

2017

Business Plan for a Non-Profit Pediatric IV Pole Wagon Distribution Program

Susan White Hester

Follow this and additional works at: https://digitalcommons.gardner-webb.edu/nursing_etd



Part of the [Pediatric Nursing Commons](#)

Recommended Citation

Hester, Susan White, "Business Plan for a Non-Profit Pediatric IV Pole Wagon Distribution Program" (2017). *Nursing Theses and Capstone Projects*. 268.

https://digitalcommons.gardner-webb.edu/nursing_etd/268

This Capstone is brought to you for free and open access by the Hunt School of Nursing at Digital Commons @ Gardner-Webb University. It has been accepted for inclusion in Nursing Theses and Capstone Projects by an authorized administrator of Digital Commons @ Gardner-Webb University. For more information, please see [Copyright and Publishing Info](#).

Business Plan for a Non-Profit
Pediatric IV Pole Wagon Distribution Program

By

Susan W. Hester

A capstone project submitted to the faculty of
Gardner-Webb University Hunt School of Nursing
in partial fulfillment of the requirements for the degree of
Doctorate of Nursing Practice

Boiling Springs, NC

April 2017

Submitted by:

Susan W. Hester, MSN, RN, CPN

Date

Approved by:

Gayle L. Casterline, PhD, RN, AHN-BC

Date

Approval Page

This capstone project has been approved by the following committee members:

Elizabeth Johns, PhD, RN (Retired)
Committee Member

Date

Bonnie Garner, MSN, RN, CPN
Committee Member

Date

Cindy Miller, PhD, RN
Graduate Program Chair

Date

Abstract

Problem: Children have reported that pain and anxiety were the most difficult part of hospitalization, and under treatment of pain and anxiety can have short and long term effects on health outcomes. Most healthcare professionals recognize a link between emotional health and physical health, but this may be especially true for pediatric patients who may not be able to marshal adequate coping skills due to their developmental age. Providing age appropriate alternatives, such as distraction therapy, may result in less invasive treatments for pediatric patients. Distraction therapy is an effective non-pharmacological intervention that is often under-utilized in the acute care setting. Providing an additional distraction intervention could help ameliorate the negative effects of hospitalization, enabling pediatric patients to decrease pain and anxiety while increasing coping and joy.

Purpose: The purpose of the project was to spread awareness and to increase the use of a new, innovative distraction intervention in the form of an IV pole wagon. The wagons were developed in 2015 and were being used in a small, but rapidly increasing, group of pediatric hospitals.

Background: Unfortunately, drug therapy, which should be second line treatment, is often the first line treatment despite evidence that non-pharmacological therapeutic interventions are similarly effective for the management of mild to moderate pain and anxiety. Distraction interventions, such as music therapy, pet interactions, video games, etc., have been shown to be successful therapies for mild to moderate pain and anxiety in children, but are under-utilized, resulting in unnecessary invasive amelioration therapies.

Project Implementation: The cardinal goal for this DNP project was writing a business plan to provide a model for other pediatric organizations to start and maintain a nonprofit program to supply IV pole wagons to children in medical need. Secondary objectives included supportive measures to augment the business plan including marketing initiatives to inform the public/healthcare workers of the project, grant writing for funding, information dissemination by presenting at a nursing conference, and providing the IV pole wagons to facilities and individual families. The purpose of these interventions were to provide a developmentally appropriate distraction to lessen the pain and distress that can be associated with hospitalization while increasing pediatric coping and joy. The pilot program, called the Whee Wagon Program, was developed through Western Carolina University's (WCU) School of Nursing, in Cullowhee, NC, in August 2015. The project goal was to influence other pediatric organizations and/or advocacy groups to develop similar, but unique, programs to distribute these wagons to as many pediatric facilities as possible.

Outcome: This project resulted in a comprehensive business plan to provide pediatric organizations with a blueprint for the development of their own program to provide IV pole wagons to children in medical need. The business plan, written in standard business plan format, was distributed to 14 pediatric organizations for their use. It was also published on the Western Carolina University Whee Wagon website and a proprietary Whee Wagon website for public use. This author presented the Whee Wagon concept at a pediatric nursing conference, and applied for, and was awarded, a \$1,000 grant to disseminate the Whee Wagons to children in medical need. Finally, since the beginning of this project in January 2016, 22 wagons have been distributed to facilities or families.

Keywords: distraction, pediatric, hospitalization, non-pharmacological, wagon,
alternative, business plan

Acknowledgements

I'm not telling you it's going to be easy, I'm telling you it's going to be worth it.

– Art Williams

First, I'd like to express my gratitude for my capstone committee chair, Dr. Gayle Casterline, for her inspiration, guidance and patience, and also for the hard questions which motivated me to widen my perspectives throughout this project. My sincere thanks also goes to my committee members, Dr. Elizabeth (Bunny) Johns and Bonnie Gardner, MSN, for their insightful comments and encouragement. Bonnie, your unending advocacy for medically fragile children is an inspiration, and Bunny, you have been a guiding light all throughout my personal and professional life. You both make the world a better place.

I would also like to thank all the graduate faculty of Gardner-Webb University for supporting a DNP project that was “out of the norm” and to work with me to provide a project that benefits pediatric patients in an innovative way. You have all been invaluable to my education.

This DNP journey was a team effort of my entire cohort, and each and every member inspires me to be a better nurse every day. You are all doing amazing things in the field of nursing, and I feel very blessed to take this journey with you. I especially would like to thank Christina Harrelson, my DNP “partner”, for her support and friendship.

I'd also like to thank the leadership and my colleagues at Western Carolina University School of Nursing for their support of this project and all the program "wagoneers": Jeffery Neufeld, Reina Branch, Synamon Jones, Kaitlin Gillespie, Sally Morris, Christina Bridgeman, Brandon Allen, Kaci Stepp, Tess Schneider, Alexis Ross, Kelsey Vaughn, Nate Price, Lacey Callahan, Lindsi Ahearn, Sarah Blackwell, Christy Barker, Marissa Beatty, Larissa Capps, Taylor Johnson Crowe, Kaleigh Phillips and Valleri Gospodinoff.

Finally, I'd like to thank my husband, Bill, and children, Rye and Callie, for their support while I pursued my education, especially while I have been in graduate school. Your love, understanding and encouragement has meant the world to me. I love you all, and I promise this is the last degree... well, maybe.

© Susan W. Hester 2017

All Rights Reserved

TABLE OF CONTENTS

Introduction.....	1
Problem Recognition and Significance.....	2
Problem Literature Review	3
Effects of Pediatric Pain and Anxiety.....	4
Medical	5
Nursing.....	6
Child Life	6
Developmental Considerations	7
Needs Assessment.....	7
Population Identification.....	7
Pediatric Patients.....	7
Healthcare Professionals.....	8
Parents.....	12
Pediatric Organizations	12
Stakeholders	13
Organizational Assessment.....	13
Chad’s Brackets	13
Western Carolina University.....	14
SWOT Analysis	14
Cost-Benefit Analysis	16
Theoretical/Conceptual Underpinnings	16
Theory of Integral Nursing	17
Deming’s PDCA Model.....	19
Implementation Literature Review	20
Non-Pharmacological Distraction Use	20
Medical	21
Nursing.....	21

Child Life	23
Summary	23
Purpose, Goals and Objectives	24
Purpose.....	24
Mission Statement.....	24
Goals and Objectives	24
Project Design.....	26
Institutional Review Board Process	26
Project Interventions	26
Marketing Initiatives	26
Business Plan Development.....	26
Grant Application.....	27
IV Pole Wagon Dissemination.....	27
Project Evaluation.....	28
Interpretation of Project Outcomes	28
Needs Assessment.....	28
Marketing Initiatives	28
Business Plan Development.....	28
Grant Application.....	28
IV Pole Wagon Dissemination.....	29
Limitations/Difficulties with Project Implementation	29
Funding	29
Needs Assessment.....	29
Tax Exempt Status	30
Public Sourcing.....	30
Comparison to Theory of Integral Nursing Model	30
Comparison to PDCA Model.....	31
Recommendations.....	31

Conclusion	32
References.....	33
Appendices	
Appendix A: Needs Assessment Survey.....	42
Appendix B: Needs Assessment Results	44
Appendix C: Media News Release	50
Appendix D: Flyer and Brochure.....	51
Appendix E: Website	54
Appendix F: MAHEC Poster	56
Appendix G: Grant Application.....	57
Appendix H: Business Plan	61

List of Figures

Figure 1: Needs Assessment Frequency of Use Results.....	9
Figure 2: Dossey Conceptual-Theoretical-Empirical Model.....	18
Figure 3: Deming PDCA Model.....	20

Introduction

Inpatient hospital admissions often involve invasive and painful procedures that are distressing for pediatric patients. Unfamiliar environments, family separations, medical interventions and activity restrictions can also add to pediatric psychosocial distress (Ersig, Kleiber, McCarthy, & Hanrahan, 2013). The pain and anxiety children may experience before, during and following these situations can have short and long term effects to a child's overall health. As healthcare providers are aware, physical health is intrinsically linked to emotional health, and pain has been identified as a global health problem (International Association of the Study of Pain, 2008). Identification and optimization of interventions to alleviate pediatric pain and anxiety should be an important consideration for all healthcare personnel.

Indeed, amelioration of pediatric pain and distress is considered a basic right and is a necessary aspect of holistic care (Gold et al., 2009; Huguet & Miro, 2008). Additionally, the Joint Commission regards pain as the fifth vital sign, and accurate assessment and effective treatment is the standard of care (Mathews, 2011). Additionally, appropriate management of pain and anxiety has the potential to support positive patient outcomes, such as improved recovery, as well as reducing morbidity, mortality, patient fear, patient, family and staff distress, and costs related to health care use (Dowden, McCarthy, & Chalkiadis, 2008). Yet, despite compelling evidence that pain and distress is undertreated and may result in serious short and long term deleterious effects on overall health, children continue to receive suboptimal care (Olmstead et al., 2014). Additionally, the pain-stress relationship is circuitous, and multiple studies show under

treatment of pain increases anxiety and fear, which, in turn, augments the perception of pain (Anand & Scalzo, 2000; Koller & Goldman, 2012).

Problem Recognition and Significance

As previously stated, evidence indicates hospitalized children often experience pain and anxiety and yet remain undertreated (Alexander, 2012; Koller & Goldman, 2012; Olmstead et al., 2014; Twycross & Finley, 2014) and children who experience medical procedures often have elevated levels of stress, anxiety and fear during hospitalization as well as after discharge (Koller, 2008). While treating children with pharmacological interventions is often used to ameliorate pain and anxiety, other treatments, such as distraction use, are less invasive, result in similar or better outcomes, and yet are frequently underutilized (Oliveira & Linhares, 2015). Indeed, implementation of evidence-based distraction has been shown to decrease pain and anxiety scores in the acute care pediatric population (Twycross, Dowden, & Stinson, 2014), while conversely, untreated pain and anxiety can lead to long term sequelae including a multitude of psychiatric conditions such as post-traumatic stress disorder (Alexander, 2012). The problem of untreated pain and anxiety is further compounded by nurses' lack of use, or understanding, of pain strategies such as non-pharmacological distraction, that are readily available (Twycross, Dowden, & Stinson, 2014; Twycross, Forgeron, & Williams, 2015).

Many studies have supported the use of distraction to address pediatric anxiety and pain (Alexander, 2012; Harris et al., 2015; Koller & Goldman, 2012). Common distractions include music therapy, pet interactions, video games, virtual reality, television viewing, blowing bubbles, toy usage and earning stickers (Oliveira & Linhares, 2015). This writer, who is a pediatric nurse, often observes in practice the positive

difference non-pharmacological interventions make for pain control and anxiety relief. Olmstead, Scott, Mayan, Koop, and Reid (2014) stated “evidence on non-pharmacological management of pediatric pain describes distraction as one of the most successful methods for alleviating children’s distress and pain” (p. 163). Twycross and Finley (2014) acknowledged that there is a significant gap in knowledge in non-pharmacological interventions for pediatric pain. Additionally, Olmstead et al. (2014) stated that despite the benefits of non-pharmacological interventions such as distraction, “evidence reveals the lack of update of these efficacious measures into nursing practice” (p. 163). Clearly, non-pharmacological distraction has been identified as an effective intervention for ameliorating pediatric anxiety and mild to moderate pain, yet this family of beneficial interventions are frequently underutilized.

Problem Literature Review

A literature review was conducted to find current, germane studies that related to the project. While the initial search was performed by the writer, a subsequent search utilized the help of a Western Carolina University research librarian. Databases utilized in the search included the following: Academic Search Complete, Applied Science & Technology Abstracts, CINAHL Plus with Full Text, Communication & Mass Media Complete, eBook Collection (EBSCOhost), Education Source, Environment Complete, ERIC, Information Science & Technology Abstracts with Full Text, MEDLINE Complete, and SocINDEX with Full Text. Search words included truncated words such as: distract*, child*, stress*, anx*, nurs*, and pedia*, as well as single and/or Boolean combinations of the search words: pain, perception, pharmacological, non-

pharmacological, distress, poor, ineffective, relief, research, education, perception, and intervention.

Effects of Pediatric Pain and Anxiety

Upon reviewing the literature on pediatric pain and anxiety, there is persuasive evidence pain and anxiety is persistently under addressed in the acute care setting. Long considered solely a medical issue, pain and anxiety are currently viewed as an interdisciplinary problem affecting all aspects of the healthcare continuum. Koller and Goldman (2012) stated “pain is a complex, multidimensional and subjective experience that consists of physiological, sensory, emotional, cognitive, and behavioral components” (p. 652).

No federal or stated statistics for aggregate pediatric hospitalizations exist; however, one can look at data from a North Carolina public children’s hospital and extrapolate the frequency of general pediatric medical care. This is not to say that all children experience the phenomena of anxiety and pain in the hospital setting; however, it does assist with project planning and give a baseline for the frequency of pediatric care. The North Carolina Children’s Hospital at Chapel Hill treats over 70,000 children each year for a total of 200,000 visits annually (University of North Carolina School of Medicine, 2014). This hospital is one of six dedicated pediatric hospitals in the state of North Carolina. This data does not take into account regional and critical access hospitals that may only have a pediatric floor, or the number of emergency department visits for children, which would increase pediatric care numbers considerably.

There are few pediatric comprehensive summaries of pain epidemiology to quantify the magnitude of acute pediatric pain, however, several studies have provided

evidence that chronic pain is a significant problem, affecting approximately 20% to 35% of children (King, et al.; 2011; Stanford, Chambers, Biesanz, & Chen, 2008). The World Health Organization (2012) stated chronic pain in children may result from: 1) chronic diseases such as arthritis, sickle cell disease, rheumatologic disorders, and inflammatory bowel disease, 2) trauma, exhibited by physical, thermal, electrical and/or chemical injuries, 3) life threatening diseases and their treatment such as simultaneous acute and chronic pain in cancer or HIV/AIDS, and 4) idiopathic pain which has no identifiable etiology such as headaches and recurrent abdominal discomfort.

Medical. Untreated pain and anxiety in the acute care setting have many negative outcomes including delayed recovery time, arrested healing and increased length of stay (Edward, Sanderson, & Giandinoto, 2015). Evidence shows pediatric patients often receive less analgesia than adults for comparable procedures or similar situations and may experience increased pain (Dowden, McCarthy, & Chalkiadis, 2008). Additionally, unresolved pain and stress in the hospital has been shown to have long term effects that may lead to suboptimal health outcomes (Alexander, 2012; Ersig et al., 2013; Koller & Goldman, 2012; Olmstead et al., 2014, Twycross & Finley, 2014). Multiple studies have identified significant sequelae including post-traumatic stress disorder, trypanophobia, avoidance or difficulty with future medical care, and alterations in pain perception and coping (Alexander, 2012; Ersig et al., 2013). Additionally, frequently hospitalized children with chronic pain are more likely to have increased risk for future negative mental health concerns such as anxiety and depression (Harris et al. 2015; Hockenberry & Wilson, 2015).

