The Value of Certified Child Life Specialists: Direct and Downstream Optimization of Pediatric Patient and Family Outcomes

Full Report | January 2020

Jessika Boles, PhD, CCLS
Camille Fraser, MS, CCLS, CIMI
Katherine Bennett, MEd., CCLS
Maile Jones, MEd.(c), CIMI
Jenna Dunbar, MEd.(c), CIMI
Ashlie Woodburn, MEd., CCLS, CIMI
Mary Ann Gill, MEd.(c)
Anne Duplechain, MEd.(c)
Erin K. Munn, MS, CCLS, CIMI
Katy Hoskins, CCLS

ASSOCIATION OF
Child Life
Professionals

Abstract

Today’s value-based healthcare market demands that hospitals, clinics, and medical professionals provide high quality care at sustainable costs for patients and payers alike. Top-decile performers systematically target each dimension of the Quadruple Aim, registering incremental yet cumulative gains (and savings) in safety, timeliness, effectiveness, efficiency and equity in patient-and-family-centered care. These ambitious objectives require a multidisciplinary approach, particularly when serving infants, children, adolescents and emerging adults, and their families. Certified Child Life Specialists, as psychosocial healthcare professionals with focused training in child development, family systems, and evidence-based supportive interventions, are indispensable members of high-caliber healthcare teams. In collaboration with medical and allied health professionals, Certified Child Life Specialists bring a multifocal lens, individualized to the needs of pediatric patients and their families, grounded in developmental theory, attuned to the influence of past and present trauma, and aimed at building resilient family systems. Capitalizing on the power of therapeutic relationships and the expansive benefits of play-based interventions, Certified Child Life Specialists help children, youth, and families lay the foundation for lifelong health and wellness. In these ways, child life professionals significantly reduce the financial, developmental, and psychological costs associated with the discomfort and distress that persist far beyond each episode of care. By doing so, Certified Child Life Specialists ensure a cost-effective experience for patients and families that cultivates well-informed, actively engaged, loyal consumers of healthcare services throughout the lifespan.

TABLE OF CONTENTS

The Value of Certified Child Life Specialists: Direct and Downstream Optimization of Pediatric Patient and Family Outcomes

In the era of Pay-for-Performance and the Quadruple Aim, healthcare providers, payers, and organizations must do more, in better ways, for less cost. Healthcare-associated expenses in the United States have risen at unsustainable rates, creating a dynamic in which high-quality service comes with a high price tag for both direct and indirect stakeholders. Despite multilevel, multifocal, and multidimensional efforts, per capita healthcare costs in the United States are rapidly approaching double those of other developed nations - without generating comparable improvements in population health.[1-3]

Pinpointing a singular root cause for the industry's transformation is problematic. Even more challenging is identifying cost-effective tactics that adequately broach the "quality chasm"[4] omnipresent in healthcare today. Patients and families now enjoy unprecedented access to performance ratings, comparative indices, and customer reviews. When this transparency is coupled with the sheer number of healthcare service models available, institutions must differentiate themselves from the competition by investing in strategies that improve care quality, maximize reimbursement incentives, and instill consumer loyalty. Emerging techniques and technologies are quickly being adopted across the industry; thus, expanding patient-and-family-centered services is a prime and promising opportunity to elevate the patient experience. Certified Child Life Specialists (CCLSs) - frontline members of multidisciplinary care teams - create and maintain an experience and culture within pediatric healthcare that others cannot.

Prioritizing the coping and developmental needs of pediatric patients and families, CCLSs promote and protect emotional safety in times of healthcare duress. Their work is predicated on individualized assessments of patient-and-family strengths and stressors, alongside the illness and treatment factors that threaten family functioning and well-being. As they build therapeutic relationships with infants, children, youth, and families of all circumstances and backgrounds, CCLSs integrate their knowledge of child development, family systems, and the healing properties of play to promote optimal physical and psychological health in the face of stress-inducing healthcare experiences.[5]

In order to become a CCLS, individuals must fulfill specialized academic requirements, complete clinical training hours under qualified supervisors, and successfully pass a standardized certification exam. Today's CCLSs often complete additional postgraduate work and/or hold supplemental certifications in related intervention sets (e.g., grief counseling, infant massage, and patient experience) to further refine their expertise in providing high-quality, cost-effective, and impactful psychosocial care for children and their families. Although most prevalent in the United States, Canada, and Japan, CCLSs work in children's hospitals and healthcare settings across five continents;

the Association of Child Life Professionals (ACLP) and its certifying body, the Child Life Certification Commission (CLCC), maintains a membership of more than 6,200 certified professionals worldwide. Regardless of geographic location or cultural setting, CCLSs employ an individualized approach that honors and serves patients and families of all backgrounds, experiences, belief systems, and preferences.

Certified Child Life Specialists are patient-and-family-centered care professionals who have established and raised the proverbial bar for the patient experience movement in healthcare settings.[6] Recognized by the American Academy of Pediatrics,[7] the Beryl Institute,[8] the Canadian Paediatric Society,[9] the Society of Critical Care Medicine,[10] The Walt Disney Company,[11] and decades of clinical research,[12-16] CCLSs exemplify a high-yield investment in patient and family experience, as well as in the direct and downstream success of healthcare institutions.

Certified Child Life Specialists integrate six evidence-based domains to formulate interventions that meet infants, children, youth, and families where they are in their healthcare experience. Combining 1) an individualized approach to care, 2) a focus on cultivating resilience, 3) cognizance of the developmental contexts in which children and families live and grow, and 4) consideration for the impacts of past and present trauma, CCLSs 5) establish and develop therapeutic relationships by 6) capitalizing on the expansive utility of play (see Figure 1 below).

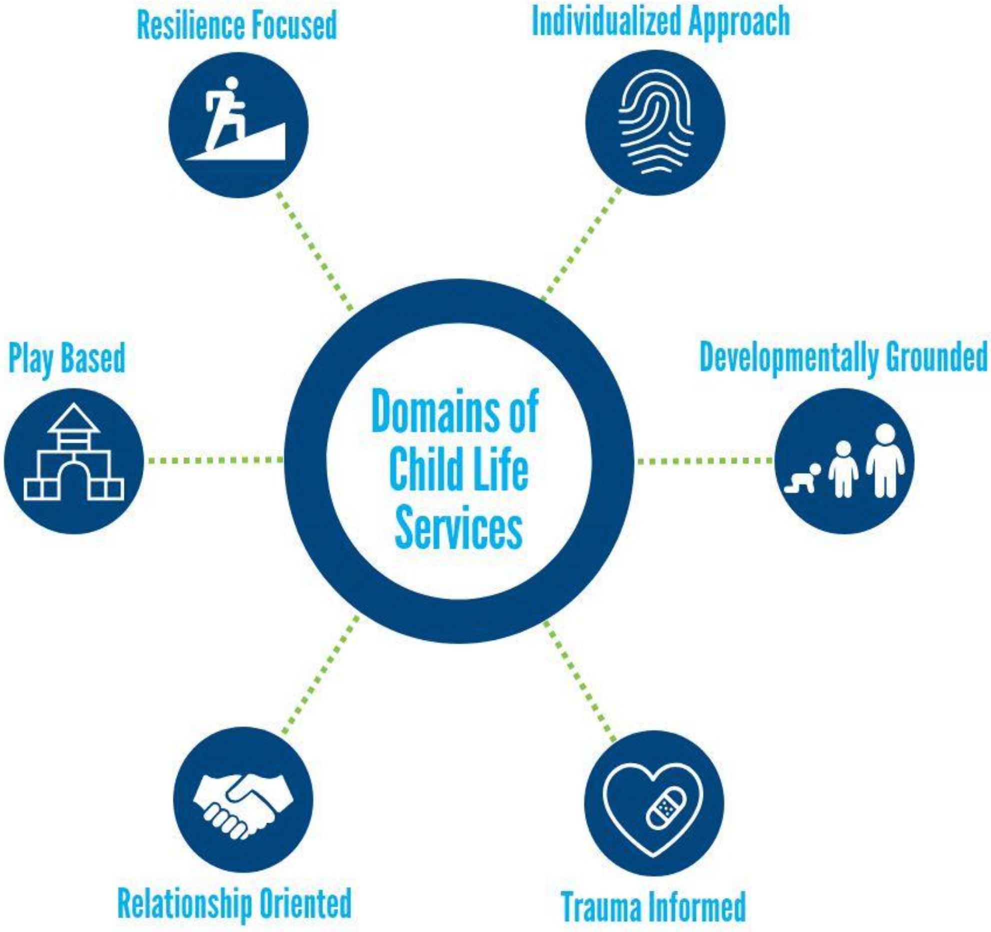


Figure 1. *The Six Domains of Child Life Services.*

It is at the crux of these six domains that CCLSs promote and optimize patient and family outcomes throughout their healthcare journey.

Individualized Approach.

Given the growing call for effective psychosocial interventions in an increasingly diverse patient population, a core component of child life practice is addressing the individual needs of children and families to improve their care experience. Certified Child Life Specialists develop clinical partnerships with children and families that make the healthcare experience more empowering and positive; they take an other-oriented stance that reflects advocacy, cultural sensitivity, and effective communication.[8] By recognizing the importance of care that prioritizes and responds to person-specific needs, CCLSs integrate themselves into each unique system to build rapport, cultivate trust, and provide necessary psychological support services to help patients and families identify and achieve their goals. Through careful and continuous observation of their distinct characteristics, CCLSs to engage patients and families in ways that build upon their strengths and empower them as active participants in their care. Taking this collaborative, individualized approach, CCLSs help patients and families master their healthcare experience, promoting improved psychological, physical, and behavioral health outcomes.

Resilience-Focused.

Certified Child Life Specialists facilitate psychosocial interventions that build and fortify resilience in patients and families facing healthcare challenges. Characterized by maintaining personal well-being even when enduring moments of stress, adversity, and grief,[17,18] resilience is a phenomenon capable of being both threatened and enriched by healthcare encounters. By capitalizing on the individual and collective strengths of each child and family, CCLSs reinforce and generate adaptive coping skills,[19] positive appraisals,[20] health-promoting behaviors,[21] problem solving skills, and goal setting behaviors[22] - all of which are integral features of resiliency. The patient-and-family-centered approach CCLSs employ includes the patient and their identified family system in partnership with one another, which achieves optimal trust and alliance across providers and healthcare settings.[23] Certified Child Life Specialists acknowledge the importance of relationships to bolster positive outcomes by prioritizing opportunities for peer connections,[24] optimizing family functioning,[21] and cultivating therapeutic clinical relationships with patients of all ages and their family members.[17] In collaboration with patients and families, CCLSs ensure that healthcare experiences engender resilience, thereby establishing the foundation of both psychosocial and emotional well-being for patients and their families.

Developmentally Grounded.

Certified Child Life Specialists integrate seminal and contemporary theories of child and family development[25-34] to promote coping and adaptation across the developmental trajectory. Research has long demonstrated that infants, children, youth, and adults interpret and understand medical information differently, often in accordance with their evolving cognitive capabilities and the contexts in which they live and grow.[35-38] In turn, these individual appraisals shape the ways in which children and their families respond to and cope with the stressors of healthcare encounters, and inform pertinent assessment and intervention practices.[39,40] Certified Child Life Specialists, therefore, apply their calibrated developmental lens and contextual approach to ensure that individual needs for education and coping support are appropriately and sufficiently met.[41-43] Certified Child Life Specialists also operationalize their developmental expertise to help healthcare teams anticipate patient and family responses to healthcare experiences, and partner with multidisciplinary providers to extend the supports families need for resilience and recovery.[44-46]

Trauma-Informed Care.

The philosophy of trauma-informed care elucidates the impact of past and present trauma in the lives of infants, children, youth, and families - impacts that have far-reaching consequences for developmental, psychosocial, and mental health.[47,48] By maintaining awareness of their prevalence and potential manifestations, CCLSs acknowledge, address, and mitigate the risks of psychological trauma that are associated with hospitalization[49] and other adverse childhood experiences (ACES).[50] Existing on a continuum, ACEs involve events and conditions that inflict or exacerbate physical, psychological, and relational distress,[50] thus encompassing trauma that spans a multitude of social environments, such as healthcare settings. Certified Child Life Specialists have practiced principles of trauma-informed care long before the term was coined (e.g., understanding and facilitating physical and emotional safety, establishing trusting relationships, communicating honestly and accurately, offering choice and control, and using a strengths-based approach to care). As the field has grown, CCLSs continue to incorporate tools like therapeutic and medical play, procedural support, and preparation to decrease manifestations of traumatic stress during and beyond healthcare encounters.[43,47,48,51,52] Understanding that 62% of the population has experienced at least one ACE and that 25% report at least three,[53] CCLSs assess and account for ACEs when creating plans of care. They incorporate approaches true to the philosophy of trauma-informed care to allay negative emotional reactions and maladaptive stress responses (i.e., ACEs), as well as the ways in which children and their families interact with new or unexpected medical events and ongoing courses of treatment.[52,54]

Relationship Oriented.

Defined as “a trusting connection and rapport established between [clinician] and [patient] through collaboration, communication, empathy, and mutual respect,”[55(p49)] therapeutic relationships enhance child life interventions, decrease stress symptoms, and increase positive developmental and coping outcomes for infants, children, youth, and their families.[56,57] Relationships true to these defining qualities facilitate better engagement between clinicians, patients, and families, particularly when formed through active listening, question-asking, and sensitive displays to emotional needs.[58] Through establishing these therapeutic relationships, CCLSs enhance communication, teach coping skills, and build resiliency with and for patients and families. Strong therapeutic relationships enhance the quality of communication between patients, families, and the broader healthcare team, which not only improves the accuracy and delivery of the diagnosis but also decreases the frequency of consumer-generated malpractice claims.[57]

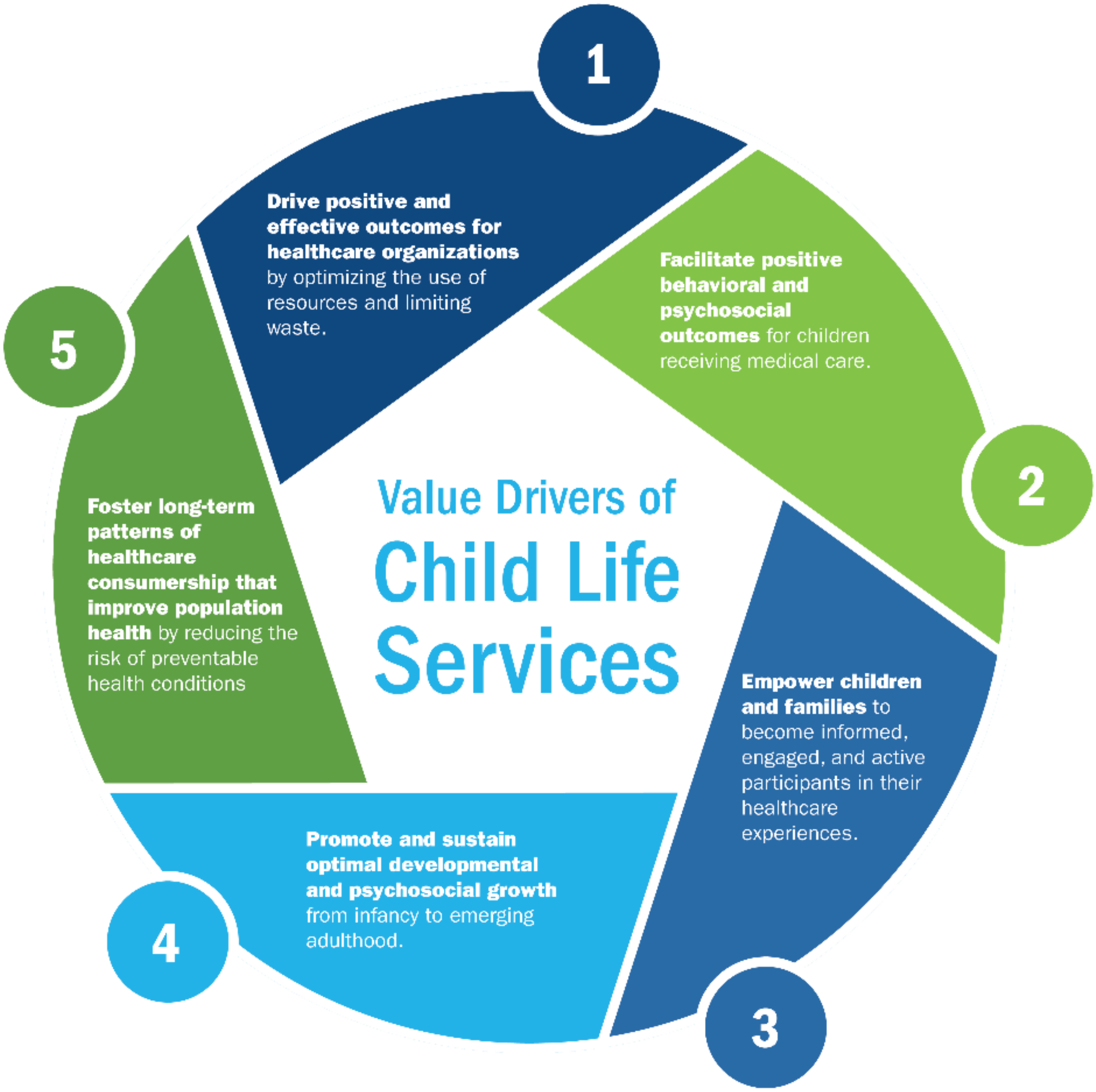
Play-Based.

Often grossly underestimated and misunderstood, yet expansively beneficial, play is among the most effective tools used by CCLSs to empower children and families in coping with the stressors of healthcare encounters. When individually and intentionally constructed, play-based interventions have the power to normalize an otherwise abnormal healthcare environment or experience. Skilled play partners and opportunities equip children to regulate their emotions and manage their behavioral responses when faced with painful or distressing procedures, at times replacing the need for anesthesia or sedatives. Thus, play-based psychosocial care is a functional, effective means of alleviating and preventing trauma among pediatric patients, as play provides distraction, reduces anxiety, and facilitates developmentally appropriate and effective communication.[52] Play is empirically supported as a significant opportunity for promoting further social-emotional, cognitive, and language development,[7,59,60] and within the scope of child life practice, CCLSs use play to assess the developmental needs and potential medical misconceptions of pediatric patients and their families.

Meeting the psychosocial needs of children and families through individualized, play-based interventions, CCLSs form strong therapeutic relationships that promote resilience in developmentally-appropriate, trauma-informed ways. In addition to the personally-crafted care experience they deliver to infants, children, youth, and families, more than 40 years of clinical research and practice demonstrate that Certified Child Life Specialists:

1. *Drive positive and effective outcomes for healthcare organizations by optimizing the use of resources and limiting waste.*
2. *Generate positive behavioral, psychological, and physiological outcomes through individualized interventions with pediatric patients.*
3. *Empower children and families to become informed and active participants in their healthcare experiences.*
4. *Promote and sustain optimal developmental and psychosocial growth from infancy through emerging adulthood.*
5. *Improve population health by fostering long-term patterns of healthcare consumership that reduce the risk of preventable conditions.*

Together, these five value drivers produce substantial outcomes: significant cost-savings for all healthcare stakeholders; improved patient, family, and population health; enhanced patient experience; and heightened healthcare quality. (see Figure 2 below).



Drive positive and effective outcomes for healthcare organizations by optimizing the use of resources and limiting waste.

Facilitate positive behavioral and psychosocial outcomes for children receiving medical care.

Empower children and families to become informed, engaged, and active participants in their healthcare experiences.

Promote and sustain optimal developmental and psychosocial growth from infancy to emerging adulthood.

Foster long-term patterns of healthcare consumership that improve population health by reducing the risk of preventable health conditions

Figure 2. *The Five Value Drivers of Child Life Services.*

Value Driver 1: Institutional Savings

Certified Child Life Specialists drive positive and effective outcomes for healthcare organizations by optimizing the use of resources and limiting waste. *Children who receive preparation and procedural support require less sedation and anesthesia, demonstrate less emergence delirium, and consume less narcotic pain medication. As a result, patient safety, access, and throughput are increased, while staffing costs and post-anesthesia length of stay are reduced - and significant cost-savings are realized.*

Children are often given sedation or general anesthesia to complete routine procedures and radiological scans - burdening institutions and families with additional costs and safety risks. When preparation and procedural support are provided by CCLSs, sedation and anesthesia use are diminished, unnecessary expenses are eliminated, and patient safety is maximized.

