



Shriners Hospitals
for Children®

2016 Community Health Needs Assessment: Report & Action Plan

Shriners Hospitals for Children® - Portland



Prepared by:
The Shriners Hospitals for Children – Portland
Community Health Needs Assessment
Steering Committee

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Mission and Vision

Mission:

The mission of Shriners Hospitals for Children is to:

- Provide the highest quality care to children with neuromusculoskeletal conditions, burn injuries and other special healthcare needs within a compassionate, family-centered and collaborative care environment.
- Provide for the education of physicians and other healthcare 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, or the ability of a patient or family to pay.

Vision:

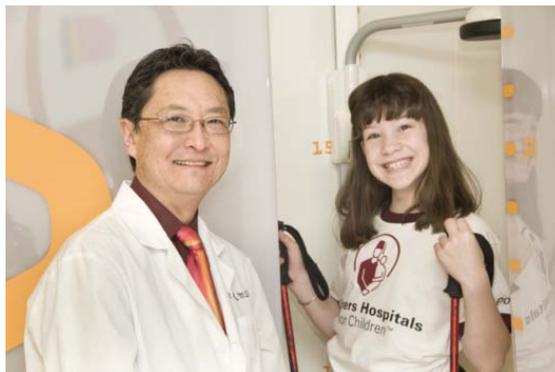
- Shriners Hospitals for Children will be the unquestioned leader, nationally and internationally, in caring for children and advancing the field in its specialty areas.

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Introduction

Since 1922, North America-based Shriners Hospitals for Children® has been helping children in need. The network of pediatric hospitals provides world-class, compassionate medical care regardless of the families' ability to pay. Care is provided to all children without regard to race, color, creed, sex or sect.



Michael Aiona, M.D. Chief of Staff

Shriners Hospitals for Children – Portland is part of this system. For over 90 years, the Portland hospital has been providing pediatric orthopaedic care in the Pacific Northwest. In 1983, the hospital moved from its original location in Northeast Portland to its current location on Marquam Hill, adjacent to Oregon Health & Science University. Since the move, the hospital has experienced tremendous growth in all areas of patient care activities.

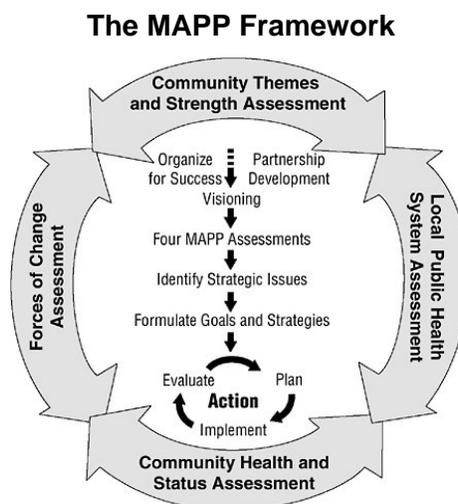
Currently, the hospital is equipped to provide care for virtually all pediatric orthopaedic problems including cerebral palsy, scoliosis, spina bifida, clubfoot and other foot deformities, and hand and hip deformities, among many other conditions. The hospital also offers services in the areas of burn reconstructive surgery and cleft lip and palate (CLP) repair and reconstruction.

The mission of Shriners Hospitals for Children – Portland is to provide the highest quality care to special needs children within a compassionate, family-centered and collaborative care environment, without regard to the ability of a patient or family to pay. By consistently maintaining and investing in current programs, this hospital meets, and will continue to support, the health needs of the local community.

Background

Methodology

Shriners Hospitals for Children – Portland utilized the *Mobilizing for Action through Planning and Partnerships* (MAPP) model as a foundation to conduct this Community Health Needs Assessment. The MAPP model leverages health data along with community input to identify the most pressing community health issues.



National Association of County & City Health Officials (NACCHO)
<http://www.naccho.org/topics/infrastructure/mapp/framework/>

Community input was obtained via a survey (see Exhibit 1 & 2), which was created and distributed to a variety of local organizations. Among the organizations contacted were more than 90 churches of various denominations, local little leagues and youth sports associations, public schools and educational service districts, missions and family resource centers, consulates, county health departments, food banks and gleaners, free and reduced healthcare clinics, and the Oregon Public Health Division. To address the high number of Hispanic/Latino members of the local-area population, the survey was provided in both English and Spanish. Surveys were collected from October 20, 2015 through December 31, 2015.

Paper copies of the survey were also distributed at onsite hospital events including the *2015 Beattie Lectureship* and the *2015 Annual Primary Care Providers Conference*. Both of these events draw a range of healthcare providers from the Portland metropolitan area. In addition, the survey was distributed at offsite events including the *2015 Oregon Health Care Interpreters*

Association Conference and the 2015 Oregon Association for Healthcare Quality Fall Conference.

The survey asked respondents to indicate if they serve children who have unmet medical needs, and if so, to specify the services that are lacking. A total of 450 surveys were distributed and 126 were completed, a response rate of 28%.

A multitude of pre-existing resources provided additional health data utilized for this assessment. These resources are identified throughout the report and in the *Acknowledgements* section.

Prioritization of Needs

Once top medical need areas were identified, the hospital's Community Health Needs Assessment steering committee prioritized the needs utilizing a Health Needs Prioritization Grid.¹ The grid evaluated factors such as the hospital's organizational capacity and infrastructure to address the specific need. Current partnerships were also taken into consideration as they related to the identified area of need. Once prioritized, the committee identified potential actions to address each need, which are detailed under the *Priority Needs & Action Plan* section below. The recommendations were then presented to hospital leadership for review and approval.

¹ Community Benefit Connect. *Health Needs Prioritization Grid*. http://www.communitybenefitconnect.org/wp-content/uploads/2014/09/HealthNeedsPrioritizeGrid_v1.pdf. Accessed October 15, 2015.

Community Profile

Service Area

Care provided by Shriners Hospitals for Children – Portland spans an extremely wide area (see map) including Oregon, Washington, Alaska, Idaho, Montana, Wyoming & three provinces in Canada. Given that the greatest share of patients are from Oregon and Washington (92.5% in 2015), this assessment focused on communities located in the immediate Portland-metropolitan area. This includes Multnomah, Washington, and Clackamas Counties in Oregon, as well as Clark County in Washington. Wherever possible, data is specific to these four counties.



Population

According to the United States Census Bureau, the population of the four county Portland metropolitan area was an estimated 2,185,690 in 2014. This represented an average growth rate of 5.7% since April 2010 (see Core Service Area: County Demographics, pg. 9). Population growth is expected to remain strong over the coming years: According to Truven Health Analytics, between 2015 and 2020 the local population is expected to grow 5.1% compared to the national average of 3.5% (see Exhibit 3). Of the four counties evaluated, Multnomah County had the largest population (776,712), while Washington County experienced the greatest growth rate (6.3%).

Children and teens under the age of 18 comprise, on average, 22.9% of the local area population, indicating a strong need for medical services catering to this age group. Further, this demographic is expected to maintain strong growth over the next several years, with children ages 0 – 17 making up an estimated 22.1% of the local area population by 2020 (Truven Health Analytics, Exhibit 3).

Race and Ethnicity

By race and ethnicity, the primary service area for Shriners Hospitals for Children – Portland in 2014 was 73.2% non-Hispanic white, 12.0% Hispanic/Latino, 7.9% Asian/Pacific Islander, 3.3% African American and 1.4% American Indian/Alaska Native. The largest minority group, the Hispanic/Latino population, is represented most strongly in Washington County where 16.3% of the population self-reported as being of Hispanic/Latino descent. Washington County also reported the highest percentage of households with a primary language other than English (23.3%).

Economic Profile

While unemployment rates have decreased from the highs of 2009, data from the Robert Wood Johnson Foundation (2013) indicate there is a notable share of the local-area population still seeking employment. For the four county service area, the unemployment rate was highest in Clark County (9.6%), followed by 6.9% in Multnomah County and 6.8% in Clackamas County. Median household income was highest in Clackamas and Washington Counties (over \$64,000 annual), but dropped to \$58,225 in Clark County and \$52,511 in Multnomah County.

Economic disparity for children was particularly pronounced in Multnomah County, with 23% of children living in poverty compared to 17% in Clark County, 14% in Washington County and 11% in Clackamas County. Some studies estimate that the number of Oregon children living in poverty is even higher. For example, the most recent *Kids Count* report from The Annie E. Casey Foundation found that the percentage of children living in poverty in the state increased from 18% in 2008 to 22% in 2013.²

Lack of employment is a key contributor to poverty levels in the Portland metropolitan area as well as across the state. The percentage of Oregon children whose parents lacked secure employment was up 4% (from 29% in 2008 to 33% in 2013) in the most recent *Kids Count* data. This percentage is higher than the national average of 31%. Overall, Oregon ranks 35th in the nation for economic well-being according to the 2015 *Kids Count* profile. As noted above, Clark County, Washington has a particularly high rate of unemployment (9.6%), while the three Oregon counties included in this assessment all report unemployment rates in the 6 percent.

² Annie E. Casey Foundation. 2015 *Kids Count Profile: Oregon*.

http://www.aecf.org/m/databook/2015KC_profile_OR.pdf. Accessed September 17, 2015.

In addition to lack of employment, Oregon families face some of the highest housing costs in the nation. While improved from 43% in 2008, as of 2013, 39% of Oregon children still lived in households with a high housing cost burden. This is compared to 36% nationally.² According to a more recent report from Portland's major daily newspaper, *The Oregonian*, the average rent in Portland increased 41% from 2010 – 2015, straining budgets and in some cases pricing families out of the local metropolitan area.³

Core Service Area: County Demographics

	Clackamas County, OR	Multnomah County, OR	Washington County, OR	Clark County, WA
Total Population⁴	394,972	776,712	562,998	451,008
Population Growth % Change⁴ (4/1/10 – 7/1/14)	5.0%	5.6%	6.3%	6.0%
Age⁴				
Under 5 years	5.3%	5.9%	6.6%	6.3%
Under 18 years	22.2%	19.8%	24.3%	25.2%
Race/Ethnicity⁴				
White, non-Hispanic	83.1%	71.3%	67.8%	70.4%
African America	1.0%	5.7%	2.2%	4.1%
American Indian/Alaska Native	1.1%	1.5%	1.1%	1.9%
Asian/Pacific Islander	4.5%	7.8%	10.4%	8.9%
Hispanic/Latino	8.4%	11.2%	16.3%	12.2%
Employment				
Unemployment rate ⁵	6.8%	6.9%	6.3%	9.6%
Income				
Median Household Income ⁴	\$64,352	\$52,511	\$64,180	\$58,225
% of children in poverty ⁵	11%	23%	14%	17%
% of children in single parent households ⁵	25%	33%	24%	27%
Other				
Languages other than English spoken at home ⁴	11.8%	19.6%	23.3%	14.0%

³ The Oregonian. *Working Class Priced Out, Kicked Out in New Portland Housing Boom*.

http://www.oregonlive.com/watchdog/index.ssf/2015/09/post_19.html. Published September 22, 2015.

