



## **MADONNA REHABILITATION HOSPITAL**

### **COMMUNITY HEALTH NEEDS ASSESSMENT 2021-2022**

#### **INTRODUCTION**

Madonna Rehabilitation Hospitals (MRH) are Catholic hospitals that provide physical medicine and rehabilitation services to children and adults throughout the nation. Madonna rehabilitates those who have sustained injuries or disabling conditions so they can fully participate in life; lead research to improve outcomes; prevent physical disabilities and promote wellness through community programs.

Madonna Rehabilitation Hospitals will be the destination of choice for world-class rehabilitation providing children and adults, devastated by illness or injury, the bright hope of being made whole.

This hope is ignited and fueled by Madonna Rehabilitation Hospitals’:

- expert staff open to the call of those in need
- innovative programs and state-of-the-art equipment
- cutting-edge research and innovative technology development
- medical, academic and community partnerships

Madonna, as an organization, operates four hospitals in two geographic locations.

- Madonna Rehabilitation Hospital Lincoln (MRH-Lincoln)
- Madonna Rehabilitation Specialty Hospital Lincoln (MRSH-Lincoln)
- Madonna Rehabilitation Hospital Omaha (MRH-Omaha)
- Madonna Rehabilitation Specialty Hospital Omaha (MRSH-Omaha)

MRH-Lincoln and MRH-Omaha are comprehensive acute rehabilitation hospitals that serve children and adults in both an inpatient and outpatient setting. MRSH-Lincoln and MRSH-Omaha are long term acute care hospitals (LTCHs).

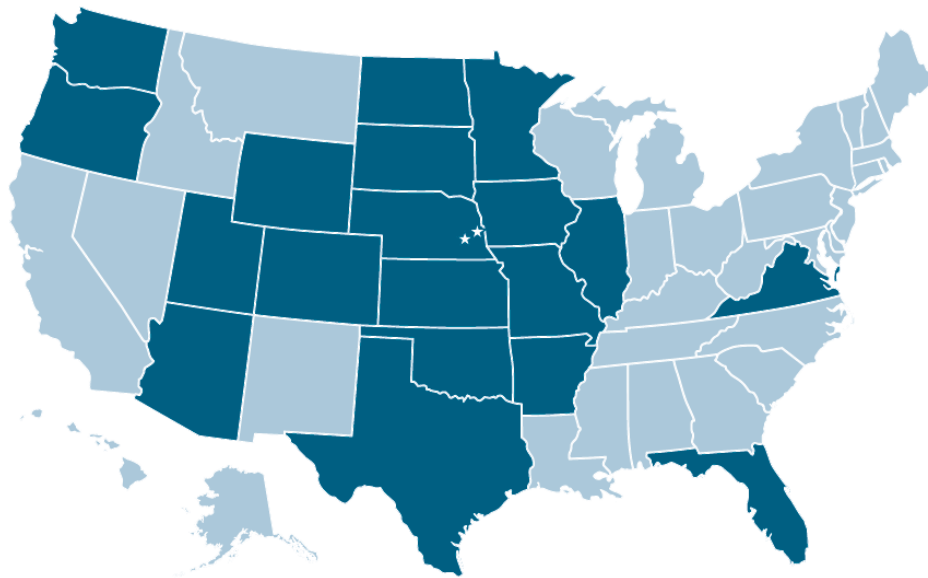
#### **DESCRIPTION OF COMMUNITY SERVED BY MADONNA**

Madonna is one of the nation's largest specialized rehabilitation hospitals. Madonna treats children and adults with complex disabilities due to traumatic brain injury, spinal cord injury, stroke, neurological disorders, burns, pulmonary disease, cancer and other disabling conditions. This is Madonna’s “community” — the people who require inpatient

post-acute physical rehabilitation to reduce or eliminate impairments, activity limitations, and participation restrictions. Unlike acute care hospitals, Madonna does not define “community served” as a geographic area, but rather by the priority population that requires these highly specialized services. This population includes people of all ages, gender, income level, and race from throughout the country.

### **Referral Market and National Admissions**

In FY 2021, Madonna served patients from 19 U.S. states.



## **TOTAL ADMISSIONS BY STATE**

FY 2021 National Admissions

### **FY 2021 Referral Market Results for Madonna**

- 7,325 total patients were served
- 101 hospitals and healthcare facilities referred patients
- 851 physicians referred patients

### **MRH-LINCOLN**

#### **Adult Acute Rehabilitation**

Case Mix Index (CMI) is a measure of patient severity. In FY 2021, MRH-Lincoln treated persons with a CMI of 1.76, compared to the national benchmark of 1.44 which placed MRH-Lincoln in the top two percent nationally. This demonstrates the ability and expertise of Madonna to offer clinically excellent and appropriate care for the needs of the adult rehabilitation patient.

Patient mix comparisons also demonstrate that Madonna's acute rehabilitation level of care treats a more complex population than the national norm. In FY 2021, 82 percent of those served at MRH-Lincoln were neurologically impaired with diagnoses such as stroke, brain injury and spinal cord injury compared to the 57 percent reported nationally.

### **Adult Acute Rehabilitation Clinical Outcomes**

In FY 2021, MRH-Lincoln discharged 77 percent of its patients to a non-institutionalized setting. The **Brain Injury Program** discharged 75 percent, the **Spinal Cord Injury Program** discharged 69 percent, and the **Stroke Program** discharged 79 percent of their patients to community settings.

According to data from eRehabData<sup>1</sup>, outcomes were strong in spite of the fact that Madonna's patients were in the top two percent in the nation for severity in FY2021. Inpatient rehabilitation patients' functional improvements are measured by a standardized assessment taken at admission and again at discharge. MRH-Lincoln patients made greater functional gains and discharged at a higher functional level compared to national benchmarks. MRH-Lincoln patients were contacted six months after discharge. Of those responding, 96 percent reported maintaining the functional gains they had made in rehabilitation<sup>2</sup>.

MRH-Lincoln is accredited by CARF International (CARF)<sup>3</sup>. In FY 2021 MRH-Lincoln earned three-year accreditation, the highest accreditation possible, in Brain Injury Specialty Program, Spinal Cord System of Care and Stroke Specialty Program.

### **Pediatric Acute Rehabilitation**

Madonna Rehabilitation Hospitals are the only free-standing rehabilitation hospitals in the region to house separate, secured pediatric rehabilitation units with specialized pediatric clinical staff including a physiatrist, rehabilitation nurses, therapists and a rehabilitation psychologist.

The Alexis Verzal Children's Rehabilitation Unit (AVCRU) in Lincoln serves adolescents and children with a variety of diagnoses, including those with mild to severe brain injury, spinal cord injury, stroke, cancer, cardio-pulmonary conditions, neurological conditions and those with developmental disabilities.

The Lincoln pediatric unit has 13 available beds, a pediatric gym, therapy space, sensory stimulation spaces, feeding spaces, specialized car seat fitting and storage, and provides recreational therapy and play space/time.

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<sup>1</sup> eRehabData is an internet based data application offered through The American Medical Rehabilitation Providers Association (AMRPA). It delivers real-time financial and clinical outcomes and benchmarks for inpatient rehabilitation facilities. [www.erehabdata.com](http://www.erehabdata.com)

<sup>2</sup> MRH-Lincoln Board Quality Scorecard YTD Actual FY2021

<sup>3</sup> CARF International is the premium accreditation body for rehabilitation hospitals.

AVCRU is:

- One of five hospitals nationally accredited in Pediatric Specialty Rehabilitation and Spinal Cord Specialty Program.
- One of six hospitals nationally accredited in Pediatric Specialty Rehabilitation and Brain Injury.
- One of 34 hospitals nationally accredited in Pediatric Specialty Programs.

As one of the few rehabilitation hospitals with a CARF accredited pediatric program, AVCRU attracts referrals from throughout the region. The Lincoln campus cared for 81 children and adolescents during FY 2021<sup>4</sup>.

### **AVRCU Clinical Outcomes**

The children and adolescents achieved excellent outcomes in FY2021 in terms of discharge to community, functional gains, patient satisfaction, and maintenance of gains.

- 77 percent discharged to community settings.
- Children and adolescents stayed an average of 38 days and made WeeFIM gains of 26. The WeeFIM scores track and measure gains from admission to discharge in such areas as communication, feeding, ambulation, dressing, toileting, etc.
- 96 percent of patients responding to a survey reported maintaining gains three months after discharge.<sup>5</sup>

### **MRSH-LINCOLN**

MRSH-Lincoln provides care to chronically critically ill and medically complex patients who require medical management for a longer period of time than generally occurs in acute care. Unlike most LTCHs, Madonna chooses to apply a rehabilitation approach to care for patients served. In FY 2021 MRSH-Lincoln earned a three-year accreditation, the highest accreditation possible, by CARF in Comprehensive Integrated Inpatient Rehabilitation Programs (CIIRP).

Many patients are able to discharge directly home, while others gain the strength, medical stability, and activity tolerance necessary for transfer to acute rehabilitation. The patient population often requires mechanical ventilation and/or tracheostomy management and weaning, telemetry, respiratory therapy treatments, medication management, and complex medical services, such as in-room hemodialysis and complex wound or burn cares.

### **MRSH-Lincoln Clinical Outcomes**

According to the latest Medicare data, MRSH-Lincoln is in the top one percent of the United States for preventing readmissions to acute care 30 days after discharge.

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<sup>4</sup> MRH Patient Mix Report July 1, 2020 – June 30, 2021

<sup>5</sup> MRH-Lincoln Board Quality Scorecard YTD Actual FY2021

Madonna's interdisciplinary approach to patient care and exceptional discharge planning contributed to this positive outcome.

Of the discharged patients surveyed, 96 percent maintained the gains they made at MRSH-Lincoln at six months post-discharge.