Preparation

Preparation, sometimes referred to as psychological preparation or procedural preparation, is a fundamental intervention implemented by CCLSs in which children and their families are provided with developmentally appropriate information about upcoming medical procedures and experiences.[61] When equipped with this accurate and honest information, even very young patients (such as toddlers and preschool-age children) and their families are better able to adjust to and cope with medical experiences.[62] Unlike other multidisciplinary team members, CCLSs have the education, training, and protected time to provide high-quality preparation interventions that align with individual patient-and-family temperaments, learning needs, and coping styles.[62]

Certified Child Life Specialists incorporate a variety of techniques in order to achieve preparation intervention goals. The specific method(s) of preparation utilized by a CCLS vary dependent on an assessment of the child and family as well as available resources. Preparation interventions can include: providing developmentally appropriate description of the anticipated sequence of events,[63] discussing the child's questions and concerns using age appropriate language,[64] modeling elements of the procedure,[65] medical play and opportunities for the child to manipulate medical equipment, dolls, and puppets,[66,67] leading coping strategy planning and rehearsal,[68,69] watching puppet shows[67] or videos,[61] conducting hospital tours,[70] reading fiction and/or non-fiction books that intentionally address relevant stressors,[71] and providing relevant websites or media resources for further information. [69]

When preparation and procedural support are provided by CCLSs, sedation and anesthesia use are diminished, unnecessary expenses are eliminated, and patient safety is maximized.

Throughout a preparation intervention, CCLSs rely on observation, interaction, and return demonstration to assess the child's developing understanding, as well as their ability to cope with the procedure at hand.[70]

When classified as high-quality, preparation for children undergoing medical procedures includes teaching through play and modeling, coping skills training, provision of procedural and sensory information, and fostering emotional expression and trust.[72] A substantial number of studies indicate that the effectiveness of preparation is highly dependent on goodness-of-fit between the specific needs of the child and family and the teaching modalities utilized by CCLSs. Thus, across this myriad of strategies, the central benefit of preparation remains consistent: patients and families cope more effectively with what is understood and expected, rather than what is uncertain and unpredictable.

Procedural Support

Beyond preparation, CCLSs extend their support techniques into the procedure room. With their continued presence, CCLSs can facilitate a child's pre-established coping plan during medical procedures, thereby minimizing pain perceptions and potential trauma. Distraction is a highly validated technique utilized by CCLSs during children's medical procedures.[73,74] Defined as a strategic effort to draw a child's attention away from painful or distressing stimuli, distraction techniques decrease pain perceptions[75] and emotional distress[76] during invasive medical procedures. Although distraction is a highly effective component of procedural support, it is just one of many tactics that CCLSs use to help infants, children, and youth manage their anxiety. For instance, CCLSs assess and modify the procedural environment before and throughout the child's experience by minimizing unnecessary sensory stimuli, anticipating developmental stressors (e.g., concerns about privacy, needs for autonomy and control, fears of strangers), facilitating communication with the healthcare team, and advocating for individualized solutions.

Certified Child Life Specialists apply their developmental assessment skills to identify the most effective active, passive, or combinatory distraction techniques for each child. Active distraction encourages a child's engagement with a preferred stimulus through physical movement or cognitive processing. Examples include distraction cards,[77] virtual reality,[78] interactive applications on a computerized tablet,[75] or a kaleidoscope.[79] Conversely, passive distraction provides stimuli that does not require the child's active engagement. Audiovisual resources such as cartoons,[80] wall projections,[81] movies,[82] and music,[83] are examples of passive procedural support approaches. When developing coping plans with children and coaching them through their identified coping techniques, CCLSs invoke their developmental training to help children confront their stressors while simultaneously incorporating patient preferences and adapting to procedural elements.[73] Multidisciplinary collaboration is vital in providing quality care during procedures[84,85]; and when a CCLS is present in these moments, nurses report they are more able to tend to the medical needs of the patient while still feeling confident that the child's coping needs are being met.[86] When children's needs are anticipated and coping plans are enacted, CCLSs transform potentially traumatic procedures into empowering experiences for infants, children, youth, and parents/caregivers.

Institutional Outcomes of Procedural Preparation and Support

The overlap of preparation and procedural support is most profound in procedure-oriented healthcare settings, such as radiology and radiation-oncology, where these interventions significantly lower sedation rates among infants and children who would otherwise require sedation to successfully complete procedures and scans.[61,87-92] Therefore, beyond the demonstrated benefits for individual patients and families, preparation and procedural support also render gains for the provider and facility performing the procedures. For example, preparation programs, often facilitated by CCLSs, demonstrate lower rates of sedation and anesthesia, as well as comparable rates of diagnostic-quality image acquisition without increasing procedure time.[68,71,87,93,94] Research demonstrates that when preparation and procedural support are provided in conjunction with one another, patient outcomes are improved and institutional efficiency is optimized. Furthermore, when provided by a CCLS, these interventions address the individual needs of the patient and account for their unique stressors and developmental preferences. This patient-specific approach results in children being significantly more likely to complete scans with diagnostic quality images without requiring sedation or general anesthesia, thereby lessening the need for repeat procedures, reducing costs for the hospital, and mitigating negative emotional impact on the child.[63,91,95,96]

Although child life services are an operational expense, they result in substantial return on investment (ROI) through the reallocation of valuable anesthesia and staffing resources.[90,97-99] A radiation oncology program recorded savings upwards of $775,000 per year when children participated in a play-based procedural preparation and support with a CCLS[92]; similarly, a Magnetic Resonance Imaging (MRI) program reported an annual net savings of $117,870 following the implementation of a mock scanner preparation intervention.[87] For children in need of intra-articular joint injections, preparation and procedural support from a CCLS generated a 33% cost savings by reducing the need for deep sedation - all whilst maintaining a 97.5% completion rate in those cases performed without sedation.[98] Additional cost savings have been observed in preoperative settings, with preparation and procedural support interventions yielding a 24% shorter length of stay, earlier post-procedural extubation, and a 14% reduction in emergence delirium for those receiving anesthesia.[69,100-102]

These findings are of great significance, as when anesthesia or sedation are used in infants, children, and youth, safety monitoring and medical management needs amplify, thereby constraining institutional resource reserves and increasing staffing costs.[103] When CCLSs actively facilitate preparation and procedural support, larger numbers are served at greater efficiency, improving accessibility and throughput for both individuals and institutions.[14,96] For instance, children scheduled for MRI without sedation - in conjunction with preparation and procedural support provided by a CCLS - demonstrated an order completion period of 15 days, compared to 46 days for those scheduled with sedation.[96] Even after time and materials involved in preparation interventions are adjusted for, the overall cost of MRI remains lower as a function of the decreased need for sedation and shorter length of stay (approximately three hours less per patient).[104] And, as costs decrease and resource use is optimized, high-quality healthcare is actualized.

In addition to reducing rates of anesthesia and sedation during procedures, preparation provided by CCLSs reduces unnecessary medication use. For example, preparation has shown to decrease the amount of narcotic pain medications pediatric patients consume by up to 50%, thereby reducing waste, minimizing side effects, and helping prevent medication misuse.[100] When parents/caregivers partner with CCLSs in providing preparation and procedural support, studies have demonstrated a 28% reduction in the use of oral Versed© (midazolam) in pediatric surgical patients - again, without increasing length of preoperative or induction time.[105] In outpatient, non-surgical settings, procedural support interventions have shown to be equal to or more effective than lidocaine and other topical analgesics in aiding patient coping, additionally reducing care costs while also improving patient and family experience.[82,101,106,107] Thus, when CCLSs provide preparation and procedural support, they decrease the need for anesthesia, sedation, and narcotic pain medication in pediatric patients, reduce the risk of medical complications or adverse events, and produce unparalleled cost savings for healthcare facilities.

Value Driver 2: Psychosocial Outcomes

Certified Child Life Specialists generate positive behavioral, psychological, and physiological outcomes through individualized interventions with pediatric patients. *They implement an array of play-based, coping-focused techniques shown to ameliorate pain, lower anxiety, reduce distress, and increase satisfaction with - and loyalty to - institutions of care. Children demonstrate fewer behavioral disturbances during and beyond medical encounters when receiving comprehensive preparation, procedural support, and coping skills education, all of which are associated with accelerated healing.*

Healthcare encounters and medical procedures pose a multitude of threats to a child's psychological well-being, such as disruption of normal routines and relationships; separation from home, family, and community; fear and uncertainty; pain; and loss of control.[108-110] However, by providing individualized, developmentally appropriate, and resilience-oriented interventions, CCLSs facilitate positive coping, minimize distress, and optimize patient and family outcomes.

Coping Skills Education

Coping skills education is an aspect of preparation and procedural support with benefits that transcend individual stressors, situations, and settings.[72] Children's responses to distressing events (e.g., illness, injury, or hospitalization) are largely determined by their individual appraisals of: 1) the stressor at hand, and 2) their perceived resources and abilities for managing the stressor. Coping, then, refers to an individual's cognitive/behavioral responses (both verbal/nonverbal and active/passive) resulting from their perceptions of stressors and self. Adaptive (i.e., positive) coping strategies help children and families manage their emotions and respond effectively when stressed, but multiple factors, including developmental status, previous trauma exposure, and cognitive or emotional fatigue, can influence a child's knowledge and use of coping strategies.[22,111] When they are unable to engage in adaptive coping strategies, children and families experience psychosocial distress or trauma, which then jeopardizes illness management and wellness outcomes.[17,22,112,113]

While many possible coping mechanisms exist, the most prominent - and powerful - adaptive modality in childhood is play.[43,114,115] Unfortunately, healthcare events have been empirically shown to disrupt children's access to and ability to engage in play; this leads to developmental regression and coping difficulties,[116,117] as well as altered levels of the stress hormones (heightened cortisol and lowered norepinephrine) associated with adverse experiences and toxic stress.[118] In stressful healthcare situations, play is the ideal coping tool for children because it affords them a sense of familiarity alongside opportunities for active engagement, control, and mastery.[114,115,119] Engaging in play is particularly effective when designed and facilitated by trained professionals, such as CCLSs, boosting positive coping behaviors and optimizing outcomes.[119-122] Furthermore, CCLSs routinely offer play-based, family-centered coping skills education to address both illness- and non-illness-related developmental and psychosocial needs. For example, CCLSs construct therapeutic, child-directed play sessions that encourage children to express their emotions more readily,[43] often utilizing techniques similar to those implemented during preparation and procedural support interventions.

Expanding the range and variety of coping resources available to patients and families, CCLSs provide additional skills-based coping interventions (e.g., problem solving, communication skills, deep breathing, muscle relaxation, distraction, imagery, positive thinking).[111,123-125] These interventions positively influence children's appraisals of the intra- and interpersonal resources they possess for managing medical stressors. Moreover, CCLSs capitalize on the health benefits of social support - a resource readily available to most patients and families but at times unrecognized and untapped - by offering peer support interventions to improve coping, health-promoting behaviors, and patient satisfaction.[44,126,127] These interventions are particularly effective for adolescents, a patient population for whom peer interaction is a primary driver of socioemotional development.[126,128] By teaching, modeling, and facilitating adaptive coping skills, CCLSs catalyze long-term benefits for children and families that continue far beyond the medical moment. Selecting from their repertoire of play- and skills-based tools, CCLSs assess psychosocial and developmental risks and strengths to support patients and families in creating individualized coping plans.[125] Collaborative and personalized interventions like these are linked to long-term improvements in psychosocial well-being, information seeking, illness self-efficacy, illness knowledge, and treatment adherence.[123-126,129] Especially beneficial for children with autism spectrum disorder (ASD), individualized coping plans have been shown to improve patient and family satisfaction and reduce procedural distress.[130-133] Therefore, play-based coping skills education is a cornerstone intervention with which CCLSs enhance patient experience, encourage health-promoting behaviors, and nurture resilience.

Managing Pediatric Pain and Distress

The impact of acute or chronic pain and distress on children's psychosocial well-being is undeniable. Hospitalized children have been found to experience an average of 6.3 painful procedures each day,[134] and without proper pain management and coping support, children can experience compounding distress and long-term psychological sequelae such as needle phobia.[135] This is especially true for infants as neural structures in the developing brain and pain pathways throughout the central nervous system can be permanently altered by painful procedures, thereby heightening pain sensations throughout the lifetime.[136] When paired with frightening or distressing procedural experiences, these factors understandably influence an individual's approach to healthcare later in life.

For example, in day surgery, children's peak anxiety at the time of anesthesia induction and increased distress during transitions in care can persist for days and weeks following the procedure.[108] When left untreated, prolonged anxiety leads to increased self-reported pain, behavioral changes, consumption of more acetaminophen and codeine following hospital discharge, and greater risk of emergence delirium[110]; specifically, higher salivary cortisol (a physiological indicator of stress) is connected to greater morphine consumption.[142] However, children who receive developmentally appropriate preparation and procedural support show significant decreases (upwards of 59%) in perceived, measured, and observed pain and distress[13,75,98,144-148] and, in some cases, accelerated healing.[149]

Developmentally appropriate and individualized preparation and procedural support provided by a CCLSs has the capacity to lessen children's healthcare anxieties.[67,75,100-102,137-143] Studies consistently demonstrate that without preparation and procedural support, many children not only experience acute distress, but can also display negative behavioral and psychological changes such as apathy, withdrawal, separation anxiety, and sleep disturbances. And, for nearly 30% of pediatric patients, these difficulties will persist for more than 14 postoperative days.[109] However, when provided with developmentally appropriate preparation and procedural support, and guided through selection and rehearsal of coping techniques by a CCLS, children demonstrate fewer problematic emotional and behavioral changes.[70,143,148] More specifically, studies have noted a decrease in anger, aggressiveness, sleep problems, concentration, hyperactivity, and impulsivity, among children following surgery[66,141] with impacts lasting up to 10 days post-discharge[150] when these supports are provided. Additionally, pediatric patients that receive adequate preparation and procedural support demonstrate improved appetite and willingness to eat, and report feelings of mastery, growth, and joy.[141,151]

Preparation and procedural support not only aid patients but also the entire family system, including parents, grandparents, legal guardians, and other caregivers. For example, parents of children who receive preparation and procedural support also experience lower levels of distress and significant decreases in anxiety over time.[67,100,139-141,144,150,152-154] This reduction in parental anxiety positively impacts the child's emotional response, given the direct correlation between parent and child distress in medical settings.[140] Thus, low levels of parent and child distress improve overall psychosocial outcomes at and beyond the time of hospitalization.[13,76,155,156]

However, children who receive developmentally appropriate preparation and procedural support show significant decreases (upwards of 59%) in perceived, measured, and observed pain and distress[13,75,98,144-148] and, in some cases, accelerated healing.[149]

From an experiential standpoint, preparation and procedural support provided by CCLSs improves the overall patient and family experience. The anxiety- and stress-reducing functions of such interventions have shown to increase parent/caregiver satisfaction with the care their child received.[13,67,78,98,101,139,140,143,148,150,157,158] Moreover, families are more likely to return to or recommend the treating facility to others when procedural support was provided and are, thus, a cost-effective and organic marketing mechanism for the healthcare institutions they serve.[81]

Comfort Positioning

Another way CCLSs support children's coping and family engagement during procedures is through comfort positioning. Comfort positioning refers to the strategic use of positive parent/child touch to provide safe, yet supportive, immobilization during procedures.[159] These positioning practices stand in direct contrast to traditional restraint techniques, which have shown to increase anxiety, decrease perceived feelings of control, and hinder effective coping.[160] For example, the most common position used during pediatric medical procedures is the supine position, which requires the child to be placed on their back; however, remaining supine throughout such an experience increases fear and tearfulness, making the child more likely to become highly distressed.[161,162]

Comfort positions are an aspect of procedural support planning and intervention in which CCLSs purposively offer parents/caregivers an opportunity to participate in their child's care, which, in turn, lessens parent distress.[163] Children indicate more positive coping when procedures occur while sitting upright and comforted by their parent/caregiver, which, again, increases parent satisfaction.[162] Certified Child Life Specialists also understand that the implementation of comfort positioning is dependent on multiple factors - the child's age, size, and abilities, as well as the type of procedure - but that the practice itself reaps benefits for all ages. For example, even very young infants placed in a prone position rather than a supine position for a heel lance, cry less and experience decreased pain and distress.[164] Working in collaboration with multidisciplinary teams, CCLSs contribute an acute awareness of individualized, evidence-based tactics to promote adaptive coping with medical procedures, thereby minimizing distress and enhancing satisfaction with care.

Value Driver 3: Patient and Family Engagement

Certified Child Life Specialists empower children and families to become informed and active participants in their healthcare experiences. *By providing timely, individualized diagnosis, treatment, and discharge education for children and families, Certified Child Life Specialists promote health literacy and treatment adherence - reducing unnecessary emergency department visits, preventable hospital readmissions, unscheduled clinic visits, and use of rescue medications in chronically ill populations. When education is provided in play-based, trauma-informed, and culturally responsive ways, patient-family-provider relationships and communication are strengthened, familial distress is alleviated, and illness self-management is enhanced.*

When healthcare providers fail to effectively communicate with patients and families about diagnoses, procedures, and treatments, both children and parents/caregivers struggle to cope - often because of uncertainty and lack of knowledge; thus, physical and psychological outcomes are jeopardized. Through ongoing psychosocial assessment and relationship building, CCLSs provide educational interventions that empower children and families to seek information and become active participants in their healthcare experiences.

Communicating with Children

A cornerstone of child life practice, effective communication with children across all stages of development is the foundation of optimal pediatric health outcomes. Children clearly and consistently report the importance of receiving honest, accurate information in healthcare settings,[165-167] and while physicians also identify honesty as a priority in healthcare communication,[167] the medical terminology in which they are trained is difficult for children and youth to interpret.[165,168] Ineffective communication fuels children's misconceptions and fears about their illness and treatment. Conversely, children indicate that receiving intelligible information about their body, condition, and care is important in ameliorating their fears.[165,169]

When communication is categorized as effective, rather than avoidant or ineffective, children exhibit significantly less distress (i.e., withdrawal, anxiety, depression) and fewer social problems.[166] Thus, a pivotal apex in pediatric healthcare improvement is individually tailored, developmentally appropriate communication with children, and CCLSs advocate for, educate about, and deliver this intentional communication with patients of all ages and backgrounds. Blending cognitive, psychosocial, information-processing, and sociocultural perspectives, CCLSs anticipate and assess for the nuanced understandings that shape children's communicative capacities, such as the development of symbolic thought, the initiation and resolution of fantastical thinking, the importance of concrete exploration and explanations, and the point at which concerns about the future start to inform present decision making. Furthermore, CCLSs are trained in attending to contextual factors that influence children's thoughts and words (even those that are left unsaid), including cultural beliefs, family structures, perceived power dynamics between patients and providers, and elements of the physical environment often unnoticed by adults and providers (e.g., counter heights, seating arrangements, color schemes, and accessibility of age appropriate play materials). Merging their six domains of practice, CCLSs display and implement a precisely calibrated skill set for approaching, involving, and aiding children, youth, and their families in understanding their care.

Certified Child Life Specialists recognize that the timing of effective healthcare communication is an important component for facilitating patient autonomy in care and decision-making.[165] As seen with adults, earlier and more frequent communication is best. Thus, when communication with children is conducted using age-appropriate methods of care planning, patients from early childhood to emerging adulthood can better understand illness concepts and more actively participate in medical decision-making.[170] By improving comprehension of their healthcare needs and eliciting effective communication of their wishes, age-appropriate and accessible styles of communication in healthcare settings facilitate further engagement of pediatric patients in their care.[171] Care and communication that is patient-centered and collaborative coincides with greater perceptions of control and competence amongst patients and parents/caregivers, resulting in higher self-efficacy and adherence, especially among older pediatric patients.[172]

Although the need for effective communication in healthcare settings is clear, nurses and physicians indicate considerable barriers when interacting with children. Nurses identify lengthy, more involved communication about important healthcare information as difficult to prioritize in their busy clinical days, and physicians note their lack of knowledge regarding communication with children as a primary impediment to effective interactions with pediatric patients.[173] However, developmentally appropriate communication facilitated by CCLSs mitigate many of these barriers noted by nurses and physicians. Considering that healthcare subject matter tends to be complex and emotionally charged, CCLSs apply their education and training to deliver and reinforce information that facilitates patient involvement in ways tailored to their individual needs. Furthermore, when the subject matter seems less life-altering, the importance of therapeutic relationship building - a core component of child life care - has a salutary effect on patient and family satisfaction during treatment.[174-176] The time constraints often noted by other healthcare professionals are less applicable to CCLSs because their profession is largely dependent upon communication for education, coping skills training, and advocacy.