⁴ United States Census Bureau. *State & County QuickFacts*. <http://quickfacts.census.gov>. Accessed September 15, 2015.

⁵ Robert Wood Johnson Foundation. *County Health Rankings & Roadmaps*. <http://www.countyhealthrankings.org/>. Accessed September 15, 2015.

County Health Rankings

Developed via collaboration between the Robert Wood Johnson Foundation and the University of Wisconsin Population Health Institute, the *County Health Rankings & Roadmaps* program is designed to provide an annual look at vital health factors across the nation on a county-by-county basis. The “overall health” assessment measures a variety of factors including health behaviors, access to clinical care, socioeconomic variables, and the physical environment.

According to the most recent ranking, which evaluated 34 counties in Oregon, Washington County ranked number 3 for overall health, followed by Clackamas County (#4) and Multnomah County (#8). Clark County in Washington State came in slightly lower for overall health factors, ranking #14 out of 39 total counties ranked.

Of particular interest are the measures around individual health, specifically those related to clinical care. Multnomah County reported the highest share of uninsured individuals (17%), although the other three counties followed closely. While these numbers were improved since the hospital’s last needs assessment, a study conducted by the Oregon Health Authority in 2014 found that children ages 0 – 18 were the least likely (69.8%) to have gained health insurance of the three age groups evaluated.⁶ What is more, the Hispanic/Latino population is the least likely to be insured across the 0 – 64 age group in the Portland area, with 26.8% of this ethnic group reporting in 2013 that they were uninsured at some point during the previous 12 months.⁷

Clark County, Washington reported the fewest primary care physicians per capita, with an average of 1,496:1. Clark County, and to a lesser degree Clackamas County, indicated a greater need for dentists, with ratios of 1,552:1 and 1,353:1, respectively. Finally, the data show a need for more mental health providers, particularly across Clackamas and Washington Counties in Oregon, and Clark County in Washington. Of note, dental care and mental health both emerged as top unmet need areas via the community survey, which is discussed in detail further below.

⁶ Oregon Health Authority. *Oregon Health Insurance Survey: Recontact Study 2014*.

http://www.oregon.gov/oha/OHPR/RSCH/docs/Uninsured/2013_OHIS_Recontact_Demographics_FaceSheet.pdf.

Accessed September 28, 2015.

⁷ Oregon Health Authority. *Oregon Health Insurance Survey: Uninsured Rates by Race and Ethnicity*.

http://www.oregon.gov/oha/OHPR/RSCH/docs/Uninsured/OHIS_FS_RE_2013.pdf. Accessed September 28, 2015.

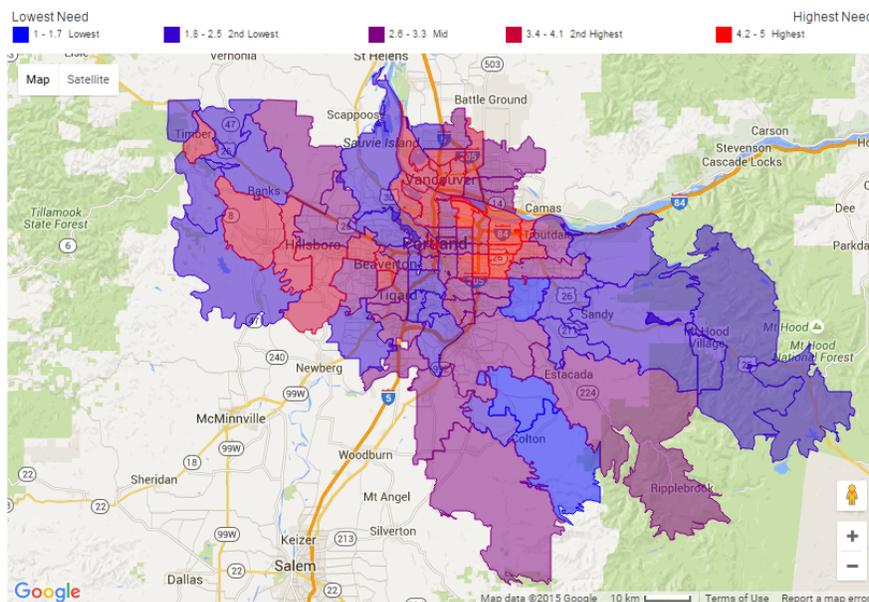
Core Service Area: County Health Rankings

	Clackamas County, OR	Multnomah County, OR	Washington County, OR	Clark County, WA
Health Factors Overall Rank⁵	4	8	3	14
Uninsured	14%	17%	15%	16%
Primary Care Physicians	1,200:1	778:1	1,125:1	1,496:1
Dentists	1,353:1	1,115:1	1,186:1	1,552:1
Mental Health Providers	517:1	175:1	458:1	479:1

Community Need Index

The Dignity Health and Truven Health Interactive Community Need Index (CNI) maps community health need by zip code based on a variety of socioeconomic indicators. The areas measured include income, culture, education, insurance and housing, with combined scores ranging from 1 (low need) to 5 (high need).

Across the four counties evaluated for this assessment, the highest need areas (4.2 – 5.0) were all in Multnomah County. The second highest need area (3.4 – 4.1) included additional communities in Multnomah County, along with areas of Clark and Washington Counties. All zip codes within Clackamas County scored in the low to mid-range on the CNI, indicating less substantial community need for this area.



Digital Health and Truven Health Interactive Community Need Index for the Shriners Hospitals for Children – Portland service area (<http://cni.chw-interactive.org/>)

Hospital Data

A review of 2015 admission data for Shriners Hospitals for Children – Portland revealed demographic data consistent with population of the four county service area, although the hospital serves a slightly higher percentage of Hispanic/Latino patients. While Hispanics/Latinos comprise 12% of the population within the primary service area, 18.2% of patients served by Shriners Hospitals for Children – Portland in 2015 identified as Hispanic/Latino. Additionally, reflecting the hospital's broad reach across the Northwest, Shriners Hospitals for Children – Portland serves slightly more American Indian/Alaska Native patients (1.6%) compared to the local population (1.4%).

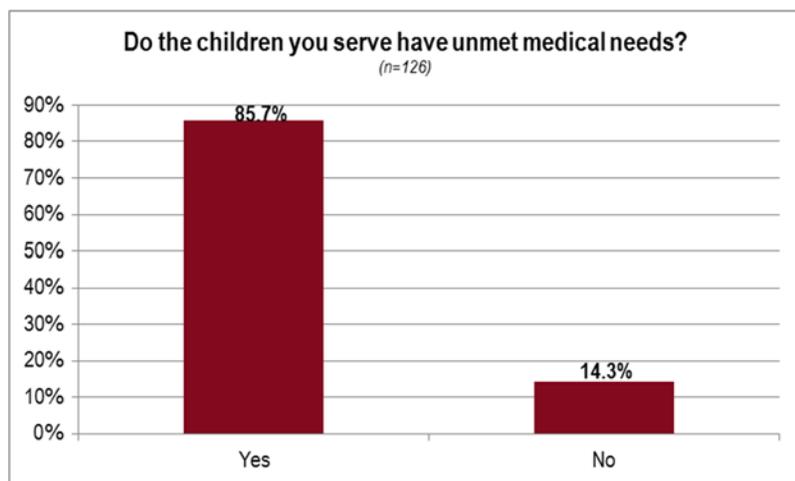
Indicative of the broad reach of patients served by Shriners Hospitals for Children – Portland, 2015 data reveal that 42.9% of patients were from the four county primary service area, with remaining patients coming from other counties throughout Oregon and Washington, as well as other states and Canadian Provinces. When looking specifically at the four county local area, the greatest share of patients were from Multnomah County (32.1%), followed by Washington County (29.8%), Clark County (20.9%) and Clackamas County (17.1%).



Dale W. Stauss, Chairman of the Shriners Hospitals for Children Board of Trustees, and a hospital patient enjoy a visit from the 2015 Portland Rose Festival Court

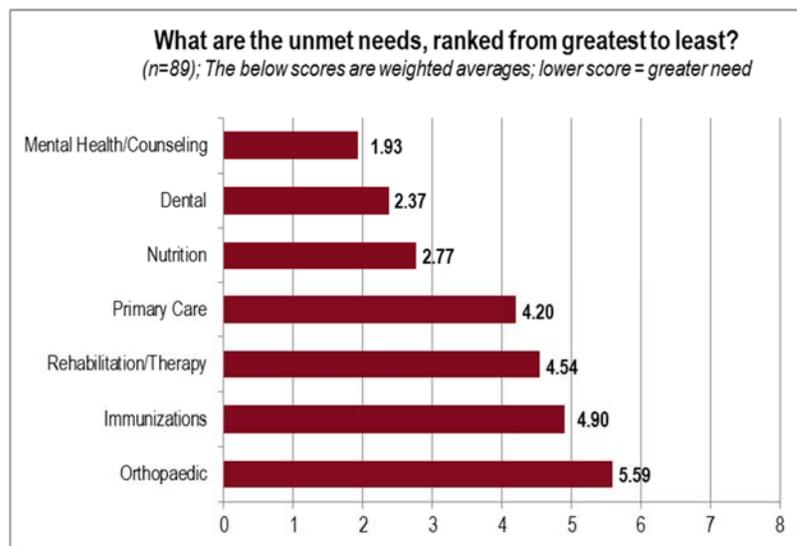
Community Survey

Many of the above data points were corroborated by the community survey. Again, the survey was distributed to a variety of organizations including schools, religious-based programs, sports and athletic groups, medical clinics for the underserved, local shelters and public health agencies. The survey achieved a 28% response rate.



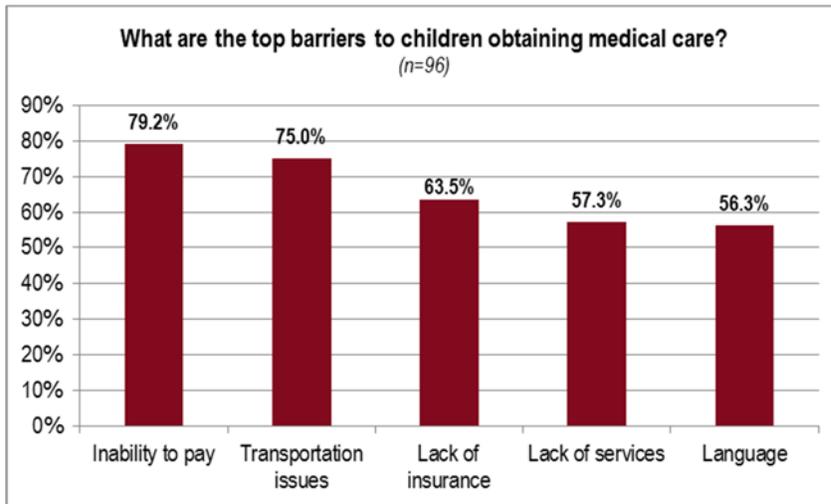
Of the 126 survey respondents, 85.7% indicated that the children with whom they interact have unmet medical needs.

