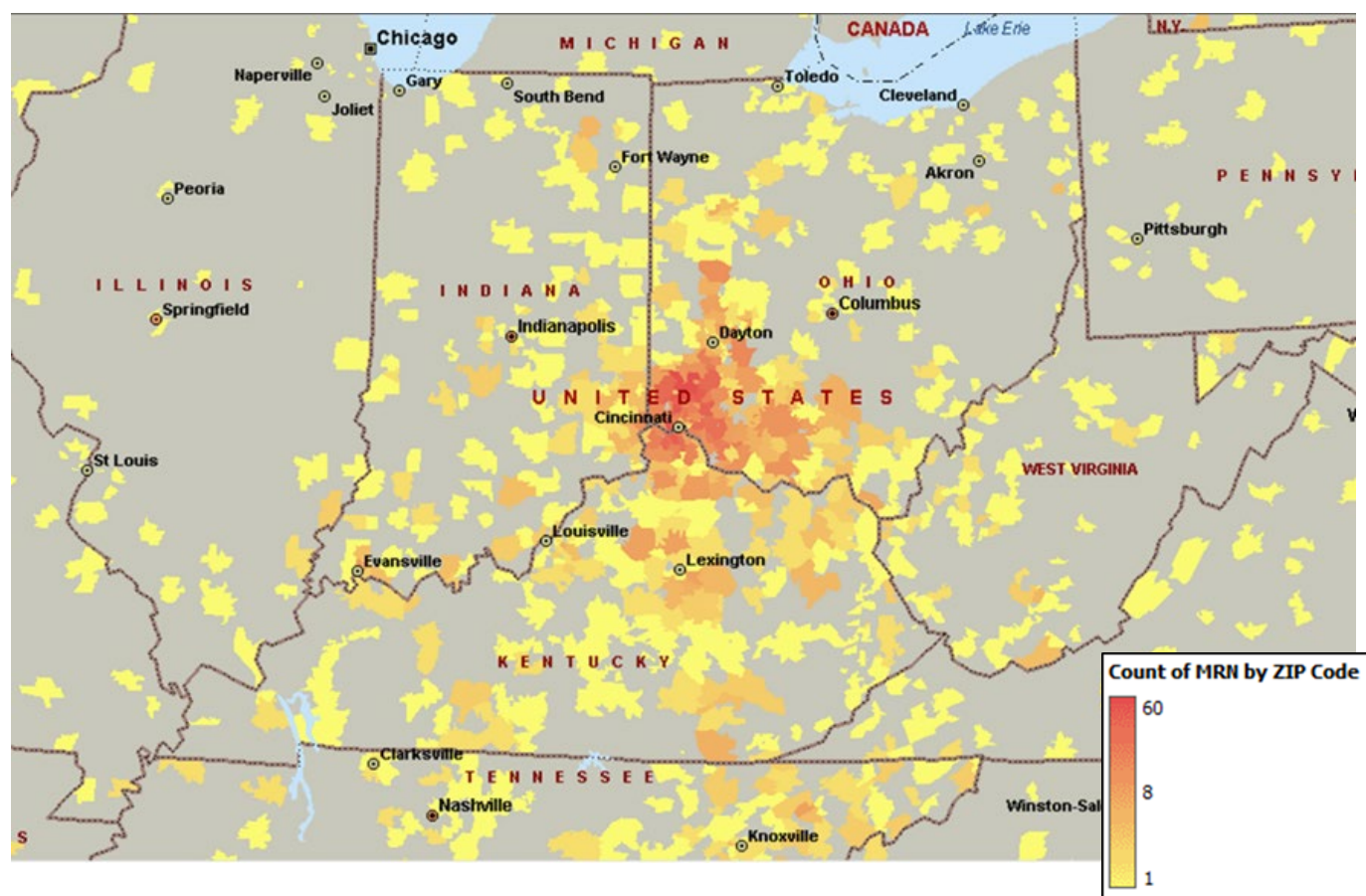
Our Community

Shriners Children's Ohio draws patients from across the US, with the majority of patients residing within a 276-mile radius of the hospital.

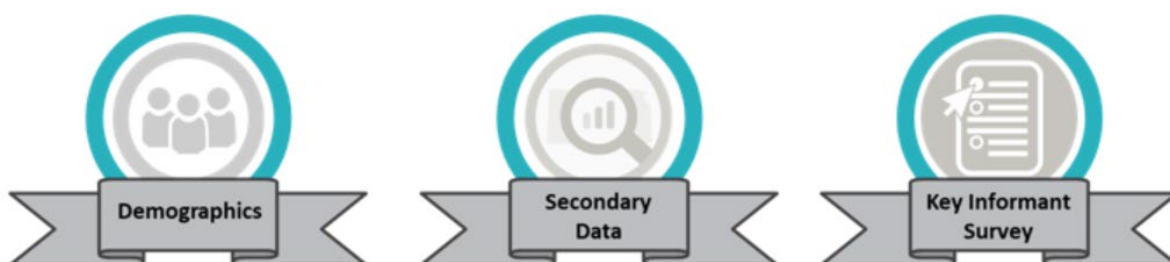
Across the United States, Acute Burn prevalence (number of acute burn cases at a given point in time, not number of new cases*) equates to ~15 cases per 10,000 residents. If applied to the pediatric population of 253,423 children between the ages of 0-18 years within the seven surrounding counties served by Shriners Children's Ohio this would amount to 16,864 acute burn cases a year by 2022.

NOTE:

Please reference the Exhibits section at the end of this CHNA for Exhibit 15's map illustrating unique patient distribution throughout 2022. Shriners Children's Ohio's burn service expertise attract kids geographically throughout Ohio, Kentucky, West Virginia, Indiana, Illinois, Missouri, Tennessee, Georgia, Florida, North Carolina, and 11 other states in the Midwest, Plains and Southeastern seaboard. With a big concentration from the south and northeast, with the majority of regional patients coming from more than 90 minutes (drive time) away from Shriners Children's Ohio.



Process and Methods



DEMOGRAPHICS

NOTE:

Please reference the Exhibits section at the end of this CHNA for detailed Tables of seven counties that are served by Shriners Children's Ohio and the population distribution based on age, ethnicity and household income.

Table 1 (below) shows a combined area patient and family demographics that when assessed can assist in care delivery. Based on the data, the following can be said about Shriners Children's Ohio population:

Education level:

- 33.96% of the population have at least a high school education, higher than the entire U.S. population at 26.92%
- 28.16% have some college/Associates Degree, lower than the U.S. population at 30.84%
- 29.39% have a Bachelor's degree or higher. This is just below the education distribution across the entire U.S. Population at 30.70%.

Household Income Distribution:

- 18.40% of the population make under \$50K a year, lower than the U.S. average of 19.06%.
 - o 8.77% have an income of <\$15K, below the current poverty line in the U.S.
 - o 6.59% have an income of \$15-\$25K, either below the poverty line or slightly above.
- 30.31% of the population has a house hold income between \$50-\$100K
- 35.93% of the population has an annual income over \$100K

Table 1

COMBINED POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	572,082	50.74%	586,796	50.74%	2.57%	50.76%
Male Population	555,485	49.26%	569,652	49.26%	2.55%	49.24%
Total	1,127,567	100.00 %	1,156,448	100.00 %	2.56 %	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
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00-17	253,423	22.48%	249,940	21.61%	(1.37 %)	21.98%
18-44	386,292	34.26%	395,229	34.18%	2.31%	35.61%
45-64	286,402	25.40%	278,351	24.07%	(2.81 %)	24.91%
65-UP	201,450	17.87%	232,928	20.14%	15.63%	17.50%
Total	1,127,567	100.00 %	1,156,448	100.00 %	2.56 %	100.00 %

	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Ethnicity/Race						
Asian & Pacific Is.						
Non-Hispanic	40,375	3.58%	48,235	4.17%	19.47%	6.09%
Black Non-Hispanic	71,252	6.32%	76,902	6.65%	7.93%	12.45%
Hispanic	42,948	3.81%	49,762	4.30%	15.87%	19.26%
White Non-Hispanic	941,591	83.51%	945,968	81.80%	0.46%	58.82%
All Others	31,401	2.78%	35,581	3.08%	13.31%	3.38%
Total	1,127,567	100.00 %	1,156,448	100.00 %	2.56 %	100.00 %

	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Language*						
Only English at Home	993,013	93.60%	1,019,033	93.60%	2.62%	78.18%
Other Asian-Pacific Lang at Home	6,620	0.62%	6,786	0.62%	2.51%	0.99%
Other Indo-European Lang at Home	12,134	1.14%	12,490	1.15%	2.93%	1.88%
Other Lang at Home	6,652	0.63%	6,781	0.62%	1.94%	1.14%
Spanish at Home	23,949	2.26%	24,581	2.26%	2.64%	13.46%
All Others	18,521	1.75%	19,005	1.75%	2.61%	4.35%
Total	1,060,889	100.00 %	1,088,676	100.00 %	2.62 %	100.00 %

Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	31,972	7.43%	29,089	6.58%	(9.02 %)	8.82%
\$15-25K	29,259	6.80%	25,876	5.85%	(11.56 %)	7.56%
\$25-50K	83,298	19.35%	74,898	16.93%	(10.08 %)	19.06%
\$50-75K	72,861	16.93%	71,304	16.12%	(2.14 %)	16.21%
\$75-100K	59,368	13.79%	58,676	13.26%	(1.17 %)	12.60%
\$100K-200K	112,574	26.15%	125,888	28.45%	11.83%	24.79%
>\$200K	41,108	9.55%	56,681	12.81%	37.88%	10.97%
Total	430,440	100.00 %	442,412	100.00 %	2.78 %	100.00 %

Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	14,475	1.91%	14,998	1.90%	3.61%	4.90%
Some High School	44,676	5.89%	46,363	5.89%	3.78%	6.64%
High School Degree	250,838	33.06%	260,283	33.06%	3.77%	26.92%
Some College/Assoc. Degree	226,170	29.81%	234,500	29.78%	3.68%	30.84%
Bachelor's Degree or Greater	222,491	29.33%	231,255	29.37%	3.94%	30.70%
Total	758,650	100.00 %	787,399	100.00 %	3.79 %	100.00 %

*Excludes population age<5, **Excludes population age <25

Source: Claritas Pop-Facts® 2022

Primary Data Analysis

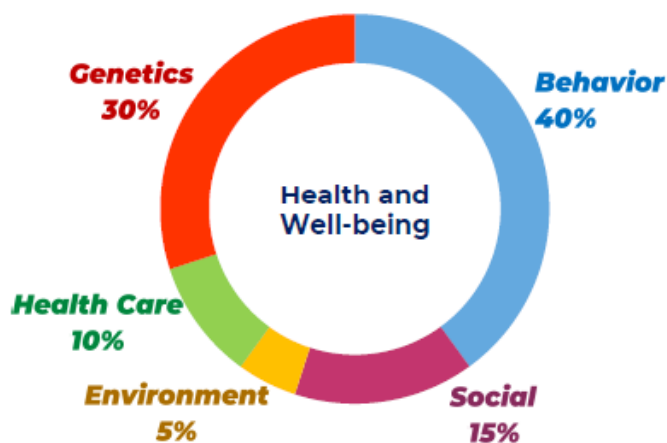
Focus group participants discussed the following questions:

1. What are the most serious health issues facing your community?
2. What can you do to improve your health?
3. What barriers have you experienced in receiving health care in your community?
4. What would you say is the most important child health issues in your community?
5. What would you say is the most important thing that can be done to improve child health in your community?

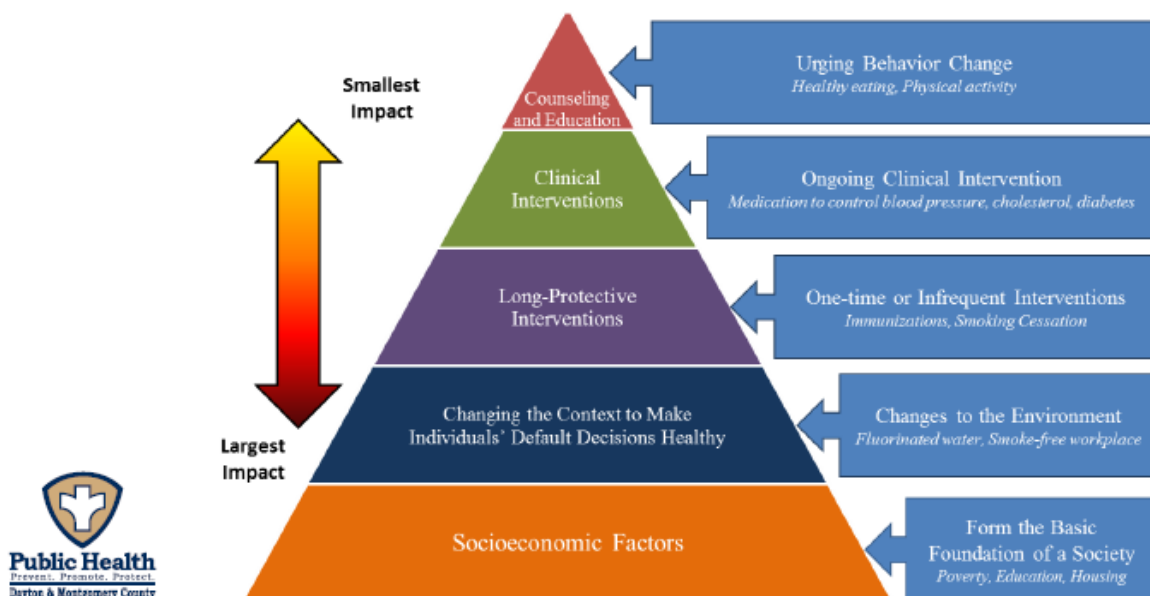


Rank	Top Priorities
1	Social Determinants of Health <ul style="list-style-type: none"> ♦ Access to Care (Insurance, Cost, Availability of Services and Providers) ♦ Cultural Competence ♦ Healthy Food/Nutrition ♦ Discrimination ♦ Education ♦ Employment ♦ Parenting/Family ♦ Language ♦ Opportunity to Exercise ♦ Public Safety ♦ Transportation
2	Mental Health <ul style="list-style-type: none"> ♦ Suicide
3	Substance Use <ul style="list-style-type: none"> ♦ Stigma
4	Chronic Diseases
5	Care Coordination

Factors Influencing Health Status



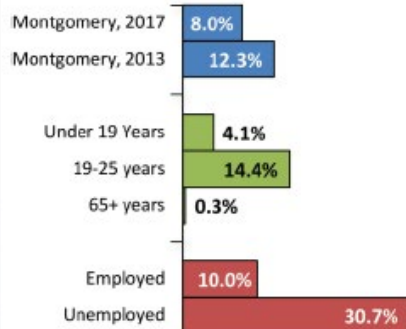
Health Impact Pyramid



Access To Care



Uninsured Montgomery County, 2017



Source: American Community Survey, U.S. Census Bureau

KEY FINDINGS

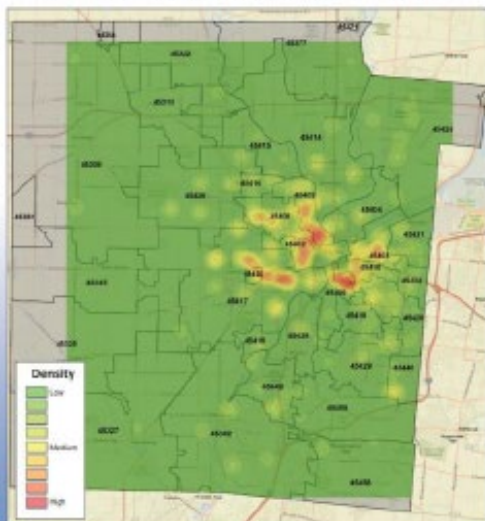
- ▶ 8% of the population is uninsured, compared to 12% in 2013.
- ▶ 14% of the population 19 to 25 years of age are uninsured.

Built Environment

A person's built environment, the community where they live and work, impacts their overall health and quality of life. Individuals living in poverty may have more adverse health outcomes than other individuals. Issues such as poor air quality, childhood lead exposure, a high concentration of tobacco and alcohol retail locations, high crime rates and limited access to healthy food disproportionately affect communities in poverty.

Density of Individuals Living in Poverty, Montgomery County, 2017

Percent of Individuals Living in Poverty Top 20 Zip Codes		
Montgomery County 2014-2017		
1	45428	68.6%
2	45402	42.3%
3	45403	39.3%
4	45417	38.7%
5	45405	36.0%
6	45406	31.8%
7	45410	31.3%
8	45404	25.7%
9	45426	24.7%
10	45416	21.9%
11	45439	21.3%
12	45414	20.9%
13	45420	20.4%
14	45409	19.8%
15	45345	19.6%
16	45449	18.1%
17	45344	15.8%
18	45342	12.5%
19	45418	12.3%
20	45424	11.6%



Source: American Community Survey, U.S. Census

"Your longevity and health are more determined by your zip code than they are by your genetic code."

- Tom Frieden, M.D., M.P.H., former Director of the CDC



Social Determinants of Health

Economic Stability

- Employment
- Food Insecurity
- Housing Instability
- Poverty

Social and Community Context

- Discrimination
- Incarceration
- Social Cohesion and Support
- Community Engagement

Education

- Early Childhood Education
- High School Graduation
- Language and Literacy
- Higher Education/Vocational Training

Neighborhood and Built Environment

- Access to Healthy Food
- Quality Housing
- Transportation
- Public Safety
- Environmental Conditions

Health and Health Care

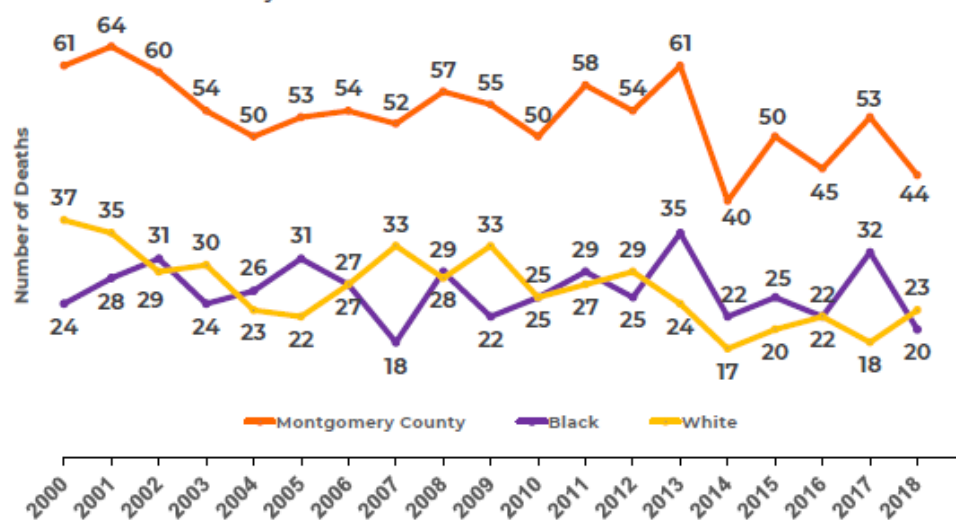
- Access to Health Care
- Health Literacy
- Provider Availability
- Provider Cultural Competency
- Quality of Care



Infant Mortality

Montgomery County

Trends in Infant Deaths by Race



2018 numbers are preliminary

Community Needs Survey

In order to measure the needs in the local healthcare community, a second survey, the Community Needs Survey was distributed to Shriners Children's Ohio's top 150 providers and mid-level providers. 150 surveys were initially handed out. Total number of responses was 42 (N = 42), this is a 35% response rate. Surveys were handed out in pediatrician and family practice medical offices and community health clinics in the local seven-county area served by Shriners Children's Ohio.