Diagnosis Education

As many as one in four children in the United States are living with chronic health conditions - with incidence estimates rapidly rising - suggesting an important and expanding need for developmentally appropriate diagnosis education that begins early in the illness trajectory.[177] The term “diagnosis education” describes a multitude of play-based and developmentally grounded interventions designed to increase patient-and-family knowledge and skills related to medical conditions and their management.[178,179] Certified Child Life Specialists employ their distinctive communication abilities to provide diagnosis education for patients and families, further encouraging parental involvement and continuing to support families with honest information-sharing.

Diagnosis education is most effective when it is developmentally appropriate and incorporates both problem solving and coping skills training.[180-182] Certified Child Life Specialists have the distinctive and dedicated knowledge, focus, resources, and clinical time to build therapeutic relationships with children and families, ensuring that education is individually tailored, developmentally appropriate, and coping-focused. In collaboration with members of multidisciplinary healthcare teams, CCLSs provide diagnosis education that improves patient and family experience in diverse situations, such as inpatient admissions for ketogenic diet initiation, perinatally acquired HIV disclosure, burn rehabilitation, autism support, and transitional care programs in late adolescence.[44,45,132,183-187]

Research shows that parents/caregivers struggle with a lack of knowledge and certainty when communicating medical information to their children, and poor illness knowledge contributes to increased psychosocial distress and diminished health outcomes for children and families.[169,188] In fact, clinical and best-practice guidelines reinforce the importance of combining pediatric diagnosis education with psychosocial support. For example, it is difficult to provide effective diagnosis education for a patient and family experiencing healthcare-related emotional distress[189-191]; thus, combining interventions that address coping with those targeting knowledge acquisition creates a space in which patients and families feel emotionally and psychologically safe - a space more conducive to learning and sharing. Additionally, certain psychosocial risk factors (e.g., low socioeconomic status, history of migration experiences, previous trauma exposures, or childhood mental illness) are associated with even lower condition knowledge and higher uncertainty for child and parent.[192] Certified Child Life Specialists are adept at communicating with children in developmentally appropriate ways to remedy medical misconceptions, especially through ongoing diagnosis education. They are aptly positioned within the multidisciplinary care team to not only address these issues as they arise but to also ensure that the mode through which issues are addressed promotes comfort and reiterates trust.

By providing diagnosis education, CCLSs extend benefits to children, families, and hospitals alike, increasing patient and family knowledge while also impacting their behavior in ways that optimize the bottom line. Children who receive individualized asthma education, for instance, show reductions in subsequent emergency department visits, hospital readmissions, unscheduled clinic visits, and use of oral corticosteroids, illustrating a link between diagnosis education and healthcare resource utilization.[193-195] Educational interventions, such as those used by CCLSs, are associated with long-term improvements in patient and parent/caregiver knowledge, psychosocial well-being, quality of life, and physical health.[178,195,196] Furthermore, parents/caregivers who report receiving more and/or higher quality asthma education indicate better parent-provider relationships, highlighting the connection between quality diagnosis education and improved patient and family experience.[197]

In collaboration with members of multidisciplinary healthcare teams, CCLSs provide diagnosis education that improves patient and family experience in diverse situations, such as inpatient admissions for ketogenic diet initiation, perinatally acquired HIV disclosure, burn rehabilitation, autism support, and transitional care programs in late adolescence.[44,45,132,183-187]

Adherence-Promoting Interventions

The specialized knowledge and skills that CCLSs apply in diagnosis education and coping support closely mirror those they use to promote treatment adherence in pediatric patients and their families. Treatment non-adherence is an increasingly burdensome expense in healthcare - whether measured by dollars, population health outcomes, or resource availability. Across both acute and chronic conditions, non-adherence to treatment plans is seldom without consequences. For children with acute conditions, poor adherence to antibiotic medications has been identified as a barrier to individual and public health goals (e.g., preventing recurrent infection, reducing the growth of antibiotic resistant bacteria)[198]; in those with chronic conditions, substandard treatment adherence is correlated with growing healthcare usage and costs.[199] Furthermore, non-adherence can lead to higher risks of morbidity and mortality, such as organ rejection after transplantation[200] and relapse or recurrence in those with cancer.[201] Regardless of the diagnosis, and much like what is seen in discharge education research, combination interventions that address multiple components of psychosocial well-being prove most impactful,[198,202] aligning with the multidimensional approach and skill set of CCLSs.

While barriers to treatment adherence (e.g., difficulty or inability to swallow pills, diagnosis and treatment intensity, lack of treatment knowledge) are many and varied (and not to be ignored), they are frequently overcome through targeted interventions within the scope of child life practice. Such interventions have rendered statistically significant adherence improvements, while at the same time promoting other key health outcomes, such as decreased viral load and improved CD4+ T-cell counts in children with HIV.[203,204] Additional adherence barriers in childhood manifest and multiply when treatment is administered via injection, including pain or fear of pain associated with needles, lack of knowledge and understanding regarding the illness and/or treatment, and the quality of the relationships between healthcare professionals and patients.[205] Certified Child Life Specialists provide combinatory interventions that address illness-related knowledge and understanding, treatment comprehension, and techniques for coping with needle-related fear and distress.

Developmental complexities also impact adherence to treatment recommendations, and in the context of child life care, they are essential pieces of individualized assessment for adherence-targeting interventions. For example, in children and adolescents living with epilepsy, commonly endorsed barriers reflect the intricacies of each developmental stage, such as disliking the taste of liquid medication, difficulty swallowing pills, forgetfulness on behalf of the parent/caregiver and/or patient, overall medication refusal, feeling embarrassed about the condition and its treatment, running out of medicine, and difficulty accessing a pharmacy.[206] It can be seen, then, that just as barriers to adherence change throughout the child's development, so, too, should assessment and intervention techniques for bolstering adherence - directing extra attention to the developmental periods in which health outcomes are typically poorer (i.e., adolescence).[206] The importance of implementing frequent and individualized assessment alongside ever-evolving intervention rings true across varied and complex pediatric conditions (e.g., organ transplant, HIV).[200,207] Thus, by assessing and addressing contextualized barriers that can arise for patients and families, the developmental knowledge of CCLSs is vital in supporting adherence (both for patients and their caregivers) across childhood, adolescence, and emerging adulthood.

Certified Child Life Specialists provide combinatory interventions that address illness-related knowledge and understanding, treatment comprehension, and techniques for coping with needle-related fear and distress.

Parent Engagement

As shown above, parental involvement is a key component of both treatment adherence and adherence-promoting interventions. Because effective communication and active engagement are vital in optimizing both patient and family outcomes, parents/caregivers need to be intentionally incorporated into their children's care. In pediatric healthcare, parents'/caregivers' participation in their children's healthcare can range from simply being present at the bedside to intentional interaction and/or active engagement in communication and care processes. Research demonstrates that there are benefits of allowing parents/caregivers to be present in medical settings (e.g., during medical procedures, anesthesia induction, and resuscitation) and providing them with individualized education and support.[169] In addition, care that is truly family-centered leads to increased satisfaction overall.[208]

More specifically, providing parents/caregivers with guidance on supporting their child during treatment, hospitalization, and procedures has emerged as an essential means for managing parent/caregiver - and patient - distress across pediatric healthcare settings. During their child's inpatient hospitalization, parents/caregivers report significant challenges to their own coping, such as unfamiliarity with the hospital environment, ambiguity regarding their role in the child's care, a lack of information about and understanding of procedures, and uncertainty about the diagnosis and treatment plan.[140,209-212] Furthermore, parents/caregivers also experience healthcare related distress when a child is hospitalized and/or has a chronic illness involving repeat healthcare experiences. As this anxiety rises, so, too, do negative behavioral and health-related outcomes such as psychological symptomatology, disease severity, and healthcare utilization rates for children and adolescents.[213] In day-to-day life, general parenting stress in those with children diagnosed with a chronic illness is significantly higher than that of parents/caregivers of healthy children[213] - a finding to be expected given the increased levels of daily care and perceived isolation for parents/caregivers of chronically ill children. As multidisciplinary team members attuned to the dynamic, bidirectional effects of parent/caregiver and child distress, CCLSs provide interventions to promote and support adaptive parental coping with children's present and prospective medical experiences.

An expected component of pediatric healthcare, parenting stress (like patient stress), is a modifiable condition.[213] A parent's appraisal, positive or negative, of an event or situation can largely determine the psychosocial outcomes of a child's healthcare experience. Negative appraisals can dilute coping efforts and increase disease-related stress in parents/caregivers.[213] When parents/caregivers are given the opportunity to access information about their child's treatment and receive guidance on ways to best support their children in the process, parental anxiety is lessened.[105,169,214] In addition, more knowledge about and frequent use of effective coping strategies not only decreases parent distress but also heightens parent satisfaction with healthcare experiences.[215] Additionally, when parents/caregivers are actively involved in their child's care (i.e., included in decision making and empowered to address developmental milestones utilizing play and other skills), they experience less distress, their children cope more effectively, and their confidence as parents grows.[105,214,216]

Ensuring this active parent/caregiver engagement in healthcare experiences is a central tenet of child life care. Interventions (e.g., preparation, procedural support, coping skills and diagnosis education) that reduce negative experiences, increase understanding and parental engagement and can reduce distress in parents and their children alike during future medical encounters.[162,217-219] For example, parents/caregivers who are engaged in IV placements through comfort positioning report greater satisfaction with catheter insertion, their level of participation in the procedure, their ability to provide emotional support to their child, and the staff's skill in managing the child's pain.[162] In addition, engaging and involving parents/caregivers in their children's care can significantly lower parent and child distress during procedures like IV placements without significantly altering the number of attempts made or the total time spent on the procedure, which maximizes both quality of care and throughput.[148,162,217,218]

Often perceived as falling primarily on the parent/caregiver, responsibility for illness management in pediatrics is typically shared between the child or adolescent, the parents/caregivers, and the healthcare team. Just as higher parent/caregiver stress can intensify negative health outcomes, so, too, can unbalanced responsibility. Unrest in health management responsibilities between any of these partners can further amplify parental distress.[213] Therefore, cyclical patterns of parent, patient, and family distress are propagated. Through encouraging a teamwork approach to disease management, CCLSs can: 1) ascertain a child's capacity to begin taking responsibility for disease management, 2) work with nursing colleagues to assess the educational and developmental needs of the pediatric patient, and 3) coach parents/caregivers in meeting these needs - all of which lead to an increasingly well-balanced approach to condition management and lowered parent stress.[175,208,213,220,221] Involvement by child life professionals aids in preventing parents/caregivers and/or pediatric patients from assuming unsustainable responsibilities for care, and research demonstrates that both parents/caregivers and healthcare staff find parental support to be more impactful - and children to be more cooperative with care - when a CCLS is involved.[148,175,219] Their fine-tuned skill set and family-centered training enable CCLSs to meet the needs of parents/caregivers as they care for their ill or hospitalized child, increasing parent satisfaction, decreasing parent stress, and creating a more informed and engaged generation of healthcare consumers.

Discharge Education and Health Literacy

A prime area for improvement in patient-and-family-centered healthcare experiences, particularly for inpatient hospitalizations, is supporting families through hospital-to-home transitions. During these times of change, much like times of duress, accurate information and individualized support are crucial to patient and family coping and success. In this sense, the practices and concepts of discharge education and health literacy are steadily emerging areas of opportunity, both for improving patient experience and population health.

Transitional success in healthcare contexts is largely a function of health literacy, which has been defined as, "the degree to which [patients and/or parents/caregivers] have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."[222] However, according to the U.S. Department of Education,[223] as many as 40 million American adults - 1 in 5 - are considered to have "low English literacy skills," or as having below basic functional reading skills. This means that for this subset of parents/caregivers, when tasked with the elevated challenges of reading and comprehending complex healthcare information, upwards of 20% of parents/caregivers are unsuccessful in achieving the necessary level of health literacy to serve as proficient partners in their child's care. Taking into account the profound importance of the parent/caregiver role in effective hospital-to-home transitions and health outcomes in childhood, providers must assess and account for health literacy when formulating and implementing effective discharge education in healthcare settings.

Systematic empirical evidence consistently demonstrates that lower literacy skills in children lead to poorer personal health behaviors, and lower parent/caregiver literacy skills lead to worse child health outcomes.[224] While much of pediatric health literacy research focuses on parents/caregivers, findings demonstrate these outcomes are also likely to hold true for children.[225,226] For example, healthcare literature that is specifically targeted towards and designed for pediatric patients has been shown to result in children more accurately identifying and answering questions about their health status.[227] This marks a significant achievement because children often understand their hospitalization through their own interpretive lens – a direct result of their developmental level, personal knowledge, and experiences.[228] Certified Child Life Specialists, by blending their strategies for effective communication with their robust developmental knowledge, possess distinct training allowing them to identify the ways in which children's conceptual schemas about health and illness are developed, revised, and expanded, especially as children negotiate the barrage of new information presented by healthcare encounters. Thus, CCLSs identify, explain, correct, and replace these misconceptions through developmentally appropriate play, education, and communication,[7,229] strengthening children's health literacy as it unfolds.

Across intervention types and modes of administration, health literacy must be assessed and adjusted for, ultimately adjoining into multidisciplinary care approaches to promote successful transitions to and from care. Discharge education and standardized discharge processes have been identified by both parents/caregivers and healthcare providers as indispensable components of pediatric hospital care[230-233]; furthermore, parents/caregivers and providers demonstrate marked agreement regarding educational content and strategies for effective content delivery.[230,231,233,234-236] Namely, both stakeholder groups prioritize discharge education that is: 1) high-quality,[231,233,235] 2) delivered in standardized ways,[230,231,234] and 3) appropriately timed.[233,236]

Relevant literature illuminates vital considerations for the delivery of discharge education, particularly as patients and families start their transitions from hospital to home. When discharge education is poorly planned or lacking, patients and families are more likely to experience subsequent readmissions.[235,237] It has been shown that when discharge education is provided all at once, shortly before discharge and/or on the date of discharge, parents/caregivers report feeling both overwhelmed and unprepared,[233,236] compromising their ability to comprehend crucial details about their child's care. High quality discharge education, on the other hand (as perceived by the parent/caregiver), results in a more positive assessment of their discharge readiness by nursing staff,[235] and when discharge education is considered comprehensive, reductions in readmission rates, particularly in children hospitalized for asthma-related illness, can result.[238] Additionally, when in-home care activities are required after discharge, simulated teaching with parents/caregivers that appropriately addresses their knowledge and comfort levels bolsters their self-efficacy[239] - which allays provider costs and resources by avoiding preventable readmissions or care encounters.[240,241]

Beyond the institutional benefits rendered by effective discharge education, research reveals a host of positive outcomes for individual parent/caregivers and patients (e.g., increased illness-related knowledge, decreased anxiety, improved coping).[242] In addition, these benefits are magnified when discharge education is appropriately structured, culturally appropriate, and individualized for the patient and family.[233,242] Teach-back (a particular provider-driven and patient-reciprocated educational strategy), for example, has proven to be highly effective in discharge education.[243,244] However, like many educational interventions, its use is frequently hindered by lack of provider time[235,245] and staffing.[246] Physicians likewise identify time constraints and a lack of empirically supported communication tools (e.g., teach-back) as barriers to promoting patient and family comprehension of discharge information.[247]

As effective communicators, relationship builders, and educators for patients and families,[7,229,232] CCLSs consider, facilitate, and develop health literacy in children and families as an integral part of their dedicated clinical time and responsibilities. Their ability to conduct individualized assessments enables child life professionals to design and implement structured, educational plans of care that cater to the unique needs and experiences of each patient and family while simultaneously meeting unit-based and facility-wide discharge goals. Certified Child Life Specialists possess the distinct, necessary multidimensional skills for ensuring that discharge education and hospital-to-home transitions are opportunities carefully constructed and intentionally poised to enhance the health literacy of children, youth, and families.

Value Driver 4: Developmental Impacts

Certified Child Life Specialists promote and sustain optimal developmental and psychosocial growth from infancy through emerging adulthood. *They facilitate purposeful play experiences, normative interactions, and transition support for patients, parents/caregivers, and family members that shape positive coping and development. Targeted, developmentally appropriate, and family-centered play-based and educational interventions result in increased weight gain, abated feeding difficulties, and decreased length of stay in infancy, thus enhancing neurodevelopmental outcomes. In children, adolescents, and emerging adults, these supports render improved emotion regulation, effective coping behaviors, adaptive peer interactions, and more appropriate use of healthcare resources.*

Chronic illness and prolonged hospitalization in childhood pose a multitude of threats to child and family development.[216] Left unaddressed, these experiences can damage children's physical and psychological health, and quickly activate traumatic stress responses.[248] By providing family-centered, play-based, and developmentally supportive care, CCLSs help children and their families access the tools within themselves and one another needed to successfully navigate developmental barriers and transitional experiences.

Developmental Assessment and Intervention

Developmentally supportive care is defined as a comprehensive, collaborative, and patient-and-family-centered approach to improving developmental outcomes through individualized interventions.[249,251] Similarly, positive patient experiences and outcomes multiply when the focus is on both the physical well-being of children and their developmental and psychosocial needs.[252] Certified Child Life Specialists partner with patients and families of all abilities and diagnoses to identify developmental barriers, needs, and goals during medical experiences. Depending on the child's age (chronological and developmental) and experiences, these can involve ensuring parent/caregiver presence during procedures (especially for infants), maximizing opportunities for choice and control for toddlers, correcting misconceptions of care in preschoolers, supporting connections to activities and contexts of daily life (e.g., school, community, extracurricular activities, and peer interactions) for older children and adolescents, and adapting the hospital environment and care approach to support the needs of children with complex healthcare needs, such as autism spectrum disorder.[253-255]

Children understand their medical experiences, as well as the impacts of these experiences, based on their cognitive, social, and emotional development, and an important component of child life practice is anticipating potential challenges that can arise as a result of these perceptions. Certified Child Life Specialists are specifically trained to identify children's interpretations of and reactions to stressful events, particularly in the context of healthcare environments.[252] Depending on the child's developmental level and temperament, factors such as decreased mobility, social and physical isolation, use of life-sustaining medical equipment, and treatment or illness side effects altering baseline behavior can provoke developmental difficulties or delays.[216] Additionally, inconsistent parent/caregiver presence, painful and invasive procedures, interruptions of daily routines and schedules, lack of opportunities for exploratory play, and altered parent-child roles and responsibilities can jeopardize the child-parent relationship. Furthermore, disruptions to parent/caregiver participation in the child's care can jeopardize infant-parent attachment and further complicate the child's ability to achieve normative developmental milestones.[216,248,249,252] Thus, CCLSs provide targeted play-based, educational, and therapeutic solutions to address medical misconceptions, ameliorate the consequences of these misconceptions, and reinforce honest, accurate, and developmentally appropriate information.

By continually assessing the individual patient, family, environment, and situation, CCLSs intervene based not only on the child's developmental needs and capabilities but also on the influence of their temperament, previous medical experiences, misconceptions, fears, and responses to stressful events.[257,258]

As noted by the National Association for the Welfare of Children in Hospitals,[256] children need and prefer developmentally supportive care, age appropriate information about their diagnosis and treatment, and opportunities to participate in their healthcare experiences. Without these elements, it is nearly impossible to provide truly child-focused medical and psychosocial care.[248] Therefore, in order to meet the unique developmental needs of children in the hospital (i.e., creating and maintaining healthy routines, providing opportunities for play and socialization, and supporting children during procedures), ongoing environmental assessment is essential, as a child's relationship with their environment is a salient source of exploration, learning, and development for children of all abilities and conditions.[251]

To facilitate comfort and increase understanding, CCLSs consider the environment and its impact on care interactions when providing ongoing, individualized support for pediatric patients and their families. By continually assessing the individual patient, family, environment, and situation, CCLSs intervene based not only on the child's developmental needs and capabilities but also on the influence of their temperament, previous medical experiences, misconceptions, fears, and responses to stressful events.[257,258] Specifically in infancy, developmentally supportive care (e.g., kangaroo care, purposeful positioning, infant massage, and age appropriate pain management) results in reduced length of stay, earlier transitions to oral feedings, increased weight gain, and better neurodevelopmental outcomes for premature infants.[251] On the other hand, environmental stimuli such as harsh lighting and excessive ambient noise, inadequate or excessive handling and caregiving, and repeated exposure to painful procedures can damage the immature infant brain and, ultimately, alter their developmental course.[259] Certified Child Life Specialists, with their knowledge of child development and awareness of multisensory environmental and health-related stressors, are distinctly prepared to anticipate, prevent, and combat the potentially harmful impacts of healthcare encounters for children and families.