When looking specifically at the areas of greatest need, three rose to the forefront: Mental health/counseling (weighted average of 1.93), dental care (2.37) and nutrition (2.77). Other areas of unmet needs are indicated in the accompanying chart. While not within the top three need areas, there is clearly demand for services offered at Shriners Hospitals for Children – Portland, particularly rehabilitation/therapy (including physical, speech and occupational therapy) as well as orthopaedic services.



Respondents reported that the greatest barriers to care are inability to pay (79.2%) and transportation issues (75.0%). With regard to inability to pay, a few respondents noted that

certain services – especially those related to therapy (physical, speech, occupational) – are covered in limited number by the Oregon Health Plan. In such cases, children may require more visits to continue their progress but may be unable to continue treatment due to lack of coverage.

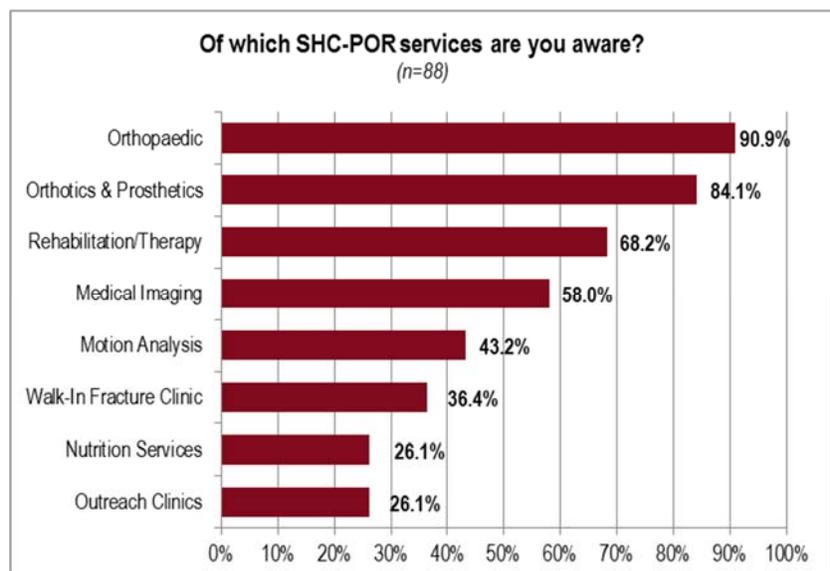


Transportation was particularly problematic for those living in rural areas and those who rely on public transportation. Transportation can be especially difficult for families with children and even more so for those who have children with disabilities. A number of

respondents indicated that while a family may have a vehicle, they often lack money for gas or face challenges in scheduling appointments around the parents’ working hours.

To a lesser extent, lack of insurance (63.5%), lack of services (57.3%) and language (56.3%) were also reported as barriers to obtaining care. Also worth noting, several respondents cited parents’ struggles with their own health needs as contributing to a lack of action on their children’s behalf. A number of others reported that many parents simply are not aware of what resources are available.

Finally, when asked about awareness of services offered by Shriners Hospitals for Children – Portland, a majority of respondents indicated familiarity with the orthopaedic (90.9%), orthotics & prosthetics (84.1%), and rehabilitation/therapy (68.2%) programs. A much smaller



share of respondents were familiar with the hospital's outreach clinics (26.1%) and nutrition services (26.1%). Roughly 36% of respondents were familiar with the walk-in fracture clinic, indicating an opportunity to further raise awareness of this new offering.

A Look Back: Revisiting the 2013 Action Plan

Before delving into the most recently identified community health needs and plans by Shriners Hospitals for Children – Portland to address those needs, an update on the 2013 Action Plan is warranted. Below are the key need areas that were identified via that assessment, and the steps the hospital has taken to address these needs. Shriners Hospitals for Children – Portland is committed to continuing work on these initiatives and will actively seek opportunities to integrate these efforts with the most recently identified areas of community need.

Community lack of awareness around the services offered by Shriners Hospitals for Children – Portland. Investigation three years ago revealed that there was a general lack of awareness around services offered by the Portland hospital, particularly among primary care physicians, community-based organizations and families. This lack of awareness meant that many children who might benefit from services offered at the hospital were missing out. As a result, the Portland hospital took several steps to raise brand awareness within the community.

First, a full-time physician liaison was hired in the spring of 2012. This liaison calls on local and regional physician offices and school districts to promote awareness of services provided by the Portland hospital. These outreach efforts have led to a notable increase in patient referrals to the Portland hospital, with 38.3% more physician and healthcare provider referrals in 2012 compared to 2011. These referrals have continued to increase an average of 10% every year since 2012. Indeed the efforts have been so successful that the hospital has requested a second full-time physician referral liaison starting in 2016.



A hospital patient smiles for the camera

To address a lack of awareness by community-based organizations and families that might benefit from services provided by Shriners Hospitals for Children, an awareness survey was conducted in late 2014. Based on results from that survey, a major marketing campaign proposal has been developed and submitted for funding approval. The proposal will emphasize television, web, radio and print advertising to expand visibility of hospital offerings.

In addition to marketing efforts, hospital employees and volunteers also raise awareness of services offered via regular participation in community health fairs and collaboration with organizations such as Oregon Rural Health Clinics and the Oregon Primary Care Association.

Finally, in order to ensure that Shriners Hospitals for Children is meeting community needs outside the immediate core service area, the Portland hospital continues to conduct regional outreach clinics. The program currently serves patients and their families in Anchorage, AK and Medford, OR. Additional clinics are slated for rollout in 2016 in Bellingham, WA; and Pendleton, OR. Longer-term, the hospital hopes to add a fifth outreach clinic in Fairbanks, AK.

Sports Medicine Program and Fracture Clinic. Another need area identified during the 2013 assessment was a sports medicine program, specifically a walk-in clinic to provide specialized care of fractures. The fracture clinic was implemented in April 2015 and quickly became the third busiest line of treatment for the hospital (following ortho and spine). For its first nine



A patient poses next to his prosthetics provided by the Portland hospital

months of operation (April – December 2015), the clinic saw a total of 147 patients, an average of just over 16 patients per month. As with all care provided at Shriners Hospitals for Children, services are provided regardless of the families' ability to pay.

Staffed by experienced pediatric orthopaedic surgeons and pediatric physical therapists, the clinic takes advantage of the Portland hospital's day surgery and inpatient post-surgical care unit.

Operating Monday through Friday, the clinic provides total fracture care, which may include reduction/re-alignment, surgery, casting, post fracture follow-up and rehabilitation services.

Recognizing the vital community need the fracture clinic is fulfilling, the Portland hospital remains committed to further raising awareness of this service.

Shared Spina Bifida clinic with Oregon Health & Science University (OHSU). Efforts to establish a shared spina bifida clinic with OHSU are underway, with the goal of finalizing the agreement and beginning service in mid-to-late 2016. In addition to improved coordination of

services and streamlined continuity of care, patients will be able to receive all services in one convenient location at the Portland hospital, minimizing the need for transportation to and from appointments.

Cleft Lip and Palate (CLP) with Orthodontia Program. At the time of the last community health needs assessment, it was recommended that services related to CLP and orthodontia be further researched. Currently, Shriners Hospitals for Children – Portland offers treatment for patients with a cleft lip and/or palate via a multidisciplinary group of experts who work as a team to improve appearance as well as the child's ability to eat, breathe and communicate. In addition to two attending oral surgeons, one plastic surgeon and two otolaryngologists, the Portland hospital includes orthodontia consultations as part its CLP practice. Post-reconstructive surgery, patients frequently benefit from services offered by the hospital's speech therapy, nutrition and other support departments.



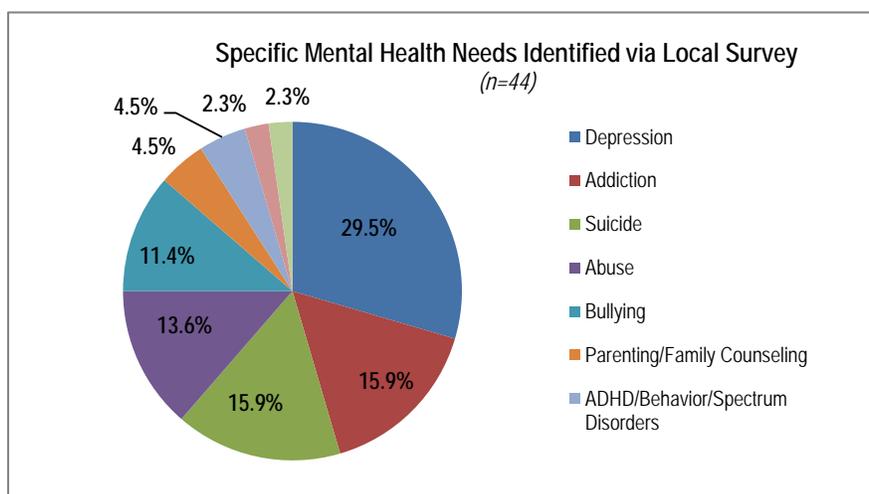
A CLP patient before (left) and after (right) treatment at Shriners Hospitals for Children – Portland

Priority Needs & Action Plan

Returning now to the most recent community needs assessment, the local community survey revealed the top unmet medical needs to be mental health/counseling, dental care and nutrition. While all three of these areas fall outside the hospital's specialty focus of orthopaedics, leadership has identified opportunities where the Portland hospital may make a positive impact with both patients and the community more broadly. These are outlined below. Additionally, the assessment revealed two areas of opportunity that do fall within the hospital's realm of expertise. As such, these areas represent an opportunity to generate greater awareness of the services offered at the hospital while simultaneously growing related services offered to the community.

Priority Need: Mental Health/Counseling

According to local survey results, mental health/counseling was the top identified medical need for children, with 82.7% of respondents reporting that the children they serve have unmet needs in this area. Among the top reported mental health concerns were depression (29.5%), addiction and suicide (both 15.9%), abuse (13.6%) and bullying (11.4%).