## **MRH – OMAHA**

### **Adult Acute Rehabilitation**

In FY 2021, MRH-Omaha treated persons with an average CMI of 1.46, compared to the national benchmark of 1.44. This places MRH-Omaha in the 40<sup>th</sup> percentile nationally in terms of patient complexity.

In FY 2021, 68 percent of those served at MRH-Omaha were neurologically impaired with diagnoses such as stroke, brain injury and spinal cord injury compared to the 57 percent reported nationally. The other 32 percent were orthopedically impaired or suffered another medical diagnosis.

### **Adult Acute Rehabilitation Clinical Outcomes**

MRH-Omaha discharged 78 percent of its patients to a non-institutionalized setting. The **Brain Injury Program** discharged 73 percent to a community setting, the **Cancer Rehabilitation Program** discharged 73 percent and, the **Stroke Program** discharged 78 percent of their patients to a community setting.

Patients were contacted six months after discharge. Of those responding, 93 percent reported maintaining the functional gains they had made in rehabilitation.<sup>6</sup>

MRH-Omaha is accredited by CARF International. In FY 2021 MRH-Omaha earned three-year accreditation, the highest accreditation possible, in Brain Injury Specialty Program, Cancer Rehabilitation Specialty Program and Stroke Specialty Program.

### **Pediatric Acute Rehabilitation**

Omaha pediatric patients are admitted by Pediatric Hospitalists contracted from Children's Hospital and Medical Center (CHMC) in Omaha, which offers a unique opportunity to provide continuity of care for children discharged from CHMC to Madonna.

The Omaha pediatric unit has 14 available beds, a pediatric gym, therapy space, sensory stimulation spaces, feeding spaces, specialized car seat fitting and storage, and provides recreational therapy and play space/time.

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<sup>6</sup> MRH-Omaha Board Quality Scorecard YTD Actual FY2021

The Children's Rehabilitation Unit, now jointly accredited with the unit in Lincoln, is:

- One of three hospitals nationally accredited in Pediatric Specialty Rehabilitation and Cancer.
- One of six hospitals nationally accredited in Pediatric Specialty Rehabilitation and Brain Injury.
- One of 34 hospitals nationally accredited in Pediatric Specialty Programs.

As one of the few rehabilitation hospitals with a CARF accredited pediatric program, MRH-Omaha attracts referrals from throughout the region. The Omaha campus cared for 86 children and adolescents during FY 2021<sup>7</sup>.

### **Pediatric Program Clinical Outcomes**

The children and adolescents achieved excellent outcomes in terms of discharge to community, functional gains, patient satisfaction, and maintenance of gains.

- 74 percent discharged to community settings.
- Children and adolescents demonstrated an average WeeFIM gain of 20 points and stayed an average of 27 days.
- 100 percent of patients responding to a survey reported maintaining gains six months after discharge.<sup>8</sup>

### **MRSH-OMAHA**

MRSH-Omaha provides care to medically complex patients who require medical management for longer periods of time than generally occurs in acute care hospitals. In addition to the complex medical category, MRSH-Omaha also serves individuals with pulmonary and neurological conditions, including stroke. Like MRSH-Lincoln, MRSH-Omaha chooses to apply a rehabilitation approach to care for patients served. In FY 2021 MRSH-Omaha earned a three-year accreditation, the highest accreditation possible, by CARF International in Comprehensive Integrated Inpatient Rehabilitation Programs (CIIRP).

Many patients are able to discharge directly home, while others gain the strength, medical stability, and activity tolerance necessary for transfer to acute rehabilitation. Like MRSH-Lincoln, patient population often requires mechanical ventilation and/or tracheostomy management and weaning, telemetry, respiratory therapy treatments, medication management, and complex medical services, such as in-room hemodialysis and complex wound or burn cares.

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<sup>7</sup> MRH Patient Mix Report July 1, 2017 – June 30, 2021

<sup>8</sup> MRH-Omaha Board Quality Scorecard YTD Actual FY2021

## **MRSH-Omaha Clinical Outcomes**

According to the latest Medicare data, MRSH-Omaha is in the top nine percent in the United States for preventing readmissions to acute care 30 days after discharge. Madonna's interdisciplinary approach to patient care and exceptional discharge planning contributed to this positive outcome.

Of the discharged patients surveyed, 89 percent maintained the gains they made at MRSH-Omaha at six months post-discharge.

## **2021 COMMUNITY HEALTH NEEDS ASSESSMENT**

### **Process & Methodology**

#### **Progress of 2018 CHNA Implementation Strategy**

The first step in conducting the 2021 community health needs assessment was reviewing the progress made to the previously conducted CHNA and Implementation Plan.

**Priority #1:** Align the Lincoln Campus physical plant with space required to meet the clinical needs of a high-acuity, specialized patient population (Madonna's "community").

**Progress:** In May 2020, construction began on a three story patient wing expansion at the Lincoln campus. The addition includes a 112,000 square foot patient wing complete with 59 state-of-the-art patient suites, on-site family amenities, a new recreation therapy area and new kitchen and dining space. Outside, the campus will feature several outdoor gardens to be utilized in daily therapies and recreationally with family members. The new patient wing is scheduled to be substantially complete by March 2022 and occupied in May 2022.

**Impact:** To sustain its high organizational performance, Madonna must be the greatest place for employees to work, for physicians to practice and for patients to receive care. Facility and room modernization will allow for innovative care at every stage of the rehabilitation process.

**Priority #2:** Expand Lincoln Campus on-site clinical and ancillary services required to meet the clinical needs of a high-acuity, specialized patient population (Madonna's "community").

**Progress:** In 2019 Madonna established a high observation unit at the Lincoln campus which included expanded onsite radiology and laboratory services and telemetry implementation. Additionally, Madonna established employed

physiatrist coverage at the Omaha Campus and implemented telemedicine capabilities to provide physician consulting services.

In 2020, Madonna in collaboration with Children's Hospital and Medical Center, CHI-St. Elizabeth, BryanHealth and Lincoln Medical Education Program jointly established and financially supported a Pediatric Hospitalist Service in Lincoln.

**Impact:** The implementation of the aforementioned services has supported Madonna's increased patient acuity and improved patient quality and outcomes. The Pediatric Hospitalist Service has expanded the scope of acute and post-acute pediatric care in the Lincoln community eliminating the unnecessary transfer of children to Omaha or cities outside the state of Nebraska.

**Priority #3:** Complete the implementation of the newly established Physical Medicine and Rehabilitation Graduate Medical Education Residency Training Program.

**Progress:** The PM&R residency program jointly established with The University of Nebraska Medical Center (UNMC) is entering its fourth year and now has a full contingent of 16 residents. With the increased number of residents, UNMC has added a PM&R consult service to the resident rotation schedule. As part of this consult service, residents will round on trauma and surgery patients at the Nebraska Medical Center.

**Impact:** The PM&R residency program will train specialists to fill a critical gap in the health care continuum that currently exists in the Midwest. The addition of the consult service will provide a valuable experience for the residents, and also has the possibility of increasing referrals to Madonna both directly and indirectly by spreading knowledge of Madonna's services among potential referring providers at UNMC. Further expansion of the residency program to include a brain injury fellowship program would enhance Madonna's specialty Brain Injury Program and further reinforce a regional/national reputation.

### **Assessment of Health Needs**

Madonna uses multiple avenues to collect data regarding the needs of its community. The evaluation of community health needs is an ongoing process that is integrated into Madonna's strategic planning process and annual goal setting.

On a continuous basis hospital leadership holds various meetings, lunch and learns, and focus groups with persons who represent the broad interest of the community. These community representatives include government officials on the local, state, and federal levels; public health leadership; payor representatives; regional healthcare facility management; and key stakeholders of the organization. A list of community organizations engaged during the CHNA process is located in Appendix A.



Additionally, Madonna managers and clinicians are encouraged to pursue leadership positions in their areas of expertise. Each year, Madonna staff members are elected and/or appointed to boards, special task forces, and other leadership positions within community organizations. In these positions, Madonna staff receives direct input from colleagues in affiliated organizations and patients within the community served including those representing the medically underserved, low income, and minority populations. A list of Madonna staff and the organizations they are affiliated with are located in Appendix B.

Data was also collected through publications from organizations and government agencies at the local, state, regional, and national levels. Outcome indicator sources such as eRehabData and Program for Evaluating Payment Patterns Electronic Report (PEPPER)<sup>9</sup> were also utilized. These sources were used to collect data on post acute care trends, impairments (brain injury, spinal cord injury, stroke, etc.), public health education, insurance regulations, government mandates, socio-economic characteristics, and biological factors.

Health needs data came directly from Madonna's patients which include satisfaction and follow up surveys that occur during and up to a year post discharge. Additionally, a Needs Assessment questionnaire was distributed to key persons within the organization who represent the broad interest of Madonna's community. The questionnaires were then collected and analyzed to determine trends.

Madonna also welcomed written comments on the organization's most recently conducted CHNA and Implementation Strategy to aide in addressing community health needs.

### **Health Needs Identified**

- COVID-19 has had greater impact on our society than virtually any other health crisis in the last generation. In addition to medical consequences, patients hospitalized with severe COVID-19 often experience profound functional limitations, severe depression, Post Traumatic Stress Disorder (PTSD) and anxiety. Recent studies suggest that 1/3 of these patients demonstrate neurological complications and impaired physical function 1-2 years post-infection. Local community hospitals have provided amazing medical care to patients who suffered from COVID-19. Madonna has great relationships with these hospitals admitting patients from every county in Nebraska. When ready to leave the hospital, individuals with persistent or lingering symptoms need ongoing treatment and comprehensive rehabilitation in order to continue their recovery. This group has been labeled "long-haulers" or demonstrating "long-COVID". Many hospitals have referred long-hauler patients to Madonna for both inpatient

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<sup>9</sup> PEPPER is a comparative data report that provides hospital-specific Medicare data statistics for discharges vulnerable to improper payments. PEPPER can support a hospital or facility's compliance efforts by identifying where it is an outlier for these risk areas. [www.cms.gov](http://www.cms.gov)

and outpatient care. Over the last two years we have treated some of the most debilitated patients impacted by the syndrome. Healthcare providers are just beginning to understand the long term health needs of individual with long-COVID. Madonna offers a full continuum of world-class rehabilitation programs and is uniquely positioned to take a leadership role in treating this population.