Nursing. A further review of the literature indicates there is more of an impact to unresolved pain and anxiety than just short term discomfort such as crying, fear, lack of cooperation and elevated vital signs, although all these things are of concern to the pediatric nurse (Alexander, 2012). Multiple studies show nurses often under assess and undertreat pediatric pain due to a variety of reasons including lack of assessment skills, preconceived ideas on pediatric pain, institutional pain management culture and under use of non-pharmacological distractions (Ersig et al., 2013; Twycross & Finley, 2014; Twycross, Forgeron & Williams, 2015). For example, Carbajal et al. (2008) found neonates who underwent painful or stressful procedures only received analgesic relief from nurses 79.2% of the time. Twycross and Finley (2014) report in a study that nurses actions to treat pain adequately versus their perceptions of adequate pain treatment only occurred 53% of the time, and in a study by Zisk-Rony, Lev, and Haviv (2015), nurses used pain assessment scales appropriately only 25% of the time. Koller and Goldman (2012) tie non- or under treatment of pain to pediatric stress, stating “pain is also associated with heightened levels of distress and anxiety... and can lead to negative long-term emotional outcomes” (p. 652).

Child Life. Child life specialists are trained professionals with expertise in helping children cope with hospitalization and medical procedures (Child Life Council, n.d.). A Child Life practice statement (Koller, 2008) noted children often have negative responses due to hospitalization and medical procedures, and pain and anxiety amelioration should have multimodal interventions to be the most effective. The stress of medical procedures and hospitalization can lead to pediatric anxiety, fear, lack of cooperation, behavioral problems and parental stress (Koller, 2008). Additionally,

parental stress has been shown to have a reciprocal relationship with their children's stress and anxiety in the hospital (Koller, 2008).

Developmental Considerations. Due to the wide range of developmental stages in the pediatric continuum, it can be challenging for the healthcare professional to accurately assess and treat children with pain and anxiety. Often children will react differently to pain than adults, and assessment techniques, as well as the identification of pain and anxiety-associated behaviors, are linked to their age and/or developmental level (Mathews, 2011). Koller (2008) acknowledged the younger the child, the more likely they are to express anxiety and fear when compared to older children. Additionally, significant numbers of hospitalized children may experience developmental delays due to pain-related disabilities. These disabilities include the potential for reduction in physical activity, changes in sleep patterns, lack of interaction with other children or family members, school absence or impaired recreation and/or play (Mathews, 2011; Zernikow et al., 2012).

Needs Assessment

Population Identification

For this project, the population identification is two-fold. The first aggregate population include the children, families and healthcare workers impacted by the wagons' use. The second aggregate audience were the targets for the business plan and a successful regional roll out of the program.

Pediatric patients. Children receiving medical infusion therapy, such as IV fluids, IV medication or gastric tube feeds were a primary population for this project. It should be noted that IV therapy is one of the most common procedures in the acute care

setting with an estimated 80% of patients receiving this intervention during hospitalization (De Lima-Jacinto, Avelar, & Pedreira, 2011).

Healthcare professionals: Koller (2008) stated that health care professionals' (HCP) involvement with pediatric patients fosters relationships, especially when play is involved. While the IV pole wagons can be utilized as a distraction to ameliorate stress and pain, their ancillary use for children who are not experiencing distress is also significant. Child psychosocial theorist Erik Erikson stated, "To play is the most natural auto-therapeutic measure childhood affords. Whatever other roles play may have in the child's development...the child uses it to make up for defeats, sufferings and frustrations" (as cited in American Academy of Pediatrics, 2014, p. 1473). Clearly play addresses the needs of children regardless of situation, which is a holistic goal for all pediatric HCPs.

This writer asked HCPs at two children's hospitals to answer a survey in September, 2016 on healthcare workers perceptions of the IV pole wagons. Questions for the needs assessment can be found in Appendix A.

Thirty-four nurses and one patient care technician responded. When asked the question, "What response do you see on the patient's pain and/or anxiety when children use the IV Pole Wagons?", 10 responses indicated a decrease in pain, 17 responses indicated a decrease in anxiety, and 18 responses indicated an increase in joy and/or mood.

1) A sampling of comments regarding pain and anxiety amelioration included:

- a) “I feel children are more at ease being transported in a wagon than the traditional bed or wheel chair which lowers anxiety and in turn lowers their pain level.”
 - b) “I care for a lot of pediatric oncology patients, and I always see an immediate decrease in pain and anxiety whenever their parents take them for a ride in the wagon.”
 - c) “Anxiety of being in the hospital decreases when patients get to go for wagon rides with their siblings or parents! It is a treat for them, something to look forward to in an otherwise scary time for a child.”
 - d) “They LOVE to ride in the wagons and it decrease their anxiety greatly just to be able to ride around in them!! The kids love them!”
- 2) The needs assessment also provided information on the frequency of use of the IV pole wagons on an inpatient floor where they are accessible (Figure 1).

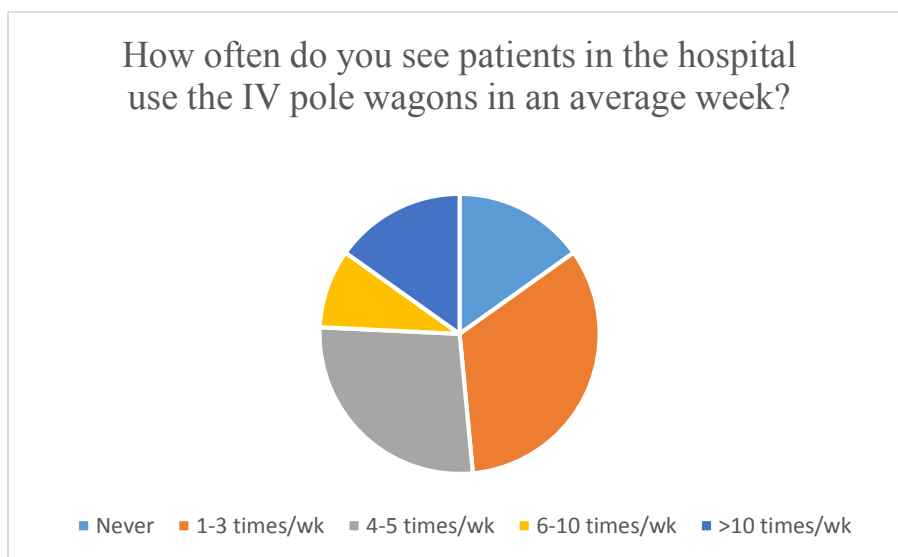


Figure 1. Needs Assessment Frequency of Use Results

Additional themes included positive support for the use of IV pole wagons with health care providers providing positive commentary on the following areas:

3) Ease of mobility. Comments included:

- a) “Having the patient and their pumps in the same vehicle allows for easy transportation for nurses and for families.”
- b) “They can be transported around in only the wagon with the IV pole versus the wagon and having to bring the separate pole, it is difficult to transport both the wagon and a separate pole with just one person.”
- c) “Easy to transport without interrupting infusions.”
- d) “Much easier to transport pediatric patients and the kids love to take a wagon ride.”

7) Safety. Comments included:

- a) “As a nurse, it eases my mind knowing that there’s a lesser chance [in an IV pole wagon] of the patient pulling out their IV or port since the IV pole is an equal distance from the patient.”
- b) “Safer than traveling with a separate big pole. Much safer going over elevator thresholds with a wagon because the big poles tip over.”
- c) “The wagons have seat belts for safety. It keeps the patient close to their pumps which means their tubes/IV will not be pulled.”
- d) “I think they are safe. They don’t tip over easily; it would be easy to pull someone out of one in an emergency; they are easy to use and to wipe clean.”

7) Ease of use. Comments included:

- a) “Easier transport of a small child with IV fluids infusing.”

- b) “They are an easy, fun way to transport patient throughout the hospital. Much easier than taking a bed or crib for a small child when it’s not necessary.”
 - c) “Contains the kids. Makes it easier for the parents and nurse to transport the children whether to a procedure or just a social outing.”
- 7) Promotion of psychosocial/developmental needs. Comments included:
- a) “They allow all patients to get a wagon ride, even if they have IV [fluids] running. Pediatric patients need to get out of their rooms, if at all possible, to promote healing and to just simply be a kid.”
 - b) “They are a great addition to our hospital in order to meet all of the needs of the pediatric patient. Psychosocial needs are incredibly important for a child’s well-being during their hospital stay, and the wagons help promote that.”
- 7) Desire for increased wagon availability. Comments included:
- a) “We need more of these at the hospital. We don’t have enough!!”
 - b) “I wish we had more!”
 - c) “Need more of them, please.”

While the majority of the responses were positive on the use of the wagons, there were neutral and constructive commentary as well. For the question, “Can you discuss how safe you consider the IV pole wagons to be and why?”, 27 of the 29 comments supported the wagons’ safety. Two comments provided neutral or negative commentary:

- 1) “I don’t really care about the pole. Since pediatric infusions aren’t by gravity, having the pump on a pole isn’t necessary.”
- 2) “Out of a 10, I will give a 6 for infants. I always double check, because the restraints are not very safe.”

This writer has personally utilized these wagons in practice and can vouch for their beneficial attributes. A complete list of the needs assessment responses can be found in Appendix B.

Parents. Another audience that may be impacted from the implementation of the IV wagons are parents. Parental stress has been shown to have a reciprocal relationship with their child's stress and anxiety in the hospital (Koller, 2008). Koller (2008) also noted that parental involvement exerts a significant influence on a pediatric patient's coping abilities in regards to medical experiences. One can deduce that utilizing a distraction that requires dual involvement, such as a wagon rider and a wagon puller, requires either parental or HCP involvement along with the child. This provides an interactive opportunity to increase client/parent or client/HCP involvement, which studies show decrease distress for children undergoing procedures (Alexander, 2012; Koller, 2008).

Pediatric organizations. A second aggregate targeted population are the pediatric organizations who wish to utilize a nonprofit business plan to develop an IV pole wagon program in their community. Potential organizations include state and region schools of nursing, as well as advocacy groups, hospital auxiliaries, and philanthropies. Also, there is a large variety of pediatric groups in North Carolina that may be targeted to implement the IV pole wagon program. The list includes professional organizations, health advocacy groups, community health organizations, pediatric support groups, families in the community, special interest groups, as well as people on an individual basis who wish to support pediatric causes. Due to this variety, it is difficult to quantify the number of organizations that may be interested in implementing the business plan for the IV wagon

program, however to give perspective, this writer will provide information on two possible organizations that might be targeted.

- **North Carolina Board of Nursing [NCBON]:** The NCBON lists 94 Associate, Baccalaureate and Diploma nursing programs in the state, each of which has pediatric faculty and classes that may wish to implement the business plan (NCBON, 2016).
- **Shriner's International.** The charitable arm of the Shriner's organization consists of 22 children's hospitals in North America which provide care to children free of charge. In North Carolina the Shriners organization consists of one children's hospital as well as 16 regional clubs (Shriners International, 2016).

Stakeholders

Key stakeholders for this project include children in medical need that can be found in pediatric facilities including in- and out-patient treatment centers, hospices, special needs daycares, home health organizations, and patient families. Other stakeholders are the pediatric advocacy groups that support the acquisition and dissemination of the IV Pole wagons (such as nursing schools or hospitals), and especially family members who will benefit from amelioration of pediatric pain and anxiety.

Organizational Assessments

Again, due to the dual nature of this project, this writer will provide information on two organizations for the organizational assessment.

Chad's Brackets. The Chad's Bracket organization is the manufacturer of the IV pole wagons. The mission and values of the Chad's Bracket founder, Roger Leggett, are congruent with this DNP project. His mission is to support the use of the IV pole wagons

for pediatric mobility and to actively seek ways to disseminate the wagons to pediatric facilities. This mission is in alignment with the business plan for this project. The Chad's Bracket organization is also nonprofit and is currently seeking tax-exempt status, which is consistent with the wagon project's mission statement.

Western Carolina University. The organizational setting and culture for this project was also influenced by Western Carolina University (WCU) and the School of Nursing (SON), which is committed to improving both the quantity and quality of health care in North Carolina. Additionally, one of the tenets of higher education is to provide service to the community, and this project supports that principle. WCU is also a nonprofit organization, and encourages faculty to innovate programs to the betterment of society. The SON also encourages community involvement as well as supporting faculty to provide clinical services to facilities and advocacy groups.

SWOT Analysis

When evaluating the ability to implement a project to successfully address an identified need in the healthcare setting, it is important evaluate the strengths, weaknesses, opportunities and threats (SWOT) to program implementation. The SWOT process provides a systematic way to identify internal and external factors to maximize strengths while minimizing threats and allowing the project implementation to optimize opportunities.

Strengths

- Support from WCU as a whole, as well as multiple departments for the business plan development.

- Support from the WCU SON as well as the wagon manufacturer to implement a business plan to facilitate wagon use.
- This writer has work history as a pediatric nurse and has used the wagons in practice.
- This writer's work history at Children's Healthcare of Atlanta, and Mission Memorial Hospital allows access to research personnel who have supported the project.
- The program is nonprofit and provides wagons free of charge, so no financial obligation exists for recipients.
- This writer has personal relationships with many of the internal and external advocates of the program which may parley into tangible and intangible support.
- The wagons are relatively inexpensive at \$225 each.
- The wagons are bioengineered for infection control and hospital safety.

Weaknesses

- Many individuals not trained in the developmental needs of children do not fully understand the significance of the wagon implementation.
- Financial support is dependent on donor contribution.
- There are no similar programs to model.
- Administering the program takes time.
- The cost of shipping the wagons is considerable and may be more than the wagon itself. This may limit the dissemination of the wagons.

Opportunities

- Presenting at pediatric conferences to disseminate information on the wagons and the nonprofit program is beneficial. Facilities may choose to buy wagons instead of using the donation program.

- Shipping expense can be lowered by exploring partnerships with shipping companies.
- Organization of a systematic fundraising program, or a club to raise money for the wagons may help with financial needs.
- Applying for grants through professional organizations and local community foundations has helped with financial concerns, and allow for wider dissemination of wagons.
- Local media attention through television and paper media helps to publicize the program and elicit donors.
- Social media presence allows for marketing and donation opportunities.

Threats

- Increased proliferation of the program may stress the ability of the manufacturer to supply wagons.
- Liability concerns with wagon use.
- The WCU SON director has recently resigned and this may signal a change in support for the program.

Cost – Benefit Analysis

The cost-benefit for this not-for-profit program was incidental since the project was predicated on the assumption that all wagon donations were secondary to sponsorship to cover program expenses. Additionally, most indirect expenses for the program were covered by the parent organization which sponsors the program. All labor for the program was voluntary and non-compensated.

Theoretical/Conceptual Underpinnings

The theoretical framework for this DNP project was comprised by the combination of the Theory of Integral Nursing by Barbara Dossey and W. Edwards Deming's PDCA business model. Both frameworks are congruent with the purposes of the project.

This DNP project links the Theory of Integral Nursing and Deming's PDCA model by emphasizing holistic care and a business model as components impacting an organization's goals for providing pediatric restorative interventions. Holistic health and quality improvement were important components that were central to the current project.

Theory of Integral Nursing

Dossey's Theory of Integral Nursing is a grand theory which integrates holistic concepts into a comprehensive, intrinsic paradigm (Dossey, Keegan, Barrere, & Blaszk-Helming, 2015). The theory emphasizes the conceptual integration of mind, body, and spirit, and directs healthcare providers to base the practice of nursing on healing the whole person, and not simply his or her illness. Since each of these concepts are individually integral to the whole person, for healing to occur, it necessitates the healthcare provider to contemplate the connectedness of the concepts to move the patient to optimal health (Dossey, Keegan, Barrere, & Blaszk-Helming, 2015). An example would be implementing an intervention to increase "joy" such as visiting with a pet therapy dog. While this intervention may be initially intended to address the psychological domains (spirit or mind), it may also benefit the patient's physical status (body) (Koller & Goodman, 2012).