The local survey results were corroborated by secondary research on the topic. According to a 2010 study from the Oregon Health Authority, 12% of children and adolescents (aged 0 – 17) in the state of Oregon are in need of mental health services; of those children, only 33% have their needs adequately met.⁸ Additionally, children in Oregon are more likely than the national

⁸ Richard Harris. *Addictions & Mental Health Delivery Systems in Oregon*. Oregon Health Authority. <http://www.oregon.gov/oha/OHPB/meetings/2010/100413-amh.ppt>. Accessed December 9, 2015.

average (27.2% compared to 22.6%) to have experienced at least two adverse events – including abuse, neglect and exposure to violence – during childhood.⁹ The consequences are severe: In the United States, suicide is the third leading cause of death for people aged 10 – 24¹⁰ and the second leading cause of death for those aged 15 – 24.¹¹ Further, there is evidence that more than 90% of children who die by suicide have a mental health condition.¹² Suicide has become such a public health issue that it was recently acknowledged by The Joint Commission, a group that accredits more than 21,000 healthcare organizations and programs across the United States. In February 2016, The Joint Commission issued an alert outlining the importance of detecting and treating suicide ideation in all point of care settings.¹³

Addressing mental health issues has a variety of benefits. The Oregon Health Authority has found that when children received mental health services, their school attendance improved by 30% while 60% demonstrated improved functioning with parents, siblings and peers.¹⁴ The long-term consequences are equally dramatic: Individuals with serious mental illness face increased risk of chronic medical conditions and die, on average, 25 years earlier than others due to largely treatable medical conditions.¹⁵

⁹ Data Resource Center for Child & Adolescent Health. *2011/2012 National Survey of Children's Health*. <https://childhealthdata.org/browse/snapshots/nsch-profiles?rpt=16&geo=39>. Accessed December 9, 2015.

¹⁰ Centers for Disease Control and Prevention. *Suicide Prevention: Youth Suicide*. http://www.cdc.gov/ViolencePrevention/suicide/youth_suicide.html. Accessed December 9, 2015.

¹¹ American Association of Suicidology. *Youth Suicide Fact Sheet*. <http://www.suicidology.org/Portals/14/docs/Resources/FactSheets/Youth2012.pdf>. Accessed December 9, 2015.

¹² U.S. Department of Health and Human Services. *Mental Health: A Report of the Surgeon General*. <http://profiles.nlm.nih.gov/ps/access/NNBBJC.pdf>. Pg. 154. Accessed December 9, 2015.

¹³ The Joint Commission. *Sentinel Event Alert: Detecting and Treating Suicide Ideation in all Settings*. http://www.jointcommission.org/sea_issue_56/. February 24, 2016.

¹⁴ Richard Harris. *Addictions & Mental Health Delivery Systems in Oregon*. Oregon Health Authority. <http://www.oregon.gov/oha/OHPB/meetings/2010/100413-amh.ppt>. Accessed December 9, 2015.

¹⁵ National Association of State Mental Health Program Directors Council. *Morbidity and Mortality in People with Serious Mental Illness*. <http://www.nasmhpd.org/sites/default/files/Mortality%20and%20Morbidity%20Final%20Report%208.18.08.pdf>. Accessed December 9, 2015.

Action Plan: Mental Health/Counseling

While mental health counseling is not offered by the Portland hospital, support to patients and their families is provided, helping them connect with a variety of community services, including those focused on mental health. In order to address the social and emotional concerns of special needs children, the Child Life program offers preparation before and support during and after stressful events with coping techniques, socialization opportunities with peers, music and pet therapy. When requested by family or teachers, the program also offers assistance with school re-entry, including classmate education.

Recreation Therapy is also offered by the hospital, promoting participation in leisure activities for both physical and emotional well-being. In cooperation with community partners such as Adaptive Sports Northwest, Adventures Without Limits, Forward Stride and Owl Be Better with Music, programs are available to patients regardless of the families' ability to pay. Families are always welcome to observe programs and, whenever possible, family participation is encouraged.

Given the substantial community need around mental health, the Portland hospital has identified several additional opportunities to be pursued over the next three years. These include:

- Creating a “Resources” page on the hospital website that lists local mental health organizations and includes research and reference material on mental health topics.
- Maintaining current hospital-wide efforts around the annual Unity Day (October) and the “Cut The Bull” campaign (Shriners Hospitals for Children’s system-wide anti-bullying effort).
- Increasing partnerships with local schools specifically to address bullying among children and teens with special needs.
- Inviting a Grand Rounds speaker from a mental health-focused organization to educate staff on mental health awareness and top related issues facing children and teens.
- Implementing public service announcements (PSAs) around mental health in the Outpatient Clinic lobby to educate families on mental and behavioral health topics and where to get help locally.

Priority Need: Dental Care

The second greatest unmet medical need as identified via the local survey was dental care, with 77.6% of respondents indicating this is a need for the children they serve. Again secondary

research on the topic confirmed the scope and prevalence of this need. According to the CDC, tooth decay is one of the most common chronic medical conditions during childhood in the United States.¹⁶ The Oregon Health Authority's 2012 report, *The Oregon Smile Survey*, which reflects data for the entire state, found that more than one-half (52%) of Oregon children ages 6 – 9 have had at least one cavity. Further, roughly 20% of Oregon children have untreated decay in their primary or permanent teeth.¹⁷ A separate study conducted by the Oregon Health Authority focused on students in the 8th through 12th grades. Although most students (~74%) reported that they had visited the dentist within the past year, a vast majority (~72%) also reported having had at least one cavity.¹⁸

Children from lower income households are more likely to suffer from a lack of dental care, reporting higher cavity rates (63% vs. 38%) and greater untreated tooth decay (25% vs. 13%) than children from higher-income households. Hispanic/Latino children experience particularly high rates of cavities and decay, with 68% reporting at least one cavity (compared to 47% in white children), 25% reporting untreated decay (vs. 18% in white children) and 24% reporting rampant decay (vs. 11% in white children).¹⁷

Data for Washington is consistent with Oregon, with a statewide oral health screening survey finding that kindergarteners from lower-income families were more likely to have tooth decay than children from higher-income households (51% vs. 30%). Ethnic disparities were also prevalent, with roughly 21% of kindergartners of Hispanic/Latino descent reporting rampant tooth decay compared to 11% of non-Hispanic, white kindergartners.¹⁹ Lack of adequate dental care has far-reaching effects. In addition to being a significant chronic childhood health

¹⁶ Centers for Disease Control and Prevention. *Children's Oral Health*.

http://www.cdc.gov/oralhealth/children_adults/child.htm. Accessed November 2, 2015.

¹⁷ Oregon Health Authority. *Oregon Smile Survey*.

<https://public.health.oregon.gov/PreventionWellness/oralhealth/Documents/SmileSurvey2012.pdf>. Accessed December 10, 2015.

¹⁸ Oregon Health Authority. *2013 Oregon Healthy Teens Survey*.

https://public.health.oregon.gov/BirthDeathCertificates/Surveys/OregonHealthyTeens/Documents/2013/2013_OHT_S_tate_Report.pdf. Accessed November 2, 2015.

¹⁹ Washington State Department of Health. *Smile Survey 2010: The Oral Health of Washington's Children*.

http://www.doh.wa.gov/Portals/1/Documents/Pubs/160-099_SmileSurvey2010.pdf. Accessed December 10, 2015.

condition, dental decay can lead to growth and development challenges, speech problems, poor self-esteem and a host of other long-term issues.²⁰

Action Plan: Dental Care

While dental services are not offered by the Portland hospital, the Portland hospital is committed to exploring efforts in this area and has identified several opportunities to be pursued over the next three years. These include:

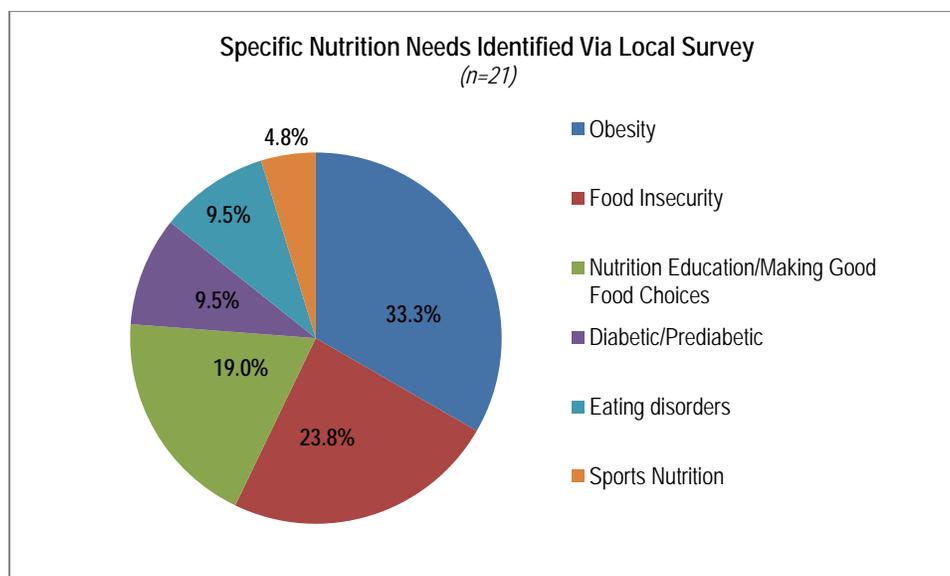
- Listing free or low-cost local-area dental providers and dental health information on the newly formed “Resources” page of the hospital website.
- Reaching out to Colgate’s *Bright Smiles, Bright Future* program to explore a partnership via which all Shriners Hospitals for Children – Portland patients receive educational materials on oral health and a toothbrush/toothpaste.
- Implementing PSAs around dental health in the Outpatient Clinic lobby to educate families on proper brushing technique and overall oral health.
- Investigating a screening and referral program for Shriners Hospitals for Children – Portland patients who are in need of dental care.

Longer-term (3+ years), the hospital will continue to evaluate community need around cleft lip and palate offerings, potentially expanding that program in response to demand.

Priority Need: Nutrition

Over 74% of survey respondents indicated that nutrition is an unmet medical need of children in the local community, making this is the third greatest need for the Portland metropolitan area. Further parsing the topic, obesity was the top-ranked area of need (33.3%) followed by food insecurity (23.8%). Perhaps in alignment with obesity, a number of respondents also indicated the need for greater nutrition education and guidance around making good food choices (19%).

²⁰ National Maternal and Child Oral Health Resource Center. *Oral Health and Learning: When Children’s Health Suffers, So Does Their Ability to Learn*. <http://mchoralhealth.org/PDFs/learningfactsheet.pdf>. Accessed December 10, 2015.



Again, survey results were consistent with secondary research on the topic. According to the Childhood Obesity Action Network, 30.6% of U.S. youth aged 10 – 17 are either overweight or obese. Children in Oregon fare slightly better: 26.5% of youth in the state are considered overweight or obese according to the same report.²¹ That said, from 2001 to 2013, obesity has increased by 38% among Oregon eighth-graders, a dangerous trajectory for the state.²²

The long-term health effects of being overweight or obese in childhood include a higher risk of developing type 2 diabetes, high blood pressure, high levels of blood fats and high LDL (bad cholesterol), which are all risk factors that may lead to heart disease and stroke. Additionally, being overweight or obese has been associated with increased risk for several types of cancer.²³

At the opposite end of the spectrum, child food insecurity is also an issue of great public concern across the nation. According to a 2012 report on food insecurity from the U.S. Department of Agriculture, 14.5% of U.S. households self-reported being food insecure (unable

²¹ Childhood Obesity Action Network. http://www.childhealthdata.org/docs/nsch-docs/oregon04_23_508-pdf.pdf. Accessed December 10, 2015.