- The post-acute care market has grown during the past few years and is projected to keep expanding, driven by factors such as an aging population, the increasing prevalence of chronic diseases, and rising healthcare expenditures. The number of Americans over the age of 65 is projected to double by 2060, from 50 to 100 million, while the number of patients needing post-acute care is expected to jump from 8 million today to 27 million by 2060. The post-acute care sector will continue to evolve, as new regulatory and reimbursement changes area adopted. As the population ages, increasing numbers of individuals will need rehabilitative, short-term and long term care.<sup>10</sup>
- As the population ages, they are at risk for falls; stroke; cardiac and respiratory conditions which could result in traumatic and life altering impairments.
- Every year, more than 795,000 people in the United States have a stroke. About 610,000 of these are first or new strokes.<sup>11</sup>
- The aging population will lead to greater needs for high quality rehabilitative services for stroke and other conditions associated with aging.<sup>12</sup>
- In 2018, 51.8% (129 million) of civilian, noninstitutionalized adults had been diagnosed with at least 1 of 10 selected chronic conditions<sup>13</sup>
- More than 2.8 million people in the United States sustain a traumatic brain injury each year. <sup>14</sup>
- The average age at which spinal cord injuries are occurring is increasing. Patients with spinal cord injuries have life-long impairment requiring specialized rehabilitation, assistive technology and home and vehicle modifications found only in dedicated rehabilitation hospitals.<sup>15</sup>
- Rehabilitation patients are demonstrating more complex and severe impairments.
- Despite the high occurrence of cancer-related disability, rehabilitation is largely underutilized even for readily treatable impairments, with receipt among survivors ranging from 1%-2%. As such, improving access to and use of rehabilitation among

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<sup>10</sup> “Hot Trends to Watch for in Post Acute Care” May 18, 2020. eviCore Healthcare <https://www.evicore.com/insights/hot-trends-to-watch-for-in-post-acute-care#:~:text=Hot%20Trends%20to%20Watch%20for%20in%20Post-Acute%20Care,million%20today%20to%2027%20million%20by%202060.%20>

<sup>11</sup> Virani SS, Alonso A, Benjamin EJ, Bittencourt MS, Callaway CW, Carson AP, et al. [Heart disease and stroke statistics—2020 update: a report from the American Heart Associationexternal icon](https://www.cdc.gov/stroke/facts.htm). *Circulation*. 2020;141(9):e139–e596. <https://www.cdc.gov/stroke/facts.htm>

<sup>12</sup> Guidelines for Adult Stroke Rehabilitation and Recovery; AHA Journal Volume 47, No. 6 June 2016 <https://www.ahajournals.org/doi/full/10.1161/STR.0000000000000098>

<sup>13</sup> Prevalence of Multiple Chronic Conditions Among US Adults, 2018, Peter Boersma, MPH<sup>1</sup>; Lindsey I. Black, MPH; Brian W. Ward, PhD, September 17, 2020 [https://www.cdc.gov/pcd/issues/2020/20\\_0130.htm](https://www.cdc.gov/pcd/issues/2020/20_0130.htm)

<sup>14</sup> Brain Line: Get the Stats on Traumatic Brain Injury in the United States (Centers for Disease and Prevention), April 27, 2017 <https://www.brainline.org/article/get-stats-traumatic-brain-injury-united-states>

<sup>15</sup> Spinal Cord Injury Facts and Figures at a Glance NATIONAL SPINAL CORD INJURY STATISTICAL CENTER <https://www.nscisc.uab.edu/Public/Facts%20and%20Figures%20-%202021.pdf>

survivors has been identified as a priority for several organizations, including the American Cancer Society.<sup>16</sup>

- As people survive conditions that once would have been fatal, the field of psychiatry is moving to the forefront of medicine.<sup>17</sup>
- Research shows patients and family members care deeply about privacy, accessibility and comfort in their rooms.<sup>18</sup>
- Throughout the healthcare industry, planning and design innovations are continuing to drive changes in the way inpatients are accommodated. These changes are driven by the need to improve outcomes, increase safety, and reduce staff errors, thereby raising efficiency and lowering costs.<sup>19</sup>
- By evidence collected in on-unit research, it was recognized that private rooms and the ways the inpatient unit is designed can affect a patient's psychological and medical wellbeing.<sup>20</sup>
- The number of LTCHs began to decrease in 2013, but the decline has been more rapid since the implementation of the dual payment-rate system. From 2016 to 2019, the total number of Medicare cases in all LTCHs decreased by an average of about 10 percent annually.<sup>21</sup> Though volumes have decreased, this level of care will always be needed to care for the most medically complex patients discharging from acute care hospitals including those on mechanical ventilation. The key is identifying the appropriate LTCH size.
- Nationally the number of IRFs has remained stable, however, the number of cases has significantly increased 10%.
- There are a variety of environmental factors, including an aging population and the COVID-19 pandemic, making it critical for post acute care (PAC) providers to share data across care settings in as close to real time as possible. Providers leaning toward more digitized practices are taking part in this tremendous opportunity to boost health care efficiencies, enable smoother care transitions, build stronger referral businesses and ensure high-quality patient care at a pivotal moment in the industry.<sup>22</sup>

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<sup>16</sup> "Cancer Treatment & Survivorship: Facts and Figures 2019-2021". Atlanta: American Cancer Society; 2019.

<https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-treatment-and-survivorship-facts-and-figures/cancer-treatment-and-survivorship-facts-and-figures-2019-2021.pdf>

<sup>17</sup> American Academy of Physical Medicine and Rehabilitation: <https://www.aapmr.org/career-support/medical-student-resources/a-medical-students-guide-to-pm-r/what-does-a-physiatrist-do>

<sup>18</sup> The Ohio State University Wexner Medical Center <https://wexnermedical.osu.edu/mediaroom/pressreleaselisting/patient-room-comfort> and Journal of Health Environments Research and Design <https://journals.sagepub.com/doi/abs/10.1177/1937586717696700>

<sup>19</sup> Department of Veterans Affairs Design Guide 11/29/2011 - Medical/Surgical Inpatient Units & Intensive Care Nursing Units. [https://www.wbdg.org/FFC/VA/VADEGUID/inpatient\\_nu.pdf](https://www.wbdg.org/FFC/VA/VADEGUID/inpatient_nu.pdf)

<sup>20</sup> Department of Veterans Affairs Design Guide 11/29/2011 - Medical/Surgical Inpatient Units & Intensive Care Nursing Units. [https://www.wbdg.org/FFC/VA/VADEGUID/inpatient\\_nu.pdf](https://www.wbdg.org/FFC/VA/VADEGUID/inpatient_nu.pdf)

<sup>21</sup> MediPac Report to Congress: Medicare Payment Policy – Long-term Care Hospital Services March 2021. [http://www.medpac.gov/docs/default-source/reports/mar21\\_medpac\\_report\\_ch10\\_sec.pdf?sfvrsn=0](http://www.medpac.gov/docs/default-source/reports/mar21_medpac_report_ch10_sec.pdf?sfvrsn=0)

<sup>22</sup> "Understanding New Interoperability Regulations That Affect Post-Acute Care", Knowlton, Nick October 13, 2021 <https://www.homecaremag.com/october-2021/understanding-new-interoperability-regulations-affect-post-acute-care#:~:text=Interoperability%20has%20been%20widely%20adopted%20in%20acute%20and,broader%20ecosystem%20and%20creating%20successful%2C%20long-lasting%20referral%20relationships.>

- The 2014 Improving Medicare Post-Acute Care Transformation (IMPACT) Act required the standardization and interoperability of specific categories of PAC patient assessment content.<sup>23</sup>
- With an aging and growing US population, American healthcare faces an impending physician shortage. This is important for the field of physical medicine and rehabilitation, because physiatrists' skills in managing chronic conditions and functional outcomes are especially relevant to an older population. The future identity of physical medicine and rehabilitation will continue to develop as professional and demographic trends shape this important medical specialty.<sup>24</sup>
- With changes taking place in the health and characteristics of the population worldwide, the estimated need for rehabilitation is only going to increase in the coming years. People are living longer and more people are living with chronic diseases such as diabetes, stroke and cancer.<sup>25</sup>
- With COVID-19 hitting the stage, the adoption of virtual health has become a necessity<sup>26</sup>
- Demographic trends, combined with the increasing complexity and severity of patients' conditions, have caused acute hospital systems to realize the goals of the Affordable Care Act (ACA) cannot be achieved without a strong post-acute strategy.

### **Potentially Available Resources to Address Health Needs**

In regards to offering post acute care there are approximately 1,152 inpatient rehabilitation facilities (IRFs)<sup>27</sup> and 361 long term acute care hospitals (LTCHs)<sup>28</sup> in the United States. As an organization, Madonna is approved and licensed for 263 inpatient beds by the State of Nebraska (MRH-Lincoln - 67; MRSH-Lincoln – 86; MRH-Omaha – 62; MRSH-Omaha – 48)<sup>29</sup>. There are currently 16 free-standing IRFs and 24 LTCHs located in Madonna's region<sup>30</sup>. Services at these facilities differ programmatically from those offered by Madonna.