Burn Education Survey

The 2022 Community Health Needs Assessment process included collecting data using two sources. Burn Education Survey data was collected after burn education presentations as part of the evaluation. Data for this survey was collected from providers including physicians, mid-level providers, nurses, and first responders at pediatrician and family practice medical offices, community health clinics, first responder presentations, and emergency departments in a local seven-county area served by Shriners Children's Ohio.

Because of information uncovered in the hospital's previous community health needs assessment, Shriners Children's Ohio elected to collect additional information regarding burn education. The questions below were added to our regular education evaluations to see if additional burn education changed the delivery of burn care.

1. Will your treatment of burns change based on the education you received today?

YES NO

2. When was the last time you had burn education prior to today's presentation?

1-5 years 5-10 years 10+ years Never

3. Please circle your credential:

MD/DO APRN RN PA EMT/PARAMEDIC

Burn Education Survey data were collected from the following sources between 2019 and 2022: 544 evaluations were handed out and total number of responses was 544 (N = 544), this is a 100% response rate. The high response rate was tied to continuing education credits awarded for return of evaluations.

1. Pediatrician and family practice providers, emergency rooms, and fire departments
2. Data collected from burn education evaluations

Key Findings

Based on the data collected, the following can be identified as key findings. Addressed below are the summary of responses by survey and secondary data analysis.

Burn Education Survey Response Analysis

Total number of respondents 544, 100% response rate

Do you see a need for burn education in the health care setting?	Percent of total respondents answering "Yes"
	100%
Have you received burn education in the past one year?	
Yes	10%
No	90%
How long ago did you receive burn education, if ever?	Number of respondents who have received burn education in the past
1 to 5 years ago	107
5 – 10 years ago	148
> than 10 years ago	254
I have never received burn education	35
Would you be interested in burn education?	Percent of total respondents answering "Yes"
	100%
Please select your professional title:	Number of professional titles surveyed/responded
MD/DO	80
APRN	22
RN	125
MA/NA	23
First Responder/Paramedic/EMT	276
Student	18

Community Health Needs Survey Response Analysis:

Total number of respondents 42 (150 surveys initially handed out)

	In Ranking Order of Responses
For which specialty care services do you most often refer your patients to other providers (could select multiple options).	<ul style="list-style-type: none">- Gastroenterology (5)- ENT (6)- Endocrinology (4)- Pediatric Orthopedic Surgery (5)- Neurology (4)- Urology (3)- Pediatric General Surgery (5)- Physiatrist (6)- Rheumatologist (2)- Geneticist (2)

Note: not all survey responders answered this question

Other Specialist: Speech, Psychiatry/Psychology, Physical Therapy/Occupational Therapy, Developmental Pediatrics, Optometrist, and Dentist

Action Plan

2019 Action Plan

In the face of Shriners Children's Ohio transition from Cincinnati, Ohio to Dayton, Ohio our Community Health Needs Assessment continued to show a deficiency relating to burn education for children in the first responder community, hospital emergency rooms, and physician offices.

In 2020 Shriners Children's Ohio launched a robust, system-wide website tool for providers and first responders that delivers up-to-date educational tools on burn care management and other resources providing instruction on treating the burned child.

2019 Action Plan Results

Shriners Children's Ohio introduced another digital mobile application in 2016 that takes information from the website and puts it into the hands of medical professionals and first responders immediately via their mobile devices. As of 2022, medical professionals and first responders have downloaded over this robust application over 1,800 times.

Our action plan included continued outreach to the various communities and beyond via presentations and lectures (see chart below):

Years	States	Presentations	Attendees
2017	14	93	1500
2018	14	94	2802
2019	10	55	1157
2020	5	43	295
2021	5	67	625

In early 2020, like so many other healthcare facilities in the United States, Shriners Children's Ohio was hit hard by the COVID-19 pandemic. However, the continued need for educational outreach became even more vital. Therefore, the Shriners Children's Ohio community outreach staff then shifted their efforts to virtual presentations and a virtual one-hour PowerPoint presentation and lecture about pediatric burns, including types of burns and management. Presentation and lecture materials were pre-mailed to all attendees and included burn treatment information, and updated information about the hospital's webpage and referral options.

Written Comments on 2019 Community Health Needs Assessment

Shriners Children's Community Health Needs Assessment and implementation was made widely available to the public on Shriners Children's website at <https://www.shrinerschildrens.org/en/community-health-needs>

In addition to posting the Community Health Needs Assessment, contact information including email were listed. No comments or questions were received.

2022 Action Plan and Performance Measures

Like so many other healthcare facilities in the United States of America, Shriners Children's Ohio is currently going through a transition period. Regardless of the transition, Shriners Children's Ohio is committed to continuing to provide burn care and management to the pediatric population.

Our goals from now until the next Community Health Needs Assessment in 2024 includes working with future partners, affirming our commitment to providing the best burn care and management in the world, and continuing to provide evidence-based burn education to the health care community to improve patient outcomes.

Based on the results of this 2022 Community Health Needs Assessment, Shriners Children's Ohio will take the following actions in response to prioritized community needs:

Goal	Objective	Strategy	Timeframe
Improve outcomes for burned children.	Increase burn awareness and burn care education to pediatric care providers throughout the healthcare community.	Continue to provide evidence-based burn education to the healthcare community by means of in person presentation and PowerPoint.	From now through 2024
		Continue to provide updated web-based burn information for the medical community and families.	From now through 2024
		Continue to provide phone-application based digital tool to provide emergent and up to date burn care and burn management information for providers.	From now through 2024
		Work with potential future partners to care for and manage burned children	From now through 2024
Shriners Children’s Ohio Community Health Needs Assessment – Action Plan 2022			

Conclusion

Burn education continues to be a critical need in the community at all levels and must be repeated often to provide the most recent evidence-based information. Having the knowledge of proper burn care and management, in the emergent, office or clinic, or field setting can be a life-saving intervention and change the outcome for the child.

Shriners Children's Ohio remains committed to providing the best care and education as we have for the last 50 years.

2022 Community Health Needs Assessment Report Available Online or in Print

The 2022 Community Health Needs Assessment is available at:

<https://www.shrinerschildrens.org/en/community-health-needs>

05/04/2022

Date adopted by authorized body of hospital

Randall A. White, MHA, MBA, FACHE - Hospital Administrator

Exhibits

Exhibit 1

Burn Injury Management Course for Professionals



**Shriners
Children's
Ohio**

One Children's Plaza - 2 West
Dayton, Ohio 45404

TARGET AUDIENCE

Designed for the interdisciplinary members of the health care team providing emergency care and management of the burn injured child.

PROGRAM CONTENT

- Emergent Interventions
- Treatment Priorities
 - Airway Management
 - Fluid Resuscitation
 - Wound Care
- Severity of Injury
- Expected Outcomes
- Case Studies

"Very informative, more than I expected. Ms. Harrell had great information that is very relevant to practice."

Nurse Practitioner - Hamilton City Schools, Hamilton, OH

"I gained valuable information today. Quite impressive."

Pediatrician - Floyd Memorial Hospital Pediatric Group, New Albany, IN

How to schedule:

To arrange a date and time for the program at your facility, please call or email:

Debbie Harrell, MSN, RN, NE-BC | Cell - 513-824-5718 | ddharrell@shrinenet.org

If you know a child we can help, call or go to:

shrinersohio.org

Burn & Emergency Services

866-947-7840

Plastic Surgery Services

855-206-2096

Burn Injury Management:

The 1st 24 Hours

Virtual presentations are also available

PRESENTED BY:

Debbie Harrell, RN, MSN, NE-BC

Course Description

This program is intended to advance the knowledge of emergency health care providers in pediatric burn care management. Treatment of burn injured children is addressed from the care at the scene, during transport and care in the emergency room. These lectures provide basic burn care management interventions, practical application of current therapies, and expected clinical patient outcomes.

Share this Program with your staff

A professional member of the burn team from Shriners Children's™ Ohio can visit your facility, providing your staff with continuing education (CE) credits.

**FREE
CME or CEU
Credit !**

Exhibit 2

Burn Management
FAQ's Handout

**Shriners
Children's[®]**
Ohio

866-947-7840

Shriners Children's Ohio — Dayton, OH

Burn Management

FREQUENTLY ASKED QUESTIONS



Temperature Management

How do I keep the patient warm?

Keep the patient covered at all times with dry dressings. Warming IV fluids, increasing ambient temperatures and Bair Huggers are all very helpful. Maintaining the patient's temperature is a priority. The room should be warmed, and the patient should be covered with dry sheets and blankets to prevent hypothermia. Warmed IV fluid (37–40°C) may be used for resuscitation.^[1]



Airway Management

How do I assess for INHALATION injury?

There are 3 distinguishable types of airway inhalation injury:

1. **Carbon monoxide poisoning:** Treatment is application of 100% oxygen
2. **Inhalation (thermal) injury** above the glottis: The patient may have a hoarse raspy voice, stidor respiratory distress and
3. **Inhalation (chemical and irritant) injury** below the glottis

What is considered a "CONFINED/ CLOSED SPACE?"

A confined/closed space is an area where smoke and heat cannot readily escape thereby increasing the risk of an inhalation injury.

How do I know if I need to INTUBATE?

Stridor, hoarseness of voice or cry, drooling, difficulty speaking, respiratory distress, and obvious swelling of the oropharynx are indications for emergent intubation. An

Airway Management continued

obtunded patient or a patient with absent airway reflexes mandates emergent intubation. Extensive total body surface area burns (> 40%) may also require intubation.^[1, 2] Flash facial burns, singed nasal/facial hair, and carbonaceous material (soot) in the nasopharynx or oropharynx are NOT absolute indications for emergent intubation as long as the patient is breathing comfortably and does not display any of the above mentioned signs.