Dimensions of Play

Play is one of the foundational tools that CCLSs draw upon to assess development and prevent any emotional or psychological harm posed by healthcare environments. Across theoretical perspectives, play is consistently described as any activity in which participants are voluntarily engaged, that is free from the structure and bounds of reality, and inherently enjoyable.[43,114,122] Play is a therapeutic tool, a conduit for healing and healthy processing of events and information, and an essential intervention in pediatric healthcare settings.[43,114,115,121,260] Hospitalized children, in contrast with those in the comforts of home and family, demonstrate a greater need to play because of the stress generated by unfamiliar environments, unpredictable schedules, painful experiences, and mobility restrictions due to illness or treatment.[116,261] When play is unstructured, child-directed, developmentally appropriate, contextually relevant, and easily accessible, play is replete with therapeutic value and vital for whole child development. In the safe, low-stakes atmosphere of play, infants, children, and youth explore possibilities, rehearse responses, and process thoughts or emotions in manners unavailable in other real-life contexts.[43,120,262] Hospitalization is one such context that disrupts access to and activities involving play.[116,117,263] In fact, consistent and prolonged absence of play in a child's environment leads to missed opportunities for learning, understanding, and development.

Particularly in hospital settings, children and adolescents spend less time playing and use more narrow and repetitive themes, engaging in less group play with peers than those in their homes, neighborhoods, and other community settings.[116] Such changes in play behaviors stem from anxiety and the lack of perceived safety and predictability in the hospital environment.[116] Stress, therefore, intensely colors children's perceptions of medical events,[116,264] and as a result, hospitalized children are prone to many months of emotional distress following discharge.[263] Certified Child Life Specialists remain cognizant of the detrimental consequences arising from the absence of play, thus, intentionally weaving it into most components of their practice (e.g., facilitating self-expression, and providing preparation, procedural support, diagnosis teaching and discharge education).

Play is one of the foundational tools that CCLSs draw upon to assess development and prevent any emotional or psychological harm posed by healthcare environments.

An important piece of facilitating and protecting play in stressful healthcare experiences is preparing and preserving play-conducive spaces[122,260,262,265] - a facet of care that CCLSs are attuned to across healthcare situations. The pediatric healthcare environment should be designed to create as many playful circumstances as possible, increasing the time and space for children and adolescents to process and master their experiences.[7,116,260,262,266,267] Certified Child Life Specialists intentionally create and adapt hospital environments to promote play opportunities, improve coping behaviors and maximize quality of life in hospitalized children and their families,[51,116,264] and when a safe and supportive environment is achieved, play aids in increased cooperation and adherence to treatment regime.[114]

Often referred to as “pretend play” or “therapeutic unstructured play” in research literature, free play prevents or reduces child anxiety and distress especially when offered in the restrictive bounds of healthcare environments.[121,143] Additionally, the presence of a knowledgeable, supportive adult play partner is necessary in assisting and guiding children in making sense of their hospital experiences through play.[116] Responsive, empathetic, and well-trained adults such as CCLSs assess individual coping needs of children and adolescents through observation that is supported by strong, applied knowledge of child and family development.[51,114,119,120] And, when they supervise, but do not necessarily structure or lead, CCLSs purposefully modify play interventions to reinforce adaptive coping behaviors (e.g., effective emotion regulation, appropriate coping strategy usage, and positive peer interactions) and abate negative behaviors.[121,143] Furthermore, parental presence in a child’s play environment directly predicts self-expression and positive coping.[122,261]

Along with the presence of supportive caregivers and skilled staff such as CCLSs, the active role of the child in play is imperative to building effective coping strategies for managing acute and chronic (or repeated) healthcare experiences. As previously established, in order for positive coping behaviors to develop, children need the ability to free play by selecting their own play materials and themes within an intentionally-designed, effectively-supervised environment.[115,116,268,269] Pretend play in such environments cultivates divergent thought processes and emotion regulation, which are elements of problem solving essential for coping with stress.[121,270] Certified Child Life Specialists recognize the ability of pediatric patients to choose, when appropriate, and advocate for opportunities for the child to exercise control. Thus, when play is child-directed, children often perceive themselves as in control, gaining enhanced mastery over their experiences and improved self-efficacy regarding current and future hospitalizations.[117,271,272] It is through this perceived control, and increased self-efficacy in stressful situations that young patients are taught to be active participants in and lifelong consumers of healthcare.[271]

A distinct form of play unique to child life practice is medical play, which gives children access to play with medical themes and/or medical equipment offered in a monitored, and non-threatening manner. This type of play is further characterized by three other essential features: 1) it can be adult initiated but must be child-directed and maintained 2) it is enjoyable in nature, often accompanied by laughter and relaxation, and 3) it offers mastery and control over frightening medical environments.[272] An important component of children’s coping in healthcare settings is this intentional play with medical equipment (e.g., masks, gloves, syringes, stethoscopes, and even needles), and the combination of recognizable play methods and unfamiliar medical equipment allows children to integrate their thoughts and feelings and achieve a healthy sense of mastery over a situation.[273,274] For example, research indicates that children that play with items related to their stressors (such as those involved in an IV placement) experience reduced anxiety and greater ability to cope.[114] By gradually introducing unfamiliar medical equipment through play, children attain greater control over their environment and begin expressing their feelings and perceptions, as play is their language and toys are their words.[266]

Because of their extensive education and training in medical play, CCLSs are model healthcare professionals for facilitating it for confused, anxious, and/or stressed pediatric patients and families. They possess the developmental knowledge necessary for ensuring that the medical equipment involved in play interventions is appropriate for the social, emotional, and cognitive abilities of the patient, and they have clinically completed individualized assessments to ensure said equipment meets these developmental requirements. Certified Child Life Specialists utilize free play as another form of assessment, effectively observing children's behavioral cues while also screening for accurate understanding (or misconception) that indicates need for follow up care.[46,52,131,264] Specifically, medical play can yield insight into developmental needs, psychological conflicts, and unexpressed fears[43,51, 52,275] and more directed (or adult- or CCLS-led) medical play techniques can be used to prepare children for surgery or other unpleasant medical procedures, resulting in decreased anxiety.[61,274] Apart from alleviating psychological distress, medical play with the goal of preparation also carries physiological benefits for the child, such as decreased cortisol levels and heart rate both before and during medical procedures.[115,143]

Within the context of well-defined, therapeutic relationships, CCLSs provide safe, secure spaces for children and youth to express feelings that, outside of low-stakes play contexts, could be construed as inappropriate and go unacknowledged.[114,262,264,269] Certified Child Life Specialists provide opportunities, as well as physical and temporal space, for pediatric patients to gain a sense of control and mastery over healthcare experiences.[114,116,262,264,269,270] In fact, many hospitals rely upon CCLS and additional child life staffing (e.g., child life assistants, special events coordinators, or volunteer supervisors) to enhance patient experiences and normalize the environment through coordinated hospital events and/or play-based programming. A visit from a facility dog, a musical activity in the recording studio, or a movie night in the hospital theater are just a few examples of events that provide therapeutic benefits for patients and families (e.g., socialization, self-expression, diversion, a sense of normalcy) during stressful times while also engaging the support of community partners and donors.[44,276-278]

As the multidisciplinary team members most knowledgeable about the powerful effects of play, CCLSs often demonstrate and teach coping strategies through play to decrease stress in healthcare settings and impact development in the midst of and following healthcare encounters.[119,143,270] They also provide therapeutic play opportunities that reduce stress before procedures, ameliorating negative behaviors and physiological responses.[143,263] Certified Child Life Specialists facilitate consistent, recurring opportunities for free, unstructured, and truly therapeutic play so as to bolster positive, long-term effects on pain, adjustment to illness, and externalizing behaviors. Notably, and as expected, the presence of a CCLS has been shown to proliferate children's effective and healthy interactions with play materials in healthcare settings.[121] Certified Child Life Specialists are the professionals within multidisciplinary healthcare teams specifically trained in the therapeutic value and expansive utility of play, child development, and the ideal ways to apply this knowledge to identify and ameliorate stress in healthcare settings.

School Reentry

Medical experiences continue to affect children far past the point of procedure completion or discharge. When a diagnosis, treatment, or hospitalization separates them from their typical social circles for extended periods of time, returning to contexts like home, school, and peer groups can be an additional source of stress. Research demonstrates that children who are ill or hospitalized report disruptions to their daily activities and social roles as their most significant health-related stressors (e.g., missing school days or falling behind in school work, not doing things they used to do, feeling isolated from their peers).[279,280] Furthermore, work has verified that prolonged absences threaten the child's peer relationships and sense of well-being. Children often feel estranged from their friends, as school attendance dwindles[279,281,282] and side-effects from treatment (e.g., fatigue, nausea, and pain) not only prolong separation from school, but also pose long-term cognitive challenges,[283,284] and attention difficulties,[285,286] all of which can have detrimental and lasting impacts on a child's sense of self and social relationships. Moreover, approximately 45% of students with chronic health conditions fall behind in their school work, which, in turn, leads them to dislike school.[286] An increased aversion towards school and fear of isolation from classmates can make returning to school after a healthcare encounter that much more difficult. However, play-based and educational school-reentry programs, provided by CCLSs, help ease this transition for patients, classmates, and school staff. Certified Child Life Specialists recognize the challenges school reentry can present, assessing and anticipating the patient-and-family's transitional needs and providing individualized, evidence-based interventions (e.g., coping skills education, therapeutic play, diagnosis and treatment education).

School reentry programs extend hospital-based child life support into the community through targeted education for the child, their peers, and school personnel (e.g., teachers, school counselors and nurses, classroom aids). A considerable way in which CCLSs bridge the gap between the typical developmental context of the classroom and the drastically different hospital setting is by increasing school personnel's knowledge and comfort with the child's condition, and the many ways in which the school can support the child's reentry. These programs facilitate support by coordinating care between the child's family, healthcare team, and educational staff, and are individualized to reflect the child's cognitive, physical, and socioemotional needs both prior to and since treatment.[287-290]

Considering their robust knowledge of child development and family systems, CCLSs are distinctly suited to facilitate school reentry services, liaising between the patient's family, multidisciplinary healthcare team, and school personnel.[291] Certified Child Life Specialists, through age appropriate education and play, model ways to relate to, care for, and engage with the child to promote connection and reduce social isolation. They tailor information to the developmental needs specific to the patient and their peers, and they possess the knowledge and communication skills necessary to explain pertinent medical information to teachers and classmates alike. By articulating the developmental impacts of the child's condition to educators and administrators, CCLSs ensure that the child receives the appropriate instructional and ancillary support needed to thrive in the school setting. Educational workshops provided by CCLSs are particularly beneficial to peers and classmates because the provision of accurate and developmentally appropriate medical information demystifies misconceptions they may have prior to the child's return; if left unaddressed, classmate fears and fallacies can evolve into isolating the ill child, further exacerbating the loneliness they felt during hospitalization.[282,292] Certified Child Life Specialists facilitate these support services to ensure that patients have the comprehensive academic and psychosocial resources needed for a successful hospital-to-school transition.

Transitional Care

Like school reentry, the progression from pediatric to adult care introduces another medical and social transition that can provoke anxiety for adolescents and emerging adults (AEAs), and their families. Transitioning toward adult health systems proves to be a tenuous juncture in the developmental and medical trajectories of AEAs[59] due to their increased vulnerability to behavioral health risks, emerging or worsening chronic health conditions, and diminished healthcare use in this age group.[293-295] Moreover, age-gradient patterns of healthcare coverage and access have been well documented during the AEA period of development, with rates worsening as individuals progress through adolescence and enter into emerging adulthood[295] - a pattern also evident in AEAs with special healthcare needs.[296] Poor planning and/or lack of readiness for healthcare transition is linked to more frequent use of emergency rooms and outpatient clinics, as well as higher incidence of hospital admissions and surgical procedures.[297-299] In addition, transfer to adult care is delayed, medical appointments are missed, and independent care management is compromised.[297,298] Taken together, this constellation of effects can have dire consequences for the delivery of cost-effective, high-quality healthcare services and attainment of optimal population health outcomes.

Developmentally appropriate and individualized interventions (a core feature of child life practice) for AEAs improve transitional healthcare planning and readiness (e.g., improved patient disease knowledge and competence, greater patient self-efficacy, increased patient confidence, and heightened motivation).[296,300] The extensive developmental knowledge that CCLSs routinely employ when working with patients and families is invaluable in such contexts; these healthcare professionals ensure that the interventions and supports being provided are emotionally, cognitively, and physically appropriate for each unique patient and family system. By tending to the psychosocial variables deemed most important by AEA patients (e.g., unstable life circumstances, competing life demands, depression, anxiety, denial of illness, fear and anxiety as it relates to their diagnoses, changing social structures, and lack of peer support/relation), CCLSs provide the education and support this vulnerable patient population requires as they assimilate into adult healthcare processes and systems.[298,301]

The timing by which the transition from pediatric to adult care is introduced and initiated is another key facet of optimized AEA health. When unprepared, AEA patients report feeling forced into taking responsibility for their health management too soon - not ready for the tasks upcoming or at hand.[298] Transitional care that begins earlier in childhood/adolescence and evolves alongside the pediatric patient and their family increases patient disease knowledge and self-management,[298,301] and by discussing this care early in the medical journeys of pediatric patients with chronic conditions, expectations are set that further their confidence, self-efficacy, and independent functioning.[302] Patients who receive preparation for the transition to adult care through structured, purposeful programming indicate favorable perceptions of their health status, as well as increased satisfaction with their providers.[302]

Certified Child Life Specialists, trained in anticipating and evaluating developmental changes as they occur, are skilled therapeutic relationship builders; therefore, they are ideal multidisciplinary team members for incorporating incremental, purposeful transitional education and training. Drawing from their expertise in both family systems and effective communication, CCLSs not only recognize the need to provide ongoing preparation for both AEAs and their parents/caregivers but are also an invaluable source of this support. They understand the particular importance this type of intervention has for parents/caregivers because research often notes struggle when tasked with relinquishing control of their adolescent's daily illness management.[301] Furthermore, in order to provide all parties with a smooth transition, CCLSs educate parents/caregivers on developmentally appropriate strategies to encourage incrementally increased healthcare responsibility in their AEAs - strategies addressing components such as medication management, independently engaging with providers, and caring for medical equipment - so as to facilitate better preparedness and subsequent care satisfaction across this critical family dyad.[302]

Beyond sheer fit of their skillset, CCLSs demonstrate these competencies when designing and facilitating targeted transition programs for AEAs with special healthcare needs. For example, when explicitly employed to improve transition outcomes for youth with chronic conditions, CCLSs developed and facilitated comprehensive transition programming that was associated with a three-year, 40% increase in AEA patients engaging in treatment, as well as patient-and-family satisfaction scores sustained in the 90th percentile. Furthermore, CCLSs added to healthcare consumership while concurrently facilitating improved patient experience by intentionally incorporating leadership development, peer socialization and mentoring, and developmentally appropriate treatment and survivorship education.[44] AEAs participating in such programs demonstrated significant improvements in illness knowledge and a 100% participation rate in routine follow-ups after transition programming engagement.[185]

While engagement with transition programming is essential, it cannot happen without first assessing for the preparedness of AEAs and their families for such intervention. Reports of healthcare transition readiness in this population are notably impacted by family cohesion, such that the more unity the patient and family describe, the more likely patients are to report being ready for healthcare transitions.[297] As healthcare professionals acutely aware of transitional needs and supports, CCLSs employ their distinctive developmental knowledge and training not only to appropriately begin, but also effectively maintain and revise purposeful, measured movement from pediatric to adult health systems.

Value Driver 5: Healthcare Consumership

Certified Child Life Specialists improve population health by fostering long-term patterns of healthcare consumership that reduce the risk of preventable conditions. *By maintaining and advancing a patient-and-family-centered healthcare environment, Certified Child Life Specialists mitigate pediatric medical traumatic stress and improve mental health outcomes for infants, children, youth, and families. They establish the foundation for positive coping and resilience in the face of medical experiences and attenuate the negative physical and psychosocial effects of stress, loss, and grief - including stroke, heart attack and high blood pressure in adulthood - thereby cultivating health-promoting behaviors throughout the lifespan.*

A family's medical experience or hospitalization has the potential to incur a host of negative outcomes: pediatric medical traumatic stress (PMTS), insecure attachment, psychological maladjustment, complicated bereavement, escalated risk of psychopathology, and greater incidence of life-threatening health conditions throughout the lifespan. By providing procedural preparation and support, opportunities for parental education and involvement, and therapeutic play interventions, CCLSs equip patients and families with irreplaceable adaptive coping strategies - thereby cultivating resilience and mitigating iatrogenic effects of healthcare related stress.

Pediatric Medical Traumatic Stress

Pediatric medical traumatic stress (PMTS) encompasses a set of psychological and physiological responses of children to potentially traumatic events such as pain, injury, serious illness, medical procedures, and invasive or frightening treatment experiences.[303] More than a singular diagnostic entity, PMTS is a broader conceptual framework for understanding the spectrum of possible negative responses to medical experiences that children may exhibit.[49] Overall rates of clinical PMTS are roughly 30% for children, youth, and parents/caregivers.[48] Symptoms of PMTS can include - but are not limited to - manifestations of posttraumatic stress disorder (PTSD) such as arousal, avoidance of trauma reminders, dissociation, negative changes in mood or cognition, re-experiencing traumatic events, and intrusive thoughts.[47,48] In fact, even three to five months after an inpatient hospitalization, more than 55% of children demonstrated significant symptoms of re-experiencing trauma, 30.4% exhibited symptoms of avoidance, and 32.9% displayed significant symptoms of hyperarousal.[304]

By providing procedural preparation and support, opportunities for parental education and involvement, and therapeutic play interventions, CCLSs equip patients and families with irreplaceable adaptive coping strategies - thereby cultivating resilience and mitigating iatrogenic effects of healthcare related stress.

While acute stress reactions are common initially, they are typically mild to moderate and short-lived.[305] A notable minority (5-10%) of pediatric patients, however, will develop posttraumatic stress symptoms that persist long after a healthcare encounter. If left untreated, acute medical distress can become a clinically-verified PTSD diagnosis, inhibiting quality of life, impairing day-to-day activities, hindering adherence to medical treatment, and, ultimately, leading to poorer health and functioning.[48,49] Therefore children and youth especially require a wide range of supports (e.g., education about illness or injury, preparation for procedures, opportunities to play and regain control over their new environment) in order to properly address PMTS and its effects.[52]

Identifying risk factors for the development of PMTS is a critical assessment component for allaying potentially traumatic healthcare experiences and preventing persistent distress. Across illness and injury, children's subjective interpretations of the severity and threat of medical events are one of the most salient predictors of enduring PMTS,[48] appraisals which are dependent upon their unique developmental history - including ACEs, patterns and strata of support from families and communities, and access to coping resources. Thus, the appraisals children make about their healthcare encounters and the responses or efforts that their thought processes elicit can be infinitely varied. It is imperative that individualized coping interventions are offered in developmentally appropriate ways, necessitating the inclusion of child life support.[306]

Considering how differently each case of PMTS can appear, a developmental and contextual approach is vital for preventative interventions that support patient and family post-discharge health outcomes - interrelated domains which are prioritized in child life care. Modulating distress, providing emotional support, encouraging positive coping, and explaining typical developmental recovery processes, CCLSs buffer patients and families against the long-term psychological deficits that can result from hospitalization, alongside the lingering trauma that accompanies it.[47] Certified Child Life Specialists are primely positioned to assess for, prevent, and alleviate PMTS symptoms in infants, children, youth, and families through play-based, relationship-reliant, and individualized psychosocial care.