<sup>23</sup> Impact Act of 2014 Data Standardization & Cross Setting Measures. <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/IMPACT-Act-of-2014/IMPACT-Act-of-2014-Data-Standardization-and-Cross-Setting-Measures>

<sup>24</sup> Trends in Graduate Medical Education and Subspecialization Amid Changing Demographics. Petriceks, Aldis H. BA; Hales, Hannah A. BS; Srivastava, Sakti MBBS, MS. American Journal of Physical Medicine & Rehabilitation: October 2019 - Volume 98 - Issue 10 - p 931-936. Physical Medicine and Rehabilitation: Trends in Graduate Med... : American Journal of Physical Medicine & Rehabilitation (lww.com)

<sup>25</sup> World Health Organization Fact Sheet Rehabilitation. <https://www.who.int/news-room/fact-sheets/detail/rehabilitation>

<sup>26</sup> Future of Electronic Medical Records: Experts Predict EMR Trends in 2021. Dugar, Divya. <https://www.selecthub.com/medical-software/emr/electronic-medical-records-future-emr-trends/>

<sup>27</sup> MediPac Report to Congress: Medicare Payment Policy – Inpatient Rehabilitation Facility Services March 2021 – Count as of 2019. [http://www.medpac.gov/docs/default-source/default-document-library/mar21\\_medpac\\_report\\_to\\_the\\_congress\\_secv2.pdf?sfvrsn=0](http://www.medpac.gov/docs/default-source/default-document-library/mar21_medpac_report_to_the_congress_secv2.pdf?sfvrsn=0)

<sup>28</sup> MediPac Report to Congress: Medicare Payment Policy – Long-term Care Hospital Services March 2021 - Count as of 2019. [http://www.medpac.gov/docs/default-source/default-document-library/mar21\\_medpac\\_report\\_to\\_the\\_congress\\_secv2.pdf?sfvrsn=0](http://www.medpac.gov/docs/default-source/default-document-library/mar21_medpac_report_to_the_congress_secv2.pdf?sfvrsn=0)

<sup>29</sup> Madonna Rehabilitation Hospital bed count as of June 30, 2021.

<sup>30</sup> Madonna's region is defined as the States of Nebraska, Iowa, Kansas, Missouri, South Dakota, North Dakota and the southern part of Minnesota.

Madonna currently subsidizes several programs to meet the needs of the medically underserved. These programs are not covered by a payor source or not covered adequately by a payor source but have been identified as critical in the recovery process in building and sustaining independence.

### **Adaptive Sports and Recreation**

There are very limited opportunities for people with disabilities to participate in community-based recreation and sports, particularly on a competitive basis. Madonna's Adaptive Sports & Recreation Program offers a variety of sports and several levels of competition to help children and adults with disabilities participate more fully in life. Due to the COVID-19 outbreak, Madonna's Adaptive Sports and Recreation program took a hiatus in FY 2021 to ensure community safety. In FY 2020, 493 individuals were served by Madonna's Adaptive Sports and Recreation Program. Seventy six percent were community members with disabilities.

### **Community Medical Transportation**

Because people with disabilities and the elderly have increased health care needs, isolation from providers can have a profound impact on the quality of their life, health and safety. Medical transportation barriers can lead to rescheduled or missed appointments which delays care, including missed or delayed medication. The consequences of inaccessibility of medical transportation can lead to poorer management of chronic health care conditions and ultimately, poorer outcomes. Madonna's community medical transportation program allows individuals to get the timely medical care they need, decreasing the amount of emergent situations which often result in emergency room trips and increased costs. In FY 2019, Madonna transportation provided 19,277 rides to and from non-emergency medical appointments. Due to the COVID-19 pandemic rides in FY 2020 and FY 2021 equated to 10,394 and 10,673 respectively. Due to social distancing health measures, Madonna was unable to multi-load patients so each trip was for an individual. When COVID-19 was at its peak, Madonna was only providing rides that were absolutely necessary as many physician offices were closed. To prevent/reduce the spread of COVID-19, drivers spent as much time sanitizing their equipment as transporting patients.

### **Research Institute for Rehabilitation Science and Engineering**

The Institute for Rehabilitation Science and Engineering conducts research to improve rehabilitation outcomes so each person can participate fully in life. The research leads to development of new technologies and treatments for people living with physical disabilities and chronic conditions.

### **Therapeutic Learning Center**

The transition back to everyday activities is not always easy after an injury. Madonna recognizes this need as a critical part of the recovery process. Madonna's Therapeutic Learning Center (TLC) is the only on-site, classroom-based hospital program of its kind in

the region. The TLC helps student patients maintain and, if necessary, re-learn academic work; learn new study skills and coping strategies; and work with parents and schools to provide the necessary services and support to make a student's transition back to school as successful as possible. Medical insurance does not cover the cost of patient sessions due to the educational nature of the TLC program. Educational funds are not available because the services are provided in a medical setting. TLC services are offered at no cost to patients at both the Lincoln and Omaha campuses. In FY2021 the TLC assisted 99 student patients.

In addition to the myriad of programs offered, Madonna also participates in community outreach and education on a continual basis. During the needs review process it was evident that community outreach and prevention and treatment education regarding the afflictions of Madonna's community is an everyday need. Madonna staff make many educational presentations on various rehabilitation and health topics throughout the year. A list of educational presentations given in fiscal year 2021 is available in Appendix C. In addition, educational literature is available at the facility and on Madonna's website, [www.madonna.org](http://www.madonna.org).

In FY2021 Madonna embarked several initiatives in order to meet identified needs of its community and position Madonna as a national leader in post acute care.

### **Cancer Rehabilitation Program Accreditation**

In recognition of the growing need for comprehensive cancer rehabilitation services and to support the clinical partnership with UNMC's Buffet Cancer Center, Madonna began preparing to be one of the nation's first CARF-accredited cancer rehabilitation programs. As part of the 2021 survey, Madonna's Omaha Campus became the 13<sup>th</sup> facility in the United States, and the only facility in our six-state region, to achieve Cancer Specialty Program accreditation. This accreditation will apply to both the inpatient and outpatient programs for adults and pediatrics at the Omaha Campus. With this specialty program accreditation, in addition to President Joe Biden's recent \$6.5 billion investment in cancer and other medical research, along with his pledge to "end cancer as we know it", we are poised to become a regional and national leader in cancer rehabilitation services.

### **Omaha Physician Clinic**

In July 2020, Madonna began construction on an outpatient clinic in response to the growing community need for physician-led outpatient physiatry and therapy services in the Omaha market. Additionally, the outpatient physicians clinic will enhance the physical medicine and rehabilitation (PM&R) training experience at Madonna as part of the PM&R residency program. The Physicians Clinic at the Omaha Campus opened to see patients in March 2021.

## **Virtual Services**

It would be difficult to conduct a community health needs assessment without recognizing the impact the COVID-19 pandemic had on hospitals and health systems. COVID-19 led Madonna to develop innovative approaches to engage with their community, to assess community health needs and implement improvement plans.

As a result of the COVID-19 pandemic, Madonna quickly expanded virtual services capabilities. The Sunrise EHR system was enhanced for telehealth specialty orders (consult and appointment) and treatment notes expanded for specific telehealth fields for compliance. This made therapy sessions, remote home assessments, and physician services available via virtual technologies. Moving forward, virtual services will expand to include specialty program clinic services for out of state patients.

## **Geographic Expansion of Services**

Madonna Rehabilitation Hospitals have long served patients from outside Lancaster and Douglas counties. Approximately 7% of patients admitted to the Lincoln Campus location come from cities located in the central or western portion of the state. The documented aging population and incidence of stroke/neurological conditions has highlighted the demand for post-acute-care services in these more rural areas. In 2020, Madonna received a request to establish services in North Platte, Nebraska. North Platte is the tenth largest city in Nebraska with a population of 23,390. In response to this request Madonna representatives completed a study to evaluate the feasibility of developing an Acute Rehabilitation Hospital/Unit in partnership with a local healthcare facility. In 2021, an evaluation of this request was completed. An analysis of local hospital discharge data (from North Platte and surrounding areas) was completed to determine historical demand for this level of care as well as the potential for additional demand beyond current utilization rates. Based upon this study, Madonna concluded it was not financially feasible to build or operate an Acute Rehabilitation Hospital/Unit in North Platte. The city size is a major limiting factor. However, the need for comprehensive post-acute-services in more rural portions of Nebraska is clear. Further study is warranted to determine the feasibility of a Madonna post-acute-care hospital campus in a larger populated, more centrally located city in the state.

## **Needs Review Process**

After data is collected through the means identified, the information is reviewed during the hospital's annual strategic planning process and shared with the Board of Directors at the annual retreat. Identified needs are also reviewed throughout the year in regularly scheduled leadership and other team meetings.

Needs that can be addressed through equipment purchases are identified and prioritized in the Hospital's annual budgeting process.

Programming needs are reviewed and included, as warranted, in the Hospital's annual corporate goals. Progress on these identified needs is reviewed every quarter.

### **Prioritization of Health Needs**

Health needs significant to Madonna's community was discerned through the 2021 community health needs assessment process and building upon the impact of the previously conducted CHNA.

Prioritization criteria was based upon urgency, feasibility, government regulations, the importance the community places on addressing the need, and Madonna's philosophy and approach to rehabilitation. Madonna's goal is to return the patient to their highest level of independence possible through specialized programs and state-of-the-art research and technology so that they can resume their life roles.

The following needs were prioritized by Madonna and are represented in the Implementation Strategy:

- 1) Configure hospital beds and align the physical plant with space required to meet the clinical needs of a high-acuity, specialized post-acute-care patient population (Madonna's "community").
- 2) Enhance the compliment of specialty rehabilitation programs and create a Model System of Post-COVID-19 care.
- 3) Optimize the exchange of information.
- 4) Integrate acute care and post-acute care by collaborating with acute care hospitals and academic institutions.