What should I expect a burn patient's MENTAL STATUS to be like?

Typically, a burn patient is alert and oriented and may be in a significant amount of pain. If the patient is not alert, consider associated trauma/injury, carbon monoxide poisoning, cyanide poisoning, hypoxia, and hypoglycemia.^[1, 2]



Fluid Management/ Resuscitation

WHERE should I place an IV?

Preferably through unburned skin, but vessels underlying burned skin can be used if necessary.^[1] Preparation of the skin or burned tissue overlying the vessel to be cannulated should follow the same protocol as typical IV placement. If peripheral venous access cannot be obtained, intraosseous lines can serve as temporizing measures until venous access is achieved.

How do I SECURE an IV?

Adhesive tape sticks poorly to burned skin. IV catheters can be secured using a gauze roll or Coban[™] Self-Adherent Wrap if available.

WHO needs a FLUID BOLUS?

Routine fluid boluses should be avoided in order to prevent fluid overload (ie "fluid creep") that will exacerbate generalized edema and contribute to respiratory distress syndrome. In the absence of a

Fluid Management/Resuscitation continued

history of acute blood loss, initiate resuscitation fluids at the recommended rate.

What is "FLUID CREEP?"

"Fluid creep" refers to fluid overload that may result from overestimation of burn size, under appreciation of the limitations of standard hemodynamic monitoring methods in the burn patient, and inadequate reduction of fluid infusion in response to excessive urine output.^[1]

What are the GOALS for FLUID RESUSCITATION in a burn patient?

Fluid resuscitation should be aimed at maintaining tissue perfusion and organ function while avoiding the complications of inadequate or excessive fluid therapy. Peripheral vascular resistance markedly increases and cardiac output decreases in the early stages after thermal injury.

^[1] Tissue blood flow is diminished and redistributed. The edema that forms in injured tissue reaches its maximum in the second 24 hours post burn. Excessive volume of resuscitation fluid exaggerates edema formation leading to compromised local blood supply as well as contributing to worsened respiratory distress syndrome and prolonged time on the ventilator. Inadequate resuscitation can lead to shock and organ failure, most commonly acute renal failure.^[1]

Which burn patients REQUIRE a FOLEY CATHETER?

A patient with TBSA burns of 20% or more should have a Foley catheter placed in order to monitor urine output.

What is the best way to know that I am RESUSCITATING EFFECTIVELY?

Urine output is the best guide for ensuring the appropriateness of fluid resuscitation.

^[1] Insertion of a Foley catheter allows for the calculation of hourly urine output. Goal urine output: adults = 30–50 mL/hr; children <30kg = 0.05 mL–1 mL/kg/hr.^[1–3]

continued next page...

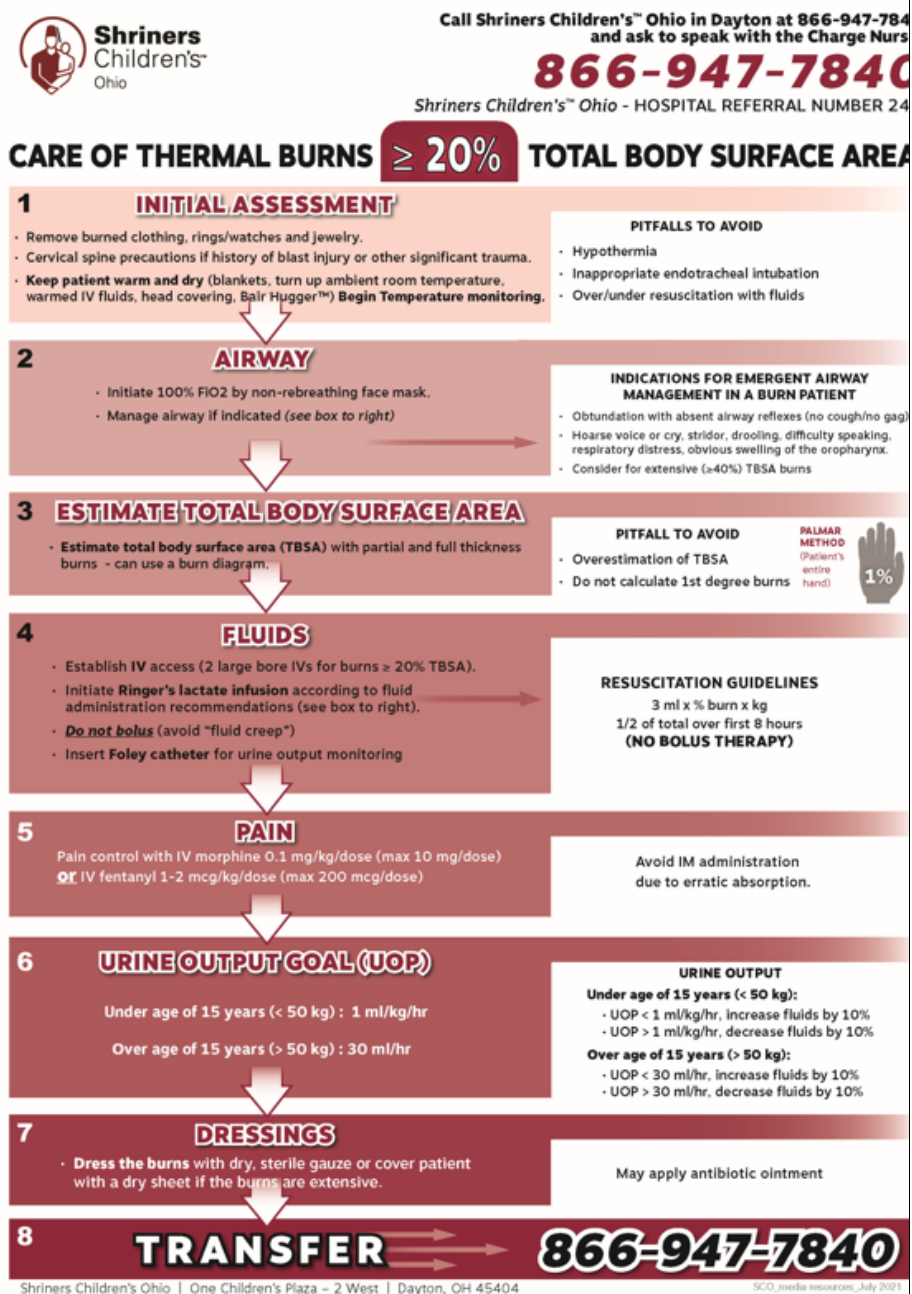
Exhibit 3**Care of Thermal Burns $\geq 20\%$ Body Surface Area**

Exhibit 4**Pediatric Burn Triage Handout**

This 8-1/2" x 11" educational handout was developed to assist emergency departments and pre-hospital providers with early burn wound treatment. Many children with mismanaged burns come through our doors. Improper early treatment can create complications and delays in healing.

This handout is used in two delivery methods:

- The Director of Professional Relations delivers a laminated version to hospital emergency departments.
- This handout is included in the lecture folder.



Exhibit 5**Initial Burn Wound Care Handout**

This 8-1/2" x 11" handout was developed to assist emergency departments and medical providers with early burn wound treatment. We see many children who received improper treatment from which arise complications and delay in healing.

This handout is used in two delivery methods:

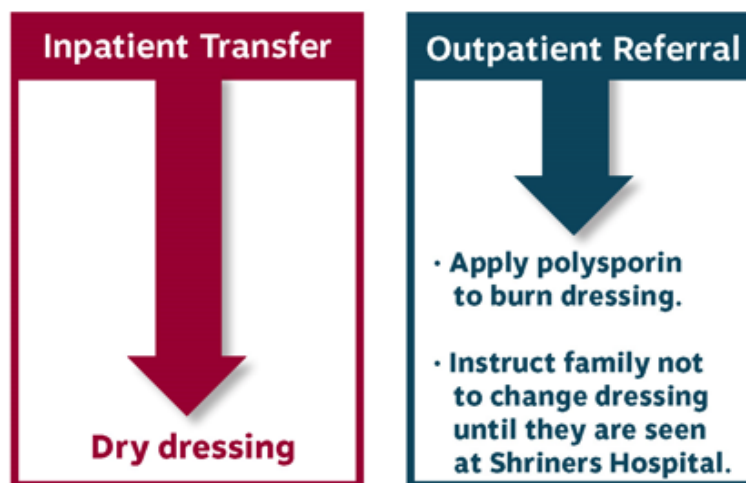
- Laminated copies of this handout are delivered to physician practices and health care clinics by the physician liaison during her visits. The Director of Professional Relations also delivers the laminated version to hospital emergency departments she visits.
- This handout is included in the lecture folder.

INITIAL CARE

Immediately after a burn occurs remove affected clothing and stop the burning process by using cool water to the area for 3-5 minutes. Do not use ice, this can cause decreased blood flow to already impaired skin causing further damage. Cover the wound with loose fitting clean dry dressing and elevate if possible.