²² Oregon Health Authority. *Obesity*. <https://public.health.oregon.gov/ProviderPartnerResources/PublicHealthAccreditation/Documents/indicators/obesity.pdf>. Accessed December 10, 2015.

²³ Centers for Disease Control. *Childhood Obesity Facts*. <http://www.cdc.gov/healthyschools/obesity/facts.htm>. Accessed December 15, 2015.

to afford adequate food) at some point during the year. From 2012 – 2014, an average of 16.1% of Oregonians faced food insecurity, the highest percentage in the Western geographic region of the United States.²⁴ Further, a study from the Oregon Health Authority found that children within the state are particularly impacted by hunger: As of 2012, Oregon had the 10th highest rate of child food insecurity in the United States, with 27.3% of children qualifying as food insecure. This compared to the national average of 21.6% for children.²⁵

Besides the obvious issue of hunger, longer-term repercussions from child food insecurity include more frequent illness and associated medical care costs, growth and developmental impairments, poorer academic achievement in school and greater social and behavioral problems.²⁶

Action Plan: Nutrition

As with the top two priority need areas, nutrition is not a focal point for the Portland hospital. The hospital does seek to address the unique nutritional needs of patients via one pediatric clinical nutrition dietitian, who provides consultations for both inpatients and outpatients as well as multidisciplinary feeding clinics to insure proper nutritional support for patients. To provide continuity of care, the dietitian frequently collaborates with community organizations such as home infusion companies related to tube feedings, primary care physicians, local hospitals and the Special Supplemental Nutrition Program for Women, Infants and Children (WIC).

Impacting the community outside the hospital, Shriners Hospitals for Children – Portland regularly donates excess food supplies to Birch Community Services (BCS). BCS is one of the largest food-distribution programs in Oregon, and unique in that it assists families with becoming financially stable and debt-free. Employing a two-pronged strategy, BCS first redistributes millions of pounds of wholesome food, clothing and household goods deemed surplus by product donors. These donations allow families the means to reach their goals of decreasing or

²⁴ Coleman-Jensen, Alisha, Mark Nord, and Anita Singh. *Household Food Security in the United States in 2012 (ERR-155)*. <http://www.ers.usda.gov/publications/err-economic-research-report/err155.aspx>. U.S. Department of Agriculture, Economic Research Service. Accessed December 14, 2015.

²⁵ Oregon Health Authority. *Food Insecurity*. <https://public.health.oregon.gov/ProviderPartnerResources/PublicHealthAccreditation/Documents/indicators/foodinsecurity.pdf>. Accessed December 10, 2015.

²⁶ John Cook, PhD and Karen Jeng, AB. *Child Food Insecurity: The Economic Impact on our Nation*. <https://www.nokidhungry.org/sites/default/files/child-economy-study.pdf>. Accessed December 20, 2015.

eliminating consumer debt, catching up with mortgage or car payments, paying medical bills, and/or helping pay for vocational training to earn a living wage. Secondly, BCS provides workshops and courses designed to equip families with new knowledge and skills for achieving fiscal stability.

Given the community need for broader nutrition outreach, the Portland hospital has identified several opportunities to be pursued over the next three years. These include:

- Hosting a speaker from the Oregon Food Bank (OFB), the hub of Oregon's statewide network of food banks and hunger-relief agencies, during 2016 Grand Rounds to raise employee awareness of nutrition issues and community resources available to address those issues.
- Incorporating food insecurity screening questions, provided by the OFB, at intake to assess if patients are in need of nutritional resources.
- Providing those patients scoring positive on the screening with an OFB-developed handout directing to available resources.
- Implementing PSAs focused on nutrition and making good food choices in the Outpatient Clinic lobby.

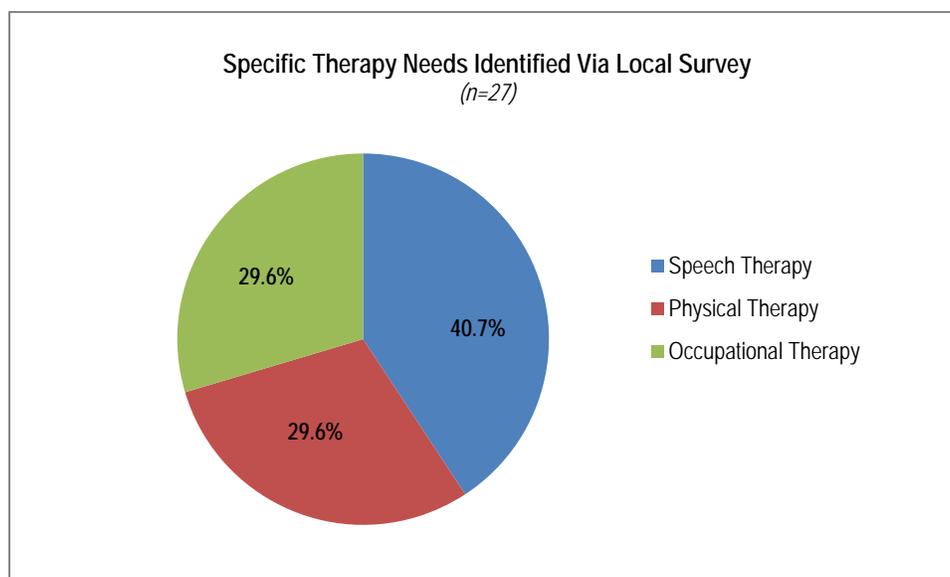
Longer-term (3+ years), the hospital would like to explore further collaboration with the Oregon Food Bank and/or the Oregon Health & Science University Farmers Market on how best to support community-focused nutrition programs.

Additional Need Areas

While the above need areas were identified as the top three for local children, two other services areas, both clearly in alignment with the mission of Shriners Hospitals for Children – Portland, were also ranked by participants. Rehabilitation/therapy was noted as an unmet medical need by 41.8% of survey respondents, while orthopaedic care was cited as an unmet need by 31.6% of respondents.

Additional Need: Rehabilitation/Therapy

Just over 40% of survey respondents cited rehab/therapy as an unmet medical need in the Portland metropolitan area. Of the three types of therapy provided at the Portland hospital, speech therapy was cited as most in-demand (40.7% of respondents), followed by physical and occupational therapy (both 29.6% of respondents).



Shriners Hospitals for Children – Portland provides care including speech, physical and occupational therapies for all patients regardless of the families' ability to pay. The hospital also collaborates with a number of community partners to support this type of care. For example, ABATE of Oregon, a not-for-profit organization devoted to raising member and public awareness about motorcycle issues and safety through education and community involvement, annually raises funds for patient's equipment needs. Much of the equipment donated via this effort would not be possible for families to purchase due to cost. The hospital's Rehabilitation

Department also supports participation of special needs patients in the annual Junior Rose Parade event in Portland.

Action Plan: Rehabilitation/Therapy

As rehab/therapy is already a key service area for the hospital, leadership remains committed to evaluating related community needs. One challenge faced by the hospital is that rehabilitation and therapy services are only offered to current patients, thus limiting ability to offer such services to the community more broadly. That said, in order to continue supporting these needs within the community, the hospital will:

- Raise greater local awareness of Shriners Hospitals for Children – Portland services via social media, an updated website and continued outreach to local schools and physician offices.
- Continue collaboration with local partners, including ABATE, Adaptive Sports Northwest, Adventures Without Limits, Forward Stride and others, to provide rehab/therapy services.
- Offer resources to help patients locate rehab/therapy services in their own communities.
- Explore opportunities to offer rehab/therapy services to non-Shriners patients.



ABATE delivers needed equipment to a happy family

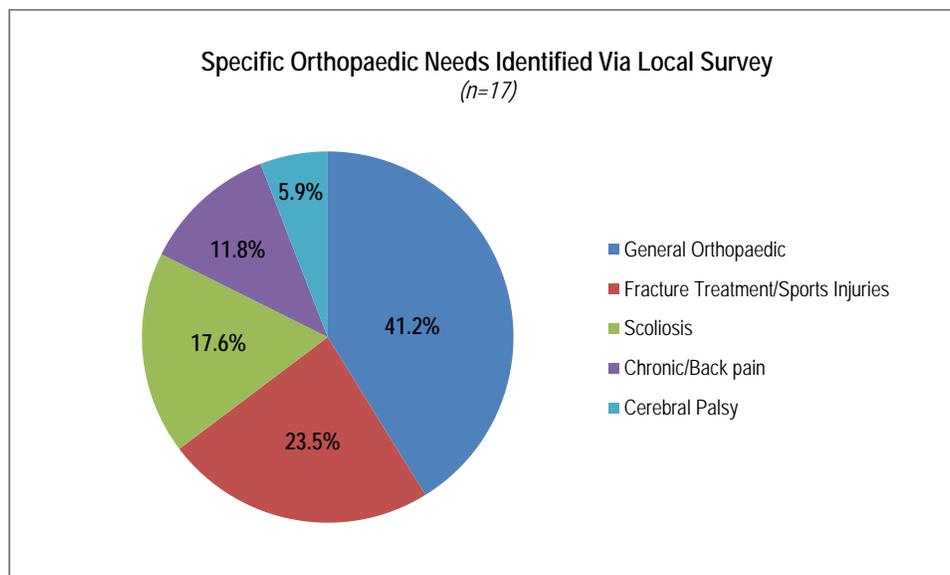
Additional Need: Orthopaedic Care

While orthopaedic care ranked lowest on the list of unmet medical needs for local-area children (cited by 31.6% of respondents), Shriners Hospitals for Children – Portland is in a unique position to address the needs that do exist. As an orthopaedic hospital, Shriners Hospitals for Children – Portland provides a full spectrum of pediatric orthopaedic and plastic surgery care to patients from birth to 18 years of age. The hospital is equipped and staffed to provide care for virtually all pediatric orthopaedic problems including but not limited to:

- scoliosis
- cerebral palsy
- spina bifida
- clubfoot and other foot deformities
- skeletal growth abnormalities

- neuromuscular diseases such as muscular dystrophy
- metabolic bone disease such as rickets and osteogenesis imperfecta (brittle bone disease)
- hand and hip disorders
- limb deficiencies, congenital and acquired
- subacute trauma, post-trauma deformities
- leg length discrepancies
- musculoskeletal tumors
- burn reconstructive surgery
- cleft lip and palate – early repair and late reconstruction

When looking specifically at orthopaedic care, general orthopaedic services (hip, knee, etc.) were reported as needed most often (41.2%) in the local survey, followed by the need for fracture treatment/sports injuries (23.5%). To a lesser degree, treatment and services for scoliosis (17.6%), chronic/back pain (11.8%) and cerebral palsy (5.9%) were also cited by respondents.