### **IMPLEMENTATION STRATEGY**

Madonna's Implementation Strategy sets forth the plan to address each prioritized community health need indicated in the 2021 assessment.

### **CONCLUSION**

Madonna's CHNA and corresponding Implementation Strategy were reviewed and approved by the Boards of Directors of Madonna Rehabilitation Hospital prior to publication of the CHNA on Madonna's website.

The CHNA is available on Madonna's website at [www.madonna.org](http://www.madonna.org). A copy of Madonna's CHNA is also available at no charge in hard copy format upon request.



## APPENDIX A

### Community Organizations

#### Professional Organizations

American Board of Clinical Neuropsychology  
American Board of Professional Psychology  
American Board of Swallowing &  
Swallowing Disorders  
American College of Healthcare Administrators  
American College of Healthcare Executives  
American Congress of Rehabilitation Medicine  
American Heart Association  
American Healthcare Association/National Center  
for Assisted Living  
American Medical Rehabilitation Providers  
Association  
American Occupational Therapy Association  
American Physical Therapy Association  
American Medical Rehabilitation Providers  
Association  
American Speech/Language Hearing Association  
Association for Nursing Professional Development  
Association of Occupational Health Professionals  
in Healthcare  
Association of Rehabilitation Nurses  
Commission on Accreditation of Rehabilitation  
Facilities  
International Pediatric Rehabilitation Collaborative  
Lincoln Education Association  
Lincoln/Lancaster County Safe Kids Coalition  
Lincoln Stroke Partnership  
Nebraska Academy of Nutrition & Dietetics  
Nebraska AgrAbility  
National Association of Long Term Care Hospitals  
Nebraska Brain Injury Conference  
National Education Association  
Nebraska Academy of Nutrition & Dietetics  
Nebraska Adaptive Sports Organization  
Nebraska AgrAbility Advisory Council  
Nebraska Brain Injury Advisory Council  
Nebraska Foundation for Physical Therapy  
Nebraska Hospital Association

Nebraska Nursing Facility Association / Nebraska  
Assisted Living Association  
Nebraska Occupational Therapy Association  
Nebraska Physical Therapy Association  
Nebraska Society of Respiratory Care  
Nebraska Speech-Language Hearing Association  
Nebraska State Trauma Board  
Nebraska Stroke Advisory Council  
Nebraska Wesleyan University Nursing Advisory  
Council  
Neuro-Developmental Treatment Association  
Omaha Stroke Consortium  
Regional Stroke Coordinators  
Stroke Advisory Council  
Workers Compensation Association of Nebraska

#### Workers Compensation Payors

Accident Fund  
Acuity  
Bitco  
Broadspire  
Burlington Northern Santa Fe  
CCMSI  
Chubb Insurance  
City Utilities of Springfield, MO  
Corvel  
Creative Risk Solutions  
EMC Insurance  
ESIS  
Gallagher Bassett  
Great West Casualty  
Intact Insurance  
Liberty Mutual  
Midwest Insurance  
Missouri Employers Mutual  
Nationwide  
Next Level Administrators  
Penn Miller's Insurance  
RAS

Sedwick  
Sedgwick CMS  
Sentry Insurance  
SFM  
Travelers  
Tri Star  
United Fire and Casualty  
West Bend Insurance  
Zurich

### **Healthcare Facilities**

Atrium Health Carolinas Rehabilitation - Charlotte, NC  
Avera McKennan Hospital – Sioux Falls, SD  
Beatrice Community Hospital – Beatrice, NE  
Boys Town National Research Hospital – Omaha, NE  
Brooks Rehabilitation Hospital - Jacksonville, FL  
Bryan Medical Center - Lincoln NE  
Centerpoint Medical Center – Independence, MO  
CHI Health Creighton University Medical Center Bergan Mercy- Omaha, NE  
CHI Health Good Samaritan - Kearney, NE  
CHI Health Immanuel - Omaha, NE  
CHI Health Lakeside - Omaha, NE  
CHI Health St. Elizabeth - Lincoln NE  
CHI Health St. Francis - Grand Island, NE  
CHI Health Nebraska Heart - Lincoln, NE  
Children's Hospital & Medical Center - Omaha, NE  
Cox Medical Center South – Springfield, MO  
Faith Regional Health Services - Norfolk, NE  
Filmore County Hospital – Geneva, NE  
Freeman Health System – Joplin, MO  
Fremont Area Medical Center – Fremont, NE  
Gothenburg Memorial Hospital – Gothenburg, NE  
Great Plains Regional Medical Center - North Platte, NE  
Iowa Methodist Medical Center - Des Moines, IA  
Jefferson County Hospital – Fairbury, NE  
Jennie M. Melham Memorial Medical Center – Broken Bow, NE  
JFK Johnson Rehabilitation Institute - Edison, NJ  
Liberty Hospital – Liberty, MO  
Marianjoy Rehabilitation Hospital - Wheaton, IL

Mary Free Bed Rehabilitation Hospital - Grand Rapids, MI  
Mary Lanning Memorial Hospital - Hastings, NE  
MedStar National Rehabilitation Hospital – Washington, DC  
Mercy Hospital – Council Bluffs, IA  
Mercy Hospital – St. Louis, MO  
Mercy Medical Center – Des Moines, IA  
Mercy Medical Center - Sioux City, IA  
Methodist Health Systems - Omaha, NEMosaic Life Care – St. Joseph, MO  
Nebraska Medicine – Omaha, NE  
Nebraska Medicine Bellevue – Bellevue, NE  
North Kansas City Hospital – North Kansas City, MO  
Overland Park Regional Medical Center – Overland Park, KS  
Regional West Garden County – Oshkosh, NE  
Regional West Medical Center - Scottsbluff, NE  
Republic County Hospital – Belleville, KS  
Research Medical Center – Kansas City, MO  
Salina Regional Medical Center - Salina, KS  
Sanford Medical Center – Bismarck, ND  
Sanford Medical Center – Fargo, ND  
Sanford Medical Center – Sioux Falls, SD  
Select Specialty – Kansas City, MO  
Select Specialty – Lincoln, NE  
Select Specialty – Omaha, NE  
Select Specialty – Sioux Falls, SD  
Select Specialty – Wichita, KS  
Siskin Hospital for Physical Rehabilitation - Chattanooga, TN  
Spaulding Rehabilitation Hospital – Charlestown, MA  
St. Luke's North Hospital – Kansas City, MO  
St. Luke's Regional Medical Center - Sioux City, IA  
Stormont-Vail Healthcare - Topeka, KS  
Swedish Medical Center – Englewood, CO  
TIRR Memorial Hermann - Houston, TX  
Trinity Regional Medical Center – Fort Dodge, IA  
Truman Medical Center - Kansas City, KS  
University of Iowa Hospital – Iowa City, IA

University of Kansas Medical Center – Kansas City, KS  
University of Kansas St. Francis – Topeka, KS  
University of Missouri Medical Center – Columbia, MO  
University Nebraska Medical Center – Omaha, NE  
Via Christi Hospital St. Francis – Wichita, KS  
Wesley Medical Center - Wichita, KS  
York General Hospital – York, NE

### **Government Agencies**

City of Lincoln  
City of Omaha  
Douglas County Health Department  
Lincoln-Lancaster County Health Department  
Nebraska Department of Health & Human Services  
- Acute Care Facilities  
Nebraska Department of Health & Human Services  
- Division of Medicaid & Long Term Care  
Nebraska Department of Health & Human Services  
- Licensure & Health Data  
Office of Congressman Adrian Smith  
Office of Congressman Don Bacon  
Office of Congressman Jeff Fortenberry  
Office of Senator Ben Sasse  
Office of Senator Deb Fischer  
State of Nebraska

### **Commercial Payors**

Avera Health Plan  
Blue Cross Blue Shield – Nebraska  
DakotaCare  
First Choice of the Midwest  
First Health Network  
Fortified Provider Network  
Health Alliance  
HealthNet/Tricare  
Healthsmart  
Humana  
GEHA  
Integrated Health Plan  
Med Cost Pros  
Medica

Midlands Choice  
MultiPlan  
Optum VACCN  
Prime Health Services  
Sanford Health Plan  
Stratose  
Three Rivers Provider Network  
UniNet  
United Healthcare  
USA Managed Care  
Wellmark  
WPPA ProviDRs Care Network

### **Other Organizations**

Ameritas Life Insurance Corp  
Baxter Auto  
Brain Injury Regional School Support Teams  
Briar Cliff Physical Therapy School  
Bridges Trust  
Catholic Social Services  
Cline Williams Wright Johnson & Oldfather Law Firm  
Clinic with a Heart  
Creighton University  
Curbell Medical Products Inc.  
D.A. Davidson and Co.  
Dobson DaVanzo  
Education Quest Foundation  
First National Bank  
Five Nines  
Hanger Institute for Clinical Research & Education, LLC  
HBE Becker Meyer Love, LLP  
KNG Health  
Lamson Dugan & Murray LLP  
Leadership Lincoln  
Lincoln Chamber of Commerce  
Lincoln Children's Museum  
Lincoln Education Association  
Lincoln/Lancaster County Safe Kids Coalition  
Lincoln Literacy Council  
Lincoln Parks and Recreation  
Lincoln Partnership for Economic Development  
Lincoln Public Schools

Lincoln Youth Symphony  
Love Signs  
Lyman-Richey Corporation  
Matheson Linweld  
Matt Talbot Kitchen & Outreach  
Medics at Home  
Methodist College  
National Catholic Conference  
National Education Association  
Nebraska Chamber of Commerce  
Nelnet  
Omaha Chamber of Commerce  
Omaha Media Group  
O'Neill, Heinrich, Damkroger, Bergmeyer, Schultz  
PC, L. L.O.  
Pillen Family Farms  
Purdue University  
Rembolt Ludtke, LLP  
Robinette Farms  
Sampson Construction  
Scorebuilders  
Southeast Community College  
Sports Art Inc.  
St. Vincent de Paul Society  
ThinkFirst  
Union Bank and Trust  
Union College  
University of Nebraska – Lincoln  
University of South Dakota  
US Bank  
V2 Content  
Werner Enterprises  
World's Foremost Bank  
YMCA