Dossey's theory attests to the importance of building patient relationships to promote health and acknowledges the benefit of integrating complementary holistic practices into patient care (Dossey, 1997; Dossey, 1999; Dossey, Keegan, Barrere, & Blaszk-Helming, 2015). Holistic theories not only address physical needs, but also psychological needs. Integral Nursing Theory validates traditional medicine while seeking to complement and broaden practice to include holistic components to optimize patient care and recovery (Dossey, 1997). Holistic nursing practice includes modalities such as massage, acupressure and faith-based interventions.

Dossey's theory is relevant to this DNP project as it seeks to provide a safe, alternative intervention to relieve pediatric stress and anxiety and facilitate coping (see Figure 2). This framework helps caregivers to understand the importance of treating the whole person, including validating the patient's own experience, and building relationships since humans affect other humans (Gustafson, 2015). This concept of interconnectedness helps the caregiver have a better understanding and awareness of the patient, family and environment. Adopting an integral paradigm allows the caregiver to consider how adapting care to address specific patient needs may benefit a child by fostering relationships, providing developmentally appropriate activities, and addressing psychological needs holistically.

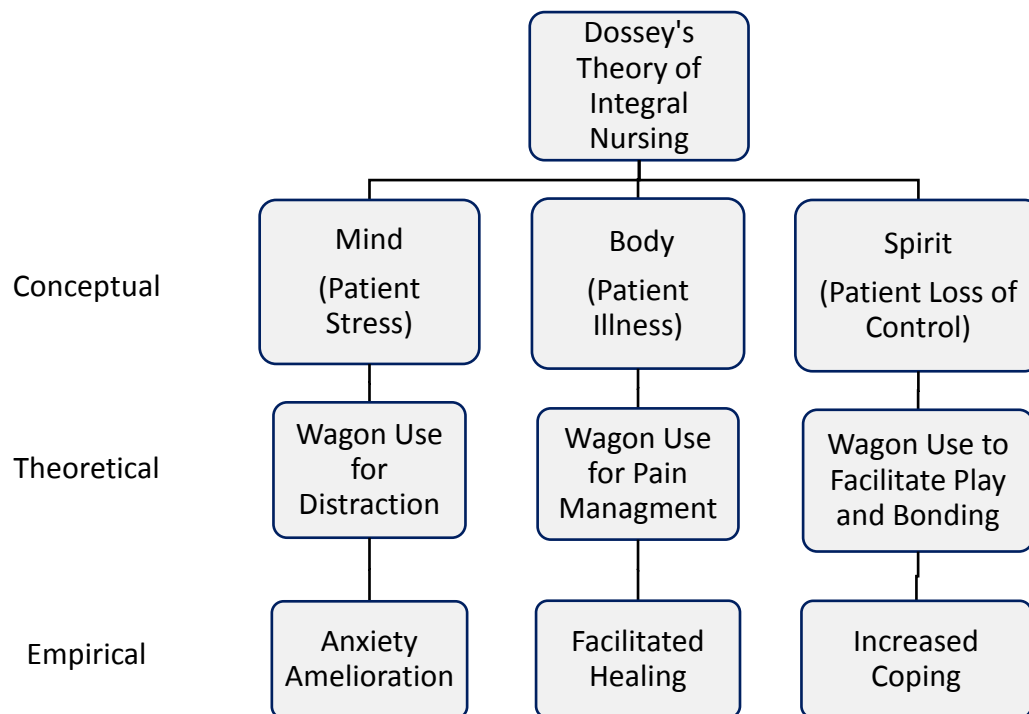


Figure 2: Dossey Conceptual-Theoretical-Empirical Model

Deming's PDCA Model

As this DNP project sought to write a business plan, Deming's PDCA (Plan-Do-Check-Act) business model provided a complementary theoretical framework (The Deming Institute, 2016). Deming's PDCA model is a quality improvement theory that is often utilized in planning and quality management (Kelly, Vottero, & Christie-McAuliffe, 2014; Langley, Nolan, Nolan, Norman, & Provost, 2009). Deming's model uses the plan-do-check-act model to "carry out ongoing processes focused on assessing, planning, acting, monitoring and evaluating, reassessing, and acting again" (Deming, as cited in Rich & Butts, 2015, p. 363). The "plan" stage involved managing a plan for quality improvement, the "do" stage initiated a small scale implementation of the plan. This implementation was evaluated during the "check" phase and the "act" stage implemented the plan and helped this writer seek adjustments to the plan to foster quality

improvement (Kelly, Vottero, & Christie-McAuliffe, 2014). Langley, Nolan, Nolan, Norman and Provost (2009) stated the following three questions should be utilized for the PDCA model, all of which helped guide this writer:

- 1) What is the goal of the project?
- 2) What needs to be done in order to reach the goal?
- 3) How can it be determined that the goal of the project was reached?

Kelly et al. (2014) stated an advantage of using Deming's theory as a model for clinical applications is the administrator is able to perform small tests of change before implementing a larger project. This enables this writer to address any changes needed in processes and outcomes. Kelly et al. (2014) stated there is intrinsic value in examining project methodology to establish a cause or relationship to the issue being examined. This author initially was attracted to the PDCA model as it closely parallels the nursing process, which helps nurses and caregivers understand its theoretical application. Figure 3 illustrates the Deming's Cycle for this project.

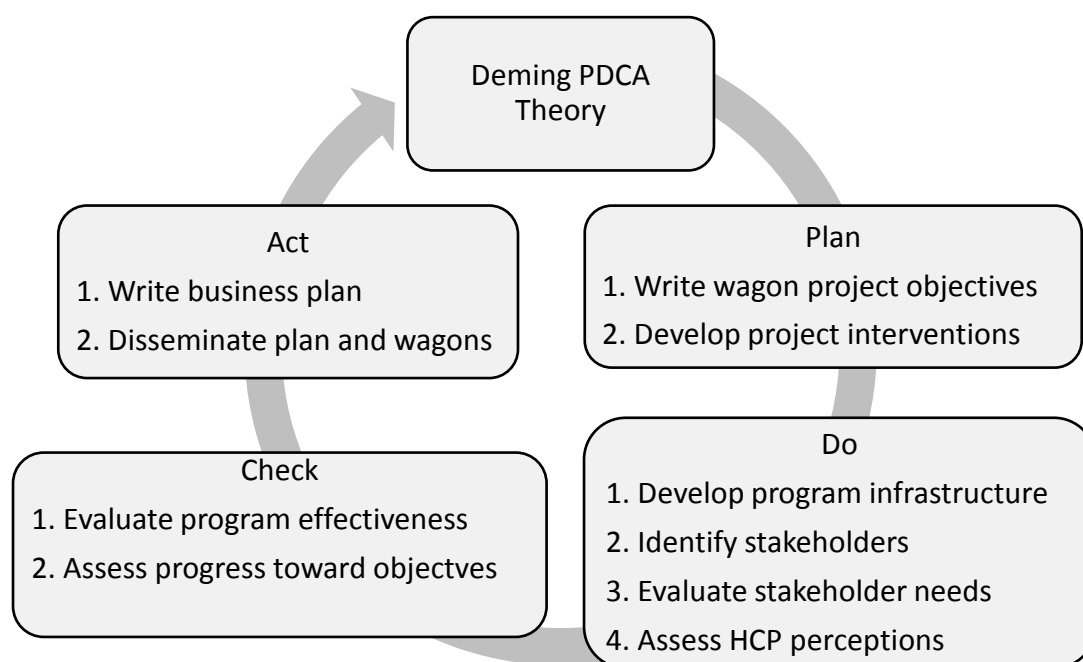


Figure 3: Deming PDCA Model

Implementation Literature Review

Non-Pharmacological Distraction Use

Multiple professional bodies have developed standards and guidelines for the assessment, management and evaluation of pediatric pain (American Pain Society, 2012; Koller, 2008), the key tenets of which stated that pain and anxiety in children should be managed through multimodal means. Multimodal means include traditional treatment approaches such as analgesic administration, in addition to complementary therapies (He et al., 2010; Koller & Goldman, 2012; Oliveira & Linhares, 2015).

Complementary therapies which seek to ameliorate pain and anxiety may include non-pharmacological techniques like distractions. Distraction techniques are used to divert attention away from distressing or painful stimuli (Olmstead, Scott, Mayan, Koop, & Reid, 2014). Age-appropriate distraction interventions are commonly utilized by HCPs such as physicians, nurses and child life specialists for children in the non-critical care hospital setting (He et al., 2010; Koller & Goldman, 2012).

Medical. An American Academy of Pediatrics' (2014) position statement notes that providing therapeutic play, distractions, and education to promote coping strategies for emotional stress and pain is "an indicator of excellence in pediatric care" (p. 1). Callahan agrees, stating "age-appropriate distraction facilitates coping, helps manage pain, decreases the use of pharmacological methods, and builds trust between the staff and patient" (as cited in Hilton, 2014, p. 1). Caregivers at multiple prominent children's hospitals utilize distraction as a therapeutic intervention for normalizing pediatric hospital

experiences (Boston Children's Hospital, 2015; Children's Healthcare of Atlanta, 2015; Children's Hospital of Pittsburgh, 2015), and the American Medical Association [AMA] supports the use of distraction as a complementary intervention as a non-pharmacological pain management strategy (AMA, 2013).

The efficacious use of non-pharmacological distraction has been well documented in medical literature (Burk, Benjamin, & Connelly, 2007; Lee et al., 2012; Patel et al., 2006; Seiden et al., 2014; Sil et al., 2014; Vagnoli, Caprilli, Robiglio, & Messeri, 2005). Interventions studied include a wide range of distraction interventions including clowns, blowing bubbles, virtual reality goggles, and video games.

Nursing. Nurses have a clear responsibility to act, and interventions, such as distraction, are considered to be an independent nursing action and well within the nurse's scope of practice (Rudd & Kocisko, 2014; Twycross, Dowden, & Stinton, 2014). Hockenberry and Wilson (2015) also support distraction as an effective nursing intervention stating it is important to provide coping strategies like distraction that help reduce pain perception, and make pain more tolerable. Common distraction strategies utilized by nurses include cartoons, games, television, and play (Oliveira & Linhares, 2015). This writer, who is a pediatric nurse, often observes in clinical practice the positive difference non-pharmacological interventions make for pediatric pain control and anxiety relief.

Many studies provide evidence on the efficacy of distraction as non-pharmacological therapy for pediatric pain and anxiety (He et al., 2010; Koller & Goldman, 2012; Olmstead et al., 2014; Svendsen & Bjork, 2014). However, many practitioners, especially less experienced nurses, do not utilize non-pharmacological

interventions even when they are available (Svendsen & Bjork, 2014; Twycross & Finley, 2014). Olmstead et al. (2014) stated that nurses are compelled “by their professional Code of Ethics to practice ‘right behavior and right knowledge’” however, they “continue to be identified as a responsible party within children’s undermanaged pain and unnecessary suffering” (p. 163). Svendsen and Bjork (2014) suggested that additional studies are needed on the use of distraction to help increase understanding and optimize the use of non-pharmacological methods. Svendsen and Bjork (2014) noted that understanding nurse’s perceptions may help to identify barriers to distraction use. Olmstead et al. (2014) recognized that despite the clear benefits of distraction use, “evidence reveals the lack of update of these efficacious measures into nursing practice” (p. 163).

Child Life. A Child Life Council practice statement noted that promoting coping through interventions such as distraction has therapeutic value to children (Koller, 2008). Child life professionals acknowledge the utilization of pediatric distraction produces a win-win situation for children, families and healthcare professionals by supporting interaction and communication (Child Life Council, n.d.).

Currently, there are no standardized tools to measure specific child life specialist interventions (LeBlanc, Naugler, Morrison, Parker, & Chambers, 2014), so very few child life empirical studies exist. While there are several studies that show positive qualitative themes for child life interventions (Cole, Diener, Wright, & Gaynard, 2001; Kaddoura, Cormier & Leduc, 2013; LeBlanc et al., 2014), and one quantitative study that addressed overall parental satisfaction with child life services (Tyson, Bohl, & Blickman,

2014), no studies could be found that looked specifically a non-pharmacological distraction use.

Summary. An exhaustive review of the literature shows interdisciplinary support for the use of non-pharmacological distraction as a therapeutic intervention to address pediatric pain and anxiety. However, the literature review has also identified a consistent pattern of nurses' lack of use of non-pharmacological distraction in pediatric practice despite evidence on its efficacy. This project seeks to address this gap in practice using a new intervention, the IV pole wagon. Since the wagon intervention was recently developed, it is necessary to utilize evidence on other distraction therapies and extrapolate their effectiveness to this comparable intervention.

Project Purpose, Mission and Goals and Objectives

Purpose

This DNP project is being undertaken to establish a business plan to promote a nonprofit program to supply a non-pharmacological distraction intervention, IV pole wagons, to children in medical need to ameliorate pain and anxiety. After the completion of the project, pediatric advocacy groups will have a clear blueprint to effectively implement a similar program in their communities. The DNP project commenced in January, 2016 and was completed in March, 2017, however, the expectation is for the program to be sustainable and replicable.

Program Mission Statement

The mission of the IV pole wagon project is to facilitate coping for children in medical need by lessening pain and anxiety through the use of a wagon equipped with an IV pole as a therapeutic distraction intervention.

Goals and Objectives

- 1) Conduct a needs assessment on the IV pole wagons to provide information on their current use (Appendix A and B). Objectives included:
 - a) Writing and administering a needs assessment on HCP perceptions of IV pole wagon use to evaluate the wagon's efficacy and safety.
 - b) Implement the needs assessment in at least two facilities that currently use the IV pole wagons.
 - c) Evaluate the responses to support business plan development for the program.
- 2) Promote the IV pole wagon program with marketing initiatives to increase awareness of the program. Objectives included:
 - a) Write a media news release.
 - b) Brand development and marketing initiatives.
 - c) Promote the program through a nursing conference.
- 3) Write a business plan to facilitate the dissemination of the IV pole wagons through pediatric advocacy groups. Objectives included:
 - a) Use local and community small business resources for business plan development.
 - b) Read one book on not-for-profit business plan development.
 - c) Attend five online education modules on business plan development.
- 4) Apply for a community grant to provide funds for wagon dissemination.
 - a) Read one book on applying for grants.
 - b) Submit an application for a community grant.

- 5) Disseminate IV pole wagons for hospitalized children at facilities in the regional Western North Carolina area and promote the proliferation of non-profit IV pole wagon organizations.
 - a) Provide at least six wagons to families and/or facilities during the 2016-2017 academic year.
 - b) Provide the business plan to at least 10 pediatric organizations to promote program franchise.

Project Design

Institutional Review Board Process

This project was approved through Gardner-Webb University's Institutional Review Board in September, 2016. No other IRB approval was deemed necessary by the committee chair.

Project Interventions

Marketing initiatives. To increase awareness of the Whee Wagon program several articles were written and published in the university magazine, the School of Nursing newsletter and in the local media (see one example in Appendix C). A logo was developed for the program as well as a brochure and flyer (Appendix D), and a proprietary website (Appendix E). The program was also promoted at a pediatric conference at the Mountain Area Health Education center in May 2016. The poster for the conference can be found in Appendix F.

Business plan development. A comprehensive business plan was written to facilitate the dissemination of the IV pole wagons through pediatric community/advocacy groups (Appendix H). The purpose of the business plan was to provide a model for

community groups to replicate the Whee Wagon program to support the dissemination of the wagons. The business plan was written using the Live Plan business plan format (Liveplan.com, 2016). To facilitate this writer's understanding of writing a not for profit business plan, this writer read *The Secrets to Writing a Successful Business Plan: A Pro Shares Step-by-Step Guide to Creating a Plan That Gets Results* (Shelton, 2014). This writer also attended multiple online business plan development classes (Live Plan modules) as well as not-for-profit and business plan development classes at the local community college. This writer originally planned to attend five classes, but only three were available due to this writer's work schedule.