Action Plan: Orthopaedic Care

Again, orthopaedics is already a primary focus area for the hospital, and leadership regularly evaluates demands for services and adjusts offerings accordingly. As an example of this, the walk-in fracture clinic was implemented in response to the 2013 Community Health Needs

Assessment and, as noted previously, has quickly become the third busiest line of treatment in the months since its rollout.

In addition to maintaining and growing the fracture clinic, the hospital is pursuing several other initiatives which will enrich orthopaedic services offered to children and teens in the Portland metropolitan area. These include:

- Partnerships with two local healthcare organizations to bring expert orthopaedic care to several Portland-area clinics and emergency departments outside the Shriners Hospitals system.
- Pursuit of a joint spina bifida clinic with Oregon Health & Science University.
- Raising greater local awareness of Shriners Hospitals for Children – Portland services via social media, an updated website and continued outreach to local schools and physician offices.
- Expansion of orthopaedic outreach clinics to Bellingham, WA and Pendleton, OR.
- Implementation of a pediatric orthopaedic upper extremity program.



Superhero window cleaners visit the hospital in 2014

Other Ways Shriners Hospitals for Children – Portland Is Helping

Financial and Transportation Assistance

Two of the top barriers to medical care identified via the local survey were inability to pay (cited by 79.2% of respondents) and transportation issues (75% of respondents). The Portland hospital seeks to address both of these issues via several efforts.

First, the Patient Access department provides financial counseling services to assist eligible families with Medicaid applications. Patients are first evaluated through the Healthcare Entitlement Assistance & Recovery Track (HEART). Through partnership with NFV Healthcare Group, a revenue cycle management service, the application process is followed to confirmed enrollment. For under or uninsured patients, Shriners Hospitals for Children offers programs called Charity Care & Shrine-Assist.

Second, for hospital inpatients, Shriners Hospitals for Children – Portland provides room-in accommodations for one parent/guardian or relative over the age of 18 years. The parent may spend the night (room-in) with the patient, with a fold out bed and showers provided. Family hospital guest rooms are also available if an additional parent/guardian wishes to spend the night. This option is reserved for those traveling more than 50 miles from their home to the hospital.

Lastly, for families coming from outside the Portland metropolitan area, Shriners Hospitals for Children – Portland provides free transportation to and from the Portland airport, Union Station and local hotels. The hospital also partners with Alaska Airlines to offer travel vouchers that help families offset the cost of flight expenses.



A patient enjoys complimentary transportation to the hospital

Language Assistance & Outreach

While not ranked as a top barrier to children obtaining medical care, language was noted as a challenge by 56.3% of respondents. Shriners Hospitals for Children – Portland seeks to address

this need via the Medical Interpretation and Translation Department (MITD), which supports access for all languages and provides educational outreach to the community by attending community health fairs. The department also actively shares information and resources with local health clinics and community centers, including the Oregon Rural Health Clinics and Oregon Primary Care Association, as well as school districts and the Oregon Summer Meals Program participants.

In addition, the hospital regularly hosts meetings for the Oregon Health Care Interpreters Association which reaches all healthcare translators in Oregon. The Association is dedicated to maintaining, advancing and promoting high standards of professional practice, ethics and competence of healthcare interpreters by supporting educational efforts.

For the growing Hispanic population, outreach services are extended to many community organizations including:

- Virginia Garcia Memorial Health Center, whose mission is to provide high-quality, comprehensive, and culturally appropriate primary healthcare with a special emphasis on migrant and seasonal farmworkers and others with barriers to receiving healthcare.
- Bi-National Health Week, organized by the Consulate of Mexico in Portland, and dedicated to improving the health of underserved Latino communities.
- Western Farm Workers Association, an association of farm workers and other low-paid workers and their family members focused on providing emergency food, clothing, preventive medical care, job referrals, and more to those in need.
- Office of Equity & Inclusion of the Oregon Health Authority, which serves as a leader and catalyst in helping to promote equitable health and human services for communities of color, Indian tribal governments, and other multicultural groups.

Community Outreach, Education & Partnership

Because of its mission to serve children with special needs, the Portland hospital has always been proactive in providing community services, outreach and education. For many years outreach clinics have been held in Medford OR, and Anchorage, AK. Designed to assist patients who are unable to or cannot afford to travel to Portland, the clinics are an opportunity for physicians and staff from the Portland hospital to evaluate new patients and conduct follow-up appointments. Based on community assessment needs, additional clinics are slated for rollout in 2016 in Bellingham, WA; and Pendleton, OR. Longer-term, the hospital hopes to add a fifth outreach clinic in Fairbanks, AK.

Community-based screenings throughout Oregon, a longstanding tradition of the Shriners International fraternity, are another element of the hospital's outreach. While driven by individual Shrine organized clubs, Shriners Hospitals for Children – Portland partners with these groups to help spread awareness of screenings within individual communities. A key purpose of the community screenings is to identify children who may benefit from the services offered at the hospital, and to assist them in beginning their patient care experience with Shriners Hospitals for Children.

In addition to outreach clinics, and screenings, the Portland hospital also develops and produces health education materials with an orthopaedic focus, which are then distributed to local medical clinics and physicians. The hospital also provides a variety of patient education pamphlets on topics such as Vitamin D deficiency, the proper use of backpacks and lawnmower safety (see Exhibits 4 & 5). The quarterly *Leaders in CARE* publication, while produced by the Shriners home office, incorporates several pages of content written by the Portland hospital and targeted to local-area audiences.

Shriners Hospitals for Children – Portland also maintains partnerships with a variety of community organizations, raising awareness of services offered via participation in a number of local health fairs and events including the Annual Junior Rose Parade in Portland. As part of this commitment, the hospital also offers free or reduced cost facility use for several professional organizations including the Oregon Health Care Interpreters Association, the Oregon Biomedical Association, the Oregon Association of Peri-Operative RNs, and the Oregon Association of Surgical Technologists, among others.



Shriners Hospitals for Children – Portland participants in the 2015 Junior Rose Parade

Family Support Resources

Recognizing that the family plays a vital role in a child's ability to overcome an illness or injury, the Portland hospital helps families provide the support their child needs by involving them in all aspects of their child's care and recovery. The hospital provides comprehensive physical and



A patient takes part in the hospital's assistive technology user group

psychosocial services to patients and their families, including hosting a variety of support groups. Among the groups hosted are those focused on limb differences, muscular dystrophy and an assistive technology user group designed to train patients and their families on how to effectively use technology.

A core challenge for children with special healthcare needs is transitioning to adulthood.

According to the 2009/2010 National Survey of Children with Special Health Care Needs, 64.4% of Oregon youth between ages 12 – 17 did not receive services necessary to make appropriate transitions to adult healthcare, work, and independence.²⁷ As survival rates are increasing, more than physical needs must be considered for quality of life beyond care given at the medical facility. At the Portland hospital, a Transitions Program was developed to meet these needs by teaching patients and their families how to access the care and services they need. Key aspects of the program include:

- The Patient and Family Resource Library: Offers a centralized “resource room” which includes books, journals and audio-visual, and Internet transition resources. Topics include careers, diagnosis, independent living, recreation, sexuality/relationships, support and transition issues.
- Specialized “Transition Tools”: Screening tools thorough enough to quickly identify transition needs, yet concise enough to allow professional staff to efficiently meet those needs or effectively find additional resources. Transition Timelines are guidelines for transition issues at key “touch points” per the [Adolescent Health Transition Project](#).

²⁷ National Survey of Children with Special Health Needs. *MCHB Core Outcomes and Key Indicators, Oregon*.

<http://www.childhealthdata.org/browse/survey/results?q=1616&r=39>. Accessed December 17, 2015.

- **FreeMind-Transition Resources**: A computer-based mind map designed to organize and display current transition resources for quick access. FreeMind provides the flexibility to build resources most needed by the program. The Internet link is easy to use and helps to keep information comprehensive and up-to-date. This program can display resources by county or state, and expand to show categories of information in the detail needed to help provide individualized care based on need.
- **Camp Spirit**: A hospital-based transitions camp which addresses issues faced by maturing adolescents. Community experts in areas of independent living, such as careers, college, coping, recreation and transportation are invited to speak to participants. Outings with adult volunteers (or supervised peer volunteers from a local high school) to urban and recreation areas are included. The camp focus varies according to diagnosis and/or resources.



A patient is all smiles at the 2014 Camp Spirit

The hospital also hosts an annual [Caring for the Medically Fragile](#) conference, organized and presented by Nursingle, a local in-home nursing care agency. The training includes topics such as infectious diseases; evaluation, treatment and management of seizures; use of medical marijuana in relieving pain and spasticity; and the need for the POLST (Physician Orders for Life-Sustaining Treatment) form. The target audience is providers and parents/caregivers of medically fragile children.

Shriners Hospitals for Children – Portland also promotes the [NFL Play 60 All-Ability Guide](#), which includes adaptive activities and tips so children with mobility challenges have the opportunity to participate and pursue a healthy lifestyle. Launched in late 2015, the goal of the program is to encourage children of all abilities to get 60 minutes of physical activity per day.

Continuing Medical Education

The Portland hospital offers continuing medical education to providers of orthopaedic care, including medical doctors, osteopathic doctors, naturopathic doctors, nurse practitioners,

physician assistants, nurses, physical therapists and occupational therapists. Annual events hosted onsite include the Dillehunt Memorial Lecture, the Beattie Lectureship and the Primary Care Providers Conference:

- Funded by the Shriners Hospital Education Trust Fund, the [Dillehunt Memorial Lecture](#) honors the contributions of a great surgeon and legendary teacher who inspired many orthopaedists. With his devotion to children, Dr. Richard Dillehunt was instrumental in the establishment of Shriners Hospitals for Children — Portland and served as the first chief surgeon. The most recent Dillehunt Memorial Lecture focused on topics including bernese pelvic osteotomy, dega pelvic osteotomy, arthroplasty in young dysplastic hip and blood supply to the femoral head.
- The [Beattie Lectureship](#) is an annual conference to educate local orthopaedic providers on topics such as: Normal and abnormal growth of the musculoskeletal system; treatment options for bone cysts, long-term follow-up of open hip reductions; recognizing and following spinal deformities; treatment of hip subluxation in cerebral palsy; chest wall deformities; and achondroplasia.
- The [Annual Primary Care Providers Conference](#) is dedicated to providing primary providers with a better understanding of topics such as: Basic knowledge of common pediatric orthopedic conditions (including bone health, childhood obesity, duchenne muscular dystrophy, and motor delay); how to identify and timely refer unique pediatric orthopedic conditions to specialists; and evaluating and managing patients with gait disturbances, knee pain, ACL tears, and back pain.