## APPENDIX B

### Madonna Employee Organization Affiliations

- **Tiffany Armstrong**, MSN, RN, CRRN, CBIS, Quality Specialist RN /Brain Injury and Neuro Program Leader, serves as the Vice Chair of the Nebraska Brain Injury Advisory Council Public Policy Committee.
- **Celeste Baumert**, PT, DPT, Physical Therapy Program Manager, is a member of the American Congress Rehabilitation Medicine.
- **Kelly Bolz**, MSOT, OTR/L, CBIS, Pediatric Program Leader, is an adjunct professor and Union College in Lincoln, NE. She is as member of the American Occupational Therapy Association and Nebraska Occupational Therapy Association. Ms. Bolz serves on the education committee of the International Pediatric Rehabilitation Collaborative and on the advisory board of the University of Nebraska Medical Center Program in Occupational Therapy.
- **Deb Bucholz**, Therapeutic Educational Coordinator is a member of the Lincoln Education Association, National Education Association, and the southeast Brain Injury Regional School Support (BIRSST) Team.
- **Judith M. Burnfield**, PhD, PT, Director, Institute for Rehabilitation Science and Engineering, serves as graduate faculty at the University of Nebraska Medical Center (UNMC) and maintains adjunct faculty appointments in the Department of Biological Systems Engineering at University of Nebraska – Lincoln (UNL), the Department of Mechanical and Materials Engineering at UNL, the School of Pharmacy and Health Professions at Creighton University, the Department of Physical Medicine and Rehabilitation, College of Medicine at UNMC, the Division of Physical Therapy Education at UNMC, and the Department of Physical Therapy at the University of South Dakota. Dr. Burnfield serves as an advisory board member with Hanger Institute for Clinical Research and Education, LLC and collaborates on post-COVID-19 research with the NALTH Research and Quality Committee. She is currently collaborating with Curbell Medical Products, Inc. and SportsArt Inc to advance novel technology developed in Madonna’s Research Institute to market.
- **Cali Carlson**, PT, DPT, is an ad-hoc member of the Rehab Task Force within the Nebraska Stroke Advisory Council.
- **Heather Comstock**, MS, RD, LMNT, FAND, Patient Food Services Manager, is a board member of Nebraska Academy of Nutrition & Dietetics
- **Paul Dongilli Jr.**, PhD, FACHE, President and CEO, serves on the Board of Directors of the National Association of Long Term Hospitals (NALTH) and is Chair of the Education Committee. He is a board certified fellow of the American College of Healthcare Executives (ACHE) and serves on the Board of Directors for the Nebraska Hospital Association.
- **Erin Engleman**, OT, is a member of the Lincoln Stroke Partnership.
- **Amy Ferris**, RN, BSN, CRRN, Employee Health and Safety RN Specialist, is a member of the Association of Occupational Health Professionals in Healthcare.

- **Melody Gagner**, RN, BSN, NHA, Administrator Long Term Care Services, serves as a member of the American Health Care Association/National Center for Assisted Living (AHCA/NCAL) and the Nebraska Nursing Facility Association and Nebraska Assisted Living Association (NNFA/NALA). Ms. Gagner is a Certified Nursing Home Administrator Preceptor through the American College of Health Care Administrators (ACHCA).
- **Lynn Hallowell-Gottsleben**, PT, DPT, Vice President Community Services, is a member of the American College of Healthcare Executives (ACHE), the American Medical Rehabilitation Providers Association (AMRPA) Outpatient and Therapies Committee, the Nebraska Physical Therapy Association Practice Management and Reimbursement Committee and the advisory board for the Physical Therapist Assistant Program at Southeast Community College.
- **Amy Goldman**, PT, DPT, Stroke Program Manager, serves as Chair of the Nebraska Stroke Advisory Council (NSAC) Rehabilitation Task Force. Goldman is also a member of the Lincoln Stroke Partnership, the NSAC Steering Committee, Regional Stroke Coordinators and the Omaha Stroke Consortium.
- **Sam Goodwin**, CPA, Director of Finance, is a member of the National Association of Long Term Hospitals (NALTH) Policy Committee.
- **Melissa Gulizia**, BS, RRT, Pulmonary Program Manager, serves as chair for the Methodist College Respiratory Therapy Program. She serves as secretary for the Nebraska Society of Respiratory Care and is a board member for the Foster Care Review Office.
- **Michael Hedderman**, Vice President and Chief Financial Officer, is a member of the National Association of Long Term Hospitals (NALTH) Policy Committee.
- **Sonya Irons**, PT, DPT, CCS, serves on the Briar Cliff Physical Therapy School Advisory Council (Sioux City, IA), the Board of Directors for the Nebraska Foundation for Physical Therapy and as a Manuscript Reviewer for the Cardiopulmonary PT Journal, APTA. In addition, she holds an Assistant Clinical Professor appointment at Creighton University and is a National Course Instructor for Scorebuilders.
- **Joyce Jaixen** PT, serves as the Education Committee Chairperson for the Neuro-Developmental Treatment Association (NDTA).
- **Susan Klanecky**, MSN, RN, CCM, CRRN, Vice President of Patient Care, serves on the Goldberg Award review panel for the National Association of Long Term Care Hospitals (NALTH), and serves on the Nebraska Wesleyan University Nursing Advisory Council.
- **Jackie Krason**, MSN, RN, CRRN, Director of Quality and Risk Management is a member of the Workers' Compensation Association of Nebraska and the Association of Rehabilitation Nurses.
- **Andrea Kremeier**, MS, CCC, SLP, is a member of the Nebraska Speech-Language Hearing Association
- **Carrie Kuta**, BSN, RN, CRRN, Nursing Education Coordinator, in a member of the Nebraska Affiliate of Association of Nursing Professional Development
- **Christopher Lee**, MSPT, FACHE, Vice President Rehabilitation, is a board certified fellow of the American College of Healthcare Executives (ACHE). He serves as Vice Chair and board member of the American Medical Rehabilitation Providers Association (AMRPA) and on the association's Data committee. Mr. Lee also participates in training the next generation of

healthcare professionals, regularly serving as a guest speaker on healthcare management at the University of Nebraska Medical Center (UNMC).

- **Kristin Luethke**, CTRS, Child Passenger Safety Instructor, serves as co-leader for the Child Passenger Safety Task Force for Lincoln/Lancaster County Safe Kids Coalition.
- **Brooke Murtaugh**, OTD, OTR/L, Brain Injury Program Manager, is a member of the Nebraska Brain Injury Advisory Council.
- **Lisa Ostendorf**, RN, MSN is an instructor at Purdue University.
- **Kipp Ransom**, MS, LPC, LIMHP is a professional counselor with ThinkFirst national injury prevention foundation.
- **Dustin Reinbold**, MSPT, ATC, OHC serves as a Clinic Leader at Clinic with a Heart in Lincoln, NE.
- **Kathy Schmidt**, OTR/L is a member of the American Occupational Therapy Association.
- **Cathy L Smith** MSN, RN, CRRN, CBIS, serves as on the Board of Directors as Treasurer for the Nebraska Nurses Association (NNA) and is a member of the NNA Governance, Membership, and Finance Committees. Smith is also a member of the Association of Rehabilitations Nurses.
- **Virginia Schweitzer**, COTA/L, Program Leader for Work Reentry, is a board member for the Occupational Therapy Assistant program at Union College in Lincoln, NE.
- **Jeff Stec**, MS, CCC-SLP, Pediatric Program Manager, serves on the Steering Committee for the International Pediatric Rehabilitation Collaborative (IPRC). The IPRC is an organization of approximately 300 pediatric rehabilitation facilities, which includes AVCRU. Mr. Stec is also a program surveyor for Commission on Accreditation of Rehabilitation Facilities (CARF) International.
- **Lori Terryberry-Spohr**, PhD., ABPP, Director of Rehabilitation Programs, serves as a diplomat for American Board of Professional Psychology and the American Board of Clinical Neuropsychology. She also serves a member of the American Medical Rehabilitation Providers, the American Congress of Rehabilitation Medicine, the Nebraska State Trauma Board, the Nebraska Region 1 Trauma Advisory Board and the Lincoln Public Schools Medical Advisory Committee.
- **Diane Ulmer**, OTR/L, Spinal Cord Injury Program Manager, is a member of the Nebraska AgrAbility Advisory Council.
- **Cheryl Wagoner**, MS, CCC-SLP, BCS-S, , Inpatient Therapy Director, is a Board Certified Swallowing Mentor with the American Speech/Language Hearing Association (ASHA)