Grant application. A grant was written and submitted to the Great Smokies Health Foundation to provide wagons to children and facilities in the Western North Carolina area. The grant was written in July 2016 (see Appendix G). To facilitate this writer's understanding of writing a grant proposal, this writer read *How to Write a Nonprofit Grant Proposal: Writing Winning Proposals to Fund Your Programs and Projects* (Devereaux-Nelson, 2015) and utilized the expertise of the WCU grant department. The application was also reviewed and feedback was received from the WCU Director of Development. Multiple drafts were edited, and this writer gained valuable experience reading through other successful WCU School of Nursing mini grants.

IV Pole Wagon Dissemination. To promote the dissemination of the wagons, this author sought to provide wagons to at least six families and/or facilities during the 2016-2017 academic year, as well as to write and disseminate the business plan to promote program franchise. To facilitate this objective, this writer contacted local and

regional healthcare providers, including health departments, in-patient pediatric floors, child life specialists, home health agencies, and pediatric hospice facilities to identify organizations or families who would benefit from an IV pole wagon. These same populations were vetted for business plan distribution. This writer learned the value of networking by discussing the project with other pediatric healthcare providers who were gracious enough to provide commentary and advice to promote the success of this program.

Project Evaluation

Interpretation of Project Outcomes

Needs Assessment. Themes identified from the respondents included the wagons being safe, facilitating joy, and lessening pain and anxiety which was the thesis of this project (see Appendices A and B, as well as discussion in the initial Needs Assessment section under the heading Healthcare Professionals). While this information was constructive in endorsing the validity of this project, with reflection, the needs assessment audience would have been more applicable to the business plan development if it was directed at the community groups who would be receiving the dissemination model.

Marketing initiatives. Marketing materials were developed for the advancement of this program (see Appendices C and D). Enthusiastic feedback from the public, wagon recipients, and community groups indicated the materials are easy to read and informative. This feedback was received in the form of emails, public commentary and conference response forms.

Business plan development. The business plan for this project can be read in Appendix H. The plan, in a modified PDF format, is currently being distributed via the

Whee Wagon website, as well as to interested parties through email and personal communication. While it is not possible to know that extent of the plan downloads for the website, this writer has sent the business plan by personal and email request to 14 groups/individuals. Feedback was positive and constructive. Edits were made in response to the feedback as well as from review by this writer's DNP committee.

Grant application. A successful grant application was written and an award of \$1000 was received from the Great Smokies Health Foundation, Sylva, NC, on August 1, 2016 (see Appendix G). The grant was written to support dissemination for wagons to children in medical need in Jackson County, NC, as well as to support transportation and marketing of the wagons.

IV Pole Wagon Dissemination. The Whee Wagon Program has met and exceeded projections for wagon dissemination this academic year. If the first half of the academic year, funding for 13 wagons has been received and 11 have been distributed. Since this project started in Jan 2016, 21 wagons have been distributed to facilities or families in the Western North Carolina area, and one wagon was donated to the Royal Hospital for Sick Children in Edinburgh, Scotland. The Whee Wagon Program has also facilitated multiple national and international requests for wagons with the wagon manufacturer, Chad's Brackets. Successful recipient recruiting has been accomplished through networking with county health departments, pediatric hospices, coworkers, WCU alumni, and child life specialists.

Limitations/Difficulties in Project Implementation

Funding. The business model for this project is dependent donations/grant money for implementation and sustainability. This limitation may be ameliorated by securing a

fixed source of income to fund the program, such as program adoption from an organization. One idea would be for a hospital auxiliary organization to raise funding on an ongoing basis for a pediatric hospital.

Needs Assessment. With reflection, this writer would have initiated a second needs assessment to the recipients of the business plan model to determine the specific needs for wagon program implementation.

Tax Exempt Status. This writer's inexperience with tax exempt funding, the WCU Foundation, and collecting individual donations resulted in initial financial gifts not qualifying for tax exempt status. This situation was quickly addressed by aligning the Whee Wagon donation collection procedure with the WCU Foundation.

Public Sourcing. A supplementary goal for this project to support wagon dissemination was to have the design for the wagon bracket released to the public for broader dissemination. Public sourcing the bracket design on the Whee Wagon webpage would have supported dissemination of the wagons without having to source them from Chad's Brackets. Due to liability concerns from the Chad's Brackets' Board of Directors, and subsequent philosophical concurrence from WCU's legal counsel, this supplementary goal was discarded.

Comparison to Theory of Integral Nursing Model

This project provides a holistic intervention to relieve pediatric stress and anxiety which fully aligns with Dossey's Theory of Integral Nursing Model. Using the IV pole wagons as a non-pharmacological distraction technique to ameliorate pain and anxiety, while supporting coping and facilitating joy in hospitalized children, embodies Dossey's construct to use therapies integral to healing the whole person. Dossey's theory supports

using therapies that affiliate the connectedness of mind, body and spirit, and allow the caregiver to promote holistic health, while addressing a pediatric patient's unique developmental needs. IV pole wagons address both these objectives, allowing the caregiver to provide an innovative distraction therapy while providing a developmentally appropriate intervention.

Comparison to PDCA Model

The theoretical underpinning for the business plan utilized Deming's PDCA Model to provide structure for the project. Deming's model has the writer articulate the foundational goal constructs, the functional processes used to reach the goal, and the objectives used to evaluate the realization of the goal. The Whee Wagon business plan used this process to develop a comprehensive guide to operationalize the overarching objective of this project and to provide IV pole wagons to as many children as possible.

Deming's first construct, to articulate goal constructs were addressed with a literature review that identified a need for additional interventions for pediatric pain and anxiety. A subsequent review of literature narrowed that intervention to providing a non-pharmacological distraction technique and the writer's experience as a pediatric nurse led to exploring the use of IV pole wagons. Deming's second process was addressed by developing a business plan to disseminate said wagon for pediatric advocacy groups to develop wagon programs in their communities. Finally, Deming's third construct was utilized to develop objectives to evaluate the success of the project.

Recommendations

This writer plans to continue and expand this project in the future by conducting a mixed methodology study on the use of the IV pole wagons in multiple environments

including home health, hospice, and in-patient facilities. Providing additional empirical evidence on distraction therapy, and the IV pole wagons in particular, may advance the use non-pharmaceutical interventions in the pediatric population.

Conclusion

Clearly, under treatment of pain and the subsequent anxiety that is associated with pain, have far reaching and significant health consequences to the pediatric population. Healthcare personnel have a clear responsibility to act to prevent the short and long term psychological harm which may result from unaddressed pain. Despite a plethora of theoretical and empirical evidence dedicated to pain and anxiety amelioration, pediatric pain and anxiety management continues to be suboptimal. This DNP project has sought to promote a best practice intervention to address this deficit, by provide a developmentally appropriate non-pharmacological distraction for children undergoing or dependent on infusion pump therapy. By providing a business plan as a step-by-step guide to develop a proprietary IV pole wagon program for community groups, this writer has provided an intervention that can be utilized in multiple practice environments to facilitate positive pediatric outcomes.

References

- Alexander, M. (2012). Managing patient stress in pediatric radiology. *Radiologic Technology, (83)6*, 549-560.
- American Academy of Pediatrics (2014). Policy statement: Child life services. *Pediatrics, (133)5*, 1471-1478.
- American Medical Association. (2013). Module 6 pain management: Pediatric pain management. Retrieved from <https://cme.ama-assn.org/Education.aspx>
- American Pain Society. (2012). *The assessment and management of acute pain in infants, children, and adolescents*. Elk Grove Village, Ill: American Academy of Pediatrics
- Anand, K. J., & Scalzo, F. M. (2000). Can adverse neonatal experiences alter brain development and subsequent behavior? *Biology of the Neonate, 77*, 69-82.
- Boston Children's Hospital. (2015). Department of radiology overview. Retrieved from <http://www.childrenshospital.org/centers-and-services/department-of-radiology>
- Burk, C. J., Benjamin, L. T., & Connelly, E. A. (2007). Distraction anesthesia for pediatric dermatology procedures. *Pediatric Dermatology, 24(4)*, 419-420. doi:10.1111/j.1525-1470.2007.00465.x
- Butts, J. B., & Rich, K. L. (2015). *Philosophies and theories for advanced nursing practice* (2nd ed.). Sudbury, MA: Jones & Bartlett Learning.
- Carbajal, R., Rousset, A., Danan, C., Coquetry, S., Nolent, P., Ducrocq, S., . . . Breat, G. (2008). Epidemiology and treatment of painful procedures in neonates in intensive care units. *JAMA, (300)1*, 60-70.

- Child Life Council. (n.d.). Comfort tips: Techniques for keeping children's hospital experiences positive. <http://www.childlife.org/files/ComfortMeasuresandTips.pdf>.
- Child Life Council. (n.d.). What is a child life specialist? Retrieved from <https://www.childlife.org/The%20Child%20Life%20Profession/>
- Children's Healthcare of Atlanta. (2015). Center for pain relief: Pediatric pain management and anxiety relief. Retrieved from <http://www.choa.org/Childrens-Hospital-Services/Pain-Relief>
- Children's Hospital of Pittsburgh. (2015). Distraction techniques. Retrieved from <http://www.choa.org/Childrens-Hospital-Services/Pain-Relief>
- Cole, W., Diener, M., Wright, C., & Gaynard, L. (2001). Health care professionals' perceptions of child life specialists. *Children's Health Care, 30*(1), 1-15 15p.
- De Lima-Jacinto, A. K., Avelar, A. M., & Pedreira, M. G. (2011). Predisposing factors for infiltration in children submitted to peripheral venous catheterization. *Journal of Infusion Nursing, 34*(6), 391-398.
- Devereaux-Nelson, R. (2015). *How to write a nonprofit grant proposal: Writing winning proposals to fund your programs and projects*. New York, NY: CreateSpace Independent Publishing Platform.
- Dossey, B. (1999). Barbara Dossey, RN, MS on holistic nursing, Florence Nightingale, and healing rituals. Interview by Bonnie Horrigan. *Alternative Therapies in Health and Medicine, 5*(1), 78-86.

- Dossey, B. M. (1997). Complementary and alternative therapies for our aging society. *Journal of Gerontological Nursing, 23*(9), 45-51. doi: 10.3928/0098-9134-19970901-11
- Dossey, B. M., Keegan, L., Barrere, C. C., & Blaszk-Helming, M. A. (2015). *Holistic nursing: A handbook for practice* (7th ed.). Burlington, MA: Jones & Bartlett Learning.
- Dowden, S., McCarthy, M., & Chalkiadis, G. (2008). Achieving organizational change in pediatric pain management. *Pain Research & Management: The Journal of the Canadian Pain Society, 13*(4), 321–326.
- Edward, K., Sanderson, W., & Giandinoto, J. (2015). Mock admissions used to minimize pediatric anxiety before surgery. *ACORN: The Journal of Perioperative Nursing in Australia, 28*(4), 24-26.
- Ersig, A. L., Kleiber, C., McCarthy, A. M., & Hanrahan, K. (2013). Validation of a clinically useful measure of children's state anxiety before medical procedures. *Journal for Specialists in Pediatric Nursing, 18*, 311-319.
- Gold, J., Yetwin, A., Mahrer, N., Carson, M. C., Griffin, A. T., Palmer, S. N., & Joseph, M. H. (2009). Pediatric chronic pain and health-related quality of life. *Journal of Pediatric Nursing, 24*, 141-30.
- Gustafson, C. (2015). Barbara Dossey, PhD, RN: Developing a healing approach in nursing. *Integrative Medicine: A Clinician's Journal, 14*(5), 72-77.
- Harris, M. A., Wagner, D. V., Wilson, A. C., Spiro, K., Heywood, M., & Hoehn, D. (2015). Novel interventions in children's healthcare for youth hospitalized for chronic pain. *Clinical Practice in Pediatric Psychology 3*(1), 48-58.

- He, H. G., Jahaja, R., Lee, T. L., Ang, E. N., Sinnappan, R., Vehvilainen, H. T., . . .
- Chan, M. F. (2010). Nurses' use of non-pharmacological methods in children's postoperative pain management: Educational intervention study. *Journal of Advanced Nursing*, 66(11), 2398-2409. doi:10.1111/j.1365-2648.2010.05402.x
- Hilton, L. (2014). Calming kid's hospital anxieties. Retrieved from <http://contemporarypediatrics.modernmedicine.com/contemporary-pediatrics/content/tags/art-therapy/calming-kids-hospital-anxieties?page=full>
- Hockenberry, M. J., & Wilson, D. (2015). *Wong's nursing care of infants and children*. Maryland Heights, Mo: Mosby.
- Huguet, A., & Miro, J. (2008). The severity of chronic pediatric pain: An epidemiological study. *Journal of Pain*, 9(3) 226-36.
- International Association for the Study of Pain. (2008). Definition of pain, pain terminology, curriculum on pain for students in psychology. Retrieved from www.iasp-pain.org
- Kaddoura, M., Cormier, K., & Leduc, J. (2013). Resource collaboration: The benefits of utilizing child life specialists when dealing with pediatric stress. *Educational Research Quarterly*, 37(2), 3-21.
- Kelly, P., Vottero, B. A., & Christie-McAuliffe, C. A. (2014). *Introduction to quality and safety education for nurses: Core competencies*. New York, NY: Springer Publishing Company.
- King, S., Chambers, C. T., Huguet, A., MacNevin, R. C., McGrath, P. J., Parker, L., & MacDonald, A. J. (2011). The epidemiology of chronic pain in children and adolescents revisited: A systematic review. *Pain*, 152(12), 2729–2738.

- Koller, D. (2008). *Child life assessment: Variables associated with a child's ability to cope with hospitalization* (Child Life Council Evidence-Based Practice Statement). Retrieved from Child Life Council website:
<https://www.childlife.org/Resource%20Library/EBPStatements.cfm>
- Koller, D., & Goldman, R. D. (2012). Distraction techniques for children undergoing procedures: A critical review of pediatric research. *Journal of Pediatric Nursing*, 27, 652-681.
- Langley, G. L., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The improvement guide: A practical approach to enhancing organizational performance* (2nd ed.). San Francisco, CA: Jossey Bass.
- LeBlanc, C. K., Naugler, K., Morrison, K., Parker, J. A., & Chambers, C. T. (2014). Parent perceptions and satisfaction with inpatient child life specialist interventions and the role of child temperament. *Children's Health Care*, 43(3), 253-272 20p.
doi:10.1080/02739615.2013.845732
- Laurent, C. L. (2000). A nursing theory for nursing leadership. *Journal of Nursing Management*, 8, 83-87.
- Lee, J., Lee, J., Lim, H., Son, J. S., Lee, J. R., Kim, D. C., & Ko, S. (2012). Cartoon distraction alleviates anxiety in children during induction of anesthesia. *Anesthesia & Analgesia*, 15(5), 1168-73.
- Liveplan.com. (2016). Live plan business plan development. Retrieved at liveplan.com.
- Lundeberg, S. (2014). Pain in children – are we accomplishing the optimal pain treatment? *Pediatric Anesthesia*, 25, 83-92.

- Mathews, L. (2011). Pain in children: Neglected, unaddressed and mismanaged. *Indian Journal of Palliative Care, 17*, 70-73.
- North Carolina Board of Nursing. (2016). Approved pre-licensure nursing programs. Retrieved from <http://www.ncbon.com/dcp/i/nursing-education-programs-in-north-carolina-approved-pre-licensure-nursing-programs>
- Odell, S., & Logan, D. E. (2013). Pediatric pain management: The multidisciplinary approach. *Journal of Pain Research, 6*, 785–790. doi.org/10.2147/JPR.S37434
- Oliveira, N. C., & Linhares, M. B. (2015). Nonpharmacological interventions for pain relief in children: A systematic review. *Psychology & Neuroscience, (8)*1, 28-38.
- Olmstead, D. L., Scott, S. D., Mayan, M., Koop, P. M., & Reid, K. (2014). Influences shaping nurses' use of distraction for children's procedural pain. *Journal for Specialists in Pediatric Nursing, 19*, 162-171.
- Patel, A., Schieble, T., Davidson, M., Tran, M. C., Schoenberg, C., Delphin, E., & Bennett, H. (2006). Distraction with a hand-held video game reduces pediatric preoperative anxiety. *Pediatric Anesthesia, 16*(10), 1019–27.
- Potter, M. L., & Bockenbauer, B. J. (2000). Implementing Orlando's nursing theory: A pilot study. *Journal of Psychosocial Nursing & Mental Health Services, 38*(3), 14-21.
- Rosenthal, B. C. (1996). An interactionist's approach to perioperative nursing. *Association of Peri-Operative Registered Nurses Journal, 64*(2), 254-260.
- Schmieding, N. J. (1987). Problematic situations in nursing: Analysis of Orlando's theory based on Dewey's theory of inquiry. *Journal of Advanced Nursing, 12*, 431-440.