Initial Burn Wound Care

Do not wash unless visibly dirty



Shriners
Children's
Ohio



Call Shriners Children's™ Ohio
Burn and Emergency Services
866-947-7840

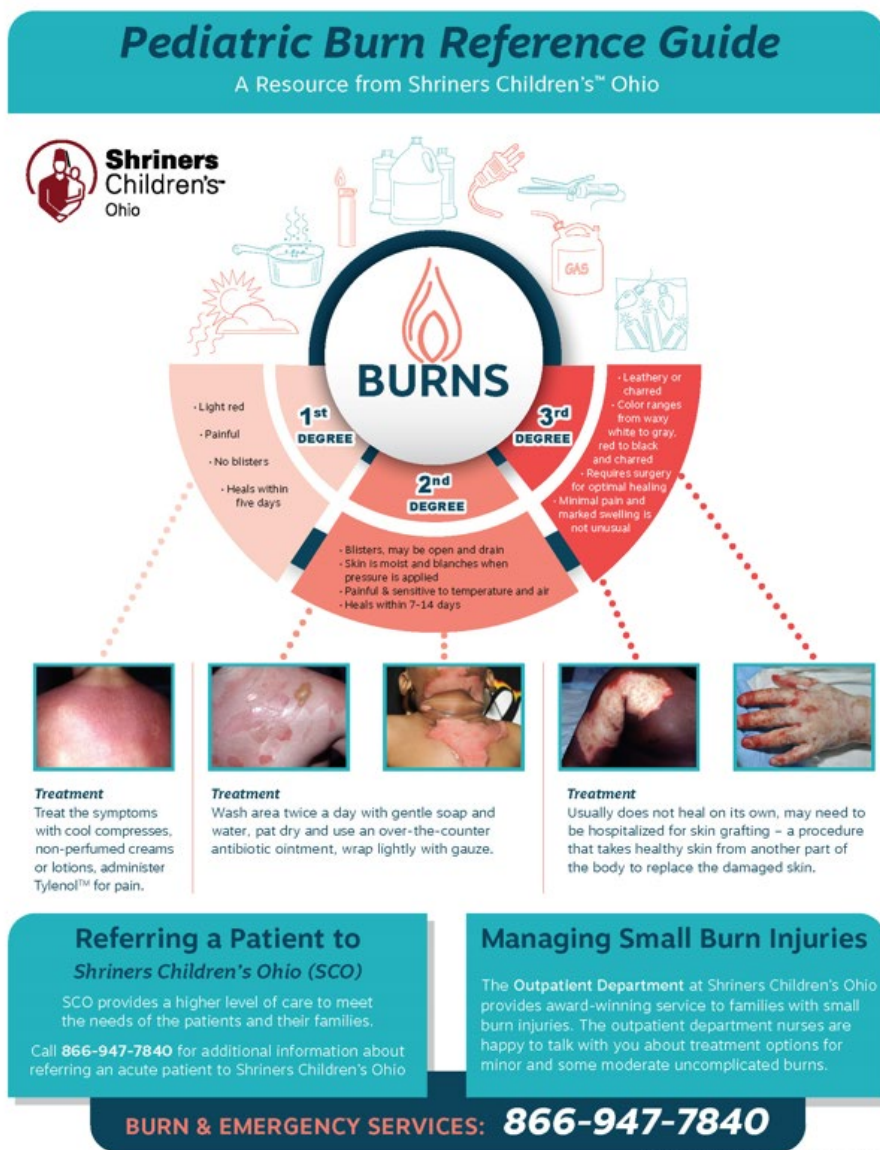
Exhibit 6**Pediatric Burn Reference Guide**

Exhibit 7**Shriners Children's
Ohio Faculty-Directed
Program Evaluation
Form***Shriners Children's Ohio
Faculty-Directed Program Evaluation*

Please complete this questionnaire and leave it with the Program Chairman at the end of the program. Thank you.

Location: _____

Date: _____

Program Title: Emergent Pediatric Burn Care

A. Check one choice representing your level of agreement regarding each statement.

PROGRAM	YES	NO	COMMENTS
1. The content met my personal objectives.	<input type="checkbox"/>	<input type="checkbox"/>	
2. Will treatment of burns change based on the education you received today?	<input type="checkbox"/>	<input type="checkbox"/>	
3. Audiovisuals were effective.	<input type="checkbox"/>	<input type="checkbox"/>	
4. Timeframe for content was appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	
FACULTY EFFECTIVE IN PRESENTATION			COMMENTS
A. Debbie Harrell, MSN	<input type="checkbox"/>	<input type="checkbox"/>	

B. Please mark whether you achieved the proposed learning objectives, listed below:

1. Describe the essential components of initial stabilization of the pediatric patient following a thermal injury.

☐ Yes ☐ No

2. Identify the etiology, treatment or interventions and impact upon short-term patient outcomes

☐ Yes ☐ No

C. Prior to today when was the last time you had burn education

☐ 1-5 years ☐ 5-10 years ☐ 10+ years ☐ Never

D. What 1 thing did you learn that you will be able to use in your work situation?

E. Please circle your credential: MD DO APRN RN PA LPN MA/NA

PARAMEDIC/EMT STUDENT OTHER _____

F. Additional Comments:

10/20

Exhibit 8**Shriners Referral Card**

A flyer was created to distribute to PCP offices and our supporting Shriners. The flyer provides specific details about who we are, what we do, what kind of care we can provide as well as telephone numbers for both the hospital's emergency/burn service number and our Plastic Surgery services phone number.



The most **Amazing Care** anywhere!

Did you know?

- **Shriners Children's™ Ohio** specializes not only in pediatric burn care, but also in a wide variety of unique pediatric reconstructive and cosmetic surgeries.
- All patients are treated regardless of their ability to pay.
- Transportation and housing assistance is provided, so distance is never an issue.
- Below is a list of frequently treated conditions. Please call for any other plastic or burn care needs.

BURN AND WOUND CARE

BURNS: Emergent Burn Care <i>(burns of any size or depth)</i> Acute Injuries Burn Reconstruction Critical Care	ACUTE SKIN CONDITIONS: Toxic Epidermal Necrolysis (TENS) Steven's Johnson Syndrome Purpura Fulminans Necrotizing Fasciitis Hidradenitis	SKIN GRAFTING WOUND CARE: Dog Bites Skin Tears Large Wounds
--------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------

PLASTIC SURGERY

BREAST ABNORMALITIES: Female Breast Abnormalities Micromastia Macromastia Breast Asymmetry Male Breast Abnormalities Gynecomastia Supernumerary Nipple	EAR CONDITIONS: Congenital Ear Abnormalities Cauliflower Ear Atresia Microtia Protruding Ears Skin Tags	SYNDROMES: Apert Syndrome CHARGE Syndrome Möbius Syndrome Pierre Robin Syndrome Poland Syndrome Sticklers Syndrome Goldenhar Syndrome Treacher Collins Syndrome
SKIN CONDITIONS: Hairy Nevus Giant Congenital Melanocytic Nevus Dermoid Cysts Preauricular Cysts Scars Birthmarks Skin Tags	CONGENITAL MALFORMATIONS: Amniotic Band Syndrome Polydactyly Hand Deformities Adactyly Extra Digits Syndactyly	
CRANIOFACIAL CONDITIONS: Cleft Lip and Palate Repair Facial Features Abnormalities Micrognathia Macrognathia Maxillary Prognathism Mandibular Prognathism Plagiocephaly	VASCULAR & LYMPHATIC MALFORMATIONS: Hemangiomas (<i>non-cancerous</i>) Port Wine Stain	

FOR MORE INFORMATION

Download our app:





or visit:
shrinersohio.org


CALL TO REFER A PATIENT:

Burn and Emergency Services 866-947-7840	Plastic Surgery Services 855-206-2096
-----------------------------------------------------------	--------------------------------------------------------

One Children's Plaza – 2 West | Dayton, Ohio 45404 | 513-872-6000

Exhibit 9**Shriners Children's
Ohio Appointment
Card**

**Shriners Children's
Ohio**



Shriners Children's Ohio
Dayton, Ohio

APPOINTMENT CARD

Appointment Please arrive 20 minutes before appointment to complete your registration. Bring insurance card and photo ID.

Date: _____

Time: _____

Give pain medicine to your child 30 minutes prior to your appointment.

Please call **855-206-2096** with any questions or if you can not make your appointment.

Directions on reverse side




Exhibit 10**Scald Fact Sheet**

A double-sided 4" x 3" card was developed to hand out to physician practices and health clinics by the physician liaison.



IN CHILDREN 0-4 YEARS OLD,

over **50** % of burns
are scalds

CAUSE OF BURNS IN CHILDREN 5-19 YEARS OLD



Shriners Children's Ohio
is dedicated to the treatment of
pediatric burns and specializes in
plastic and reconstructive surgery.

If you know a child we can help, call:
855-206-2096

Exhibit 11**Safety Begins at Home Coloring Page**

A coloring page was developed to hand out to physician practices and health clinics by the physician liaison in an effort to encourage discussions and education within the home between parents and their children.

**Exhibit 12****Safety Begins at Home – Smoke Alarms**

- Check alarms each month by pushing the "test" button.
- Replace batteries at least once a year.
- If alarm is chirping, immediately replace the battery.
- Smoke alarms do not last forever, replace them every 10 years.