## APPENDIX C

### STAFF PRESENTATIONS<sup>31</sup>

- **Lacy Albrecht** presented “Pediatric Feeding - The Basics” *College of St. Mary* in Omaha, NE
- **Danielle Aylward** presented “Stress Management and Coping” in Lincoln, NE via videoconference
- **Celeste Baumert** made the following presentations:
  - “Implementation of Cancer Rehabilitation Competencies: How to Educate for the Future” *ACRM* in Atlanta, GA
  - “Integrative Rehabilitation Techniques for the Person With Cancer” *Cancer Comprehensive Conference* in Omaha, NE
  - “Competencies for Cancer Rehabilitation: A National Delphi Study” *ACRM* in Chicago, IL
- **Jennifer Bausch** presented “Geriatrics” *Southeast Community College* in Lincoln, NE
- **Amy Burggraff** presented “Auditory, Vestibular, & Visual Impairments” in Lincoln, NE
- **Michelle Claycomb** presented “Thinking Outside of the Box, 24/7 Rehabilitation” in Lincoln, NE
- **Teresa Farlin**, RN, CRRN, presented “Improved Compliance, Outcomes, and Reimbursement with Sunrise™ Rehabilitation” *ACE HHS Conference* in Dallas, TX.
- **Annie Ferguson** presented “What is a Registered Dietitian?” *high school nutrition class* in Sedan, KS via videoconference.
- **Gail Finland** presented “Evaluation of Mild-Moderate TBI” *University of Nebraska Lincoln* in Lincoln, NE
- **Amy Goldman** made the following presentations:
  - “Madonna Stroke Rehab Program Overview” *University of Nebraska Medical Center* in Omaha, NE
  - “Body Weight Supported Gait Training” *University of Nebraska Medical Center* in Omaha, NE
  - “Stroke Rehabilitation: Current Guidelines, Treatments and Technologies” *Nebraska Medicine* in Omaha, NE
  - “Stroke Rehabilitation: Qualifications, Criteria and Outcomes in Kearney, NE
- **Melissa Gulizia** made the following presentations:
  - “Returning Patients with Complex Medical Needs to their Rural Communities” *American Association of Respiratory Care Congress Conference* via videoconference.
  - “This and That.....Trachs, Madonna, and More” *Methodist College* in Omaha, NE via videoconference
- **Sarah Hamilton** presented “Driver Rehabilitation” in Lincoln, NE

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<sup>31</sup> Madonna employees are in **bold**



- **Shelbi Hatfield** presented “Therapeutic Exercise” in Omaha, NE
- **Sonya Irons**, PT, DPT, CCS, made the following presentations:
  - “Physical Therapy—Is it the right career choice for you?” *University of Nebraska Lincoln* via videoconference
  - “Rehabilitation for the Post-Operative Patient Status Post Cardiovascular Surgery” *Creighton University* via videoconference
  - “Clinical Application of EKG” *Creighton University* via videoconference
  - “Physical Therapy for the Post-Operative Patient Status Post Cardiovascular Surgery” *Creighton University* via videoconference
  - “Cardiovascular and Pulmonary Physical Therapy” *Briar Cliff University* in Sioux City, IA
  - “PTD 616 Integrated Lab VI” *Creighton University* in Omaha, NE
  - “Clinical Application of EKG” in Omaha, NE
  - “Physical Therapy for the Post-Operative Patient Status Post Cardiovascular Surgery” in Omaha, NE
  - “Physical Therapy: Options to Specialize” in Lincoln, NE
  - “Physical Therapy: Role in Gerontology” *University of Nebraska Lincoln* in Lincoln, NE
- **Thomas Janousek** made the following presentations:
  - “Health and Life Beyond High School” *Leadership Lincoln* in Lincoln, NE
  - “Depression, Coping and Work Life Balance” *National Rural Electric Cooperative Association* in Lincoln, NE
  - “Work Life Balance” in Lincoln, NE via videoconference
  - “Neuropsychology as a Career” *Pius X High School* in Lincoln NE
  - “Unconscious and Implicit Bias” in Lincoln, NE
- **Amber Koch** presented “Introduction to Dysphagia” *College of St. Mary* in Omaha, NE
- **Paul Krabbenhoft, MD** presented “Spinal Cord Injury Medicine” in Lincoln, NE
- **Jennifer Luethje** presented “Wheelchairs and Seating Systems” in Omaha, NE
- **Susan Luethke** presented “Improving Efficiencies and Clinician Well Being with Sunrise Compass” in Dallas, TX
- **Alexandra Miller** presented “Manipulation, Traction and Massage” in Omaha NE
- **Andrew Mollering, MD** presented “Acute Medical Issues - Inpatient HTN Management & Pre OPA” in Omaha, NE
- **Brooke Murtaugh**, OTD, OTR/L, CBIST made the following presentations:
  - “Pediatric Burn Rehabilitation” *Children’s Hospital & Medical Center* in Omaha, NE
  - “Therapy Dosing and Intervention in the Multidisciplinary Burn Care Environment: Examining Available Evidence, Practice Standards, and Protocols” *American Burn Association National Conference* via videoconference.
  - “Understanding Disorders of Consciousness after Severe Brain Injury” *National Work Comp Symposium* in Lincoln, NE.
  - “Brain Injury in Acute Care” *Centerpointe Trauma Center Virtual Symposium* in Independence, MO via videoconference.

- “Preparing the Neurological Patient for Intensive Rehabilitation” *Great Plains Regional Medical Center* in North Platte, NE
- “Disorders of Consciousness: Implementation of Guideline Recommendations in Interdisciplinary Care” American Congress of Rehabilitation Medicine national conference via videoconference.
- “Burn Injury: Post-Acute Care and Rehabilitation” in Denver, CO
- “Severe Brain Injury and Disorders of Consciousness” *National Worker’s Comp Webinar* via videoconference.
- “Disorders of Consciousness” *EMC Work Comp Webinar* via videoconference
- “Disorders of Consciousness after Severe Brain Injury” *WCRA Work Comp Webinar* via videoconference
- “Pediatric Burn Care” *Lincoln Pediatric Hospitalists Education Forum* via videoconference
- “Brain Injury Rehabilitation” *Methodist College of Occupational Therapy* via videoconference
- “Program Update, Tips for Success and Discussion with BT-C Certified Therapists” *American Burn Association* via videoconference
- “Disorders of Consciousness: Application of DoC Practice Recommendations” *North American Brain Injury Society Conference* in New Orleans, LA.
- “Rehabilitation for TBI” *Mosaic Medical Center* in St. Joseph, MO.
- **Mandy Parry** presented “Madonna as a Community Resource” *Metropolitan Community College* in Omaha, NE
- **Teresa Raven** presented “The Role of the Nurse” *Southwest High School* in Lincoln, NE
- **Mary Reece** made the following presentations:
  - “Introduction to Health Care Professions” *Health Careers Opportunity Program* via videoconference
  - “Acute Mental Health Crisis Management” via videoconference
  - “Psychological Aspects to Neurogenic Bowel” in Lincoln, NE
- **Christopher Sanders** presented “Meyers Neuropsychological System” in Omaha, NE
- **Teresa Springer** presented “Complex Dysphagia Cases” *Nebraska Speech Language Hearing Association State Conference* via videoconference.
- **Melissa Starr** made the following presentations:
  - “LVADs and Heart Transplantations” *Creighton University* in Omaha, NE
  - “Peripheral Vascular Disease” *Creighton University* in Omaha, NE
  - “Cardiovascular PT, Pulmonary PT, and Management of the Medically Complex Patient” *Southeast Community College* in Lincoln, NE
  - “Now more VITAL than ever, Vitals are Vital” *American Physical Therapy Association of Nebraska* via videoconference.
  - “A Day in the Life of a CI” *Creighton University* in Omaha, NE
  - “PT Cardiovascular and Pulmonary Labs” *Creighton University* in Omaha, NE
  - “Excellence in Cardiovascular and Pulmonary Therapy” *Creighton University* in Omaha, NE

- “Cardiovascular and Pulmonary Physical Therapy” *Southeast Community College* in Lincoln, NE
- **Diane Ulmer**, OTR/L, made the following presentations:
  - “Preparing a Patient with SCI for Rehab” *St. Francis Medical Center* in Topeka, KS via videoconference.
  - “Preparing the Patient with Neurological Injury for Rehab” *Great Plains Regional Medical Center* in North Platte, NE
  - “Spinal Cord Injury” *Methodist College of Occupational Therapy* via videoconference
  - “Preparing a patient with SCI for Rehab” *Centerpointe Trauma Conference* in Independence, MO
  - “Preparing a patient with SCI for Rehab” *North Kansas City Summer Trauma Topics* in Kansas City, MO
- **Cheryl Wagoner**, CCC-SLP, BCS-S, made the following presentations:
  - “Assessment and Treatment for Dysphagia” *Laramie County Community College* in Laramie, WY
  - “Life on LTACH” *University of Nebraska Lincoln* in Lincoln, NE via videoconference
  - “Therapy???? These people are sick!!!! The SLP’s role for assessment and treatment with ventilated patients” *University of Nebraska Lincoln* in Lincoln, NE
  - “Code of Ethics” *Nebraska Speech Language Hearing Association Annual Conference* in Omaha, NE
- **Kaylee Wallace** presented “Physical Agent Modalities” in Omaha, NE
- **Stephani Wesely** presented “Adult Neurogenic Communication and Swallowing Disorders” in Omaha, NE
  - Antonellis P, **Mohammadzadeh Gonabadi A**, Malcolm P. A robotic tether can assist more efficiently than a passive tether, but the optimal timing is counterintuitive. *International Symposium on Wearable Robotics*. Online, October 13, 2020.
  - Antonellis P, **Mohammadzadeh Gonabadi A**, Malcolm P (2020). Effects of assistance timing of forward forces at the center-of-mass on propulsion. *10th Annual Regional Meeting of the Rocky Mountain American Society of Biomechanics*. Estes Park, CO, March 27-28, 2020.
  - Antonellis P, **Mohammadzadeh Gonabadi A**, Malcolm P. Optimal force profiles at the center of mass to reduce the energy cost of walking with unilaterally reduced push-off. *Student Research and Creative Activity Fair*. University of Nebraska at Omaha. March 26, 2021.
  - Antonellis P, **Mohammadzadeh Gonabadi A**, Malcolm P. Simple robotic walking assistance at the center of mass. *UNO Student Research and Creative Activity Fair*. Omaha, NE. March 6, 2020.
  - Antonellis P, **Mohammadzadeh Gonabadi A**, Malcolm P. The timing of forward forces at the center-of-mass has little effect on propulsion ground reaction forces. *44th Annual Meeting of the American Society of Biomechanics*. Atlanta, GA. August 4-7, 2020.
  - Baker BC, **Burnfield JM, Buster TW, Cesar GM**, Mestelle Z, Mestelle CR (2020). Comparison of lower extremity joint kinematics and electromyographic demands during

backward walking and reverse motor-assisted elliptical training. *American Academy of Physical Medicine and Rehabilitation 2020 Annual Assembly*. San Diego, CA. Nov 12-15, 2020. Published: *Physical Medicine and Rehabilitation*, 12(S1)(suppl 1).