- Seiden, S. C., McMullan, S., Sequera-Ramos, L., De Oliveira, G. S., Roth, A., Rosenblatt, A., & ... Suresh, S. (2014). Tablet-based interactive distraction (TBID) vs oral midazolam to minimize perioperative anxiety in pediatric patients: A non-inferiority randomized trial. *Pediatric Anesthesia*, *24*(12), 1217-1223. doi:10.1111/pan.12475
- Sheldon, L. K., & Ellington, L. (2008). Application of a model of social information processing to nursing theory: How HCPs respond to patients. *Journal of Advanced Nursing*, *64*(4), 388–398. doi: 10.1111/j.1365-2648.2008.04795.x
- Shelton, H. (2014). *The secrets to writing a successful business plan: A pro shares step-by-step guide to creating a plan that gets results*. New York, NY: Valley Summit Press.
- Shriner's International. (2016). How can we help? Retrieved from <http://www.shrinershospitalsforchildren.org/en/locations>
- Sil, S., Dahlquist, L., Thompson, C., Hahn, A., Herbert, L., Wohlheiter, K., & Horn, S. (2014). The effects of coping style on virtual reality enhanced videogame distraction in children undergoing cold pressor pain. *Journal of Behavioral Medicine*, *37*(1), 156-165. doi:10.1007/s10865-012-9479-0
- Stanford, E. A., Chambers, C. T., Biesanz, J. C., & Chen, E. (2008). The frequency, trajectories and predictors of adolescent recurrent pain: A population-based approach. *Pain*, *138*(1), 11–21.
- Svendsen, E. J., & Bjork, I. T. (2014). Experienced nurses' use of non-pharmacological approaches comprise more than relief from pain. *Journal of Pediatric Nursing*, *29*(4), e19-e28. doi:10.1016/j.pedn.2014.01.015

- Rudd, K., & Kocisko, D. (2014). *Pediatric nursing: The critical components of nursing care*. Philadelphia: F. A. Davis.
- The Deming Institute. (2016). PDSA Cycle. Retrieved from <https://deming.org/management-system/pdsacycle>
- Tyson, M. E., Bohl, D. D., & Blickman, J. G. (2014). A randomized controlled trial: Child life services in pediatric imaging. *Pediatric Radiology*, *44*(11), 1426-1432. doi:10.1007/s00247-014-3005-1
- Twycross, A., Dowdon, S., & Stinson, J. (2014). *Managing pain in children*. Hoboken, N.J.: Wiley-Blackwell.
- Twycross, A., & Finley, A. (2014). Nurses' aims when managing pediatric postoperative pain: Is what they say the same as what they do? *Journal for Specialists in Pediatric Nursing*, *19*, 17-27.
- Twycross, A., Forgeron, P., & Williams, A. (2015). Pediatric nurses' postoperative pain management practices in hospital based non-critical care settings: A narrative review. *International Journal of Nursing Studies*, *52*, 836-863.
- University of North Carolina School of Medicine. (2014). *North Carolina Children's Hospital*. Retrieved from <https://pediatrics.med.unc.edu/education/recruit/pedsres/our-facilities/north-carolina-childrens-hospital>
- Vagnoli, L., Caprilli, S., Robiglio, A., & Messeri, A. (2005). Clown doctors as a treatment for preoperative anxiety in children: A randomized, prospective study. *Pediatrics* *116*(4), 563-567.

- World Health Organization. (2012). *WHO guidelines on the pharmacological treatment of persisting pain in children with medical illnesses*. Geneva, Switzerland: WHO Press.
- Zaccagnini, M. E., & White, K. W. (2014). *The doctor of nursing practice essentials*. Burlington, MA: Jones & Bartlett Learning.
- Zernikow, B., Wager, J., Hechler, T., Hasan, C., Rohr, U., Dobe, M., & ... Blankenburg, M. (2012). Characteristics of highly impaired children with severe chronic pain: A 5-year retrospective study on 2249 pediatric pain patients. *BioMed Central Pediatrics*, *12*, 54-66. doi:10.1186/1471-2431-12-54
- Zisk-Rony, R. Y., Lev, J., & Haviv, H. (2015). Nurses' report of in-hospital pediatric pain assessment: Examining challenges and perspectives. *Pain Management Nursing*, *(16)2*, 112-120.

Appendix A: Needs Assessment Survey

IV Pole Wagon Needs Assessment Questionnaire

My name is Susan Hester, and I am a DNP student at Gardner-Webb University. My doctoral project seeks to develop a nonprofit business plan for the dissemination of IV Pole Wagons to special needs children by pediatric advocacy groups. As a healthcare worker, I am requesting your completion of this 7 question questionnaire to help me learn more about your perceptions about the IV Pole wagon's use. It should take less than 10 minutes. The information you provide will assist me in writing the business plan. No identifying information will be kept for participants.

If you have used the IV Pole Wagons with pediatric patients, please fill out the following questionnaire. If you know of anyone else who uses the wagons that would like to fill out this survey, please feel free to give them the link. Thank you so much for your time and assistance!

Susan W. Hester, MSN, RN, CPN
Gardner-Webb University
shester2@gardner-webb.edu

1. What is your healthcare position?

- Nurse
- Physician
- Child Life Specialist
- CNA or Patient Care Technician
- Physical Therapist
- Speech Therapist
- Other (please specify)

2. How often do you see patients in the hospital use the IV pole Wagons in an average week?

- Never
- 1 to 3 times a week
- 4 to 5 times a week
- 6 to 10 times a week
- Greater than 10 times a week

3. What do you like about the IV Pole Wagons?

An empty text input field with a light gray background and a thin border. It features a vertical scrollbar on the right side and a horizontal scrollbar at the bottom.

4. What would you change about the IV Pole Wagons?

An empty text input field with a light gray background and a thin border. It features a vertical scrollbar on the right side and a horizontal scrollbar at the bottom.

5. Can you discuss how safe you consider the IV Pole wagons to be and why?

An empty text input field with a light gray background and a thin border. It features a vertical scrollbar on the right side and a horizontal scrollbar at the bottom.

6. What response do you see on the patient's pain and/or anxiety when children use the IV Pole Wagons?

An empty text input field with a light gray background and a thin border. It features a vertical scrollbar on the right side and a horizontal scrollbar at the bottom.

7. Is there any additional feedback you would like to provide about the IV Pole Wagons?

An empty text input field with a light gray background and a thin border. It features a vertical scrollbar on the right side and a horizontal scrollbar at the bottom.

Appendix B: Needs Assessment Results

IV Pole Wagon Needs Assessment Questionnaire Results September 2016

All responses are verbatim.

RESPONDENTS: 34 of 34

Q1: What is your healthcare position?

Nurses	33
Physician	0
Child Life Specialist	0
CNA	1
Physical Therapist.....	0
Speech Therapist.....	0
Other	0

Q2: How often do you see patients in the hospital use the IV pole Wagons in an average week?

Never.....	5
1 to 3 times a week.....	11
4 to 5 times a week.....	9
6 to 10 times a week.....	3
Greater than 10 times a week.	5

Q3: What do you like about the IV Pole Wagons?

1. Easier transport of a small child with IV fluids infusing
2. The IV pole wagons make transporting patients much easier and more accessible. It can be difficult to try and maneuver a heavy IV pole that may have multiple pumps attached in addition to pulling a wagon. It is very easy for IV tubing to get caught in the wheels and pull on patient's line, causing potential harm. Having everything connected to the wagon, makes for a stress-free and enjoyable ride for the patient, family and nurse!
3. Easy to transport pts.
4. Provides more mobility for families and patients
5. I like that parents don't have to push an IV pole along with the wagon
6. They are an easy, fun way to transport patients throughout the hospital. Much easier than taking a bed or crib for a small child when it's not necessary.
7. Contains the kids. Makes it easier for the parents and nurse to transport the children whether to a procedure or just a social outing. You don't have to worry about pulling on the line because the video pole is attached to the wagon versus being pushed/pulled alongside it.
8. The IV Pole wagons are much easier and safer to use than transporting a patient with the wagon and free standing IV pole. This allows freedom of your dominant hand in order to continue with patient care.

9. For toddlers and infants it's great, since parents doesn't have to carry the child and drive the pole at the same time.
10. Let's our kids travel!
11. That the children are mobile and have some sort of normalcy.
12. Easier for the patient to get out and about without having a wagon and an extra pole for the pumps.
13. Having the patient and their pumps in the same vehicle allows for easy transportation for nurses and for families. It eliminates the fear of the patient in a wheel chair or wagon without it pole getting off the elevator while the patient and the IV pole are still in the elevator when the doors close.
14. They allow patients to be mobile
15. Great idea for transporting patients
16. The patient's family does not have to worry about pulling the wagon to entertain their kid and pull an IV pole separately. As a nurse it eases my mind knowing that there's a lesser chance of the patient pulling out their IV or port since the IV pole is an equal distance from the patient.
17. Makes kids more mobile, less chance of IV's getting pulled out accidentally
18. The patient is able to move around more easily than walking or with a wheelchair.
For many kids wagons are more fun and makes them feel like a kid :)
19. It allows more patients to easily wander the hospital.
20. Convenience! They allow all patients to get a wagon ride, even if they have an IV running. Pediatric patients need to get out of their rooms, if at all possible, to promote healing and just too simply be a kid!
21. The ability to attach everything directly to the wagon. Makes the parents more likely to take their child outside the room rather than dragging the big IV pole beside them. Plus it takes only 12 person [*sic*] to use the wagon once all is attached.
22. It helps our patients feel like KIDS again!
23. Easy transporting patients and their belongings. Easy to clean in between patient use.
24. They make it easy to transport patients with one nurse or parent.
25. They can be transported around in only the wagon with the IV pole vs. the wagon and having to bring the separate pole, it is difficult to transport both the wagon and a separate pole with just one person
26. Convenient when transporting patients
27. Very handy with IV pole, even if no IV infusing you can hang an emergency bag, feeding bag, or their personal bag to make the transport easy
28. Very convenient
29. Easy to transport without interrupting infusions
30. They are an easy way to transport patients with supplies and meds
31. Much easier to transport pediatric patients and the kids love to take a wagon ride.

Q4: What would you change about the IV Pole Wagons?

1. Some of the wagons are difficult to maneuver because only two wheels turn and the pull handle is how you steer the wagon
2. Nothing!

3. Make this a little larger and sturdier
4. IV pumps are heavy. Hooking and unhooking pumps if this could be easier to would be great
5. It would be nice if they came in a larger size so that bigger children would fit in them.
6. No changes
7. I would recommend installing an attachable device to carry items the patient or nurse requires during the transport, I.e. monitor, portable vent, chart, etc.
8. Since kids could move around, and I feel there should be something like infant car seat in the wagon.
9. Better /tighter turning capability
10. That they could be made available outside the hospital (not sure if they are or aren't) for chronically ill children.
11. Nothing
12. In some cases the pole prevents the handle from staying up when stored which takes up more space.
13. More
14. Nothing, they are great
15. I cannot think of anything to change.
16. Maybe make it where a pole can attach so when the kid can get out of the wagon, then aren't attach to the wagon then
17. Make them more available! We often don't have many on the floor.
18. I wish that the sides of the wagon were higher so patients were less likely to fall out.
19. N/A
20. Add something to hold an oxygen tank?
21. It would be great if the handles were retractable/foldable for storage. They can be a hazard in the hallway.
22. More available to each floor.
23. The ability to lay it/collapse it when the patient doesn't need it
24. If we can have a cup holder, and if we can adjust the length of the pole.
25. Make all the wagons the same way
26. More comfort, more wagons available
27. I wish they were slightly smaller for storage purposes
28. It would be nice if they were made with a padded reclining seat option in the wagon.

Q5: Can you discuss how safe you consider the IV Pole wagons to be and why?

1. I don't really care about the pole. Since pediatric infusions aren't by gravity, having the pump on a pole isn't necessary. A "basket" of sorts for the pump could be added when transferring from the wagon.
2. The IV pole wagons are very safe as they minimize the risk of potential harm to the patient by preventing line/tube dislodgment.
3. They are amazing, but for the kids who have more than 1 channel the poles need to be a bit thicker and sturdier!!
4. If the pumps were not securely attached it could fall on pt.
5. Lessons [*sic*] the chance of the IV being pulled out because it is on the wagon

6. They are safe because they are low to the ground which minimizes falls. They also have a specific place for IV lines so they go with the patient and do not risk pulling out lines during transport.
7. I feel they are very safe. Close to the ground. Easily accessible and allows those helping their hands instead of having to pull the wagon and the pole. No worries of pulling on the line while in transit.
8. I feel they are much safer than transporting the free standing IV pole as you can maneuver more easily which decreases the removal of PIV's and other lines. As mentioned earlier, the IV Pole wagon also freed the caregivers dominant arm to continue with patient care.
9. Out of 10 I will give a 6 for infants I always double check, because the restraints are not very safe.
10. Safe, but can still be cumbersome
11. I don't recall any incidents, but maybe fitted with a seat belt would be safer, children move around a lot.
12. I haven't experienced anything unsafe in using the wagon.
13. The wagons have seat belts for safety. It keeps the patient close to their pumps which means their tubes/IV will not be pulled.
14. I have never had any safety issues with them
15. Safe as any other transport device and the child can be strapped in
16. I consider them relatively safe. There's a seat belt in ours and I have never seen a child get hurt while riding in one.
17. They seem pretty safe, we don't really get to use them much in our department
18. I think they are typically safer than a wheelchair/walking around since everything can be contained into one space as opposed to having a pole, wheelchair, etc
19. I think they are safe for the most part. As mentioned above I would like to see the sides higher but otherwise they offer a great way for patients to travel around.
20. I consider them safe. There are seatbelts in them, and the wagon seats are deep enough to wear the child is rather secure.
21. Safer than traveling with a separate big pole. Much safer going over elevator thresholds in the wagon because the big poles tip over.
22. The wagons do have seatbelts in them, and when those are utilized I think they're perfectly safe! It's lower to the ground than a gurney or other transport device in case of falls. However, use of the restraining devices needs to be better enforced.
23. Think they are considerably safe. I haven't heard of any current or past issues
24. Safe when used with adult supervision. I guess there's always the chance that a child could pull on tubing or change the settings on the IV pump, but this would not happen if the patient is supervised.
25. You can leave a child alone for sure, otherwise safe
26. They're fairly safe considering there's typically an adult pulling the wagon
27. They seem safe, the pole is just like a traditional IV pole
28. I think they are safe. They don't tip over easily; it would be easy to pull someone out of one in an emergency; they are easy to use and to wipe clean.

29. Very stable and easy to use.

Q6: What response do you see on the patient's pain and/or anxiety when children use the IV Pole Wagons?