If you know a child we can help, call:
855-206-2096

Exhibit 13**Shriners Children's—
Cincinnati web site**

<https://www.shrinerschildrens.org/en/locations/ohio>

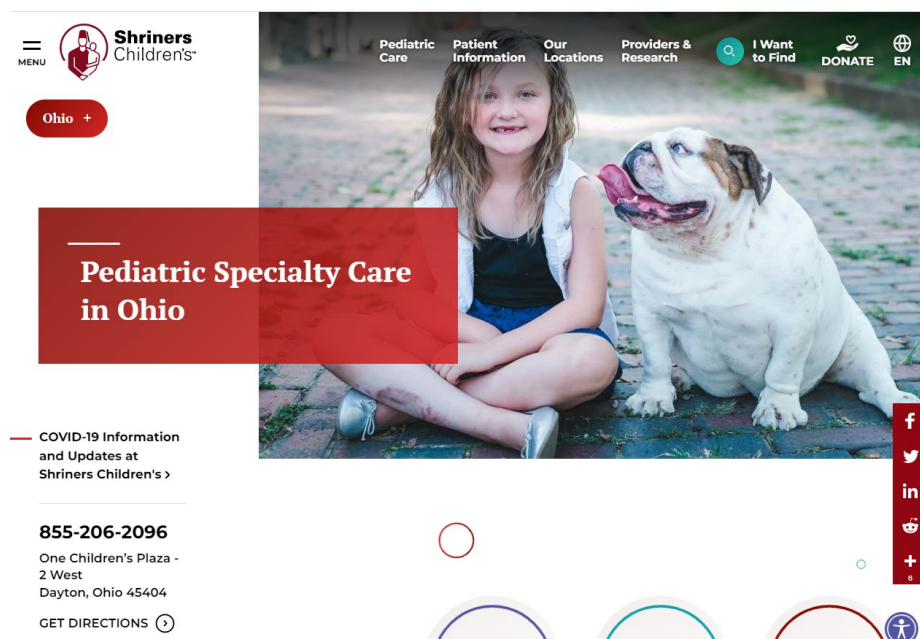
**Exhibit 14****Burn phone app
download
instructions**

Exhibit 15: Number of Hospitals by County

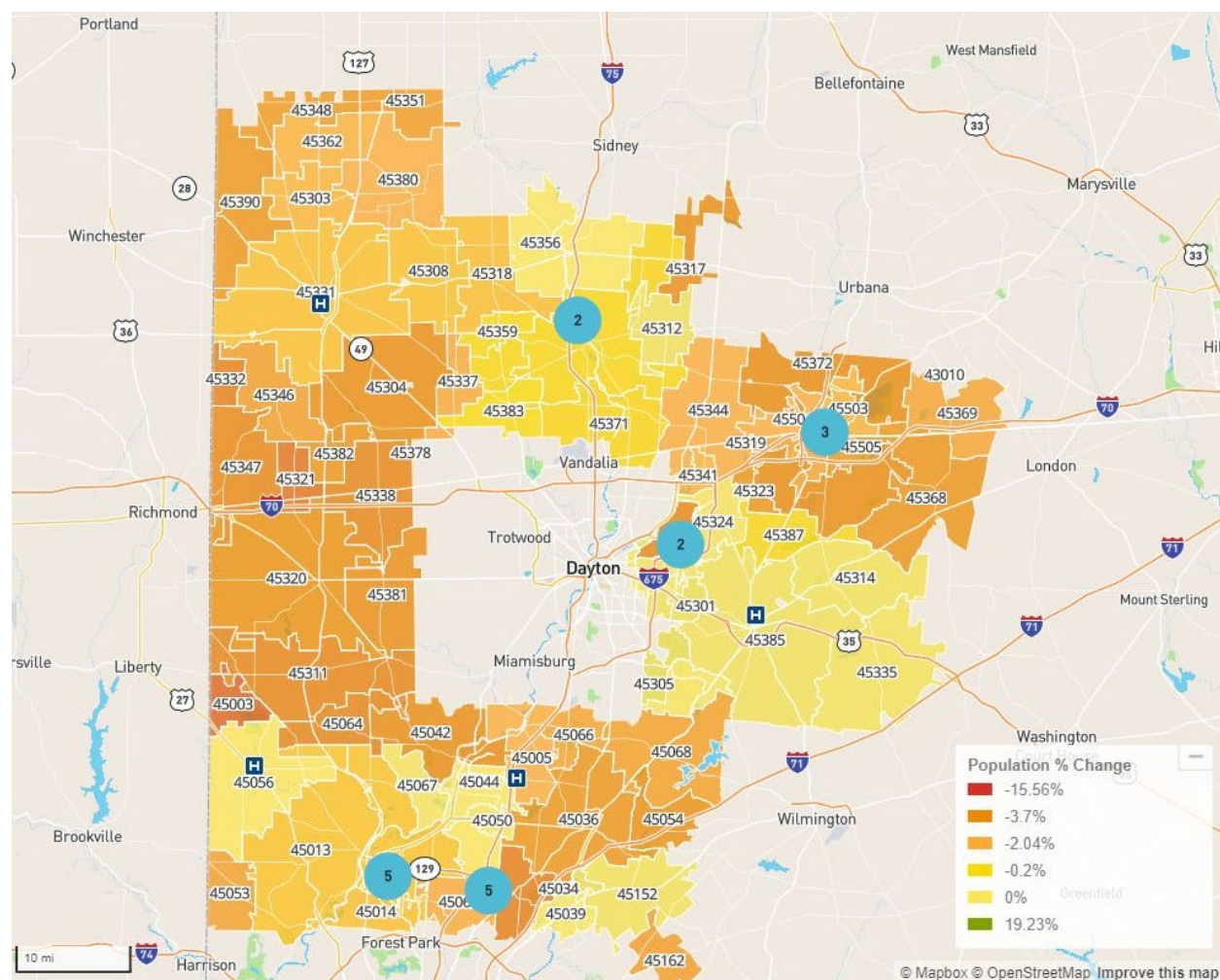


Exhibit 16: Table - BUTLER COUNTY POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Average Age and Income	Market 2022 Population	National 2022 Population	Market 2027 Population	National 2027 Population
Average Age	38.9	40.0	39.7	40.8
Average Household Income	\$36,090	\$39,393	\$40,698	\$44,282

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	197,270	50.99%	202,786	50.99%	2.80%	50.76%
Male Population	189,613	49.01%	194,892	49.01%	2.78%	49.24%
Total	386,883	100.00 %	397,678	100.00 %	2.79 %	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
00-17	88,276	22.82%	87,302	21.95%	(1.10 %)	21.98%
18-44	140,770	36.39%	144,104	36.24%	2.37%	35.61%
45-64	94,916	24.53%	92,514	23.26%	(2.53 %)	24.91%
65-UP	62,921	16.26%	73,758	18.55%	17.22%	17.50%
Total	386,883	100.00 %	397,678	100.00 %	2.79 %	100.00 %

Ethnicity/Race	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Asian & Pacific Is. Non-Hispanic	16,066	4.15%	19,495	4.90%	21.34%	6.09%
Black Non-Hispanic	35,331	9.13%	39,615	9.96%	12.13%	12.45%
Hispanic	19,969	5.16%	22,815	5.74%	14.25%	19.26%
White Non-Hispanic	304,344	78.67%	302,979	76.19%	(0.45 %)	58.82%
All Others	11,173	2.89%	12,774	3.21%	14.33%	3.38%
Total	386,883	100.00 %	397,678	100.00 %	2.79 %	100.00 %

Language*	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Chinese at Home	3,212	0.88%	3,278	0.88%	2.05%	1.12%
Only English at Home	333,554	91.72%	343,168	91.75%	2.88%	78.18%
Other Indo-European Lang at Home	4,376	1.20%	4,472	1.20%	2.19%	1.88%
Other Lang at Home	3,341	0.92%	3,392	0.91%	1.53%	1.14%
Spanish at Home	12,259	3.37%	12,598	3.37%	2.77%	13.46%
All Others	6,925	1.90%	7,108	1.90%	2.64%	4.21%
Total	363,667	100.00 %	374,016	100.00 %	2.85 %	100.00 %
Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	12,446	8.77%	11,480	7.88%	(7.76 %)	8.82%
\$15-25K	9,354	6.59%	8,422	5.78%	(9.96 %)	7.56%
\$25-50K	26,112	18.40%	23,800	16.33%	(8.85 %)	19.06%
\$50-75K	23,391	16.49%	22,449	15.40%	(4.03 %)	16.21%
\$75-100K	19,602	13.82%	19,314	13.25%	(1.47 %)	12.60%
\$100K-200K	37,693	26.57%	41,848	28.71%	11.02%	24.79%
>\$200K	13,278	9.36%	18,458	12.66%	39.01%	10.97%
Total	141,876	100.00 %	145,771	100.00 %	2.75 %	100.00 %
Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	5,048	1.99%	5,298	1.99%	4.95%	4.90%
Some High School	16,441	6.49%	17,342	6.51%	5.48%	6.64%
High School Degree	86,031	33.96%	90,686	34.03%	5.41%	26.92%
Some College/Assoc. Degree	71,333	28.16%	75,086	28.18%	5.26%	30.84%
Bachelor's Degree or Greater	74,461	29.39%	78,081	29.30%	4.86%	30.70%
Total	253,314	100.00 %	266,493	100.00 %	5.20 %	100.00 %

*Excludes population age<5, **Excludes population age<25

Source: Claritas Pop-Facts® 2022

Exhibit 17: Table - CLARK COUNTY POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Average Age and Income	Market 2022 Population	National 2022 Population	Market 2027 Population	National 2027 Population
Average Age	41.5	40.0	42.0	40.8
Average Household Income	\$29,142	\$39,393	\$32,903	\$44,282

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	68,456	51.49%	68,376	51.44%	(0.12 %)	50.76%
Male Population	64,484	48.51%	64,541	48.56%	0.09%	49.24%
Total	132,940	100.00 %	132,917	100.00 %	(0.02 %)	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
00-17	29,241	22.00%	28,479	21.43%	(2.61 %)	21.98%
18-44	42,580	32.03%	43,101	32.43%	1.22%	35.61%
45-64	33,341	25.08%	30,647	23.06%	(8.08 %)	24.91%
65-UP	27,778	20.90%	30,690	23.09%	10.48%	17.50%
Total	132,940	100.00 %	132,917	100.00 %	(0.02 %)	100.00 %

Ethnicity/Race	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Asian & Pacific Is. Non-Hispanic	999	0.75%	1,058	0.80%	5.91%	6.09%
Black Non-Hispanic	11,586	8.72%	11,574	8.71%	(0.10 %)	12.45%
Hispanic	5,346	4.02%	6,055	4.56%	13.26%	19.26%
White Non-Hispanic	110,470	83.10%	109,255	82.20%	(1.10 %)	58.82%
All Others	4,539	3.41%	4,975	3.74%	9.61%	3.38%
Total	132,940	100.00 %	132,917	100.00 %	(0.02 %)	100.00 %