Shriners Hospitals for Children – Portland physicians attend a recent Dillehunt Memorial Lecture

The hospital has also hosted several joint conferences with neighboring Oregon Health & Science University focused on orthopaedic issues. Recent topics covered at these events include congenital longitudinal deficiencies of the lower limb, rickets/osteogenesis imperfecta, adolescent developmental dysplasia of the hip, and legg calve perthes disease & slipped capital femoral epiphysis.

In addition to these onsite events, the hospital's orthopaedic surgeons also visit community hospitals and professional group conferences, providing specialized education on conditions treated and services provided. Recent presentations include the following:

- Michael D. Aiona, M.D., Chief of Staff:
 - Good Samaritan Residents Lecture in Corvallis, OR; March 2015
 - Topic: *Pediatric Hip Conditions*
- J. Krajbich, M.D., F.R.C.S:
 - Northwest Orthopaedic Group Fall Seminar in Agate Beach, OR; October 2014
 - Topic: *Orthopedic Manifestations of Neurofibromatosis and What is new in the treatment of spinal deformities in children and adolescents*
 - Orthopaedic and General Surgery Residency Program at Samaritan Health Services in Corvallis, OR; July 2015
 - Topic: *Pediatric Spine Conditions*
- Ellen Raney, M.D.:
 - Orthopaedic and General Surgery Residency Program at Samaritan Health Services in Corvallis, OR; July 2015
 - Topic: *Pediatric Spine Conditions*

Teaching Affiliations and Youth Education

The hospital is proud to maintain teaching affiliations with a number of academic programs including:

- Oregon Health & Science University School of Medicine
- Clinical fellowship programs with:
 - Australian Orthopaedic Association
 - New Zealand Orthopaedic Association

In addition to medical students, Shriners Hospitals for Children – Portland also provides educational and mentoring opportunities to other healthcare professionals in programs including radiology, rehabilitation, nursing, nutrition services, pharmacy and orthotics & prosthetics.

Beyond supporting current medical practitioners, the Portland hospital also recognizes the importance of nurturing the next generation of medical leaders. Educational presentations are conducted throughout the year for various local-area high schools, universities and community

groups. In addition, the hospital regularly hosts summer “Saturday Academy” events for elementary, junior high and high school students interested in pursuing a career in healthcare.

Research

Shriners Hospitals for Children is committed to conducting high quality, innovative research in the areas of burn, orthopaedic/musculoskeletal and

neurological injury and disease, in order to improve the care and quality of life of children with these conditions and challenges. The Portland hospital is home to one of eight Research Centers and is closely affiliated academically with Oregon Health & Science University.



Saturday Academy participants learn about the Motion Analysis Lab in a hands-on environment



Research conducted at this center is focused on musculoskeletal development, and addresses the root causes of relevant birth defects and developmental disorders affecting children receiving care. Identifying the underlying biological disturbances in these conditions will lead to new, more effective and less invasive therapies in the future, as well as better ways to monitor disease progression and response to therapies.

The Research Center’s scientific approach is multidisciplinary in nature, bringing a combination of biochemistry, genetics, cell and developmental biology, and electron microscopy to bear on disturbances of bone, cartilage, and tendon development. Conditions currently under investigation at the Portland Research Center include:

- birth defect syndromes involving limb anomalies such as connective tissue and hand-foot-urinary syndromes.
- disorders of reduced, abnormal, or excessive bone growth including achondroplasia, multiple epiphyseal dysplasia and marfan syndrome.
- disorders in which skeletal regeneration is disturbed, for example osteogenesis imperfect.
- malformations resulting from defective tendon formation, such as arthrogryposis.

Of note, the Research Center's work has been recognized by the Bill & Melinda Gates Foundation, the largest private foundation in the world. In 2014, the Research Center received a funding grant from the foundation to study growth in children, specifically via the development of a bone growth biomarker test. The research will aid in developing programs designed to improve child health, especially in resource-restricted environments of the world where children frequently suffer from chronic disease and malnutrition.

In addition to fundamental research, the Portland Hospital conducts clinical research. The focus is on determining treatment outcomes and the natural history of various conditions, including those with gait disturbances, muscle weakness, and spinal curvatures.

Finally, research conducted at the Portland hospital is shared broadly via articles published in scientific and medical journals, as well as presentations at various conferences geared to medical, orthotics and prosthetics, and rehabilitation professionals.

Exhibits

Exhibit 1: Local Survey – English Language Version



Shriners Hospitals
for Children®

Shriners Hospitals for Children-Portland is conducting a survey to identify unmet medical needs of the local community. We would like to hear firsthand from community-based organizations and providers that serve children and their families what you consider to be the greatest needs in the Portland/Vancouver Metro area. Responses should be based on your knowledge of working with children, as you may or may not have children of your own. *Please note that all answers will remain confidential.* The aggregate data will be used to help us meet our goal of better serving the community. Thank you for your help!

***If preferred, this survey may be taken online at:
<https://www.surveymonkey.com/r/ShrinersPortlandCHNA>***

1. Do the children you serve have any unmet medical needs?

- Yes No

2. Please choose the appropriate unmet needs from the list below (select all that apply):

- Dental
- Immunizations
- Mental Health/Counseling
 - Abuse
 - Addiction
 - Bullying
 - Depression
 - Suicide
 - Other mental health (please specify): _____
- Nutrition
 - Food Insecurity
 - Obesity
 - Other nutrition (please specify): _____
- Orthopaedic
 - Cerebral Palsy
 - Fracture treatment
 - General orthopaedics (i.e. hip, knee, etc.)
 - Scoliosis (including diagnosis and treatment)
 - Sports injuries
 - Other orthopaedic (please specify): _____
- Primary Care
- Prenatal Care
- Rehabilitation/Therapy
 - Physical Therapy
 - Occupational Therapy

- Speech Therapy
- Other rehab/therapy (please specify): _____
- Other medical need (please specify): _____

3. Of the unmet needs identified in question #2, please list the top three (where 1 = greatest need):

- 1. _____
- 2. _____
- 3. _____

4. Please choose any barriers to the children obtaining medical care (select all that apply):

- Inability to pay
- Lack of insurance
- Lack of services
- Language
- Transportation issues (please specify): _____
- Other (please specify): _____

5. Of the below services offered by Shriners Hospitals for Children – Portland, which are you aware? (select all that apply):

- Medical Imaging
- Motion Analysis
- Nutrition Services
- Orthopaedic (Cerebral Palsy, Clubfoot, limb deficiencies, spine & back, etc.)
- Orthotics & Prosthetics
- Outreach Clinics
- Rehabilitation/Therapy (physical, occupational, speech)
- Walk-In Fracture Clinic
- Other (please specify): _____

6. Are there any other ways Shriners Hospitals for Children could provide help to children?

7. I am interested in learning more about the services offered by Shriners Hospitals for Children – Portland. Please contact me at:

Thank you for your participation!

Exhibit 2: Local Survey – Spanish Language Version

Shriners Hospitals
for Children®

El Hospital de Shriners para Niños de Portland está llevando a cabo una encuesta para identificar las necesidades médicas de la comunidad local que no están siendo atendidas. Nos gustaría escuchar sobre las experiencias de las organizaciones que sirven a los niños y a sus familias sobre lo que consideran ser las necesidades más grandes en su área. Las respuestas deben basarse en el conocimiento adquirido en su trabajo con niños, ya que puede que usted no tenga hijos propios. *Por favor tenga en cuenta que las respuestas serán confidenciales.* Los datos acumulados se usarán para ayudarnos a cumplir nuestra meta de servir mejor a la comunidad. Gracias por su ayuda.

***Si prefiere puede llenar esta encuesta en línea visitando:
<https://www.surveymonkey.com/r/ShrinersparaNinosdePortlandCHNA>***

1. ¿Los niños que usted sirve tienen necesidades médicas que no están siendo atendidas?
 - Sí
 - No

2. Por favor escoja las necesidades que no están siendo satisfechas de la siguiente lista (seleccione todas las que aplican):
 - Dental
 - Inmunizaciones
 - Salud Mental / Consejería
 - Abuso
 - Adicción
 - Acoso / Intimidación
 - Depresión
 - Suicidio
 - Otros problemas de salud mental (por favor especifique): _____
 - Nutrición
 - Escases de comida
 - Obesidad
 - Otros problemas de nutrición (por favor especifique): _____
 - Ortopedia
 - Parálisis cerebral
 - Tratamiento de fracturas
 - Ortopedia en general (por ejemplo, caderas, rodillas, pies, etc.)
 - Escoliosis (incluyendo diagnóstico y tratamiento)
 - Lesiones deportivas
 - Otros problemas ortopédicos (por favor especifique): _____
 - Atención primaria
 - Cuidado Prenatal
 - Rehabilitación / Terapia
 - Terapia física
 - Terapia ocupacional
 - Terapia del lenguaje

- Otra terapia / rehabilitación (por favor especifique): _____
- Otras necesidades médicas (por favor especifique): _____

3. De las necesidades médicas que no están siendo atendidas que usted identificó en la pregunta #2, por favor anote tres de acuerdo a su importancia, donde la 1. es la más importante:

- 1. _____
- 2. _____
- 3. _____

4. Por favor indique cualquier barrera que tienen los niños para obtener el cuidado médico (seleccione todas las que aplican):

- Inhabilidad para pagar
- Falta de seguro médico
- Falta de servicios
- El idioma
- Asuntos de transporte (por favor especifique): _____
- Otras (por favor especifique): _____

5. ¿De cuáles servicios ofrecidos por el Hospital Shriners para Niños de Portland está usted enterado/a? (seleccione todos los que aplican):

- Radiología
- Laboratorio de Análisis del Movimiento
- Servicios de Nutrición
- Ortopedia (parálisis cerebral, anomalías de los pies, brazos, piernas, espalda, etc.)
- Órtesis y prótesis
- Clínicas de alcance a la comunidad
- Rehabilitación / Terapia (física, ocupacional, del lenguaje)
- Clínica para fracturas sin cita previa
- Otros (por favor especifique): _____

6. ¿Hay algunas otras formas en que el Hospital Shriners para Niños pudiera proveer cuidado a los niños?

7. Estoy interesado/a en saber más sobre los servicios ofrecidos por el Hospital Shriners para Niños de Portland. Por favor contácteme al: _____

¡Gracias por su participación!