1. The majority of kids like being pulled in a wagon and having fun always reduces stress and pain
2. Patients have less fear/anxiety of their line being pulled.
3. They LOVE to ride in the wagons and it decreases their anxiety greatly just to be able to ride around in them!! The kids love them!
4. They feel so happy to be mobile!!
5. They smile
6. I think using the IV pole wagons helps patients temporarily forget about their pain because they are fun to ride in.
7. Low anxiety because they see it as fun
8. I feel children are more at ease being transported in a wagon than the traditional bed or wheelchair which lowers anxiety and in turn lowers their pain level.
9. Kids love it, because there is space and easy to move around.
10. Decrease anxiety when then can out of their rooms. A1 distraction!
11. I usually see children's faces lit up with joy when using the IV pole wagons. They have sought some kind of freedom.
12. None
13. Wagon rides through the hospital and/or gardens seem to calm children. We have children unable to leave their rooms for various reasons and have let them sit in the wagon in the room for comfort and fun.
14. Pain and anxiety is lessened because the patients can get out of their room.
15. N/A
16. I care for a lot of pediatric oncology patients and I always see an immediate decrease in pain and anxiety whenever their parents take them for a ride in the wagon.
17. Unknown
18. Many times is can improve mood to #1 be in the wagon #2 be able to move around/out of their room [*sic*]
19. The IV pole wagons I feel help with decreasing pain and anxiety by making a safe way for patients to get out of the room and feel more normal.
20. Anxiety of being in the hospital decreases when patients get to go for wagon rides with their siblings or parents! It is a treat for them, something to look forward to in an otherwise scary time for a child.
21. Great distraction tool. No pain or anxiety while using it.
22. I believe these put kiddos at ease and relieve anxiety!
23. Possibly a decrease being that the wagon ride serves as some form of distraction.
24. Usually decreased anxiety because they enjoy riding in the wagons
25. they enjoy being able to leave the room
26. safe, secured to wagon
27. They feel happy to tour around the hospital

28. They're relieved [*sic*] with the convenience of having the pole apart of the wagon so they can get out of their room and not have to pull a separate pole.
29. they're excited to sit in them
30. I think they like them; they are less "medical" than a wheel chair would be
31. They enjoy the ride and it actually helps them to relax. It is fun.

Q7: Is there any additional feedback you would like to provide about the IV Pole Wagons?

1. They are an asset to the nurse and the pediatric patient
2. They're Awesome!
3. We need more of these at the hospital. We don't have enough!!!
4. Wagons give greater freedom to long term patients and families
5. I wish there were more IV pole wagons in our Children's hospital and hope they are available around the country at other children's hospitals.
6. Have an artist paint them like super hero cars or princess carriages.
7. No
8. I love the IV pole wagons not only for the patients, but for the families who utilize them. Improving on the accessibility, safety and quality of this product can only enhance the patient's experience.
9. IV poles for youth beds.
10. I wish we had more!
11. No
12. No
13. No
14. I love them!
15. They are a great addition to our hospital in order to meet all of the needs of the pediatric patient. Psychosocial needs are incredibly important for a child's well-being during their hospital stay, and the wagons help promote that.
16. Need more of them please! Nice to have the option, also a place for storage/hang things even if you are not needing to use it for the purpose of an IV
17. I think they are a great resource available within a children's hospital. And the children love to ride in them.
18. Sometimes steering seems difficult.
19. One of the many great creations!
20. We need more of them.
21. I wish they came in different colors
22. It looks like a great idea for moving young children, but it would not be practical for many of our Trach/vented patients.
23. I love them and use them daily.

Appendix C: Media News Release

July 22, 2015

Contact: Marlon W. Morgan, mwmorgan@wcu.edu, 828.227.3077

Headline

CULLOWHEE – While a pediatric nurse at Children’s Healthcare of Atlanta, Susan Hester became aware of a wagon with an attached IV pole attached that was used to transport children around the hospital.

After becoming an associate professor at Western Carolina University, Hester wanted to bring the cleverly designed wagons to Western North Carolina to serve as a nonpharmacological distraction for children.

After enlisting the help of Roger Leggett, who came up with the idea and was manufacturing the wagons for Children’s Healthcare, Hester and the WCU School of Nursing went to work during the spring semester. By the end of the semester, volunteers and faculty members came up with the WHEE Wagon Program, whose mission is to give medically fragile children wagons equipped with IV poles to grant them the opportunity to play and just be a kid. Picture an iconic Radio Flyer wagon with an IV pole attached.

“We know through studies that nonpharmacological distraction is one of the most effective techniques for pain control and ameliorating anxiety in children,” said Hester, who oversees the program. “We also know from studies that it is vastly underutilized. This is a program to basically facilitate distraction use in the pediatric community.”

Appendix D: Flyer and Brochure

Whee ☀️ Wagon

Helping Kids Be Kids



Whee Wagons are
FREE
to facilities and
families of
medically fragile
children

Our Mission

- To enrich the lives of medically fragile children through IV pole wagons, as a non-pharmacological distraction.
- Research shows overall health status is improved as a result of play, and distraction can increase coping in children.

What is a Whee Wagon?

- The Whee Wagon is a red Radio Flyer Wagon equipped with a 48 inch fixed or adjustable IV pole.
- Wagons have seatbelts, cup holders, and hold up to 60 pounds.
- A placard with donor information is placed on all wagons.
- 100% of donor contributions are used to acquire wagons and support the Whee Wagon Program.

Is it safe for my child?

- Used by Children's Healthcare of Atlanta Hospital System.
- Bioengineered for infection control.
- Reinforced, medical grade IV bracket.
- Whee Wagons provide a fun and medically safe way for Kids to just be Kids!

To request a wagon or to donate a wagon to a child in medical need, contact us at:

WheeWagon@wcu.edu

**Western
Carolina**
UNIVERSITY



School
of Nursing

Whee Wagon Brochure

Western Carolina University's
Whee Wagon Program

Our mission is to give **medically fragile children** wagons equipped with IV poles to grant them the opportunity to **play** and just be a **kid**.



The Whee Wagon program was developed in 2015 by faculty and students at Western Carolina University in Cullowhee, North Carolina.

Our team has witnessed the joy that a simple wagon ride can bring to a medically fragile child, and evidence shows that play can have a significant impact on pediatric health status.

Play it forward
...and help us change lives

GET INVOLVED!

If you'd like to sponsor a wagon for a facility or child (\$225), please contact us. All wagons have placards with donor information.

If you are looking to purchase wagons for your facility, please contact our partner, Roger Leggett with Chad's Brackets at ChadsBracket@gmail.com.

If you would like to request a **free** wagon for a child in medical need, please contact us.

If you are a **healthcare worker**, please spread the word about this program and request wagons for children or your facility.

Whee Wagon Program

WheeWagon@wcu.edu



Whee Wagon



Providing IV Pole equipped wagons FREE of charge to medically fragile children



School of Nursing



Help Us Help Kids in Need

What is a Whee Wagon?

- The Whee Wagon is a red Radio Flyer Wagon equipped with a 48 inch fixed or adjustable IV pole.
- Wagons have seatbelts, cup holders, and hold up to 60 pounds.
- Bioengineered for infection control.
- Reinforced, medical grade IV bracket.
- Whee Wagons provide a fun and safe way for Kids to just be Kids!

Is it safe for children?

- The wagons provide distraction therapy which helps lessen pain and anxiety without using medication.
- Used by major children's hospitals such as Children's Healthcare of Atlanta, Miami Children's Hospital and Mission Memorial Hospital in Asheville, NC.

"I've seen the effect that hospital stays can have on kids with needle sticks and scary machines. Sick children deserve a childhood too. Whee Wagons can help give a small part of that childhood back."



-Dayvn Grizwold, RN, WCU Graduate



"Increasing the mobility and easing the anxiety of these children as they are being transported around the hospital for treatment is a major goal of the wagon. It's all about the kids!"

-Roger Leggett,
Whee Wagon Manufacturer

Each wagon has the potential to impact hundreds, if not thousands of hospitalized children



Overall health status of children is improved

100% of donor contributions are used to acquire wagons and support the program



To request a wagon or to donate to a child in need, contact us at: WheeWagon@wcu.edu

Appendix E: Website

Whee Wagon

About Impact Donate Request a Wagon Contact

Our mission is to give medically fragile children wagons equipped with IV poles to grant them the opportunity to play and just be a kid

Western Carolina University

Play it forward

This site was created using Wix.com. Create your own for FREE >>

Whee Wagon

About Impact Donate Request a Wagon Contact

Click Below

Thanks so much for your interest in a Whee Wagon!

These wagons have the capacity to impact the lives of hundreds of children in medical need. If you are interested in having a wagon donated to your family or facility, please fill out and return the application to the Whee Wagon Program at WheeWagon@wcu.edu. A team member will be in contact when we receive your request.

**Unfortunately due to shipping, our program focuses on families in the regional Western North Carolina area. This also includes eastern Tennessee, northeastern South Carolina, and northern Georgia. **

WHEE WAGON Request

Name:

Address:

Phone:

Email:

Why are you requesting a WHEE WAGON?

Describe how the WHEE WAGON would be utilized?

This site was created using Wix.com. Create your own for FREE >>

Amazon Music | whee-wagon | Donate | Plan Outline - Whee Wago... | scaleable

www.wheewagon.org/donate

Outlook | PayPal | WCU Blackboard | LivePlan - Login | GW Blackboard | WCU | myWCU | Library Search | ExamSoft | Thesaurus | Gardner-Webb | Gift Certificates, Cloth... | SurveyMonkey | E-Portfolio

Create a WIX site!

Whee Wagon

About | Impact | Donate | Request a Wagon | Contact

Help A Child Receive A Wagon

If you'd like to sponsor a tax deductible wagon for a facility or child (\$225), please contact us. All wagons have placards with donor information. The donate link below connects to the WCU Foundation giving page.

VERY IMPORTANT
***After clicking make sure the designation portion of the page is selected to the Whee Wagon Program ***

DONATE

This site was created using WIX.com. Create your own for FREE >>

whee-wagon | Donate | Inbox - swhester@... | Document1 - Word | 12:17 PM

Appendix F: MAHEC Poster



Western Carolina University

Whee Wagon Program – Helping Kids in Medical Need

Susan W. Hester, MSN, RN, CPN
Western Carolina University
College of Health and Human Sciences
School of Nursing

The School of Nursing
commitment. compassion. excellence.



The Whee Wagon program provides IV pole equipped wagons FREE of charge to hospitalized/medically fragile children in the non critical care setting (home or facility). The wagons allow for the safe transportation of IV medications, IV fluids, and feeding pumps. Rather than being stuck in a bed or wheelchair, a Whee Wagon provides non pharmacological distraction benefits, while engaging the child in play.

Help Us Help Kids in Need

What is a 'whee wagon'?

- The Whee Wagon is a red Radio Flyer Wagon equipped with a 48 inch fixed or adjustable IV pole.
- Wagons have catheters, cup holders, and hold up to 60 pounds.
- Reengineered for infection control.
- Reinforced, medical grade IV brackets.
- Whee Wagons provide a fun and safe way for Kids to just be Kids!

Is it safe for children?

- The wagons provide distraction therapy which helps lessen pain and anxiety without using medication.
- Used by major children's hospitals such as Children's Healthcare of Atlanta, Miami Children's Hospital and Mission Memorial Hospital in Asheville, NC.

Whee Wagon

Each wagon has the potential to impact hundreds, if not thousands of hospitalized children

Overall health status of children is improved

100% of donor contributions are used to acquire wagons and support the program

Our mission is to give medically fragile children wagons equipped with IV poles to grant them the opportunity to play and just be a kid.

Play it forward
...and help us change lives

GET INVOLVED!
If you'd like to sponsor a wagon for a facility or child (\$225), please contact us. All wagons have placards with donor information.

If you are looking to purchase wagons for your facility, please contact our partner, Roger Legges with Chad's Brackets at ChadsBracket@gmail.com.

If you would like to request a free wagon for a child in medical need, please contact us.

If you are a healthcare worker, please spread the word about this program and request wagons for children of your facility.

Whee Wagon Program
WheeWagon@wcu.edu

Whee Wagon



To request a wagon or to donate to a child in need, contact us at: WheeWagon@wcu.edu

"I've seen the effect that hospital stays can have on kids with needle sticks and scary machines. Sick children deserve a childhood too. Whee Wagons can help give a small part of that childhood back."
Doreen Getzwood, RN, WCU Graduate



"Increasing the mobility and easing the anxiety of these children as they are being transported around the hospital for treatment is a major goal of the wagon. It's all about the kids!"
Roger Legges, Whee Wagon Manufacturer



Appendix G: Grant Application

Grant Application

<p>Great Smokies Health Foundation P.O. Box 176, Sylva NC 28779 (O) 828-507-2270 (C) 828-507-1815 E-mail: greatsmokieshealth@gmail.com</p>

2016 Thrift Shop Grant Application**Applications due by July 1, 2016 at 4pm****(Please limit answers to space provided, application not to exceed 4 pages)**

Organization Name: WCU Whee Wagons

Organization Tax ID #: 23-7159170

Contact Full Name: Susan Hester, MSN, RN, CPN

Contact Title: _Whee Wagon Program Coordinator/Assistant Professor_

Mailing Address: _3971 Little Savannah Rd, 354 Health and Human Sciences, Cullowhee, NC 28723

Email Address: wheewagon@wcu.edu_____

Contact Phone No.: 828-226-4405

Project Title: Whee Wagon Program

Requested Amount: \$5000

Organization Type: ___X___ Non-Profit _____ Governmental ___X___ Educational

County Served by Project: _____ Jackson _____ Swain ___X___ Both

1. What is the mission of your organization?

School of Nursing Mission: Western Carolina University's (WCU) School of Nursing is mission-driven to educate nurse leaders who are dedicated to caring and participating with individuals, families and communities to meet health needs.

Program Mission: The Whee Wagon Program seeks to give children in medical need IV pole-equipped wagons free of charge. These special wagons provide children with a safe means of transport, lessen pain and anxiety, support coping in medical situations and grant them the opportunity to play and just be a kid.

2. Provide a brief overview about your organization's programs and operations and how they relate to the health of local community?

WCU's School of Nursing educates hundreds of nursing students in a variety of undergraduate and graduate programs. We seek to prepare nurses at all entries of practice to advance the health of the people of Western North Carolina and the wider geographic region with a focus on innovative, high quality and accessible educational programs, clinical practice, research and public service. The Whee Wagon Program seeks to provide a needed public service to our local community.

3. Is this a new Project or a Continuing Project?

New

Continuing. If continuing, explain how the project has been funded in the past and why new funding is needed?

The Whee Wagon Program was organized by faculty last year (2015-16 academic year) with a goal of providing 1-3 wagons each semester. The response from patients, families, and healthcare providers was overwhelmingly positive, and we were able to provide a total of 9 wagons. Given the higher than expected demand, we intend to scale the program up during the 2016-17 academic year to provide a total of 30 wagons, and respectfully request funding through the current proposal to provide up to 30 wagons.

4. Describe the proposed Project in detail and what impact it will have on health care in the targeted communities.

The customized Radio Flyer Pathfinder wagons are equipped with medical grade stainless steel IV poles (stainless is necessary for infection control), custom made stainless steel support brackets, sponsor/donor plaques, and decorations (if appropriate). The IV pole attachment on the wagon ensures a hospitalized/medically fragile child can transport IV medications, IV fluids, and/or other medical equipment, such as a feeding pump or ventilator, with them. The wagons can be used while ill children play, are transported from unit to unit in a healthcare facility, or just when out and about at home (unfortunately, many kids either go home on IV medications or require chronic medical care).

Pediatric Nursing faculty identify recipients through a nomination process in which families, facilities, or an outside entity fill out an application form, and recipients are selected based on medical and financial need.

Recognizing the growing body of evidence based practice supports “play” as being vital for medically ill children, faculty at WCU’s School of Nursing began the Whee Wagon program to provide greater freedom of mobility and connection with the everyday world of being a child, at a time when they may feel cut off from that world due to acute or chronic illness. If the Whee Wagon is donated to a facility, something as simple as a wagon ride could potentially touch the lives of hundreds of ill children. Engaging in play can help a medically ill child build developmental skills, and can serve as an expression of their understanding/ feelings/ coping mechanisms for medical experiences.

The program is of benefit to our community.

It results in a direct, beneficial impact on our community’s medically fragile children, either in healthcare facilities or in the home. Unfortunately, there are no county or regional statistics on how many children receive home infusion pump therapies, but with funding, the Whee Wagon program can offer wagons directly to the community by utilizing home health agencies, health departments, hospital units/staff and doctor’s offices to spread the word that these wagons are available.

5. What impact(s) is anticipated from the project including number of individuals being served by the project)? How will this impact(s) be measured?