Language*	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Germanic Lang at Home	309	0.25%	304	0.24%	(1.62 %)	0.47%
Only English at Home	120,540	96.38%	120,579	96.40%	0.03%	78.18%
Other Indo-European Lang at Home	214	0.17%	210	0.17%	(1.87 %)	1.88%
Other Lang at Home	247	0.20%	238	0.19%	(3.64 %)	1.14%
Spanish at Home	2,898	2.32%	2,904	2.32%	0.21%	13.46%
All Others	864	0.69%	853	0.68%	(1.27 %)	4.87%
Total	125,072	100.00 %	125,088	100.00 %	0.01 %	100.00 %
Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	5,596	10.49%	4,982	9.33%	(10.97 %)	8.82%
\$15-25K	4,979	9.33%	4,397	8.24%	(11.69 %)	7.56%
\$25-50K	13,991	26.22%	12,424	23.27%	(11.20 %)	19.06%
\$50-75K	9,645	18.08%	9,752	18.26%	1.11%	16.21%
\$75-100K	6,768	12.68%	6,830	12.79%	0.92%	12.60%
\$100K-200K	10,347	19.39%	11,899	22.29%	15.00%	24.79%
>\$200K	2,033	3.81%	3,109	5.82%	52.93%	10.97%
Total	53,359	100.00 %	53,393	100.00 %	0.06 %	100.00 %
Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	2,084	2.28%	2,097	2.29%	0.62%	4.90%
Some High School	7,440	8.15%	7,505	8.19%	0.87%	6.64%
High School Degree	36,504	39.99%	36,721	40.07%	0.59%	26.92%
Some College/Assoc. Degree	30,127	33.01%	30,224	32.98%	0.32%	30.84%
Bachelor's Degree or Greater	15,119	16.56%	15,105	16.48%	(0.09 %)	30.70%
Total	91,274	100.00 %	91,652	100.00 %	0.41 %	100.00 %

*Excludes population age<5, **Excludes population age<25

Source: Claritas Pop-Facts® 2022

Exhibit 18: Table - DARKE COUNTY POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Average Age and Income	Market 2022 Population	National 2022 Population	Market 2027 Population	National 2027 Population
Average Age	41.5	40.0	41.9	40.8
Average Household Income	\$31,955	\$39,393	\$36,366	\$44,282

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	25,766	50.28%	25,830	50.25%	0.25%	50.76%
Male Population	25,476	49.72%	25,576	49.75%	0.39%	49.24%
Total	51,242	100.00 %	51,406	100.00 %	0.32 %	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
00-17	11,885	23.19%	11,632	22.63%	(2.13 %)	21.98%
18-44	15,503	30.25%	15,810	30.76%	1.98%	35.61%
45-64	13,101	25.57%	12,101	23.54%	(7.63 %)	24.91%
65-UP	10,753	20.98%	11,863	23.08%	10.32%	17.50%
Total	51,242	100.00 %	51,406	100.00 %	0.32 %	100.00 %

Ethnicity/Race	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Asian & Pacific Is. Non-Hispanic	272	0.53%	319	0.62%	17.28%	6.09%
Black Non-Hispanic	356	0.69%	419	0.82%	17.70%	12.45%
Hispanic	991	1.93%	1,154	2.24%	16.45%	19.26%
White Non-Hispanic	48,811	95.26%	48,586	94.51%	(0.46 %)	58.82%
All Others	812	1.58%	928	1.81%	14.29%	3.38%
Total	51,242	100.00 %	51,406	100.00 %	0.32 %	100.00 %

Language*	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Germanic Lang at Home	149	0.31%	149	0.31%	0.00%	0.47%
Only English at Home	47,163	98.19%	47,295	98.21%	0.28%	78.18%
Other Indo-European Lang at Home	121	0.25%	120	0.25%	(0.83 %)	1.88%
Spanish at Home	371	0.77%	369	0.77%	(0.54 %)	13.46%
Tagalog at Home	73	0.15%	67	0.14%	(8.22 %)	0.57%
All Others	155	0.32%	156	0.32%	0.65%	5.44%
Total	48,032	100.00 %	48,156	100.00 %	0.26 %	100.00 %
Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	1,464	7.08%	1,288	6.18%	(12.02 %)	8.82%
\$15-25K	1,634	7.91%	1,387	6.65%	(15.12 %)	7.56%
\$25-50K	4,913	23.77%	4,371	20.97%	(11.03 %)	19.06%
\$50-75K	4,013	19.42%	3,928	18.84%	(2.12 %)	16.21%
\$75-100K	3,070	14.85%	3,001	14.40%	(2.25 %)	12.60%
\$100K-200K	4,721	22.84%	5,574	26.74%	18.07%	24.79%
>\$200K	853	4.13%	1,295	6.21%	51.82%	10.97%
Total	20,668	100.00 %	20,844	100.00 %	0.85 %	100.00 %
Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	749	2.14%	759	2.16%	1.34%	4.90%
Some High School	2,493	7.11%	2,520	7.17%	1.08%	6.64%
High School Degree	16,483	47.02%	16,566	47.12%	0.50%	26.92%
Some College/Assoc. Degree	10,157	28.98%	10,155	28.89%	(0.02 %)	30.84%
Bachelor's Degree or Greater	5,171	14.75%	5,155	14.66%	(0.31 %)	30.70%
Total	35,053	100.00 %	35,155	100.00 %	0.29 %	100.00 %

*Excludes population age<5, **Excludes population age<25

Source: Claritas Pop-Facts® 2022

Exhibit 19: Table - GREENE COUNTY POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Average Age and Income	Market 2022 Population	National 2022 Population	Market 2027 Population	National 2027 Population
Average Age	40.1	40.0	40.8	40.8
Average Household Income	\$38,674	\$39,393	\$43,650	\$44,282

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	93,974	50.89%	96,365	50.86%	2.54%	50.76%
Male Population	90,687	49.11%	93,122	49.14%	2.69%	49.24%
Total	184,661	100.00 %	189,487	100.00 %	2.61 %	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
00-17	38,728	20.97%	39,240	20.71%	1.32%	21.98%
18-44	67,629	36.62%	68,122	35.95%	0.73%	35.61%
45-64	44,305	23.99%	43,075	22.73%	(2.78 %)	24.91%
65-UP	33,999	18.41%	39,050	20.61%	14.86%	17.50%
Total	184,661	100.00 %	189,487	100.00 %	2.61 %	100.00 %

Ethnicity/Race	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Asian & Pacific Is. Non-Hispanic	5,302	2.87%	5,590	2.95%	5.43%	6.09%
Black Non-Hispanic	12,671	6.86%	12,867	6.79%	1.55%	12.45%
Hispanic	6,614	3.58%	7,820	4.13%	18.23%	19.26%
White Non-Hispanic	153,500	83.13%	155,824	82.23%	1.51%	58.82%
All Others	6,574	3.56%	7,386	3.90%	12.35%	3.38%
Total	184,661	100.00 %	189,487	100.00 %	2.61 %	100.00 %

Language*	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Only English at Home	163,231	93.96%	167,700	93.97%	2.74%	78.18%
Other Asian-Pacific Lang at Home	1,155	0.66%	1,180	0.66%	2.16%	0.99%
Other Indo-European Lang at Home	1,776	1.02%	1,826	1.02%	2.82%	1.88%
Other Lang at Home	1,805	1.04%	1,845	1.03%	2.22%	1.14%
Spanish at Home	2,892	1.66%	2,964	1.66%	2.49%	13.46%
All Others	2,858	1.65%	2,940	1.65%	2.87%	4.35%
Total	173,717	100.00 %	178,455	100.00 %	2.73 %	100.00 %
Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	5,444	7.35%	5,004	6.54%	(8.08 %)	8.82%
\$15-25K	5,378	7.26%	4,754	6.21%	(11.60 %)	7.56%
\$25-50K	15,262	20.59%	14,384	18.80%	(5.75 %)	19.06%
\$50-75K	12,751	17.20%	12,505	16.34%	(1.93 %)	16.21%
\$75-100K	9,993	13.48%	9,881	12.91%	(1.12 %)	12.60%
\$100K-200K	18,720	25.26%	20,864	27.26%	11.45%	24.79%
>\$200K	6,569	8.86%	9,137	11.94%	39.09%	10.97%
Total	74,117	100.00 %	76,529	100.00 %	3.25 %	100.00 %
Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	2,120	1.69%	2,187	1.69%	3.16%	4.90%
Some High School	5,746	4.59%	5,945	4.59%	3.46%	6.64%
High School Degree	31,176	24.92%	32,309	24.96%	3.63%	26.92%
Some College/Assoc. Degree	41,587	33.24%	43,033	33.25%	3.48%	30.84%
Bachelor's Degree or Greater	44,487	35.56%	45,945	35.50%	3.28%	30.70%
Total	125,116	100.00 %	129,419	100.00 %	3.44 %	100.00 %

*Excludes population age<5, **Excludes population age<25

Source: Claritas Pop-Facts® 2022

Exhibit 20: Table - MIAMI COUNTY POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Average Age and Income	Market 2022 Population	National 2022 Population	Market 2027 Population	National 2027 Population
Average Age	41.4	40.0	42.0	40.8
Average Household Income	\$35,883	\$39,393	\$40,844	\$44,282

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	54,254	50.74%	55,814	50.72%	2.88%	50.76%
Male Population	52,669	49.26%	54,240	49.28%	2.98%	49.24%
Total	106,923	100.00 %	110,054	100.00 %	2.93 %	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
00-17	24,037	22.48%	23,958	21.77%	(0.33 %)	21.98%
18-44	33,734	31.55%	34,628	31.46%	2.65%	35.61%
45-64	27,794	25.99%	27,021	24.55%	(2.78 %)	24.91%
65-UP	21,358	19.98%	24,447	22.21%	14.46%	17.50%
Total	106,923	100.00 %	110,054	100.00 %	2.93 %	100.00 %