Infant Mental Health and Attachment

Even when a child is hospitalized in the first few months of life, stress as a result of hospitalization can have devastating effects on health and development. Infant mental health is an expeditiously emerging topic within healthcare and psychology that focuses on the social and emotional development of children ages birth to five, particularly as it relates to the child's developmental capacity, environment, and family structure.[307] When an opportunity to promote physical and social emotional development is missed during infancy, the infant will need to compensate for what they were unable to achieve during that sensitive period of growth. Therefore, effective intervention for infant development and mental health should begin as early in life as possible and be intensified as necessary to achieve adaptive outcomes for hospitalized infants.[308] In the context of their targeted education and training, CCLSs implement developmental play, non-pharmacological pain management, parent education and engagement, and help to regulate environmental stimulation based on the infant's social emotional cues and needs.

Optimal infant mental health outcomes correlate with neurodevelopmental processes, as well as the infant's evolving capacity to cope with stressful experiences, regulate emotions, and form productive attachment relationships. Attachment, specifically, is a relational construct that describes the child's understanding of the world as a trusting and safe environment, usually a result of consistently positive experiences with a primary parent/caregiver.[29] The quality of the infant-caregiver relationship, as indicated by the construct of attachment style, has the greatest impact on infant mental health outcomes[307-313] but, separation from or loss of the primary parent/caregiver, frequent illness or hospitalizations, pain, and environmental factors threaten attachment and subsequent infant mental health outcomes.[310,314]

As practitioners who support the psychosocial needs of the entire family, CCLSs empower parents/caregivers to play active roles in their infant's daily care throughout hospitalization, as this participation directly promotes the formation of positive and secure attachment.[315,316] Using clear communication and emotional support to strengthen caregiving roles, CCLSs help parents/caregivers form or strengthen these seminal relationships with their infant amidst the many risks and stressors presented by healthcare encounters.[317] For instance, a routine attachment-promoting intervention facilitated by CCLSs is touch, and whether a child is intubated and sedated or has no medical equipment creating barriers, parent/caregiver touch provides an active and constructive caregiving role that establishes secure attachment.[318,319]

Research continually demonstrates that hospitalization delays the formation of secure infant attachment,[315,320] and within the walls of the Neonatal Intensive Care Unit (NICU) in particular, manifestations of hospitalization such as presence of medical staff,[321] infant visual impairment,[319] infant intellectual disabilities,[322] congenital anomalies,[323] distance from parent/caregiver,[316] and maternal anxiety and postpartum depression[324,325] negatively impact this relationship. In adulthood, the implications of absent or malformed attachments are severe. Insecurely attached individuals are 70% more likely to report chronic, widespread pain and frequent routine illnesses.[326,327] Strikingly, attachment ratings - though primarily discussed in infancy - are linked to an array of adult pathology. Avoidant attachment ratings are linked to a broad range of illnesses and conditions characterized by pain; anxious attachment is associated with costly, life threatening, and often preventable health conditions in adulthood, including stroke, heart attack, and high blood pressure. Secure attachment, however, holds no relationships to health risks, illnesses, or disorders of any kind.[328]

Certified Child Life Specialists promote positive social, emotional, and developmental outcomes for infants by providing support and education to parents/caregivers,[309,312] thus targeting the future effects of different attachment styles. By addressing infant pain and distress cues both systematically and consistently, CCLSs protect infants' developmental trajectories and foster higher quality patient-and-family-centered care experiences for patients, families, and institutions[329] - while also mitigating preventable health conditions in adulthood.

Mental Health Outcomes in Childhood and Adolescence

While the inability to form secure attachments and trusting relationships affects development beyond infancy, decreased family functioning, an impact of chronic illness, is also a contributor to the recent rise in mental illness among children and adolescents.[330,331] In the general population of the United States, the prevalence of mental health disorders among children is 16.5% (estimated as 7.7 million children) with almost half of those (49.4% nationally) *not* receiving counseling or other needed treatment from mental health professionals.[332] Perhaps even more alarming are the recent statistics indicating that pediatric emergency department (ED) visits for suicide attempt (SA) and/or suicidal ideation (SI) have doubled - with 43% of these being for children between the ages of 5 and 11 years. Yet at the same time, the number of emergency department visits for childhood injuries or illnesses has seen little change.[333]

Mental health, also referred to as behavioral health in pediatric settings, is characterized by an individual’s level of psychological and/or psychosocial adjustment. The symptoms of mental illness and psychological maladjustment are often categorized into either internalizing or externalizing behaviors. Internalizing behaviors include depressive symptoms, withdrawal, and anxiety, whereas aggression and active noncompliance with behavioral expectations are considered externalizing behaviors. In general, internalizing behaviors impact the individual, initially, while externalizing behaviors are often directed towards others.[330,331]

Mental health is a global epidemic, and children with chronic medical conditions are at greater risk of mental health disorders, especially when compared to children without such conditions.[331,334-337] While the survival rate of children living with chronic illness is nearly 90%, these conditions and corresponding treatments impose significant stress on children and families. Living with a chronic illness is empirically associated with negative psychosocial outcomes, psychological maladjustment, incidence of mental illness diagnoses, and symptoms of anxiety and depression.[112,331,338-340] Moreover, having one mental illness diagnosis significantly increases a child's risk of developing comorbid physical and mental illness diagnoses that can further diminish quality-of-life[339] - exemplifying the bidirectional relationships between physical and mental health operant throughout the lifespan. Certified Child Life Specialists are keenly aware of the impact healthcare experiences can have on the mental health of infants, children, and youth. Assessments by CCLSs give attention to prevention of misconceptions and the development of adaptive coping behaviors. For instance, teaching a child effective coping patterns near initial diagnosis of a chronic illness can lead to long-term, healthier patterns of healthcare experiences for children and their families.

What is most concerning is that research reveals a higher prevalence of SI and SA in children and youth with a history of hospitalization and chronic illness, with ideation and attempts directly related to the reason for hospitalization.[341-343] The highest risk for SA appear to be in the weeks immediately following hospital admission, but the risk appears elevated for five years following onset of disease, and up to five years post-discharge.[342,343] More specifically, for children with type 1 diabetes mellitus, the risk of psychiatric morbidity (including SI) when compared with the general population, triples for the first six months after diagnosis, and double between age of onset and the age of 18.[341] In addition, increased risk of psychiatric diagnoses and SA are proliferated among individuals with a childhood onset of irritable bowel disorder (IBD; including diagnoses of Crohn's disease, ulcerative colitis, and IBD unspecified).[342] Moreover, when siblings and parent/caregiver psychiatric histories are also considered, there is a significant, sustained association between childhood onset of IBD, psychiatric disorders, and SA for at least five years after diagnosis.[342]

To date, studies have revealed that family functioning and social isolation help to moderate the relationship between chronic illness and mental health disorders,[340,344] namely children's mental health and general well-being are improved when family functioning is optimized.[340] However, the sense of social isolation children and adolescents experience during hospitalization further threatens their mental, behavioral, and emotional stability.[344] Thus, the quality of survival, or one's Health-Related Quality of Life (HR-QoL),[345] has become a contemporary focus of research and intervention across the healthcare sector. Furthermore, given the prevalence of psychopathological needs among children living with chronic conditions, collaborative efforts from all members of the healthcare team must be reinforced via thorough screening, prevention, and early identification.[346]

Considering today's trend of higher survival rates for children with chronic medical conditions, yet higher risk of mental health disorders, simply surviving is no longer a sufficient end goal. Certified Child Life Specialists are members of the healthcare team already working within domains that optimize developmental trajectories and prevent negative mental health outcomes resulting from healthcare experiences. Using a trauma-informed approach, CCLSs teach adaptive coping strategies to manage the typical stressors involved in growing up, as well as the added challenges posed by chronic or acute medical conditions. Certified Child Life Specialists increase access to and effective use of coping strategies, thereby mediating the effects of chronic illness on HR-QoL.[112] The first 12 months after a medical diagnosis is considered a "critical intervention period" in which children demonstrate the highest level of need for emotional support and adaptive coping strategies.[338,341,342,346] Through interventions such as therapeutic and medical play,[52] preparation[138,150] and diagnosis education,[112] coping skills education,[124,128] and procedural support,[75,98,148,347] CCLSs positively impact parent and child perception of disease, as well as their adjustment to illness related limitations. Certified Child Life Specialists facilitate peer interaction through play, group activities, and online and technologically supported platforms of communication to decrease social isolation[330,337,344]; such interventions provide opportunities for positive childhood experiences (PCEs) within the context of healthcare (e.g., feelings of control, mastery of new skills), thereby increasing active engagement with treatment throughout the family system and preventing additional mental and relational health issues into adulthood.[348]

Sibling Support

As evidenced by the dominant philosophy of patient-and-family-centered care across healthcare institutions, a pediatric patient's medical needs have resultant – and often substantial – impacts on all members of their identified family system. While most research on PMTS focuses on patients and parents/caregivers, siblings, too, face adverse developmental and psychosocial consequences as a result of stressful medical events, especially when their unique needs within the family are not addressed. When a child is hospitalized, their siblings struggle with separation from family members, as well as feelings of sadness, anger, anxiety, confusion, loneliness, and jealousy that can last for years and contribute to increased family conflict.[349-351] These siblings may exhibit symptoms of PMTS long after the patient's hospitalization or illness experience is over. As many as five years after the completion of treatment, 81% of siblings of childhood cancer survivors reported posttraumatic stress symptoms, including 32% exhibiting a moderate to severe reaction that predicted a formal diagnosis of PTSD.[352] These adverse developmental and psychosocial impacts have devastating effects on the sibling's immediate and long-term healthcare usage patterns, thereby challenging population health outcomes even in otherwise healthy children.

Certified Child Life Specialists are the only dedicated psychosocial healthcare practitioners who specifically extend their patient-and-family-centered interventions to address the behavioral and psychosocial health of siblings. Successful sibling interventions typically include play, developmentally appropriate health education, emotional support, advocating to parents/caregivers for siblings' needs, and teaching coping strategies[353-355] - very similar to those proven effective in children hospitalized for an illness or injury. For example, siblings of hospitalized children displayed significant decreases in anxiety after working individually with a CCLS[356]; and when participating in play groups facilitated by a child life professional, siblings benefited from medical play interventions used to encourage emotional expression, enacting themes such as memories of health events, need for parental attention, and impact of illness on the family.[114]

In the context of more trying circumstances, both donor and non-donor siblings of children undergoing hematopoietic stem cell transplants highlight the integral role that CCLSs play in providing therapeutic interventions for siblings. Such services were well received by siblings and family members, in addition to healthcare providers. For example, 100% of healthcare providers reported that sibling meetings with a CCLS were an important component of the transplant process; in addition, the sibling participants described child life interventions as fun, helpful, and an effective way to talk about their feelings.[357] Furthermore, the availability of child life services improved both multidisciplinary collaboration and patient and family experience during transplant.[357,358] By delivering interventions that address the needs of siblings experiencing healthcare hardship alongside pediatric patients, CCLSs offer interventions that protect against PMTS and encourage long-term resilience, well-being, and coping that only serves to benefit family health outcomes throughout the lifespan.

Legacy Building

As has been seen, healthcare experiences provoke a wide range of psychological and developmental responses in infants, children, adolescents, and their families. To assist children and families in finding the individualized sense of meaning needed to effectively cope with their healthcare encounters, CCLSs expressly offer legacy-building interventions as a way to therapeutically chronicle healthcare journeys. The term “legacy building,” distinctively coined and practiced by child life professionals, describes a variety of arts- and play-based efforts to help children and their families reflect on their experiences and create lasting memories during illness, treatment, or hospitalization.[359] While at times referred to as “legacy making” or “memory making,” these interventions are grounded in a conceptual understanding of legacy as “personal and relational summations of our unique histories, current activities, and hopes for the future.”[360(p43)] Children and families can intentionally and tangibly create a legacy through mediums like journaling, scrapbooking, photography, video diaries, collections, hand prints or molds, writing letters, storytelling, and songwriting - some of which are offered at upwards of 97% of children’s hospitals.[361] Legacy can also be developed serendipitously, without forethought, and represented by intangible items such as character traits, beliefs, actions, and values. Whether helping a patient recognize their constantly evolving legacy or facilitating a targeted, tangible activity, CCLSs ensure that the avenues and mediums through which legacy is explored by patients and families fits and satisfies their individualized preferences.

Efforts to build memories and make meaning out of difficult healthcare experiences for children, adolescents, and youth through legacy building can create an important gateway for coping. When offered by CCLSs, legacy-building interventions provide patients and families with a chance to purposefully and collaboratively document their legacies (both ongoing and established) through the hopeful framing of activities, relationships, accomplishments, and journeys - a technique promoting legacies that last beyond hospitalization and throughout a lifetime.[360] Legacy activities have been found to promote self-efficacy in patients, empowering them as they work to create lasting memories during extended, significantly stressful, or end-of-life healthcare experiences.[362] This empowerment and control during a time characterized by uncertainty, fear, and forced complacency achieves something always top-of-mind in child life care - the provision of patient-and-family choice and control.

For patients nearing the end of life, legacy building proves additionally therapeutic, as patients recognize their influence on the lives of others and develop a sense of identity by doing or saying something to be remembered.[363-365] Historically, legacy-building interventions have encompassed projects that: 1) assist individuals and families in initiating the process of life review and 2) result in a product that can be enjoyed by family and friends prior to and after the individual's death.[363] Though they take many forms, children's hospitals most commonly offer legacy-building at the end of life through mediums such as plaster hand molds, giving bereaved families an intentional and tangible way to remember the dying child.[361]

However, it is important to note that the therapeutic value of these activities comes not from the objects they produce, but rather the positive experience of connection, collaboration, and control they engender at the pinnacle of stress and loss.[360] Certified Child Life Specialists recognize that legacies last far beyond death and keepsakes, and champion this awareness in providers, patients, and families, making space and opportunities for legacies to manifest through self-expression and customized celebration. As a result of legacy-building activities and the therapeutic interactions they facilitate, CCLSs fill a compelling void in health care - psychosocial support for patients and families as they navigate personal difficulties facing their family through the hospitalization (or death) of a loved one. Thus, engaging in legacy-building activities supports both patient and family coping in the context of illness, promoting familial engagement and communication from the day of diagnosis, to the moment of discharge, or the time of death.[359-361]

Bereavement Support

An unfortunate reality that can generate or exacerbate PMTS in siblings and family members alike is the death of a child. The grief an individual experiences when a child dies is more acute and prolonged than for any other familial loss.[366] Parents/caregivers can experience a multitude of negative psychosocial outcomes as a result of their child's death,[367-369] ranging from clinical anxiety and depression[370] to symptoms of posttraumatic stress, to ultimately a clinical diagnosis of PTSD.[371] Negative physiological repercussions are also rampant in bereaved parents/caregivers, resulting in more physician consultations and subsequent hospitalizations, increased pharmacological treatment, and decreased productivity in the workforce.[372] Strikingly, research has demonstrated that a child's death is associated with increased mortality in all bereaved parents/caregivers, though more significantly in mothers than fathers.[373] Additional empirical evidence suggests that maternal mortality increases by as much as 133%.[374]

In line with the role and responsibilities of a CCLS, the most salient predictor of long-term complicated grief in bereaved parents/caregivers is access to psychological support and preparation prior to the patient's death.[367] Those with knowledge of a loved one's impending death adapt better than those without warning,[375] and, likewise, parents/caregivers who receive psychological support during the last month of their child's life are better equipped to work through grief, reporting lower levels of persisting grief up to nine years after their child's death.[367] What is more, qualitative reports validate these findings, as parents/caregivers repeatedly describe the importance of receiving anticipatory guidance by psychosocial professionals working in healthcare settings to help them understand their child's end of life trajectory and cope more adaptively after their child dies.[369] When asked to reflect on their experiences, bereaved parents specifically identified child life services as "very helpful," namely for the developmentally appropriate education and therapeutic play provided to the dying child and their siblings; parents further suggested that child life professionals should be available across hospital, home, and clinic settings as a family-centered support.[376] Aptly-timed and ongoing bereavement support supplied by CCLSs improves parent/caregiver grief and bereavement outcome as it facilitates coping and manages expectations in order to create meaningful, manageable end-of-life experiences.

Similar to their parents/caregivers, bereaved siblings, too, keenly grieve the death of a family member.[367] They suffer increases in acute illnesses, hospitalizations, and medication changes during the first six months after their sibling's death, which have been found to persist for as long as 12 months after the death event.[377] Certified Child Life Specialists efficaciously and therapeutically adapt bereavement support for siblings - which is highly rated by bereaved parents/caregivers.[376] They provide anticipatory guidance regarding what to expect when their sibling dies, significantly lowering levels of sibling anxiety two to nine years after the fact.[378] Conversely, research reveals that bereaved siblings who were dissatisfied with communication at the end of the patient's life had higher distress, as well as greater likelihood of unresolved grief, compared to bereaved siblings who received developmentally appropriate and sensitive information.[378]

When CCLSs provide preparation specifically for children visiting a family member in an adult intensive care unit, as well as age appropriate information about the illness and its expected trajectory, children exhibit fewer and less intense negative emotional reactions.[381-384]

With a strong understanding of how developmental stages impact perceptions of death, empathetic communication skills adapted for individualized needs, and the ability to establish a therapeutic relationship with the family, CCLSs maintain unrivaled positioning within multidisciplinary healthcare teams to provide the preparation and psychological support explicitly, empirically, and anecdotally noted as beneficial families. Using their scholarly knowledge of child and family grief processes, and developmental frameworks for children's evolving conceptions of death as final, irreversible, and universal, CCLSs possess the skills to explain such life events to siblings in sensitive, deliberate, and developmentally appropriate language. Furthermore, their expertise in psychological preparation is often utilized in readying and supporting siblings during critical care unit visits as patients near the end of life, even when the patient is a parent, grandparent, or another adult relative.[379,380] When CCLSs provide preparation specifically for children visiting a family member in an adult intensive care unit, as well as age appropriate information about the illness and its expected trajectory, children exhibit fewer and less intense negative emotional reactions.[381-384] Thus, by providing families with honest and timely information that is delivered with compassion and empathy, CCLSs remediate the negative psychological and physiological consequences associated with complicated bereavement experiences across family systems.

Child Life in Community Settings

Certified Child Life Specialists also extend their invaluable psychosocial interventions and support to children and families in non-traditional, community-based settings[385,386] - outside those considered as healthcare settings. The basis and rationale for this expansion is predicated on the *Child Life Vision Statement*,[387] which explains that the "practice of child life will be applicable to any healthcare setting and transferable to other community settings or situations in which the potential for infants, children and youth to cope, learn, and master is placed at risk."[387(p1)] Hence, the six domains interwoven in child life practice (see Figure 1) are comprised of highly transferable facets of care, applicable in any setting where children or families may experience stress. When CCLSs working in traditional and non-traditional settings (e.g. rehabilitation, private practice, and community settings) were surveyed about offering support for non-illness-related psychosocial stressors, they reported providing frequent assistance with other family challenges such as divorce, substance abuse, poverty, homelessness, and parental mental illness.[41] Certified Child Life Specialists address these stressors through their effectively transferable coping interventions - those which improve health outcomes for children and families across care settings.

Industry support for the expansion of child life services in community settings amplifies the aims and experiences of CCLS; the American Academy of Pediatrics[7] asserts that child life services are necessary beyond the hospital environment. To date, CCLSs have already adapted the foundational interventions of their profession and documented their impacts in: recreational and therapeutic camps,[388] non-profit agencies,[229] dentistry practices,[389-391] early childhood settings,[392,393] legal systems and child advocacy centers,[394] prenatal settings,[395] women's centers,[396] bereavement programs, funeral homes, hospice and home health, trauma or crisis teams, and behavioral health clinics.[229,385,397,398]

While it is estimated that approximately 7% of all CCLSs work in these non-hospital settings,[229] this proportion is growing in stride with changes in the healthcare service delivery model. Because current healthcare quality goals are aimed at reducing acute care and extended hospitalizations, many services are now being provided in outpatient settings,[399] and in order to best support today's pediatric patients and their families, many CCLSs are developing private practice models and exploring reimbursable billing schedules to continue this extension into the community. Therefore, because the foundational skills and interventions employed by Certified Child Life Specialists (e.g., individualized assessments, cultivation of a therapeutic environment, coping skills education, and psychological preparation) can be implemented in various settings, the potential for expansion of child life services into additional service contexts is innumerable.