Exhibit 3: Truven Health Analytics Demographic Snapshot for Portland Market Area

Demographics Expert 2.7										
2015 Demographic Snapshot										
Area: SHC Portland Market Area										
Level of Geography: Block Group Code										
DEMOGRAPHIC CHARACTERISTICS										
		Selected Area	USA					2015	2020	% Change
2010 Total Population		8,529,881	308,745,538			Total Male Population		4,465,060	4,693,555	5.1%
2015 Total Population		8,973,962	319,459,991			Total Female Population		4,508,902	4,742,307	5.2%
2020 Total Population		9,435,862	330,689,365			Females, Child Bearing Age (15-44)		1,781,534	1,813,288	1.8%
% Change 2015 - 2020		5.1%	3.5%							
Average Household Income		\$77,498	\$74,165							
POPULATION DISTRIBUTION					HOUSEHOLD INCOME DISTRIBUTION					
Age Distribution					Income Distribution					
Age Group	2015	% of Total	2020	% of Total	USA 2015 % of Total	2015 Household Income	HH Count	% of Total	USA % of Total	
0-14	1,679,751	18.7%	1,715,101	18.2%	19.1%	<\$15K	384,129	10.9%	12.7%	
15-17	344,578	3.8%	365,364	3.9%	4.0%	\$15-25K	328,827	9.4%	10.8%	
18-24	827,527	9.2%	852,275	9.0%	9.9%	\$25-50K	802,598	22.8%	23.9%	
25-34	1,259,584	14.0%	1,235,828	13.1%	13.3%	\$50-75K	657,303	18.7%	17.8%	
35-54	2,422,603	27.0%	2,480,453	26.3%	26.3%	\$75-100K	457,223	13.0%	12.0%	
55-64	1,178,419	13.1%	1,243,030	13.2%	12.7%	Over \$100K	882,812	25.1%	22.8%	
65+	1,261,500	14.1%	1,543,811	16.4%	14.7%					
Total	8,973,962	100.0%	9,435,862	100.0%	100.0%	Total	3,512,892	100.0%	100.0%	
EDUCATION LEVEL					RACE/ETHNICITY					
Education Level Distribution					Race/Ethnicity Distribution					
2015 Adult Education Level	Pop Age 25+	% of Total	USA % of Total		Race/Ethnicity	2015 Pop	% of Total	USA % of Total		
Less than High School	240,918	3.9%	3.9%	5.9%	White Non-Hispanic	6,362,462	70.9%	61.8%		
Some High School	362,585	5.9%	5.9%	8.0%	Black Non-Hispanic	306,662	3.4%	12.3%		
High School Degree	1,436,660	23.5%	23.5%	28.1%	Hispanic	1,118,266	12.5%	17.6%		
Some College/Assoc. Degree	2,103,752	34.4%	34.4%	29.1%	Asian & Pacific Is. Non-Hispanic	727,948	8.1%	5.3%		
Bachelor's Degree or Greater	1,978,191	32.3%	32.3%	28.9%	All Others	458,624	5.1%	3.1%		
Total	6,122,106	100.0%	100.0%	100.0%	Total	8,973,962	100.0%	100.0%		

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Exhibit 4: Educational Brochure on Vitamin D Deficiency (targeted to patients)

 <p>Shriners Hospitals for Children® www.shrinershospitalforchildren.org Clinical Nutrition Department 503.241.5090 ext. 4419</p> <h3>Feed Your Bones</h3> <p>Vitamin D deficiency or nutritional rickets can stunt growth or cause a child's arms and legs to have growth problems. These growth problems can even cause bones to be weak and easily broken. Vitamin D deficiency is commonly seen in northern parts of the U.S., and is beginning to become common even in sunnier areas. "Vitamin D is essential to our body's ability to absorb calcium from our diet to build and maintain healthy bones," says Dr. Ellen Raney, orthopaedic surgeon of Shriners Hospitals for Children® in Portland. "Food can contribute significant amounts of Vitamin D if chosen carefully," says hospital clinical dietitian Sharon Brown, RD, LD.</p>  <p>Our bodies can make Vitamin D in our skin when it is exposed to sunlight.</p> <p>Vitamin D is essential for adequate calcium absorption.</p> <p>Minimum daily recommended dose: 400-600 IU</p>	<p>Lifestyle Factors Contributing to Vitamin D Deficiency:</p> <ul style="list-style-type: none"> • Decreased outdoor activities • Constant use of sunscreen while outside • Limited availability of Vitamin D rich foods • Decreased milk intake due to increased intake of sugar-sweetened beverages • Obesity 	<p>Recommendations to Improve Vitamin D Health</p> <p>Soak up the sun! In sunny weather, your body can make Vitamin D in just a few minutes (10-15) of midday sun exposure without sun screen.</p> <p>What foods* contain Vitamin D?</p> <ul style="list-style-type: none"> • Fortified milk (cow, soy, almond, coconut) • Fortified orange juice • Fortified cereal • Fortified yogurt • Mushrooms • Fatty Fish (Tuna, Sockeye Salmon, Mackerel) <p><small>*check Nutrition Facts Panel for specifics on Vitamin D content</small></p> <p>How much Vitamin D does my child need?</p> <ul style="list-style-type: none"> • The American Academy of Pediatrics recommends a daily intake of 400 IU per day for children under the age of 1 year. • The Institute of Medicine recommends that children and adolescents should have a daily intake of at least 600 IU per day. • Consult with your RD to help determine how much daily Vitamin D your child is getting, as well as determine if and what additional supplement he/she might need. • Avoid taking several multivitamins to get more Vitamin D as they may contain too many other vitamins that can be harmful. <p>What supplements should I give my child?</p> <p>Vitamin D supplements are readily available in child-friendly forms (chewable or liquid drops). Get advice from your dietitian on supplement options.</p> <p>www.shrinershospitalforchildren.org</p>	<p>Getting enough Vitamin D is easy!</p> <p>Try this sample menu:</p> <p>2 cups fortified milk (16 oz total) 200IU (includes soy, rice, almond, coconut)</p> <p>8 oz fortified orange juice 100 IU</p> <p>1 cup TOTAL Raisin Bran Cereal 104 IU</p> <p>2 oz Tuna Fish 160 IU</p> <p>6 oz Dannon® Fit & Light Yogurt 80 IU</p> <p>Total Vit. D = 644 IU</p> <p>Representatives from the Academy of Nutrition and Dietetics and Shriners Hospitals for Children® participated in the development of this information.</p> <p>Shriners Hospitals for Children – Portland® 3101 SW Sam Jackson Park Rd. Portland, OR 97239</p>
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Exhibit 5: Educational Brochure on Vitamin D Deficiency (targeted to physicians and patients)

<div style="display: flex; justify-content: space-between; align-items: center;">   </div> <h2 style="text-align: center;">Kids and Vitamin D Deficiency</h2> <p>Facts About Vitamin D Deficiency Severe Vitamin D deficiency is becoming rampant around the U.S. and other countries, causing devastating impacts on children. “Vitamin D is essential to our body’s ability to absorb calcium from our diet to build and maintain healthy bones,” says Dr. Ellen Raney of Shriners Hospitals for Children® in Portland. “Vitamin D deficiency or nutritional rickets can show up in several ways. Growth may be severely stunted, or the arms and legs may not grow straight. Bones may be weak and easily broken.” The problem is worse in northern parts of the U.S. However, Vitamin D deficiency is becoming common even in sunnier areas.</p> <div style="background-color: #0070C0; color: white; padding: 5px;"> <p>Lifestyle Issues Contributing to Vitamin D Deficiency:</p> <ul style="list-style-type: none"> decreased outdoor activities constant use of sunscreen while outside limited availability of Vitamin D rich foods </div> <div style="background-color: #92D050; padding: 5px;"> <p>Vitamin D is considered a hormone. Our bodies can make Vitamin D in our skin when it is exposed to sunlight.</p> </div> 	<h2 style="text-align: center;">Recommendations to Improve Vitamin D Health</h2> <p>Limited exposure to the sun: In sunny weather, your body can make sufficient Vitamin D in just a few minutes of midday sun exposure without sun screen. Balance this recommendation with that of dermatologists who caution against too much direct sun exposure to avoid risks of skin damage and skin cancer.</p> <p>Dietary intake: Diet alone can rarely provide enough Vitamin D, found nearly exclusively in fatty fish such as salmon and cod.</p> <p>Supplement suggestion: Supplements can be a useful alternative.</p> <ul style="list-style-type: none"> The American Academy of Pediatrics recommends a daily intake of 400 IU per day of Vitamin D during the first year of life beginning in the first few days of life. The Institute of Medicine recommends that children and adolescents should have a daily intake of at least 600 IU per day. Everyone should consult their primary care professional to determine the correct amount of Vitamin D they should be taking. <p>What supplements should I give my children?</p> <p>Vitamin D is readily available by itself in child-friendly forms, such as gummy vitamins or liquid. Unlike calcium supplements, which are not absorbed if taken in doses greater than 500 mg at one time, a daily dose of Vitamin D can be taken all at once, so it need be given only once daily. Children’s multivitamins contain between 60 and 400 IU of Vitamin D. Taking several multivitamins each day to get more Vitamin D is not a good idea, because too much of other vitamins (such as Vitamin A) can be harmful.</p> <div style="background-color: #00A651; color: white; padding: 5px;"> <p>This information is brought to you as part of World Pediatric Bone and Joint (PB&J) Day. www.usbj.org/rd?WorldPB&JDay</p> <p>The USBJI is part of the worldwide Bone and Joint Decade, and its purpose is to provide a forum for all stakeholders concerned with musculoskeletal health, resulting in multi-disciplinary programs to raise awareness, improve education, and increase research.</p> <p>Representatives from the American Academy of Pediatrics, the American Academy of Orthopaedic Surgeons, the Pediatric Orthopaedic Society of North America, and Shriners Hospitals for Children® participated in the development of this information.</p> </div>
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Acknowledgements

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External Resources

American Association of Suicidology (www.suicidology.org)

Annie E. Casey Foundation (www.aecf.org)

Centers for Disease Control and Prevention (www.cdc.gov)

Childhood Obesity Action Network (www.obesity.nichq.org)

Community Benefit Connect (www.communitybenefitconnect.org)

Community Commons (www.communitycommons.org/chna)

Data Resource Center for Child & Adolescent Health (www.childhealthdata.org)

Dignity Health and Truven Health Interactive Community Need Index (<http://cni.chw-interactive.org/>)

Multnomah County Health Department (www.multco.us/health)

National Association of County & City Health Officials (www.naccho.org)

National Association of State Mental Health Program Directors Council (www.nasmhpd.org)

National Maternal and Child Oral Health Resource Center (www.mchoralhealth.org)

Oregon Health Authority (www.oregon.gov/oha)

Robert Wood Johnson Foundation (www.rwjf.org)

The Oregonian (www.oregonlive.com)

The Joint Commission (www.jointcommission.org)

Truven Health Analytics (www.truvenhealth.com)

U.S. Department of Agriculture, Economic Research Service (www.ers.usda.gov)

U.S. Department of Health and Human Services (www.hhs.gov)

United States Census Bureau (www.census.gov)

Washington State Department of Health (www.doh.wa.gov)