It is difficult to say how many children this program will potentially benefit, since there are no aggregate county or regional database for children receiving chronic infusion therapy. But, the number of children in medical need in NC is higher than most people may think. Dr. Wesley Burkes, Chair of the Department of Pediatrics and Physician-in-Chief at North Carolina Children's Hospital states, “Although most of us think of children as generally healthy, nearly one of five will have a chronic or complex illness during childhood that will require care.” University of North Carolina School of Medicine’s Pediatric Department’s webpage state that in North Carolina Children’s Hospital alone, more than 70,000 children from every NC county account for over 200,000 visits for diagnosis and treatment each year (University of North Carolina School of Medicine, 2014). Studies show children who are hospitalized are often traumatized by the event and as a result, are less likely to seek medical services in the future. Giving healthcare providers the option to utilize a simple intervention, such as a wagon, could provide an immeasurable impact to children in distress. Essentially, providing a child a chance to play significantly decreases fear, worry, and distress in the hospitalized child and may make them more receptive to medical care in the future. Candidly, it’s difficult to evaluate the benefit of play, a child’s joy, or a lessening of fear and anxiety without an empirical study. But as a community, if we can help support a child’s recovery, or simply lessen the emotional toil of a hospitalization or medical condition, isn’t that reason enough to try to help?

6. How will your organization and community benefit from this project? How will this impact be measured?

Project Goal: Provide children in medical need in Jackson and Swain Counties with greater freedom of movement, increased opportunities for play, and amelioration of pain and stress, all of which have been demonstrated to improve health outcomes.

Assessment: Through the proposed program, we will distribute, free of charge, 30 customized wagons, equipped with medical grade stainless steel IV poles during the 2016-17 academic year: 15 to individual families and 15 to medical facilities.

7. Provide a detailed budget of project indicating both revenue and expenses for the project. Please include how the requested funds will specifically be used.

The Whee Wagon program utilizes 100% of donor contributions to either acquire, transport, or get out the word about Whee Wagons. The wagons cost \$225 each. Our plan is to give away as many wagons as needed to the community. Providing our program with \$5,000 would fund 20 wagons. The wagons are manufactured in Atlanta, so we've factored in gas for transportation (2-3 trips).

Expenses

1) Whee Wagons (\$225 x 30)	\$6,750
2) Marketing material (flyers, brochures, etc)	\$ 250
3) Transportation (gas/incidentals)	\$ 250
Total	<u>\$7,225</u>

Income

1) Great Smokies Health Foundation	\$5,000
2) Potential future private donations.....	<u>\$2,225</u>
Total	<u>\$7,225</u>

8. What is the 2015 Annual Operating Budget for your Department or organization? \$ 0.00 . The Whee Wagon program does not receive funds from WCU or the School of Nursing. All wagons are donated as we receive funding.

Signature of Project Manager:

Date: 6 / 10 /16

Authorized Applicant Signature: _____ Date: / /16
(Executive Director/School Board Principal/Government Agency Director)

Appendix H: Business plan



Not Confidential/Please Share

Whee Wagon Program

Supplying IV Pole Wagons Free of Charge to Medically Fragile Kids

Business Plan
Prepared December 2016

Contact Information

Susan W. Hester

wheewagon@wcu.edu

828-226-4405

www.wheewagons.org

3971 Little Savannah Rd
Cullowhee, NC 28723, USA

Executive Summary

Opportunity

Business Plan Purpose

This business plan has been written to support the replication of Western Carolina University's Whee Wagon Program for other pediatric organizations. The Whee Wagon Program was created to provide specially equipped IV Pole Radio Flyer wagons free of charge to children in medical need. Our team has witnessed the joy that a simple wagon ride can bring to a hospitalized child, and evidence shows that play, such as this non-pharmacological distraction, can have a positive impact on pediatric health status. Our group feels it is vitally important that children who have complex health needs be able to enjoy the same experiences other children do, and we feel a wagon ride is an effective way to allow this to happen. The Whee Wagon Program seeks to provide a model for other pediatric organizations that wish to replicate the program with the goal of providing every facility/child with this innovative distraction technique. This business plan discusses the project's successful steps to developing this self-sustaining program.

Problem

Most healthcare workers can agree that emotional health is linked to physical health, especially for hospitalized children. Therefore, providing effective alternatives to drug therapy may result in less invasive treatments for kids. Recently, IV Pole wagons were introduced as a new intervention to address pediatric distress and pain at a large urban children's hospital system in Atlanta, GA. The intervention consisted of a distraction in the form of a Radio Flyer wagon equipped with an intravenous (IV) pole. These wagons can be used as a non-pharmacological intervention to help lessen pediatric pain and anxiety, as well as to facilitate transportation, child/caregiver interaction and recreation. While the hospital system has adopted the IV pole wagons for everyday use, they are not widely used elsewhere. The intention of this business plan is to provide details on the Whee Wagon Program to promote their use and further dissemination within our region.

Target Population & Stakeholders

The targeted population for this business plan are the pediatric organizations who wish to implement an IV pole wagon program in their community. Potential organizations include state and regional schools of nursing, as well as advocacy groups, hospital auxiliaries, philanthropies, and other pediatric organizations.

Additional stakeholders for this business plan include wagon donors, hospitalized children, out-patient special needs children, and the parents of these children.

Execution

This business plan provides a guide to operationalize a program to provide IV Pole wagons free of charge directly to facilities and/or children in medical need. The business plan discusses program administrative needs, financial concerns, fundraising, wagon attainment and marketing.

Expectations

Program Organization & Expectations

The Whee Wagon Program consists of a small group of volunteers that support the distribution of IV Pole wagons to our community. The program can be an ancillary function to a larger organization or a standalone enterprise. The support organization for the Whee Wagon Program is the WCU School of Nursing, which is committed to improving the quality of healthcare in North Carolina. Additionally, one of the tenets of higher education is to provide service to the community, and this program supports that principle.

The expectation of the Whee Wagon program is to supply between 6 and 10 wagons to facilities or directly to special needs families each year. This projection is scalable depending on available funding.

Financing

The cost-benefit for this not-for-profit program is contingent on many factors since the project is predicated on the assumption that all IV pole wagon donations will be contingent on sponsorship to cover wagon expense. Additionally, this business plan assumes most of the minor overhead and indirect expenses for the program would be covered by the parent organization which sponsors the program. All labor for the program will be on a non-compensated, voluntary status.

Opportunity

Our Goal & the Problem

Whee Wagon Program

This business plan is intended to provide a model for other pediatric organizations to start and maintain a nonprofit program to supply IV pole wagons to medically fragile children. The purpose of the wagon intervention is to support coping, increase joy, and lessen any pain and distress that is associated with hospitalization. The pilot project, called the Whee Wagon Program, was developed in August 2015 through Western Carolina University's (WCU) School of Nursing located in Cullowhee, NC. Our goal is to have other pediatric organizations and/or advocacy groups to develop similar, but unique, programs to distribute these wagons to as many pediatric facilities as possible.

What is a Whee Wagon? The Whee Wagon is like a normal red Radio Flyer wagon that kids play in every day, but these wagons are specially equipped with a reinforced IV pole attached to the front. The IV pole attachment on the wagon ensures a hospitalized/medically fragile child can be transported with IV medications, IV fluids, and other medical equipment, while experiencing a non-pharmacological distraction therapy (the wagon ride). A Whee Wagon is a more engaging mode of transportation for a child, and may have the added effect of helping children cope with pain and stress. Faculty at WCU's School of Nursing believe that a Whee Wagon will allow kids to reconnect with the normal everyday world of just being a child, at a time when they may feel cut off from that world due to acute or chronic illness. By facilitating the donations of an IV pole wagon to a pediatric facility, something as simple as a wagon ride could positively benefit the health of hundreds of ill children.

These wagons were developed in 2014 by non-profit Chad's Bracket organization and have rapidly gained popularity with major hospital systems such as Children's Healthcare of Atlanta, Philadelphia Children's Hospital and Miami Children's Hospital. Over 300 wagons have now been manufactured and been shipped to fifteen states and four international destinations.

Hospitalized Children and Distress

Often, inpatient hospital admissions involve invasive and/or painful procedures that are distressing for kids. Unfamiliar environments, family separations, medical interventions and activity restrictions can also be distressing to children. The pain and anxiety children may experience before, during and following these situations can have short and long term effects to a child's overall health.

As healthcare providers are aware, physical health is intrinsically linked to emotional health and pain has been identified as a global health issue. Evidence indicates hospitalized children often experience pain and anxiety and yet may remain undertreated. Also, children who experience multiple invasive procedures may have elevated levels of

stress, anxiety and fear during hospitalization as well as after discharge. The problem of untreated pain and anxiety is further compounded by healthcare workers lack of use, or understanding, of alternative pain strategies, such as distraction, that are readily available. Despite multiple studies demonstrating the harmful effects of pediatric pain and anxiety, children often report the most difficult part of their hospitalization was pain.

What is Distraction?

The perception of pain and anxiety may be influenced by many determinants such as psychological, emotional or behavioral factors. Many studies provide evidence that an effective method of dealing with pediatric distress is the use of non-pharmacological distraction techniques. Many people may be familiar with common distraction techniques such as music therapy, pet therapy, video games, blowing bubbles or providing stickers for certain behaviors. The IV Pole Wagons are a new, innovative distraction technique that has recently been developed to provide children with distraction from inpatient hospitalizations while providing a safe, fun way to transport children around the facility.

Indeed, distraction is a vital treatment modality since appropriate treatment of pain has the potential to support positive patient outcomes and improved recovery, such as reduced morbidity and mortality, as well as lowering healthcare costs. Due to the significant effect on the short and long term health outcomes of children, the importance of multifactorial pediatric pain management cannot be understated.

Target Population

Targeted Population: There is a large variety of pediatric groups that may be targeted to implement the IV pole wagon program. The list includes professional organizations, health advocacy groups, community health organizations, pediatric support groups, families in the community, special interest groups as well as people on an individual basis who wish to support pediatric causes.

Stakeholders include the children, families, healthcare workers and hospitals that will be benefited by the wagons' use.

Pediatric patients. Children receiving medical infusion therapy, such as IV fluids, IV medication or gastric tube feeds are the primary population this program seeks to benefit. It should be noted that IV therapy is one of the most common procedures in the acute care setting with an estimated 80% of patients receiving this intervention during hospitalization.

Healthcare Professionals: This writer asked healthcare professionals at two children's hospitals to answer a survey in September, 2016 on healthcare workers' perceptions of the IV pole wagons. Thirty-five Registered Nurses and one patient care technician responded. When asked the question, "What response do you see on the patient's pain and/or anxiety when children use the IV Pole Wagons," ten responded a decrease in pain, 17 responded a decrease in anxiety, and 18 responded an increase in joy/mood.

Parents. Another population that may be impacted from the implementation of the IV wagons are parents. Parental stress has been shown to have a reciprocal relationship with their child's stress and anxiety in the hospital. Evidence also notes that parental involvement exerts a significant influence on a pediatric patient's coping abilities in regards to medical experiences.

Hospitals. Providing alternative therapies that support children and families, while promoting developmentally age appropriate activities, may result in increased customer satisfaction. High quality patient experiences may equate to increased scores on Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) or Press Ganey Surveys, which are tied to Medicare and Medicaid reimbursement.

Competition

Currently, there are few other options for this type of distraction for pediatric patients. Hospitalized children are frequently transported around the hospital in gurneys or wheelchairs which do not provide a non-pharmacological effect that a kid-friendly wagon can provide.

Organization

Whee Wagon Program

The Whee Wagon Program consists of a small group of volunteers that support the distribution of IV Pole wagons to our community. Presently, the program has a coordinator and three to four volunteers. Volunteer activities have included organizing fundraising and donations to regional hospitals and special needs day cares as well as directly to children who receive infusion pump therapy at home.

The program was originally designed to be an ancillary function to a larger organization (but that does not preclude it functioning as a stand alone enterprise). The support organization for the Whee Wagon Program is through Western Carolina University and the School of Nursing. Additionally, one of the tenets of higher education is to provide service to the community, and this program supports that principle. All donations are accepted through the tax-exempt WCU Foundation.

The annual expectation of the Whee Wagon program is to supply between 6 and 10 wagons to facilities or directly to special needs families each year. This projection can be modified depending on available funding and volunteer availability.

It should be noted that this program could be easily modified for a hospital ancillary fundraising group, such as a thrift store that provides funds for hospital equipment. This program would be especially relevant for an ancillary fundraising organization for a standalone pediatric hospital.

Chad's Bracket

Chad's Bracket Organization

IV Pole wagons can be ordered from the non-profit Chad's Bracket organization (see contact information in Appendix A). The founder, Roger Leggett and his son, Chad, designed the wagon bracket and Roger manufactures them out of his home near Atlanta, GA. Roger's goal for the wagons is the same as our goal: to provide IV pole wagons to as many facilities and children as possible. The Chad's Bracket organization provides wagons to hospitals and organizations at cost and workers that assemble the wagons are not compensated.

As of October 2016, the Chad's Bracket organization has supplied over 300 wagons to over 20 hospitals around the United States and four international destinations. More and more organizations are seeing the value of this innovative therapy, and the proof is in the smiles on children's faces as they reconnect with just being a kid despite being in an environment that can be frightening and unfamiliar.

Ordering Wagons

Ordering a wagon is a simple process. Simply call or email Roger with the number of wagons, the pole specifications (length, fixed or moveable) and what you would like your placard to read. Placards can be unique to your organization, there is no requirement to include information on this or any other program.



Execution

Wagon Recipients

Target populations for wagon donations include standalone children's hospitals, hospitals that maintain a pediatric inpatient floor, outpatient pediatric facilities (such as cancer centers), pediatric hospices, special needs day cares where children receive infusion pump therapies such as gastric tube feeds, health departments that provide children with home IV therapy and directly to children and their families. See the Whee Wagon recipient application in Appendix B.

Wagon Cost & Donation Schedule

The Whee Wagon goal is to provide 6-10 wagons each year to the community, however, this goal can easily be revised to give away as many wagons as funding allows. Partial donations are happily accepted. Donors who sponsor full funding for a wagon are welcome to request a specific recipient facility/family.

When families or facilities no longer have a need for the wagon, the Whee Wagon Program strongly recommends the recipient donates the wagon to another family or facility in medical need. In doing so, this allows the Whee Wagon program to continually work to enrich the lives of children in medical need.

Wagon Cost:

- \$225 Whee Wagon with fixed IV Pole (appropriate for hospitals)
- \$275 Whee Wagon with non-fixed IV Pole (appropriate for applicants who wish to transport the wagon in a vehicle at times)

Costs are current as of January 2017.

Marketing

Brochures/Flyers/Website Creation/Social Media: Additional methods to market the program to the public and pediatric facilities includes the following:

- **Flyers & Brochures:** Media material to "get the word out" are an effective way to market the program, but are not critical if an organization is providing one facility with the wagons. However, if the program wishes to provide wagons to the greater population, utilizing flyers (see example bottom left) or a three panel brochure (see middle and right) can provide information to local pediatrician offices, health departments, hospices, etc., on how children can receive wagons. To avoid the expense of hiring a company to develop these materials, see if a talented individual or organization will help with design and production. Ideas include contacting a media company for pro bono work (it's a great cause!) or a media related class at a community college or university. Often classes

associated with public relations, marketing and/or advertising class may be willing to take on a class project that benefits the community. Copies of these documents can be found in Appendix c, and downloadable copies can be found at www.wheewagon.org. Organizations are welcome to use these documents as a template.



Website: In today's media environment, the development of a website can be done by a layperson easily and inexpensively. The URL for the Whee Wagon website is www.wheewagon.org (see website screen shots in Appendix D). The URL extension .org was chosen for the domain to indicate the program was not a commercial enterprise. The website contents include the following pages: About Us, Impact, Donate, Request a Wagon and Contact Us. The host the program utilized was Wix.com for ease of design and use. The cost for hosting the site was \$60/year. The domain, [wheewagon.org](http://www.wheewagon.org), was purchased from GoDaddy.com for \$6/year.