- **Beukelman DR, Koch Fager S.** Difficult client-provider conversations. *UNL Graduate Seminar*. Lincoln, NE. February 7, 2020.
- **Burnfield JM.** ICARE: A community-based approach for addressing gait, fitness, balance and upper extremity rehabilitation goals. *The Natalie Barnhard Center for Spinal Cord Injury and Recovery / Motion Project*. Cheektowaga, NY. June 18, 2021.
- **Burnfield JM.** ICARE: An integrated approach for addressing gait, cardiorespiratory, balance and upper extremity rehabilitation goals. *Ability KC*. Kansas City, MO. November 20, 2019.
- **Burnfield JM.** ICARE Webinar: Comprehensive approach to maximizing function, fitness, and independence. *Motion Project (Buffalo, NY)*. June 18, 2020.
- **Burnfield JM.** ICARE Webinar: Comprehensive approach to maximizing function, fitness, and independence. *SportsArt Team*. July 23, 2020.
- **Burnfield JM.** Lunch and Learn: ICARE training to promote function, fitness and balance webinar (national *GoToWebinar* presentation). East Coast attendees. November 11, 2020.
- **Burnfield JM.** Lunch and Learn: ICARE training to promote function, fitness and balance webinar (national *GoToWebinar* presentation). West Coast and South America attendees. November 12, 2020.
- **Burnfield JM.** Observational gait analysis: How knowledge of the fundamentals can enhance patient outcomes. *Clinical Doctorate in Physical Therapy Program, University of South Dakota*. Vermillion, SD. November 1, 2019 (one day course).
- **Burnfield JM.** Observational gait analysis: How knowledge of the fundamentals can enhance patient outcomes. *Clinical Doctorate in Physical Therapy Program, University of South Dakota*. Vermillion, SD. September 25, 2020 (one day course).
- **Burnfield JM.** Three Dimensional (3D) Printing: Advantages of Rapid Prototyping to Advance Rehabilitation Care and Outcomes (2019). *Paradigm Summit*. Austin, TX. October 25, 2019.
- **Burnfield JM.** Translational PM&R research (Part 1- Quantitative research design). *UNMC PM&R Residency Program*. Madonna Rehabilitation Hospitals, Omaha, NE. September 6, 2019.
- **Burnfield JM.** Translational PM&R research (Part 1- Quantitative research design). *UNMC PM&R Residency Program*. Madonna Rehabilitation Hospitals, Omaha, NE. September 11, 2020.
- **Burnfield JM, Buster TW.** ICARE: A unified approach for addressing gait, fitness, balance and upper extremity rehabilitation aims. *Good Samaritan Hospital*. Kearney, NE. June 9, 2021.
- **Cesar GM.** Human Gait Analysis. *Clinical Doctorate in Physical Therapy Program, University of South Dakota*. Vermillion, SD. March 31, 2021 (one day course).
- **Cesar GM, Buster TW, Patten A, Perlaki BA, Burnfield JM.** Reliability and accuracy of commercially-available wrist step-count device for children and adolescents with

neurologic-induced gait impairment. *Archives of Physical Medicine and Rehabilitation*, 102(4):e14. DOI: 10.1016/j.apmr.2021.01.045.

- **Cesar GM**, Irons SL, Habron-Wach MG, **Buster TW**, **Burnfield JM**. Child with stroke improved walking, balance, and fitness following pediatric motor-assisted elliptical training intervention. *Nebraska Healthy Kids Summit 2021*. March 3, 2021 (virtual presentation).
- Dasgupta P, Mishra A, Nelson C, **Burnfield J** (2019). Towards intelligent semi-autonomous control of a modular robot for human mobility assistance. Presented, *2019 Do Good Robotics Symposium (DGRS'19)*. University of Maryland, College Park, MD. October 3-4, 2019.
- Fallahtafti F, **Gonabadi AM**, Curtze C, Samson K, Yentes, JM. Margin of stability is larger and less variable during treadmill walking versus overground. *5th Human Movement Variability Conference & 1st Great Plains Biomechanics Conference*. Omaha, Nebraska. September 4, 2020.
- Fallah Tafti F, **Mohammadzadeh Gonabadi A**, Samson K, Curtze C, Yentes JM. Speed of Walking, as well as Walking Mode (Treadmill vs. Overground), can affect Margin of Stability. Presented, *44th Annual Meeting of the American Society of Biomechanics*. Atlanta, GA. August 4-7, 2020.
- Jacobsen A, **Buster TW**, **Cesar GM**, **Burnfield JM** (2020). Comparison of electromyographic demands on trunk musculature during forward and reverse motor-assisted elliptical training. *Archives of Physical Medicine and Rehabilitation*, 101(12):e134. DOI: <https://doi.org/10.1016/j.apmr.2020.10.026>.
- **Koch Fager S**. Invited speaker for Tobii/Dynavox ALS- Expert Series for ALS Awareness Month. *Webinar presented May 14, 2020*.
- **Koch Fager S**. (Producer). August 12, 2019. Access technology for AAC & adults for Speech Uncensored Podcast. Retrieved from <https://www.speechuncensored.com/podcastepisodes/s2e3-access-technology-for-aac-adults-with-susan-koch-fager-phd-ccc-slp?rq=AAC>.
- **Koch Fager S**. Translational PM&R research (Part 2- Qualitative research and single subject design). *UNMC PM&R Residency Program*. Madonna Rehabilitation Hospitals, Omaha, NE. September 13, 2019.
- **Koch Fager S**. Translational PM&R research (Part 2- Qualitative research and single subject design). *UNMC PM&R Residency Program*. Madonna Rehabilitation Hospitals, Omaha, NE. September 18, 2020.
- McNaughton D, Jakobs T, Light J, Fried-Oken M **Fager S**, **Beukelman DR** (2020). RERC on AAC: Progress on research, development, and training activities. *Assistive Technology Industry Association*, Orlando, FL, January 31, 2020.
- **Mohammadzadeh Gonabadi A**, Antonellis P, Malcolm P (2021). Development of a system for assistance at the center of mass. *44th Annual Meeting of the American Society of Biomechanics*. Atlanta, GA. August 4-7, 2020.
- **Mohammadzadeh Gonabadi A**, Antonellis P, Malcolm P (2021). Differences between metabolic cost time profile estimations. *11th Annual Regional Meeting of the, Rocky Mountain American Society of Biomechanics*. Estes Park, Colorado. April 2, 2021.

- **Mohammadzadeh Gonabadi A**, Antonellis P, Myers S, Pipinos I, Malcolm P (2020). A new semi-rigid bilateral exoskeleton to assist hip extension and flexion: design and development. *10th Annual Regional Meeting of the, Rocky Mountain American Society of Biomechanics*. Estes Park, CO, March 27-28, 2020.
- **Mohammadzadeh Gonabadi A**, Antonellis P, Myers S, Pipinos I, Malcolm P (2021). Bandwidth testing of a semi-rigid hip exoskeleton. *Dynamic Walking Conference*. Virtual. May 17, 2021.
- **Mohammadzadeh Gonabadi A**, Antonellis P, Myers S, Pipinos I, Malcolm P. Design and development of a semi-rigid hip exoskeleton. *UNO Student Research and Creative Activity Fair*. Omaha, NE. March 6, 2020.
- **Mohammadzadeh Gonabadi A**, Antonellis P, Myers S, Pipinos I, Malcolm P. Designing and developing a new semi-rigid bilateral exoskeleton to assist hip joint motion. *5th Human Movement Variability Conference & 1st Great Plains Biomechanics Conference*. Omaha, Nebraska. September 4, 2020.
- **Mohammadzadeh Gonabadi A**, Antonellis P, Myers S, Pipinos I, Malcolm P (2020). Designing and developing a new semi-rigid bilateral exoskeleton to assist hip joint motion. *44th Annual Meeting of the American Society of Biomechanics*. Atlanta, GA. August 4-7, 2020.
- Nalamasu R, Schwery NA, Rasmussen, **CM Buster TW, Cesar GM, Burnfield JM** (2020). Motor-assistance and resistance during elliptical training alter upper extremity muscle activation patterns when using reciprocally moving handles. Presented, *American Academy of Physical Medicine and Rehabilitation 2020 Annual Assembly*. San Diego, CA. Nov 12-15, 2020. Published: *Physical Medicine and Rehabilitation*, 12(S1)(suppl 1).
- Nelson CA, Bruckner MA, Chae JS, **Burnfield JM, Buster TW, Cesar GM, Pfeifer CM, Dasgupta P** (2019). Design and kinematics of a modular robot for assistive tasks for the disabled [IDETC2019-98011]. *Proceedings of the ASME 2019 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference [IDETC/CIE2019]*. Anaheim, CA. August 18-21, 2019.
- Nimmo SM, Catcher BJ, White HJ, **Buster TW, Cesar GM, Burnfield JM**. Impact of backward motor-assisted elliptical training on upper extremity muscle activation patterns when using reciprocally moving handles. *Archives of Physical Medicine and Rehabilitation*, 102(4):e11-12. DOI: 10.1016/j.apmr.2021.01.037.
- Williams N, **Burnfield J**, Kohel K, Hatton-Bowers H, **Buster T** (2019). Understanding and supporting the wellbeing of informal caregivers in medical rehabilitation settings. *National Council on Family Relations*. Fort Worth, TX. November 20-23, 2019.