Cultivating Resilience

Child life professionals, regardless of setting, help weave an emotional and psychological safety net for patients and families, thus including CCLSs in standard care protocols cultivates positive development and, most importantly, resilience. Resilience is a term used to describe an individual's ability to maintain physical and psychological well-being during and following times of significant stress or adversity.[17,18] Resilience encompasses the evidence-based phenomenon in which children and adults are able to overcome difficulties and adapt more effectively by capitalizing on the strengths and abilities they already possess,[400] all of which are embedded in the foundations of child life practice. Certified Child Life Specialists use integrative, strengths-based approaches that support patients and families through stressful experiences, bridging the gaps between an individual's coping needs, their unique strengths, and the task demands of managing healthcare stress. By affirming and facilitating positive coping,[17,19,20] problem solving, goal setting,[20,22] family functioning, social support, and self-efficacy, CCLSs foster resilience in children and families facing medical challenges,[17,22,24,401,402] thus enhancing health-promoting behaviors and improving relationships with providers.[19,21,191]

It is widely demonstrated that disease-specific factors can directly challenge resilience and its associated health outcomes; more specifically, illnesses that are longer lasting or more severe are associated with lower resilience and self-esteem.[403,404] Findings have highlighted the importance of interventions that promote active coping and positive appraisals to mitigate the negative effects of disease. Not only do these interventions cultivate resilience, but they also moderate symptom severity and enable individuals to engage in health promoting behaviors.[21] For example, creating a disease narrative with patients affords opportunities for them to make meaning and exercise benefit-finding, while also challenging inaccurate appraisals and adjusting their beliefs about one's ability to control their own outcomes.[19,20,401] Moreover, interventions that promote diagnosis education and problem-solving behaviors in adolescents increase resilience and foster self-efficacy and adherence.[20] Thus, interventions that assist patients and families in processing their emotions, thoughts, and experiences - such as those provided by CCLSs - encourage adherence and enhance quality-of-life.[191]

Certified Child Life Specialists operate under the premise that resilience can be clinically cultivated through education, play, and emotional support for pediatric patients and their families. Fostering strong therapeutic relationships, CCLSs recognize that infants, children, youth, and parents/caregivers are capable of exercising resilience throughout even the most stressful of experiences - emerging on the other side with renewed awareness of their own internal coping resources and strategies.[405] Certified Child Life Specialists, as multidisciplinary healthcare team members acutely attuned to psychosocial needs, understand their ability to serve as positive, non-familial allies and, while employing healthy patient-provider boundaries, act accordingly. Certified Child Life Specialists routinely normalize experiences and emotions through therapeutic conversation and activities, thus filling a therapeutic role that is as comforting as it is productive.

Strong, supportive, consistent social relationships are significant predictors of resilience across age groups and conditions[401,404]; whether these relationships are with families, peers, or non-familial adults (such as CCLSs), the fact remains that relationships produce the qualities and abilities individuals need to engage in their care and achieve positive health outcomes.[17,19,21,402,404,406-408] Grounded in the therapeutic value of relationships, CCLSs build resilience through the individualized, trauma-informed, and developmentally appropriate care they provide to children and families - the effects of which are broad and enduring for physical and psychological health. As the empirical links between resilience and hope, optimism, self-efficacy, coping, meaning-making, and benefit-finding[17] demonstrate CCLSs instill transferable skills, strengths, and beliefs that pediatric patients and families can draw upon during and beyond their healthcare encounters.

Conclusion

Certified Child Life Specialists are members of the multidisciplinary care team that affect positive outcomes for institutions, patients, and families, thus approaching the Quadruple Aim and improving the healthcare industry in return. Certified Child Life Specialists empower children and families at all ages and stages to become active, informed, and well-adjusted consumers throughout their healthcare journey, no matter where it begins or leads. Resultant reductions in anesthesia, sedation use, repeated tests/procedures due to coping difficulties, pain medications, readmission rates, and overall length of stay equate to significant savings per fiscal year scaled upon institutional programs, volumes, and performance. These impacts of child life services transcend healthcare’s volume- and value-based service descriptors by increasing throughput, minimizing waste, and improving the patient experience - all without sacrificing quality or substantially increasing expenditures. Certified Child Life Specialists optimize resource use in the moment, while also cultivating a new generation of consumers that will actively seek and sustain a more affordable, accessible, and effective healthcare industry for all.

Acknowledgements

The authors would like to acknowledge Janet Cross, MEd, CCLS, CPXP and Stephanie Van Dyke, CCLS for their support of this project, as well as the many individuals who provided critical feedback on initial drafts, including: Stephanie Abbu, MSN, RN; Marissa Attis, MD; Michael W. Bishop, MD; Jason Brashier, PhD, BBA, MA; Chris Brown, MS, CCLS; Sherwood Burns-Nader, PhD, CCLS; Kathryn Cantrell, PhD, CCLS; Eileen Clark, CCLS; Gary Clark; Sarah Daniels, MS, CCLS; J. Kevin Duplechain, MD, FACS; Ame Enright; Kris Fallon, PhD; James Gay, MD, MMHC; Megan Greffen, LMSW; Diane Hart, MA, EDAC; Elise Hebel, MS, CCLS; Jim Hollender, MBA; Ellen C. Hollon, MS, CCLS; Yeh Hsueh, PhD; Katy Hudgins; Peggy Jessee, PhD, CCLS; Jennifer A. Jewell, MD, MS, FAAP; Elizabeth McCarroll, PhD, CCLS; Amy Bullock Morse, PsyD, CCLS; Emily Mozena, MA, CCLS; Pamela Norcross, PhD, CCLS;Lori Anne Parker-Danley, PhD; Charles Phelps, PhD; Farya Phillips, PhD, CCLS; Leonard Rappaport, MD, MS; Judy Rollins, PhD, RN; Teresa Schoell, MA, CCLS; Cara Sisk, PhD, CCLS; Jennifer Staab, MS, CCLS; Bindy Sweett, CCLS; Richard H. Thompson, PhD; Michelle Townsend-Barksdale, CCLS; Jessica Turnbull, MD, MA; Divna Wheelwright, MS, CCLS; Jeremy Willis, MBA; Denise Winsor, PhD; Jason A. Wolf, PhD, CPXP; Lois Wolgemuth, CCLS, and the staff and board of directors of the Association of Child Life Professionals.

References

---

1. Chee, T. T., Ryan, A.M., Wasfy, J. H., & Borden, W. B. (2016). Current state of value-based purchasing programs. *Circulation*, *133*(22), 2197-2205.
2. Papanicolas, I., Woskie, L. R., & Jha, A. K. (2018). Health care spending in the United States and other high-income countries. *JAMA*, *319*(10), 1024-1039.
3. Schneider, E. C., Sarnak, D. O., Squires, D., Shah, A., & Doty, M. M. (2018). Mirror, mirror 2017: International comparison reflects flaws and opportunities for better US health care, 2017. Retrieved from: https://interactives.commonwealthfund.org/2017/july/mirror-mirror/
4. Institute of Medicine. Committee on Quality of Health Care in America. (2001). *Crossing the quality chasm: A new health system for the 21st century*. Washington DC; National Academies Press.
5. Association of Child Life Professionals. (2018). Mission, values, vision. Retrieved August 29, 2019, from https://www.childlife.org/the-child-life-profession/mission-values-vision
6. Wolf, J. A. (2018). Lessons for patient experience from the voices of pediatrics and children's hospitals. *Patient Experience Journal*, *5*(2), 1-3.
7. American Academy of Pediatrics. (2014). Child life services: Policy statement. *Pediatrics, 133*(5), e1471-e1478.
8. Beryl Institute. (2018). What patient experience can learn from child life professionals. Nashville, TN: Beryl Institute. Retrieved from https://www.theberylinstitute.org/store/ViewProduct.aspx?id=11084124
9. Trottier, E. D., Doré-Bergeron, M. J., Chauvin-Kimoff, L., Baerg, K., & Ali, S. (2019). Managing pain and distress in children undergoing brief diagnostic and therapeutic procedures. *Paediatrics & Child Health*, *24*(8), 509-521.
10. Frankel, L. R., Hsu, B. S., Yeh, T. S., Simone, S., Agus, M. S., Arca, M. J., . . . & Gayle, M. O. (2019). Criteria for Critical Care Infants and Children: PICU Admission, Discharge, and Triage Practice Statement and Levels of Care Guidance. *Pediatric Critical Care Medicine*, *20*(9), 847-887.
11.The Walt Disney Company. (2018, March 7). The Walt Disney Company commits more than $100 Million to bring comfort to children and their families in hospitals. Retrieved from: https://www.thewaltdisneycompany.com/walt-disney-company-commits-100-million-bring-comfort-children-families-hospitals-2/
12. Gaynard, L., Wolfer, J., Goldberger, J., Thompson, R., Redburn, L., & Laidley, L. (1990). *Psychosocial care of children in hospitals: A clinical practice manual from the ACCH child life research project.* Bethesda, MD: Association for the Care of Children's Health.
13. Gursky, B., Kestler, L. P., & Lewis, M. (2010). Psychosocial intervention on procedure-related distress in children being treated for laceration repair. *Journal of Developmental and Behavioral Pediatrics, 31*(3), 217-222.
14. Mastro, K. A., Flynn, L., Millar, T. F., DiMartino, T. M., Ryan, S. M., & Stein, M. H. (2019). Reducing anesthesia use for pediatric magnetic resonance imaging: The effects of a patient- and family-centered intervention on image quality, health-care costs, and operational efficiency. *Journal of Radiology Nursing, 38*(1), 21-27.
15. Stevenson, M. D., Bivins, C. M., O'brien, K., & del Rey, J. A. G. (2005). Child life intervention during angiocatheter insertion in the pediatric emergency department. *Pediatric Emergency Care, 21*(11), 712-718.
16. Thompson, R. H., & Stanford, G. (1981). *Child life in hospitals: Theory and practice*. Springfield, IL: Charles C. Thomas.
17. Rosenberg, A. R., Yi-Frazier, J. P., Wharton, C., Gordon, K., & Jones, B. (2014). Contributors and inhibitors of resilience among adolescents and young adults with cancer. *Journal of Adolescent and Young Adult Oncology, 3*(4), 185-193.

18. Yi-Frazier, J. P., McCauley, E., Fladeboe, K., Klein, V., Eaton, L., Wharton, C., & Rosenberg, A. R. (2017). Promoting resilience in stress management for parents (PRISM-P): An intervention for caregivers of youth with serious illness. *Families, Systems, and Health, 35*(3), 341-351.
19. Muther, E. F., Polineni, D., & Sawicki, G. S. (2018). Overcoming psychosocial challenges in cystic fibrosis: Promoting resilience. *Pediatric Pulmonology, 53*, S86-S92.
20. Rosenberg, A. R., Yi-Frazier, J. P., Eaton, L., Wharton, C., Cochrane, K., Pihoker, C., . . . & McCauley, E. (2015). Promoting resilience in stress management: A pilot study of a novel resilience-promoting intervention for adolescents and young adults with serious illness. *Journal of Pediatric Psychology, 40*(9), 992-999.
21. Huang, H., Chen, C., Chen, C., Yang, H., Su, W., Wang, J., & Tsai, P. K. (2018). A positive perspective of knowledge, attitude, and practices for health-promoting behaviors of adolescents with congenital heart disease. *European Journal of Cardiovascular Nursing, 17*(3), 217-225.
22. Hornor, G. (2017). Resilience. *Journal of Pediatric Health Care, 31*(3), 384-390.
23. Roberts, J., Fenton, G., & Barnard, M. (2015). Developing effective therapeutic relationships with children, young people and their families. *Nursing children and young people, 27*(4), 30-35.
24. Cousins, L. A., Kalapurakkel, S., Cohen, L. L., & Simons, L. E. (2015). Topical review: Resilience resources and mechanisms in pediatric chronic pain. *Journal of Pediatric Psychology, 40*(9), 840-845.
25. Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *The Journal of Abnormal and Social Psychology*, *63*(3), 575.
26. Bowen, M. (1966). The use of family theory in clinical practice. *Comprehensive Psychiatry*, *7*(5), 345-374.
27. Bowlby, J. (1969). *Attachment and loss: volume I: Attachment.* London: The Hogarth Press and the Institute of Psycho-Analysis.
28. Bronfenbrenner, U. (1979). *The ecology of human development.* Cambridge, MA: Harvard University Press.
29. Erikson, E. H. (1950). *Childhood and society*. New York: WW Norton & Company.
30. Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.
31. McCubbin, H. I., & Patterson, J. M. (1983). The family stress process: The double ABCX model of adjustment and adaptation. *Marriage & Family Review*, *6*(1-2), 7-37.
32. Parten, M. B. (1932). Social participation among pre-school children. *Journal of Abnormal and Social Psychology, 27,* 243-269.
33. Piaget, J. (1952). *Play, dreams and imitation in childhood.* New York: WW Norton & Co.
34. Vygotsky, L. S. (1962). *Thought and language*. Boston, MA: The M. I. T. Press.
35. Bibace, R., & Walsh, M. E. (1980). Development of children's concepts of illness. *Pediatrics*, *66*(6), 912-917.
36. Bibace, R., & Walsh, M. E. (2016). Children's conceptions of illness. In M. Watzlawik, A. Kreibel, & J. Valsiner (Eds.), *Particulars and universals in clinical and developmental psychology: Critical reflections (pp.* 65-82). Charlotte, NC: Information Age Publishing, Inc.
37. Koopman, H. M., Baars, R. M., Chaplin, J., & Zwinderman, K. H. (2004). Illness through the eyes of the child: the development of children's understanding of the causes of illness. *Patient Education and Counseling*, *55*(3), 363-370.
38. Perrin, E. C., & Gerrity, P. S. (1981). There's a demon in your belly: Children's understanding of illness. *Pediatrics*, *67*(6), 841-849.
39. Campbell, L., DiLorenzo, M., Atkinson, N., & Riddell, R. P. (2017). Systematic review: A systematic review of the interrelationships among children's coping responses, children's coping outcomes, and parent cognitive-affective, behavioral, and contextual variables in the needle-related procedures context. *Journal of Pediatric Psychology*, *42*(6), 611-621.

40. Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, *50*(5), 992.
41. Bottino, C., Daniels, A., Chung, M., & Dumais, C. (2019). Child life specialists' experiences addressing social determinants of health: A web-based survey. *Clinical Pediatrics, 58*(8), 851-856.
42. Silver, G., & Traube, C. (2019). A systematic approach to family engagement: Feasibility pilot of a pediatric delirium management and prevention toolkit. *Palliative & Supportive Care, 17*(1), 42-45.
43. Williams, N., Ben Birk, A., Petkus, J., & Clark, H. (2019). Importance of play for young people facing illness and hospitalization: rationale, opportunities, and a case illustration. *Early Child Development and Care.* Advance online publication.
44. Bergeron, S., Noskoff, K., Hayakawa, J., & Frediani, J. (2019). Empowering adolescents and young adults to support, lead, and thrive: Development and validation of an AYA oncology child life program. *Journal of Pediatric Nursing, 47*.
45. Dobrozsi, S., Tomlinson, K., Chan, S., Belongia, M., Herda, C., Maloney, K., . . . & Bingen, K. (2019). Education milestones for newly diagnosed pediatric, adolescent, and young adult cancer patients: A quality improvement initiative. *Journal of Pediatric Oncology Nursing*. Advance online publication.
46. Wood, E. B., Halverson, A., Harrison, G., & Rosenkranz, A. (2019). Creating a sensory-friendly pediatric emergency department. *Journal of Emergency Nursing, 45*(4), 415-424.
47. Marsac, M., Kassam-Adams, N., Hildenbrand, M., Nicholls, E., Winston, F., Leff, S., & Fein, J. (2016). Implementing a trauma-informed approach in pediatric networks. *JAMA Pediatrics, 170*(1), 70-77.
48. Price, J., Kassam-Adams, N., Alderfer, M., Christopherson, J., & Kazak, A. (2016). Systematic review: A reevaluation and update of the Integrative (Trajectory) Model of Pediatric Medical Traumatic Stress. *Journal of Pediatric Psychology, 41*(1), 86-97.
49. Kassam-Adams, N., & Butler, L. (2017). What do clinicians caring for children need to know about pediatric medical traumatic stress and the ethics of trauma informed approaches. *AMA Journal of Ethics, 19*(8), 793-801.
50. Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., . . . Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience, 256*, 174-186.
51. Burns-Nader, S., & Hernandez-Reif, M. (2016). Facilitating play for hospitalized children through child life services. *Children's Health Care, 45*(1), 1-21.
52. Stenman, K., Christofferson, J., Alderfer, M. A., Pierce, J., Kelly, C., Schifano, E., . . . Kazak, A. E. (2019). Integrating play in trauma-informed care: Multidisciplinary pediatric healthcare provider perspectives. *Psychological Services, 16*(1), 7-15.
53. Merrick, M. T., Ford, D. C., Ports, K. A., & Guinn, A. S. (2018). Prevalence of adverse childhood experiences from the 2011-2014 Behavioral Risk Factor Surveillance System in 23 states. *JAMA Pediatrics*, *172*(11), 1038-1044.
54. Marsac, M., Kassam-Adams, N., Delahanty, D., Widaman, K., & Barakat, L. (2014). Posttraumatic stress following acute medical trauma in children: A proposed model of bio-psycho-social processes during peri-trauma period. *Clinical Child and Family Psychology Review, 17,* 399-411.
55. Cole, M. B., & McLean, V. (2003). Therapeutic relationships re-defined. *Occupational Therapy in Mental Health, 19*(2), 33-56.
56. Graves, T. A., Tabri, N., Thompson-Brenner, H., Franko, D. L., Eddy, K. T., Bourion-Bedes, S., . . . Thomas, J. J. (2017). A meta-analysis of the relation between therapeutic alliance and treatment outcome in eating disorders. *International Journal of Eating Disorders, 50*, 323-340.
57. Leach, M. J. (2005). Rapport: A key to treatment success. *Complementary Therapies in Clinical Practice, 11,* 262-265.

58. Pinto, R. Z., Ferreira, M. L., Oliveira, V. C., Franco, M. R., Adams, R., Maher, C. G., & Ferreira, P. H. (2010). Patient-centered communication is associated with positive therapeutic alliance: A systematic review. *Journal of Physiotherapy, 58,* 77-87.
59. American Academy of Pediatrics. (2018). The power of play: A pediatric role in enhancing development in young children. *Pediatrics*, *142*(3), e20182058.
60. Ginsburg, K. R. (2007). The importance of play in promoting healthy child development and maintaining strong parent-child bonds. *Pediatrics*, *119*(1), 182-191.
61. Grissom, S., Boles, J., Bailey, K., Cantrell, K., Kennedy, A., Sykes, A., & Mandrell, B. (2016). Play-based procedural preparation and support intervention for cranial radiation. *Supportive Care in Cancer, 24,* 2421-2427.
62. Jaaniste, T., Hayes, B., & von Baeyer, C. L. (2007). Providing children with information about forthcoming medical procedures: A review and synthesis. *Clinical Psychology: Science and Practice, 14*(2), 124-143.
63. Cejda, K. R., Smeltzer, M. P., Hansbury, E. N., McCarville, M. E., Helton, K. J., & Hankins, J. S. (2012). The impact of preparation and support procedures for children with sickle cell disease undergoing MRI. *Pediatric Radiology, 42*, 1223-1228.
64. Brewer, S., Gleditsch, S. L., Syblik, D., Tietjens, M. E., & Vacik, H. W. (2006). Pediatric anxiety: Child life intervention in day surgery. *Journal of Pediatric Nursing, 21*(1), 13-22.
65. Scott, L., Langton, F., O'Donoghue, J. (2002). Minimising the use of sedation/anesthesia in young children receiving radiotherapy through an effective play preparation programme. *European Journal of Oncology Nursing 6*(1), 15-22.
66. Athanassiadou, E., Tsiantis, J., Christogiorgos, S., & Kolaitis, G. (2009). An evaluation of psychological preparation of children for minor surgery by puppet play and brief mother counseling. *Psychotherapy and Psychosomatics, 78*, 62-63.
67. Cuzzocrea, F., Gugliandolo, M. C., Larcan, R., Romeo, C., Ruriaco, N., & Dominici, T. (2013). A psychological preoperative program: Effects on anxiety and cooperative behaviors. *Pediatric Anesthesia, 23*, 139-143.
68. Barnea-Goraly, N., Weinzimer, S. A., Ruedy, K. J., Mauras, N., Beck, R. W., Marzelli, M. J., . . . & Fox, L. (2014). High success rates of sedation-free brain MRI scanning in young children using simple subject preparation protocols with and without a commercial mock scanner - the Diabetes Research in Children Network (DirecNet) experience. *Pediatric Radiology, 44*, 181-186.
69. Fortier, M. A., Bunzli, E., Walthall, J., Olshansky, E., Saadat, H., Satistevan, R. (2015). Web-based tailored intervention for preparation of parents and children for outpatient surgery (WebTIPS): Formative evaluation and randomized controlled trial. *Anesthesia and Analgesia, 120*(4), 915-922.
70. Li, H. C. M., Lopez, V., & Lee, T. L. I. (2007a). Effects of preoperative therapeutic play on outcomes of school-age children undergoing day surgery. *Research in Nursing and Health, 30*, 320-332.
71. de Amorim e Silva, C. J., Mackenzie, A., Hallowell, L. M., Stewart, S. E., & Ditchfield, M. R. (2006). Practice MRI: Reducing the need for sedation and general anesthesia in children undergoing MRI. *Australasian Radiology, 50*(4), 319-323.
72. MacLaren, J. E. & Kain, Z. N. (2007). Pediatric preoperative preparation: A call for evidence-based practice. *Pediatric Anesthesia, 17*, 1019-1020.
73. Boles, J. (2018). The powerful practice of distraction. *Pediatric Nursing*, *44*(5), 247-251.
74. Koller, D., & Goldman, R. D. (2012). Distraction techniques for children undergoing procedures: A critical review of pediatric research. *Journal of Pediatric Nursing*, *27*(6), 652-681.
75. Burns-Nader, S., Joe, L., & Pinion, K. (2017). Computer tablet distraction reduces pain and anxiety in pediatric burn patients undergoing hydrotherapy: A randomized trial. *Burns, 43*, 1203-1211.