Ethnicity/Race	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Asian & Pacific Is. Non-Hispanic	1,986	1.86%	2,349	2.13%	18.28%	6.09%
Black Non-Hispanic	2,619	2.45%	2,877	2.61%	9.85%	12.45%
Hispanic	2,313	2.16%	2,777	2.52%	20.06%	19.26%
White Non-Hispanic	97,285	90.99%	98,965	89.92%	1.73%	58.82%
All Others	2,720	2.54%	3,086	2.80%	13.46%	3.38%
Total	106,923	100.00 %	110,054	100.00 %	2.93 %	100.00 %

Language*	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Only English at Home	97,832	97.26%	100,759	97.28%	2.99%	78.18%
Other Asian-Pacific Lang at Home	399	0.40%	406	0.39%	1.75%	0.99%
Other Indo-European Lang at Home	579	0.58%	594	0.57%	2.59%	1.88%
Other Lang at Home	232	0.23%	236	0.23%	1.72%	1.14%
Spanish at Home	837	0.83%	861	0.83%	2.87%	13.46%
All Others	704	0.70%	717	0.69%	1.85%	4.35%
Total	100,583	100.00 %	103,573	100.00 %	2.97 %	100.00 %
Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	2,945	6.77%	2,665	5.92%	(9.51 %)	8.82%
\$15-25K	3,789	8.71%	3,268	7.26%	(13.75 %)	7.56%
\$25-50K	8,935	20.54%	8,194	18.21%	(8.29 %)	19.06%
\$50-75K	7,531	17.31%	7,578	16.84%	0.62%	16.21%
\$75-100K	6,091	14.00%	6,042	13.43%	(0.80 %)	12.60%
\$100K-200K	11,597	26.66%	13,319	29.60%	14.85%	24.79%
>\$200K	2,613	6.01%	3,924	8.72%	50.17%	10.97%
Total	43,501	100.00 %	44,990	100.00 %	3.42 %	100.00 %
Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	1,637	2.20%	1,698	2.22%	3.73%	4.90%
Some High School	4,411	5.94%	4,531	5.93%	2.72%	6.64%
High School Degree	27,193	36.59%	28,044	36.68%	3.13%	26.92%
Some College/Assoc. Degree	25,282	34.02%	26,030	34.04%	2.96%	30.84%
Bachelor's Degree or Greater	15,788	21.25%	16,160	21.13%	2.36%	30.70%
Total	74,311	100.00 %	76,463	100.00 %	2.90 %	100.00 %

*Excludes population age<5, **Excludes population age<25

Source: Claritas Pop-Facts® 2022

Exhibit 21: Table - PREBLE COUNTY POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Average Age and Income	Market 2022 Population	National 2022 Population	Market 2027 Population	National 2027 Population
Average Age	42.2	40.0	42.8	40.8
Average Household Income	\$32,708	\$39,393	\$37,251	\$44,282

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	20,312	50.45%	20,368	50.47%	0.28%	50.76%
Male Population	19,946	49.55%	19,989	49.53%	0.22%	49.24%
Total	40,258	100.00 %	40,357	100.00 %	0.25 %	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
00-17	8,722	21.67%	8,325	20.63%	(4.55 %)	21.98%
18-44	12,271	30.48%	12,449	30.85%	1.45%	35.61%
45-64	10,827	26.89%	10,179	25.22%	(5.99 %)	24.91%
65-UP	8,438	20.96%	9,404	23.30%	11.45%	17.50%
Total	40,258	100.00 %	40,357	100.00 %	0.25 %	100.00 %

Ethnicity/Race	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Asian & Pacific Is. Non-Hispanic	280	0.70%	323	0.80%	15.36%	6.09%
Black Non-Hispanic	319	0.79%	383	0.95%	20.06%	12.45%
Hispanic	517	1.28%	630	1.56%	21.86%	19.26%
White Non-Hispanic	38,428	95.45%	38,235	94.74%	(0.50 %)	58.82%
All Others	714	1.77%	786	1.95%	10.08%	3.38%
Total	40,258	100.00 %	40,357	100.00 %	0.25 %	100.00 %

Language*	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
French at Home	105	0.28%	103	0.27%	(1.90 %)	0.68%
Germanic Lang at Home	102	0.27%	105	0.28%	2.94%	0.47%
Only English at Home	37,185	97.81%	37,284	97.81%	0.27%	78.18%
Other Asian-Pacific Lang at Home	92	0.24%	93	0.24%	1.09%	0.99%
Spanish at Home	377	0.99%	376	0.99%	(0.27 %)	13.46%
All Others	157	0.41%	158	0.41%	0.64%	6.22%
Total	38,018	100.00 %	38,119	100.00 %	0.27 %	100.00 %
Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	1,125	7.10%	983	6.16%	(12.62 %)	8.82%
\$15-25K	1,177	7.43%	1,014	6.36%	(13.85 %)	7.56%
\$25-50K	3,246	20.49%	2,965	18.59%	(8.66 %)	19.06%
\$50-75K	3,117	19.67%	2,895	18.16%	(7.12 %)	16.21%
\$75-100K	2,508	15.83%	2,367	14.84%	(5.62 %)	12.60%
\$100K-200K	3,912	24.69%	4,562	28.61%	16.62%	24.79%
>\$200K	760	4.80%	1,160	7.27%	52.63%	10.97%
Total	15,845	100.00 %	15,946	100.00 %	0.64 %	100.00 %
Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	546	1.93%	536	1.88%	(1.83 %)	4.90%
Some High School	2,060	7.30%	2,094	7.36%	1.65%	6.64%
High School Degree	12,338	43.71%	12,461	43.79%	1.00%	26.92%
Some College/Assoc. Degree	8,698	30.81%	8,758	30.78%	0.69%	30.84%
Bachelor's Degree or Greater	4,586	16.25%	4,605	16.18%	0.41%	30.70%
Total	28,228	100.00 %	28,454	100.00 %	0.80 %	100.00 %

*Excludes population age<5, **Excludes population age<25

Source: Claritas Pop-Facts® 2022

Exhibit 22: Table - WARREN COUNTY POPULATIONS SERVED BY SHRINERS CHILDREN'S OHIO

Average Age and Income	Market 2022 Population	National 2022 Population	Market 2027 Population	National 2027 Population
Average Age	39.8	40.0	40.8	40.8
Average Household Income	\$50,144	\$39,393	\$56,406	\$44,282

Population and Gender	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Female Population	112,050	49.88%	117,257	49.99%	4.65%	50.76%
Male Population	112,610	50.12%	117,292	50.01%	4.16%	49.24%
Total	224,660	100.00 %	234,549	100.00 %	4.40 %	100.00 %

Age Groups	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
00-17	52,534	23.38%	51,004	21.75%	(2.91 %)	21.98%
18-44	73,805	32.85%	77,015	32.84%	4.35%	35.61%
45-64	62,118	27.65%	62,814	26.78%	1.12%	24.91%
65-UP	36,203	16.11%	43,716	18.64%	20.75%	17.50%
Total	224,660	100.00 %	234,549	100.00 %	4.40 %	100.00 %

Ethnicity/Race	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Asian & Pacific Is. Non-Hispanic	15,470	6.89%	19,101	8.14%	23.47%	6.09%
Black Non-Hispanic	8,370	3.73%	9,167	3.91%	9.52%	12.45%
Hispanic	7,198	3.20%	8,511	3.63%	18.24%	19.26%
White Non-Hispanic	188,753	84.02%	192,124	81.91%	1.79%	58.82%
All Others	4,869	2.17%	5,646	2.41%	15.96%	3.38%
Total	224,660	100.00 %	234,549	100.00 %	4.40 %	100.00 %

Language*	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Chinese at Home	1,976	0.93%	2,048	0.93%	3.64%	1.12%
Only English at Home	193,508	91.36%	202,248	91.40%	4.52%	78.18%
Other Asian-Pacific Lang at Home	3,087	1.46%	3,195	1.44%	3.50%	0.99%
Other Indo-European Lang at Home	5,005	2.36%	5,205	2.35%	4.00%	1.88%
Spanish at Home	4,315	2.04%	4,509	2.04%	4.50%	13.46%
All Others	3,909	1.85%	4,064	1.84%	3.97%	4.36%
Total	211,800	100.00 %	221,269	100.00 %	4.47 %	100.00 %
Household Income	Market 2022 Households	Market 2022 % of Total	Market 2027 Households	Market 2027 % of Total	Market Households % Change	National 2022 % of Total
<\$15K	2,952	3.64%	2,687	3.16%	(8.98 %)	8.82%
\$15-25K	2,948	3.64%	2,634	3.10%	(10.65 %)	7.56%
\$25-50K	10,839	13.37%	8,760	10.31%	(19.18 %)	19.06%
\$50-75K	12,413	15.31%	12,197	14.36%	(1.74 %)	16.21%
\$75-100K	11,336	13.98%	11,241	13.23%	(0.84 %)	12.60%
\$100K-200K	25,584	31.56%	27,822	32.76%	8.75%	24.79%
>\$200K	15,002	18.50%	19,598	23.07%	30.64%	10.97%
Total	81,074	100.00 %	84,939	100.00 %	4.77 %	100.00 %
Education Level**	Market 2022 Population	Market 2022 % of Total	Market 2027 Population	Market 2027 % of Total	Market Population % Change	National 2022 % of Total
Less than High School	2,291	1.51%	2,423	1.52%	5.76%	4.90%
Some High School	6,085	4.02%	6,426	4.02%	5.60%	6.64%
High School Degree	41,113	27.16%	43,496	27.23%	5.80%	26.92%
Some College/Assoc. Degree	38,986	25.76%	41,214	25.80%	5.71%	30.84%
Bachelor's Degree or Greater	62,879	41.54%	66,204	41.44%	5.29%	30.70%
Total	151,354	100.00 %	159,763	100.00 %	5.56 %	100.00 %

*Excludes population age<5, **Excludes population age<25