- **Social Media Presence:** Social media presence is utilized to keep in touch with donors, recipients and the general public that are interested in the Whee Wagon Program. A Facebook page is currently active.
- **Placard:** Each wagon also has a placard that gives the name of the donor and the Whee Wagon Program. An additional clear sticker is placed on the front bracket that states "If you would like to donate a wagon email wheewagon@wcu.edu".

News Media: As mentioned earlier, this program benefits children, so media outlets (local paper, news programs, and university public relations departments) are often eager to cover programs of this nature. The benefit of using these resources to spread the word of the IV Pole Wagon program is twofold: 1) facilities learn of the program and may seek out wagons for use, and 2) potential donors hear about the program and this may increase funding.

Repeat Donor Solicitation: Keeping a record of donors may be helpful to ask for an annual donation. Ideas to solicit repeat donations include an annual holiday card, a call to action letter, or a personal thank you from a wagon recipient.

Operations

Program Administrative Support

As noted earlier, the purpose of this business plan is to spread this worthwhile program to more communities to support and spread the use of IV Pole Wagons to as many children as possible. Often, pediatric advocacy groups will be eager to provide support for such a beneficial program since there are few costs associated with running it.

Office Space: The Whee Wagon Program is operated out of the School of Nursing at Western Carolina University. Due to associated expenses of a proprietary location, this business plan recommends that other programs use a similar sponsorship to defray overhead costs such as a location, utilities, administrative support, etc. Partnering with a facility such as a university, hospital, pediatric organization or advocacy group keeps costs down and allows donations to be allocated directly to acquiring wagons. Depending on the volume of the program, administrative duties can easily be accomplished in a home office space or as an ancillary task to normal office work.

Volunteers: The program is supported by faculty and community volunteers. This is a worthwhile program that directly benefits children, so volunteer help is usually in abundant supply. Obtaining volunteers may be done by presenting at pediatric advocacy meetings, hospitals, Rotary groups, etc. Having a core group of program organizers (2 to 4 individuals) would be recommended, depending on program size.

IV Pole Wagon Specs

Whee Wagons have been approved by the bio-engineering department at Children's Healthcare of Atlanta and have been quickly adopted by major hospital systems over since 2014. Here are the product specifications.



The Wagon: The wagon consists of a standard red Radio Flyer pathfinder wagon. The Pathfinder comes equipped with:

- Two cup holders
- Two seatbelts
- Two seats that fold up or down
- For additional Radio Flyer product details, please see the Radio Flyer webpage (<http://www.radioflyer.com/pathfinder-wagon.html>).

The IV Pole Bracket: Specifications for the brackets include:

- Medical-grade stainless steel IV poles and screws
- Reinforced medical-grade stainless steel bracket
- Drainage holes for antimicrobial baths/infection control measures
- A choice of fixed or moveable 36 or 48" IV poles



Each Wagon also comes with a donor plaque listing the wagons sponsor and parent organization.



Other Advantages: An additional consideration for supporting the use of IV pole wagons is safety. An informal needs assessment of healthcare workers on their perceptions of the wagons' use included comments on the safety of the wagons. Commentary praised the inclusion of seat belts, having the child "packaged all together" without the need for an extraneous IV pole, and the fact that the wagon was close to the ground.

Shipping

The IV Pole wagons are manufactured outside of Atlanta, GA (see Appendix A for contact information and address). Pick up of the wagons can be done in person, or shipped to your location at a reasonable charge. Chad's Bracket's has arranged to have wagons shipped through a national shipping company for \$75 for a palette of 1 to 6 wagons.

Liability Waiver

See the WCU liability waiver for the Whee Wagon Program in appendix E.

Milestones Table

Milestone	Due Date	Who's Responsible	Details
Program started	August 24, 2015	Susan W. Hester	Program begun
Nonprofit Status Achieved	December 18, 2015	WCU Foundation	The Whee Wagon Program included into Western Carolina University's Foundation.
Nine Wagons Given Away 2015-2016 Academic Year	May 04, 2016	Susan W. Hester	Seven wagons given away to hospitals, special needs daycares and directly to families over the school year.
Grant Award Received	August 29, 2016	Great Smoky Mtn Health Foundation	\$1,000 grant received to provide wagons to special needs children.
Whee Wagon Program Website Launch	November 21, 2016	Susan W. Hester	Develop and launch proprietary website at wheewagon.org
Social Media Presence	December 05, 2016	Susan W. Hester	Goal set to develop social media plan and launch social media sites (Instagram and Facebook).
Business Plan Completed	February 20, 2017	Susan W. Hester	
Goal set to fundraise for 6 wagons this academic year	May 01, 2017		The Whee Wagon Team of volunteers has set a goal to provide a total distribution of 9 wagons this academic year.

Financials

Finding Donors, Fundraising & Grants

The Whee Wagon Program has seen three revenue streams that have supported the project. All donors receive their names on placards displayed on the wagons.

1. Individual Donations: Media stories in local papers and the WCU magazine proved effective in receiving donations from local individuals. It's a great cause, and many people enjoy supporting pediatric programs.
2. Organization Donations: Funds for wagons were also solicited from local community groups such as Rotary clubs affiliated with Rotary International.
3. Grant Funds: The Whee Wagon program applied for, and was awarded a \$1,000 community grant from the Great Smoky Mountain Health Foundation to supply wagons to local counties.

Funding for the program relies on sponsors and grants to obtain the wagons. Programs may seek tax exempt status, 501(c)(3), or join a parent organization tax exempt status such as a nonprofit hospital, organization or educational institution to accept tax exempt donations. With the exception on a small percentage of marketing costs, the majority of the tax exempt donations are directly targeted to acquiring wagons, shipping, or to additional costs directly related to supplying wagons to children. No monetary compensation should be given to program organizers and all work should be done on a volunteer basis. The expectation for this business plan is for each program to be sustainable.

Program Costs

	FY2016	FY2017	FY2018
Revenue	\$2,750	\$2,750	\$2,750
Direct Costs	\$2,656	\$2,650	\$2,650
Gross Margin	\$94	\$100	\$100
Gross Margin %	3%	4%	4%
Operating Expenses			
Salary			
Employee Related Expenses			
Brochures	\$50	\$50	\$50
Flyers	\$30	\$30	\$30
Administrative space (sponsored by host organization)	\$0		
Total Operating Expenses	\$80	\$80	\$80
Operating Income	\$14	\$20	\$20
Interest Incurred			
Depreciation and Amortization			
Income Taxes	\$0	\$0	\$0
Total Expenses	\$2,736	\$2,730	\$2,730
Net Profit	\$14	\$20	\$20
Net Profit / Sales	1%	1%	1%

Appendix A

Contact Information

Whee Wagon Program Coordinator

Susan W. Hester, MSN, RN, CPN
Assistant Professor
Western Carolina University School of Nursing
3971 Little Savannah Rd.
Cullowhee, NC 28723
828/227-2898
wheewagon@wcu.edu

Whee Wagon Websites

1. Wheewagon.org
2. <http://www.wcu.edu/learn/departments-schools-colleges/HHS/hhs-schools-depts/nursing/WHEEWagon/index.asp>

Whee Wagon Social Media Sites

1. Facebook:
2. Instagram:

Chad's Bracket

Roger Leggett, Founder and Coordinator
575 Sam Alexander Rd.
Douglasville, Ga. 30134
404/408-7143

Chad's Bracket Social Media Site

1. <https://www.facebook.com/search/top/?q=chads%20bracket>

Appendix B

Wagon Recipient Application

Downloadable copies of this flyer are available at:
<http://www.wcu.edu/learn/departments-schools-colleges/HHS/hhs-schools->

**WHEE WAGON Request**

Thanks so much for your interest in a Whee Wagon. This product has the capacity to impact the lives of hundreds of children in medical need. If you are interested in having a wagon donated to your family or facility, please print and return the application below to the Whee Wagon Program at WheeWagon@wcu.edu. A team member will be in contact when we receive your request.

Last Name: _____ **First Name:** _____

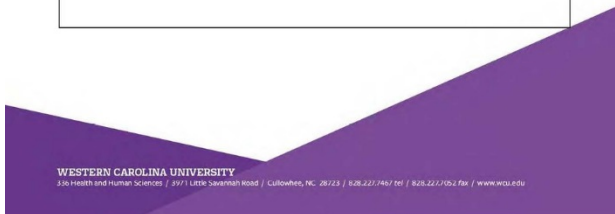
Address: _____
Street Address

_____ *City* _____ *State* _____ *ZIP Code*

Phone: _____ **Email:** _____

Why are you requesting a WHEE WAGON?

Describe how the WHEE WAGON would be utilized?

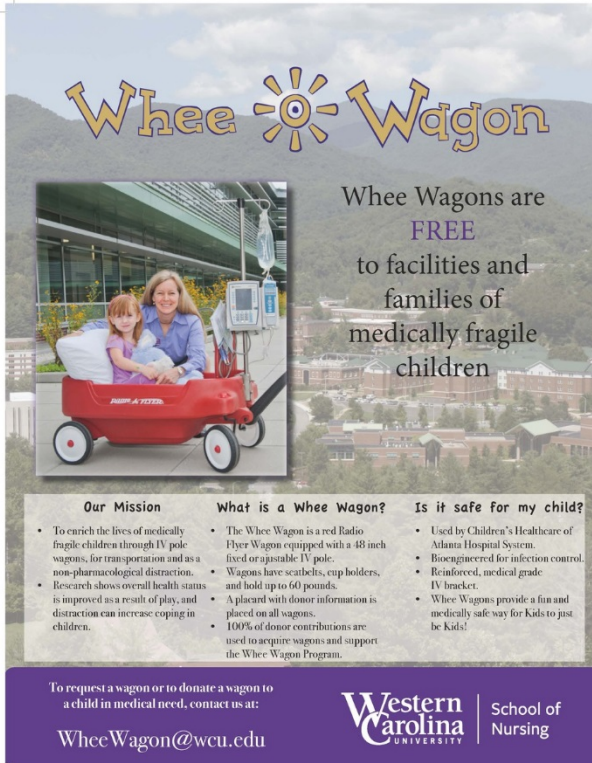


depts/nursing/WHEEWagon/wheewagonrequest.asp

Appendix C

Flyer & Brochure

Downloadable copies of this flyer are available at www.wheewagon.org.



The flyer features a background image of a hospital building and a red Radio Flyer wagon with a child and a woman. The title 'Whee Wagon' is written in a stylized, yellow font with a sun icon. The main text states that the wagons are free for facilities and families of medically fragile children. The brochure is divided into three columns of text: 'Our Mission', 'What is a Whee Wagon?', and 'Is it safe for my child?'. At the bottom, there is contact information for requesting or donating a wagon, along with the Western Carolina University School of Nursing logo.

Whee Wagon

Whee Wagons are
FREE
to facilities and
families of
medically fragile
children

Our Mission

- To enrich the lives of medically fragile children through IV pole wagons, for transportation and as a non-pharmacological distraction.
- Research shows overall health status is improved as a result of play, and distraction can increase coping in children.

What is a Whee Wagon?

- The Whee Wagon is a red Radio Flyer Wagon equipped with a 48 inch fixed or adjustable IV pole.
- Wagons have scabnets, cup holders, and hold up to 60 pounds.
- A placard with donor information is placed on all wagons.
- 100% of donor contributions are used to acquire wagons and support the Whee Wagon Program.

Is it safe for my child?

- Used by Children's Healthcare of Atlanta Hospital System.
- Bioengineered for infection control.
- Reinforced, medical grade IV bracket.
- Whee Wagons provide a fun and medically safe way for Kids to just be Kids!

To request a wagon or to donate a wagon to a child in medical need, contact us at:
WheeWagon@wcu.edu

Western Carolina University | School of Nursing

Downloadable copies of this brochure are available at www.wheewagon.org.

Western Carolina University's
Whee Wagon Program

Our mission is to give **medically fragile children** wagons equipped with IV poles to grant them the opportunity to **play** and just be a kid.



The Whee Wagon program was developed in 2015 by faculty and students at Western Carolina University in Cullowhee, North Carolina.

Our team has witnessed the joy that a simple wagon ride can bring to a medically fragile child, and evidence shows that play can have a significant impact on pediatric health status.

Play it forward
...and help us change lives

GET INVOLVED!

If you'd like to sponsor a wagon for a facility or child (\$225), please contact us. All wagons have placards with donor information.

If you are looking to purchase wagons for your facility, please contact our partner, Roger Leggett with Chad's Brackets at ChadsBracket@gmail.com.

If you would like to request a **free** wagon for a child in medical need, please contact us.

If you are a **healthcare worker**, please spread the word about this program and request wagons for children or your facility.

Whee Wagon Program

WheeWagon@wcu.edu









Providing IV Pole equipped wagons **FREE of charge to medically fragile children**



"I've seen the effect that hospital stays can have on kids with needle sticks and scary machines. Sick children deserve a childhood too. Whee Wagons can help give a small part of that childhood back."
-Dayyn Grizwold, RN, WCU Graduate



"Increasing the mobility and easing the anxiety of these children as they are being transported around the hospital for treatment is a major goal of the wagon. It's all about the kids!"
-Roger Leggett,
Whee Wagon Manufacturer




Help Us Help Kids in Need

What is a Whee Wagon?

- The Whee Wagon is a red Radio Flyer Wagon equipped with a 48 inch fixed or adjustable IV pole.
- Wagons have seatbelts, cup holders, and hold up to 60 pounds.
- Bioengineered for infection control.
- Reinforced, medical grade IV bracket.
- Whee Wagons provide a fun and safe way for Kids to just be Kids!

Is it safe for children?



- The wagons provide distraction therapy which helps lessen pain and anxiety without using medication.
- Used by major children's hospitals such as Children's Healthcare of Atlanta, Miami Children's Hospital and Mission Memorial Hospital in Asheville, NC.



Each wagon has the potential to impact hundreds, if not thousands of hospitalized children

Overall health status of children is improved

100% of donor contributions are used to acquire wagons and support the program

To request a wagon or to donate to a child in need, contact us at: WheeWagon@wcu.edu

Appendix D

Whee Wagon Website (www.wheewagon.org)



Appendix E

WCU Whee Wagon Liability Waiver

WCU Whee Wagon Liability Waiver



Durable Medical Equipment Disclaimer and Waiver of Liability

Equipment utilized in the WCU WHEE Wagon program is obtained through a purchase from the Chad's Brackett's organization. Western Carolina University (WCU) cannot ensure the safety or condition of this equipment and cannot be held liable for any known or unknown equipment malfunction or defect. WCU expressly disclaims any and all warranty of the equipment donated. We are not responsible for the maintenance and upkeep once it has been distributed.

WCU will discuss with clients the proper use of equipment but we are not responsible for any results due to the misuse of this equipment. Usage of equipment beyond the indicated limitations or in an improper manner may result in malfunction and/or injury.

The liability of WCU, as an agency of the State of North Carolina, for bodily injury, property damage, infringement of proprietary rights and patents, and other items is limited by the North Carolina Tort Claims Act, Article 31, sec. 143-291.

In consideration of and return for the equipment, and other assistance provided to any individual recipient of the equipment by WCU, the individual recipient of the equipment hereby releases the State of North Carolina, The University of North Carolina, WCU and their governing boards, officers, employees, students and agents from any and all liability, claims and actions that may arise from injury or harm to the individual recipient of the equipment, or from damage to the individual recipient of the equipment's property in connection with use of the equipment. The individual recipient of the equipment understands that this release covers liability, claims and actions caused entirely or in part by any acts or failures to act of the State of North Carolina, The University of North Carolina, WCU or their governing boards, employees, students, or agents, including but not limited to **negligence**, mistake, or failure to supervise by Institution.

By signing below, I agree to hold WCU and those affiliated, harmless from any liability due to usage of loaned durable medical equipment.

Printed Name: _____ Organization/Position: _____

Signature: _____ Date: _____

Please return to Susan Hester, 3971 Little Savannah Rd, Health and Human Sciences - 354, Cullowhee, NC 28723. Email: swhester@wcu.edu