76. Ortiz, G. S., O'Connor, T., Carey, J., Vella, A., Paul, A., Rode, D., & Weinberg, A. (2017). Impact of a child life and music therapy procedural support intervention on parental perception of their child's distress during intravenous placement. *Pediatric Emergency Care, 35*(7), 498-505.
77. Canbulat, N., Inal, S., & Sonmezer, H. (2014). Efficacy of distraction methods on procedural pain anxiety by applying distraction cards and kaleidoscope in children. *Asian Nursing Research, 8,* 23-28.
78. Gold, J. I., Kim, S. H., Kant, A. J., Joseph, M. H., & Rizzo, A. (2006). Effectiveness of virtual reality for pediatric pain distraction during IV placement. *CyberPsychology & Behavior, 9*(2), 207-212.
79. Karakaya, A., & Gozen, D. (2016). The effect of distraction on pain level felt by school-age children during venipuncture procedure - Randomized controlled trial. *Pain Management Nursing, 17*(1), 47-53.
80. Bergomi, P., Schudeller, L., Pintaldi, S., & Dal Molin, A. (2018). Efficacy of non-pharmacological methods of pain management in children undergoing venipuncture in a pediatric outpatient clinic: A randomized controlled trial of audiovisual distraction and external cold and vibration. *Journal of Pediatric Nursing, 42,* e66-e72.
81. Quan, X., Joseph, A., Nanda, U., Moyano-Smith, O., Kanakri, S., Ancheta, C., & Loveless, E. A. (2016). Improving pediatric radiography patient stress, mood, and parental satisfaction through positive environmental distractions: A randomized control trial. *Journal of Pediatric Nursing, 31,* e11-e22.
82. Sola, C., Lefauconnier, A., Bringuier, S., Raux, O., Capdevila, X., & Dadure, C. (2017). Childhood preoperative anxiolysis: Is sedation and distraction better than either alone? A prospective randomized study. *Pediatric Anesthesia, 27,* 827-834.
83. Megel, M. E., Houser, C. W., & Gleaves, L. S. (1998). Children's responses to immunizations: Lullabies as a distraction. *Issues in Comprehensive Pediatric Nursing, 21,* 129-145.
84. Dowllman, D. (2003). Pharmacological versus nonpharmacological techniques to reducing venipuncture psychological trauma in pediatric patients. *Journal of Infusion Nursing, 26*(2), 103-109.
85. Leroy, P. L., Costa, L. R., Emmanouil, D., van Beukering, A., & Franck, L. S. (2016). Beyond the drugs: Nonpharmacological strategies to optimize procedural care in children. *Current Opinion in Anaesthesiology, 29*(1), S1-S13.
86. Drayton, N. A., Waddups, S., & Walker, T. (2019). Exploring distraction and the impact of a child life specialist: Perceptions from nurses in a pediatric setting. *Journal for Specialists in Pediatric Nursing, 24*, e12242.
87. Carter, A. J., Greer, M. C., Gray, S. E., & Ware, R. S. (2010). Mock MRI: Reducing the need for anaesthesia in children*. Pediatric Radiology, 40*(8), 1368-1374.
88. Esmonde, N., Jedrzejewski, B., Fitzpatrick, B., Koh, J., Bardo, D., Urbinelli, L., . . . Kuang, A. (2019). Feed and Swaddle: An Alternative to Infant Sedation for Craniofacial Imaging*. The Cleft Palate-Craniofacial Journal.*
89. Khan, J. J., Donnelly, L. F., Koch, B. L., & Curtwright, L. A. (2007). A program to decrease the need for pediatric sedation for CT and MRI. *Applied Radiology, 36*(4), 30-33.
90. Kino, A., Zucker, E. J., Honkanen, A., Kneebone, J. Wang, J., Chan, F., & Newman, B. (2019). Ultrafast pediatric chest computed tomography: Comparison of free-breathing vs. breath-hold imaging with and without anesthesia in young children. *Pediatric Radiology, 49*, 301-307.
91. Runge, S. B., Christensen, N. L., Jensen, K., & Jensen, I. E. (2018). Children centered care: Minimizing the need for anesthesia with a multi-faceted concept for MRI in children aged 4-6. *European Journal of Radiology, 107*, 183-187.
92. Scott, M. T., Todd, K. E., Oaakley, H., Bradley, J. A., Rotondo, R. L., Morris, C. G., . . . Indelicato, J. D. (2016). Reducing anesthesia and health care cost through utilization of child life specialists in pediatric radiation oncology*. International Journal of Radiation Oncology Biology Physics, 96*(2), 401-405.
93. de Bie, H. M. A., Boersma, M., Wattjes, M. P., Adriaanse, S., Vermeulen, R. J., Oostrom, K. J., . . . Delemarre-Van de Waal, H. A. (2010). Preparing children with a mock scanner training protocol results in high quality structural and functional MRI scans. *European Journal of Pediatrics, 169*(9), 1079-1085.

94. Dong, S. Z., Zhu, M., & Bulas, D. (2019). Techniques for minimizing sedation in pediatric MRI. *Journal of Magnetic Resonance Imaging, 50*(4), 1047-1054.
95. Hallowell, L. M., Stewart, S. E., de Amorim e Silva, C. T., & Ditchfield, M. R. (2008). Reviewing the process of preparing children for MRI. Pediatric Radiology, 38, 271-279.
96. Rudder, B. S., Easley, S. J., Robinson, A. L., Noel-MacDonnell, J. R., & Nielsen, D. B. (2019). Effects of an MRI Try Without program on patient access. *Pediatric Radiology,* 1-6.
97. Durand, D. J., Young, M., Nagy, P., Tekes, A., & Huisman, T. A. (2015). Mandatory child life consultation and its impact on pediatric MRI workflow in an academic medical center. *Journal of the American College of Radiology*, *12*(6), 594-598.
98. Elitsur, R., Hollenbeck, A., Tasan, L., Torok, K. S., Cassidy, E., Blasiole, B., . . . Angelelli, I. C. (2019). Efficacy and cost savings with the use of a minimal sedation/anxiolysis protocol for intra-articular corticosteroid injections in children with juvenile idiopathic arthritis: a retrospective review of prospectively collected data. *Pediatric Rheumatology, 17*(1), 11.
99. Willis, D., & Barry, P. (2010). Audiovisual interventions to reduce the use of general anaesthesia with paediatric patients during radiation therapy. *Journal of Medical Imaging and Radiation Oncology, 54*, 249-255.
100. Kain, Z., Caldwell-Andrews, A., Mayes, L., Weinberg, M, Wang, S., MacLaren, J., & Blount, R. (2007). Family-centered preparation for surgery improves perioperative outcomes in children: A randomized controlled trial. *Anesthesiology, 106*(1), 65-74.
101. 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 noninferiority randomized trial. *Pediatric Anesthesia, 24,* 1217-1223.
102. Stewart, B., Cazzell, M. A., & Pearcy, T. (2019). Single-blinded randomized controlled study on use of interactive distraction versus oral midazolam to reduce pediatric preoperative anxiety, emergence delirium, and postanesthesia length of stay. *Journal of PeriAnesthesia Nursing, 34*(3), 567-575.
103. Fraser, C., Gray, S., & Boles, J., (2019). Patient awake while scanned: Program to reduce the need for anesthesia in pediatric MRI. *Pediatric Nursing, 45*(6)*,* 283-288*.*
104. Tornqvist, E., Mansson, A. & Hallstrom, I. (2015). Children having magnetic resonance imaging: A preparatory storybook and audio/visual media are preferable to anesthesia or deep sedation. *Journal of Child Health Care, 19*(3), 359-369.
105. Luehmann, N. C., Staubach, M. E., Akay, B., Collier, P. J., Han, R. E., Riggs, T. W., & Novotny, N. M. (2019). Benefits of a family-centered approach to pediatric induction of anesthesia. *Journal of Pediatric Surgery, 54*(1), 189-193.
106. Dastgheyb, S., Flishlock, K., Daskalakis, C., Kessel, J., & Rosen, P. (2018). Evaluating comfort measures for commonly performed painful procedures in pediatric patients. *Journal of Pain Research, 11*, 1383-1390.
107. Marechal, C., Berthiller, J., Tosetti, S., Cogniat, B., Desombres, H., Bouvet, L., . . . de Queiroz Siqueira, M. (2017). Children and parental anxiolysis in paediatric ambulatory surgery: A randomized controlled study comparing 0.3 mg kg -1 midazolam to tablet computer based interactive distraction. *British Journal of Anaesthesia, 118*(2), 247-253.
108. Fortier, M. A., del Rosario, A. M., Martin, S. R., & Kain, N. Z. (2010) Perioperative anxiety in children. *Pediatric Anesthesia, 20*, 318-322.
109. Fortier, M. A., del Rosario, A. M., Rosenbaum, A., & Kain, Z. N. (2010). Beyond pain: Predictors of postoperative maladaptive behavior change in children. *Pediatric Anesthesia, 20*, 445-453.
110. Kain, Z. N., Mayes, L. C., Caldwell-Andrews, A. A., Karas, D. E., & McClain, B. C. (2006). Preoperative anxiety, postoperative pain and behavioral recovery in young children undergoing surgery. *Pediatrics, 118*(2), 651-658.

111. Compas, B., Conner-Smith, J., Saltzman, H., Harding, A., & Wadsworth, M. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127*(1), 87-127.

112. Hons, A., Eliott, J., Wilson, A., & Kettler, L. (2008). Understanding young peoples' experience of chronic illness: A systematic review. *Integrated Journal of Evidence Based Healthcare, 6,* 321-336.

113. Osterberg, L., & Blaschke, T. (2005). Adherence to medication. *New England Journal of Medicine, 353*(5), 487-497.

114. Nabors, L., Bartz, J., Kichler, J., Sievers, R., Elkins, R., & Pangallo, J. (2013). Play as a mechanism of working through medical trauma for children with medical illnesses and their siblings. *Issues in Comprehensive Nursing, 36*(3), 212-224.

115. Potasz, C., Varela, M., Carvalho, L., Prado, L., Prado, G. (2013). Effect of play activities on hospitalized children's stress: a randomized clinical trial. *Scandinavian Journal of Occupational Therapy, 20*, 71-79.

116. Gariepy, N., & Howe, N. (2003). The therapeutic power of play: Examining the play of young children with leukemia. *Child Care, Health, and Development, 29*(6), 523-537.

117. Koller, D. (2018). Anxiety and the hospitalized child: Best practices for guiding therapeutic play. In Drewes, A. & Schafer, C. (Eds.), *Play-based interventions for childhood anxieties, fears, and phobias* (pp. 15-26). New York, NY: Guilford.

118. Yogman, M., Garner, A., Hutchinson, J., Hirsh-Pasek, K., & Golinkoff, R. (2018). The power of play: A pediatric role in enhancing development in young children. *Pediatrics, 142*(3), 1-15.

119. Salmela, M., Salantera, S., Ruotsalainen, T., & Aronen, E. (2010). Coping strategies for hospital-related fears in preschool aged children. *Journal of Paediatrics and Child Health, 46,* 108-114.

120. Ellerton, M., Caty, S., & Ritchie, J. (1985). Helping young children master intrusive procedures through play. *Children's Health Care, 13*(4), 167-173.

121. Moore, M., & Russ, S. (2006). Pretend play as a resource for children: Implications for pediatricians and health professionals. *Journal of Developmental and Behavioral Pediatrics, 27*, 237-248.

122. Rae, W., Sullivan, J., & Askins, M. (2016). Play interventions for hospitalized children. In L. Reddy, T. Files-Hall, & C. Schaefer (Eds.), *Empirically based play interventions for children* (2nd ed., pp. 115-133). Washington, DC: American Psychological Association.

123. Chokephaibulkit, K., Tarugsa, J., Lolekha, R., Leowsrisook, P., Manaboriboon, B., Naiwatanakul, T., . . . Boon-yashidhi, V. (2015). Outcomes of a comprehensive youth program for HIV-infected adolescents in Thailand. *Journal of the Association of Nurses in AIDS Care, 26*(6), 758-769.

124. Grey, M., Whittemore, R., Jaser, S., Ambrosino, J., Lindemann, E., Liberti, L., . . . Dziura, J. (2009). Effects of coping skills training in school-age children with type 1 diabetes. *Research in Nursing and Health, 32*(4), 405-418.

125. Nabors, L., Stough, C., Combs, A., & Elkins, J. (2019). Implementing the Coping Positively with My Worries manual: A pilot study. *Journal of Child and Family Studies,* 1-10.

126. Sansom-Daly, U. M., Peate, M., Wakefield, C. E., Bryant, R. A., & Cohn, R. J. (2012). A systematic review of psychological interventions for adolescents and young adults living with chronic illness. *Health Psychology, 31*(3), 380-393.

127. Srof, B. J., Velsor-Friedrich, B., & Penckofer, S. (2012). The effects of coping skills training among teens with asthma. *Western Journal of Nursing Research, 34*(8), 1043-1061.

128. Whittemore, R., Jaser, S., Jeon, S., Liberti, L., Delamater, A., Murphy, K.,. . . Grey, M. (2012). An internet coping skills training program for youth with type 1 diabetes. *Nursing Research, 61*(6), 395-404.

129. Holmes, C. S., Chen, R., Mackey, E., Grey, M., & Streisand, R. (2014). Randomized clinical trial of clinic-integrated, low-intensity treatment to prevent deterioration of disease care in adolescents with type 1 diabetes. *Diabetes Care, 37,* 1535-1543.

130. Clark, L. A., Whitt, S., & Lyons, K. (2019). Improving communication between health care providers, families, and children with autism spectrum disorder: The linked program. *Journal of PeriAnesthesia Nursing, 34*(5), 889-899.
131. Gettis, M. A., Wittling, K., Palumbo-Dufur, J., McClain, A., & Riley, L. (2018). Identifying best practice for healthcare providers caring for autistic children perioperatively. *Worldviews on Evidence-Based Nursing, 15*(2), 127-129.
132. Straus, J., Coburn, S., Maskell, S., Pappagianopoulos, J., & Cantrell, K. (2019). Medical encounters for youth with autism spectrum disorder: A comprehensive review of environmental considerations and interventions. *Clinical Medicine Insights: Pediatrics*, 13.
133. Wittling, K., Dufur, J., McClain, A., & Gettis, M. (2018). Behavioral coping plans: One inter-professional team's approach to patient-centered care. *Journal of Pediatric Nursing, 41*, 135-139.
134. Harrison, D., Joly, C., Chretien, C., Cochrane, S., Ellis, J., Lamontagne, C., & Regis, V. (2014). Pain prevalence in a pediatric hospital: Raising awareness during pain awareness week. *Pain Research and Management*, *19*(1), e24-e30.
135. Kennedy, R. M., Juhman, J., & Zempsky, W. T. (2008). Clinical implications of unmanaged needle-insertion pain and distress in children. *Pediatrics, 122*(3), S130-S133.
136. Anand, K. J., & Scalzo, F. M. (2000). Can adverse neonatal experiences alter brain development and subsequent behavior? *Biology of the Neonate, 77*(2), 69-82.
137. Fernandes, S. C., Arriaga, P., & Esteves, F. (2014). Providing preoperative information for children undergoing surgery: a randomized study testing different types of educational material to reduce children's preoperative worries. *Health Education Research, 29*(6), 1058-1076.
138. West, N., Christopher, N., Stratton, K., Gorges, M., & Brown, Z. (2019, forthcoming). Reducing preoperative anxiety with child life preparation prior to intravenous induction of anesthesia: A randomized controlled trial. *Pediatric Anesthesia.*
139. Li, H. C. W., & Lopez, V. (2008). Effectiveness and appropriateness of therapeutic play intervention in preparing children for surgery: A randomized controlled trial study. *Journal for Specialists in Pediatric Nursing, 13*(2), 63-73.
140. Li, H. C., Lopez, V., & Lee, T. L. I. (2007b). Psychoeducational preparation of children for surgery: The importance of parental involvement. *Patient Education and Counseling*, *65*, 34-41.
141. Sabaq, A. G. & El-Awady, S. (2012). The effect of pre-operative preparation program and mothers presence during induction on anxiety level and behavior change in young children undergoing elective surgery. *Life Science Journal, 9*(4), 3798-3807.
142. Wennstrom, B., Tornhage, C. J., Nasic, S.., Hedelin, H., & Bergh, I. (2011). The perioperative dialogue reduces postoperative stress in children undergoing day surgery as confirmed by salivary cortisol. *Pediatric Anesthesia, 21*(10), 1058-1065.
143. Wong, C. L., Ip, W. Y., Kwok, B. M. C., Choi, K. C., Ng, B. K. W., & Chan, C. W. H. (2018). Effects of therapeutic play on children undergoing cast-removal procedures: a randomised controlled trial. *BMJ Open, 8*(7), e021071.
144. Fincher, W., Shaw, J., & Ramelet, A. (2012). The effectiveness of a standardised preoperative preparation in reducing child and parent anxiety: A single-blind randomised controlled trial. *Journal of Clinical Nursing, 21*, 946-955.
145. Kolk, A. M., van Hoof, R., & Dop, F. (2000). Preparing children for venipuncture: The effect of an integrated intervention on distress before and during venipuncture. *Child: Care, Health and Development, 26*(3), 251-260.
146. Moore, E., Bennett, K., Dietrich, M., & Wells, N. (2015). The effect of directed medical play on young children's pain and discomfort during burn wound care. *Journal of Pediatric Health Care, 23*(3), 265-273.
147. Piskorz, J., & Czub, M. (2018). Effectiveness of a virtual reality intervention to minimize pediatric stress and pain intensity during venipuncture. *Journal for Specialists in Pediatric Nursing, 23*(1), e12201

148. Sanchez Cristal, N., Staab, J., Chatham, R., Ryan, S., Mcnair, B., & Grubenhoff, J. A. (2018). Child life reduces distress and pain and improves family satisfaction in the pediatric emergency department. *Clinical pediatrics*, *57*(13), 1567-1575.
149. Brown N. J., David, M., Cuttle, L., Kimble, R. M., Rodger, S., & Higashi, H. (2015). Cost-effectiveness of a nonpharmacological intervention in pediatric burn care. *Value in Health, 18, 631-637.*
150. Bartik, K. & Tourner, E. K. (2017). Effectiveness of a preoperative preparation program on children's emotional states and parental anxiety. *Journal of PeriAnesthesia Nursing, 33*(6), 972-980.
151. Kada, S., Satinovic, M., Booth, L., & Miller, P. K. (2019). Managing discomfort and developing participation in non-emergency MRI: Children's coping strategies during their first procedure. *Radiography, 25*, 10-15.
152. Copanitsanou, P. & Valkeapaa, K. (2013). Effects of education on paediatric patients undergoing elective surgical procedures on their anxiety - a systematic review. *Journal of Clinical Nursing, 23*, 940-954.
153. Dahlquist, L. M., Busby, S. M., Slifer, K. J., Tucker, C. L., Eischen, S., Hilley, L., & Sulc, W. (2002). Distraction for children of different ages who undergo repeated needle sticks. *Journal of Pediatric Oncology Nursing*, *19*(1), 22-34.
154. Klosky, J. L., Garces-Webb, D. M., Buscemi, J., Schum, L., Tyc, V. L. & Merchant, T. E. (2007). Examination of an interactive-education intervention in improving parent and child distress outcomes associated with pediatric radiation therapy procedures. *Children's Healthcare, 36*(4), 323-334.
155. Diener, M., Lofgren, A., Isabella, R., Magana, S., Choi, C., & Gourley, C. (2018). Children's distress during intravenous placement: The role of child life specialists. *Children's Health Care, 48*(5), 1-17.
156. McCarthy, A. M., Kleiber, C., Hanrahan, K., Zimmerman, M. B., Ersig, A., Westhus, N., & Allen, S. (2014). Matching doses of distraction with child risk for distress during a medical procedure. *Nursing Research, 63*(6), 397-407.
157. Gold, J. L., & Mahrer, N. E. (2018). Is virtual reality ready for prime time in medical space? A randomized control trial of pediatric virtual reality for acute procedural pain management. *Journal of Pediatric Psychology, 43*(3), 266-275.
158. Shahid, R., Benedict, C., Mishra, S., Mulye, M., & Guo, R. (2015). Using ipads for distraction to reduce pain during immunizations. *Clinical Pediatrics, 54*(2), 145-148.
159. Boles, J. (2013). Speaking up for children undergoing procedures: The ONE VOICE approach. *Pediatric Nursing*, *39*(5), 257-260.
160. Stephens, B. K., Barkey, M. E., & Hall, H. R. (1999). Techniques to comfort children during stressful procedures. *Accident and Emergency Nursing, 7*(4), 226-236.
161. Lacey, C. M., Finkelstein, M., & Thygeson, M. V. (2008). The impact of positioning on fear during immunizations: Supine versus sitting up. *Journal of Pediatric Nursing, 23*(3), 195-200.
162. Sparks, L., Setlik, J., & Luhman, J. (2007). Parental holding and positioning to decrease IV distress in young children: A randomized controlled trial. *Journal of Pediatric Nursing*, *22*(6), 440-447.
163. Svendsen, E. J., Moen, A., Pedersen, R., & Bjork, I. T. (2018). "But perhaps they could reduce the suffering?" Parents' ambivalence toward participating in forced peripheral vein cannulation performed on their preschool-aged children. *Journal of Pediatric Nursing, 41*, e46-e51.
164. Kahraman, A., Basbakkal, Z., Yalaz, M., & Sozmen, E. Y. (2018). The effect of nesting positions on pain, stress and comfort during heel lance in premature infants. *Pediatrics and Neonatology, 59*, 352-359.
165. Koller, D. (2016). Kids need to talk, too': Inclusive practices for children's healthcare education and participation. *Journal of Clinical Nursing, 26*, 2657-2668.
166. Stein, A., Dalton, L., Rapa, E., Bluebond-Langner, M. Hanington, L., Stein, K. F., . . . Yousafzai, A. (2019). Communication with children and adolescents about the diagnosis of their own life-threatening condition. *Lancet, 393*, 1150-1163.

167. Weaver, M. S., Heinze, K. E., Bell, C. J., Wiener, L., Garee, A. M., Kelly, K. P., . . . Hinds, P. S. (2016). Establishing psychosocial palliative care standards for children and adolescents with cancer and their families: An integrative review. *Palliative Medicine, 30*(3), 212-233.
168. Konstantynowicz, J., Marcinowicz, L., Abramowicz, P., & Abramowicz, M. (2016). What do children with chronic diseases and their parents think about pediatricians? A qualitative interview study. *Maternal and Child Health Journal, 20*, 1745-1752.
169. Smith, L. E., Maybach, A. M., Feldman, A., Darling, A., Akard, T. F., & Gilmer, M. J. (2019). Parent and child preferences and styles of communication about cancer diagnoses and treatment. *Journal of Pediatric Oncology Nursing.* Advance online publication, 1043454219859235.
170. Blazin, L. J., Cecchini, C., Habashy, C., Kaye, E. C., & Baker, J. N. (2018). Communicating effectively in pediatric cancer care: Translating evidence into practice. *Children, 5*(40), 1-16.
171. Hughes, B., O'Brien, M. R., Flynn, A., & Knighting, K. (2018). The engagement of young people in their own advance care planning process: A systematic narrative synthesis. *Palliative Medicine, 32*(7), 1147-1166.
172. Croom, A., Wiebe, D. J., Berg, C. A., Lindsay, R., Donaldson, D., Foster, C., . . . Swinyard, M. T. (2011). Adolescent and parent perceptions of patient-centered communication while managing type 1 diabetes. *Journal of Pediatric Psychology, 36*(2), 206-215.
173. Durall, A., Zurakowski, D., & Wolfe, J. (2012). Barriers to conducting advance care discussions for children with life-threatening conditions. *Pediatrics, 129*(4), e975-e982.
174. 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.
175. Levetown, M., & Committee on Bioethics (2008). Communicating with children and families: From everyday interactions to skill in conveying distressing information. *Pediatrics, 121*(5), e1441.
176. Maisels, M. J., & Kring, E. A. (2005). A simple approach to improving patient satisfaction. *Clinical Pediatrics, 44*, 797-800.
177. Van Cleave, J., Gortmaker, S. L., & Perrin, J. M. (2010). Dynamics of obesity and chronic health conditions among children and youth. *JAMA, 303*(7), 623–630.
178. Asnani, M. R., Quimby, K. R., Bennett, N. R., & Francis, D. K. (2016). Interventions for patients and caregivers to improve knowledge of sickle cell disease and recognition of its related complications. *Cochrane Database of Systematic Reviews, 10,* CD011175.
179. Pellisé, F., Sell, P., & EuroSpine Patient Line Task Force (2009). Patient information and education with modern media: The Spine Society of Europe Patient Line. *European Spine Journal*, 18 (Suppl 3), 395–401.
180. Abualula, N. A., Jacobsen, K. H., Milligan, R. A., Rodan, M. F., & Conn, V. S. (2016). Evaluating diabetes educational interventions with a skill development component in adolescents with type 1 diabetes: A systematic review focusing on quality of life. *The Diabetes Educator, 42*(5), 515-528.
181. Frizzell, C., Connolly, A., Beavis, E., Lawson, J., & Bye, A. (2011). Personalised epilepsy education intervention for adolescents and impact on knowledge acquisition and psychosocial function. *Journal of Pediatrics and Child Health, 47,* 271-275.
182. Hood, K., Iturralde, E., Rausch, J., & Weissberg-Benchell, J. (2018). Preventing diabetes distress in adolescents with type 1 diabetes: Results 1 year after participation in the STePS program. *Diabetes Care, 41*, 1623-1630.
183. Cantrell, K., Patel, N., Mandrell, B., & Grissom, S. (2013). Pediatric HIV disclosure: A process-oriented framework. *AIDS Education and Prevention, 25*(4), 302-314.
184. Gerson, A. C., Joyner, M., Fosarelli, P., Butz, A., Wissow, L., Lee, S., . . . Hutton, N. (2001). Disclosure of HIV diagnosis to children: When, where, why, and how. *Journal of Pediatric Health Care, 15,* 161-167.

185. Griffin, A., Gilleland, J., Johnson, A., Cummings, L., New, T., Brailey, T., . . . Osunkwo, I. (2013). Applying a developmental-ecological framework to sickle cell disease transition. *Clinical Practice in Pediatric Psychology, 1*(3), 250-263.
186. Kossoff, E. H., Sutter, L., Doerrer, S. C., Haney, C. A., & Turner, Z. (2017). Impact of child life services in children and families admitted to start the ketogenic diet. *Journal of Child Neurology, 32*(9), 828-833.
187. Starnes, C., Bailey, E., Calvert, C., Gusler, J., Gisler, S., Williams, F., . . . Cairns, B. (2016). Development of a pediatric educational tool: Helping burns heal . . . An adventure for kids with burns. *Journal of Pediatric Surgical Nursing, 5*(2), 50-59.
188. Gunter, M., & Duke, G. (2018). Reducing uncertainty in families with childhood cancers: An integrative literature review. *Pediatric Nursing, 44*(1), 21-37.
189. Landier, W., Ahern, J., Barakat, L. P., Bhatia, S., Bingen, K. M., Bondurant, P. G., . . . Hockenberry, M. (2016). Patient / family education for newly diagnosed pediatric oncology patients: Consensus recommendations from a children's oncology group expert panel. *Journal of Pediatric Oncology Nursing, 33*(6), 422-431.
190. Rodgers, C. C., Laing, C. M., Herring, R. A., Tena, N., Leonardelli, A., Hockenberry, M., & Hendricks-Ferguson, V. (2016). Understanding effective delivery of patient and family education in pediatric oncology: A systematic review from the children's oncology group. *Journal of Pediatric Oncology Nursing, 33*(6), 432-446.
191. Utens, E. M., Callus, E., Levert, E. M., De Groote, K., & Casey, F. (2018). Multidisciplinary family-centered psychosocial care for patients with CHD: Consensus recommendations from the AEPC Psychosocial Working Group. *Cardiology in the Young, 28,* 192-198.
192. Menrath, I., Ernst, G., Mönkemöller, K., Lehmann, C., Eberding, A., Müller-Godeffroy, E., . . . & ModuS Study group (2018). How are effects of patient education programs influenced by psychosocial risk factors in pediatrics? *Klinische Pädiatrie, 230*(2), 73-80.
193. Boyd, M., Lasserson, T. J., McKean, M. C., Gibson, P. G., Ducharme, F. M., & Haby, M. (2009). Interventions for educating children who are at risk of asthma-related emergency department attendance. *Cochrane Database of Systematic Reviews, 2,* CD001290.
194. Srof, B., Taboas, P., & Velsor-Friedrich, B. (2012). Adolescent asthma education programs for teens: Review and summary. Journal of Pediatric Health Care, 26(6), 418-426.
195. Watson, W. T., Gillespie, C., Thomas, N., Filuk, S. E., McColm, J., Piwiniuk, M. P., & Becker, A. B. (2009). Small-group, interactive education and the effect on asthma control by children and their families. *Canadian Medical Association Journal, 181*(5), 257-263.
196. Kudubes, A., Bektas, M., & Mutafoglu, K. (2018). The effect of fatigue-related education on pediatric oncology patients' fatigue and quality of life. *Journal of Cancer Education.*
197. Peterson-Sweeney, K., McMullen, A., Yoos, H., Kitzmann, H., Halterman, J., Arcoleo, K., & Anson, E. (2007). Impact of asthma education received from health care providers on parental illness representation in childhood asthma. *Research in Nursing & Health, 30,* 203-212.
198. Wu, Y. P., & Roberts, M. C. (2008). A meta-analysis of interventions to increase adherence to medication regimens for pediatric otitis media and streptococcal pharyngitis. *Journal of Pediatric Psychology*, *33*(7), 789–796.
199. McGrady, M. E., & Hommel, K. A. (2013). Medication adherence and health care utilization in pediatric chronic illness: A systematic review. *Pediatrics*, *132*(4), 730–740.
200. Loiselle, K. A., Gutierrez-Colina, A. M., Eaton, C. K., Simons, L. E., Devine, K. A., Mee, L. L., & Blount, R. L. (2015). Longitudinal stability of medication adherence among adolescent solid organ transplant recipients. *Pediatric Transplantation*, *19*, 428–435.
201. Coyne, K. D., Trimble, K. A., Lloyd, A., Petrando, L., Pentz, J., & Fawcett, A. (2019). Interventions to promote oral medication adherence in the pediatric chronic illness population: A systematic review from the children’s oncology group. *Journal of Pediatric Oncology Nursing*, *36*(3), 219–235.

202. Hood, K. K., Rohan, J. M., Peterson, C. M., & Drotar, D. (2010). Interventions with adherence-promoting components in pediatric type 1 diabetes: Meta-analysis of their impact on glycemic control. *Diabetes Care*, *33*(7), 1658–1664.
203. Garvie, P. A., Lensing, S., & Rai, S. N. (2007). Efficacy of a pill-swallowing training intervention to improve antiretroviral medication adherence in pediatric patients with HIV/AIDS. *Pediatrics*, *119*(4), e893–e899.
204. Patel, A., Jacobsen, L., Jhaveri, R., & Bradford, K. K. (2015). Effectiveness of pediatric pill swallowing interventions: A systematic review. *Pediatrics*, *135*(5), 883–889.
205. Graham, S., Weinman, J., & Auyeung, V. (2018). Identifying potentially modifiable factors associated with treatment non-adherence in paediatric growth hormone deficiency: A systematic review. *Hormone Research in Paediatrics*, *90*, 221–227.
206. Gutierrez-Colina, A. M., Smith, A. W., Mara, C. A., & Modi, A. C. (2018). Adherence barriers in pediatric epilepsy: From toddlers to young adults. *Epilepsy & Behavior*, *80*, 229–234.
207. Michaud, P.-A., Suris, J.-C., Thomas, R., Gnehm, H. E., Chesaux, J.-J. (2010). Coping with an HIV infection: A multicenter qualitative survey on HIV positive adolescents' perceptions of their disease, therapeutic adherence and treatment. *Swiss Medical Weekly*, *140*(17–18), 247–253.
208. Lowenstein, D., Cervenka, M., Mitchell, L., Stewart, N., Kossoff, E., & Kelley, S. (2018). Child life services in an epilepsy monitoring unit. *Clinical Pediatrics, 57*(11), 1269-1274.
209. Foster, K., Young, A., Mitchell, R., Van, C., & Curtis, K. (2017). Experiences and needs of parents of critically injured children during the acute hospital phase: a qualitative investigation. *Injury*, *48*(1), 114-120.
210. Hall, E. O. (2005). Being in an alien world: Danish parents' lived experiences when a newborn or small child is critically ill. *Scandinavian Journal of Caring Sciences*, *19*(3), 179-185.
211. Power, N., & Franck, L. (2008). Parent participation in the care of hospitalized children: a systematic review. *Journal of Advanced Nursing*, *62*(6), 622-641.
212. Rennick, J. E., Johnston, C. C., Dougherty G., Platt, R, & Ritchie, J. A. (2002). Children's psychological responses after critical illness and exposure to invasive technology. *Journal of Developmental & Behavioral Pediatrics, 23*(3), 133-144.
213. Cousino, M., & Hazen, R. (2013). Parenting stress among caregivers of children with chronic illness: A systematic review. *Journal of Pediatric Psychology*, *38*(8), 809-828.
214. Angstrom-Branstrom, C., Lindh, V., Mullaney, T., Wickart-Johansson, G., Svard, A., Nyholm, T., . . . Engvall, G. (2018). Parents' experiences and responses to an intervention for psychological preparation of children and families during the child's radiotherapy. *Journal of Pediatric Oncology Nursing*, *35*(2), 132-148.
215. Burns-Nader, S., Hernandez-Reif, M., & Porter, M. (2014). The relationship between mothers' coping patterns and children's anxiety about their hospitalization as reflected in their drawing. *Journal of Child Health Care, 18*(1), 6-18.
216. So, S., Rogers, A., Patterson, C., Drew, W., Maxwell.,J., Darch, J., Hoyle, C., Patterson, S., & Pollack-BarZiv, S. (2014). Parental experiences of a developmentally focused care program for infants and children during prolonged hospitalization. *Journal of Child Health Care, 18*(2), p. 156-167
217. Cypress, B. (2012). Family presence on rounds: A systematic review of literature. *Dimensions of Critical Care Nursing, 31*(1), 53-64.
218. Kuo, D., Sisterhen, L., Sigrest, T., Biazo, J., Aitken, M., & Smith, C. (2012). Family experiences and pediatric health services use associated with family centered rounds. *Pediatrics, 130*(2), 299-305.
219. Tyson, M., Bohl, D., & Blickman, J. (2014). A randomized controlled trial: Child life services in pediatric imaging. *Pediatric Radiology*, *44*, 1426-1432.

220. Cheng, L., Wang, L., He, M., Feng, S., Zhu, Y., & Rodgers, C. (2018). Perspectives of children, family caregivers, and health professionals about pediatric oncology symptoms: A systematic review. *Supportive Care in Cancer, 26*(9), 1-15.
221. Lerret, S. (2009). Discharge readiness: An integrative review focusing on discharge following pediatric hospitalization. *Journal for Specialists in Pediatric Nursing, 14*(4), 245-255.
222. Institute of Medicine (2004). *Health literacy: A prescription to end confusion*. Washington, DC: The National Academies Press.
223. United States Department of Education National Center for Education Statistics (2019). *Data point: Adult literacy in the United States* [Data file]. Retrieved from https://nces.ed.gov/pubs2019/2019179.pdf
224. DeWalt, D.A. & Hink, A. (2009). Health literacy and child health outcomes: A systematic review of the literature. *Pediatrics, 124*(Suppl. 3), S265-274
225. Driessnack, M., Chung, S., Perkhounkova, E., & Hein, M. (2014). Using the "newest vital sign" to assess health literacy in children. *Journal of Pediatric Health Care, 28*(2), 165-171.
226. Fleary, S. A., Joseph, P., & Pappagianopoulos, J. E. (2018). Adolescent health literacy and health behaviors: A systematic review. *Journal of Adolescence, 62*, 116-127.
227. Biggs, J. M., Glasgow, N. E., Pradel, F., & Morgan, J. A. (2018). Assessing the understanding of pediatric-oriented medication education materials versus standard available education materials. *The Journal of Pediatric Pharmacology and Therapeutics, 23*(5), 362-365.
228. Nabors, L., Bush, A., Buchanan, R., Clarke, J., & Campbell, A. (2011). Preschoolers' knowledge about hospital and emergency equipment and care. *Issues in Comprehensive Pediatric Nursing, 34*, 131-143.
229. Lookabaugh, S., & Ballard, S. (2018). The scope and future direction of child life. *Journal of Child and Family Studies, 27,* 1721-1731.
230. Blaine, K., Rogers, J., O'Neill, M. R., McBride, S., Faerber, J., Feudtner, C, & Berry, J. G. (2018). Clinician perceptions of the importance of hospital discharge components for children. *Journal for Healthcare Quality, 40*(2), 79-88.
231. Haugen, M. S., Landier, W., Mandrell, B. N., Sullivan, J., Schwartz, C., Skeens, M. A., & Hockenberry, M. (2016). Educating families of children newly diagnosed with cancer: Insights of a Delphi panel of expert clinicians from the Children's Oncology Group. *Journal of Pediatric Oncology Nursing, 33*(6), 405-413
232. Smith, J. G., Desai, P. P., Sira, N., & Engelke, S. C. (2014). Family-centered developmentally supportive care in the neonatal intensive care unit: Exploring the role and training of child life specialists. *Children’s Health Care, 43*(4), 345-368.
233. Vepraskas, S. H., O'Day, P., Zhang, L., Simpson, P., & Gage, S. (2018). Parents support teach-back, demonstration, and a postdischarge phone call to augment discharge education. *Hospital Pediatrics, 8*(12), 778-784.
234. Schweitzer, M., Aucoin, J., Docherty, S. L., Rice, H. E., Thompson, J., & Taylor-Sullivan, D. (2014). Evaluation of a discharge education protocol for pediatric patients with gastrostomy tubes. *Journal of Pediatric Health Care, 28*(5), 420-428.
235. Weiss, M. E., Sawin, K. J., Gralton, K., Johnson, N., Klingbell, C., Lerret, S., . . . Schiffman, R. (2017). Discharge teaching, readiness for discharge, and post-discharge outcomes in parents of hospitalized children. *Journal of Pediatric Nursing, 34,* 58-64.
236. Wilson-Smith, M. G., Sachse, K., & Perry, M. T. (2018). Road to home program: A performance improvement initiative to increase family and nurse satisfaction with the discharge education process for newly diagnosed pediatric oncology patients. *Journal of Pediatric Oncology Nursing, 35*(5), 368-374.
237. Kulaylat, A. N., Rocourt, D. V., Tsai, A. Y., Martin, K. L., Engbrecht, B. W., Santos, M. C., . . . Dillon, P. W. (2018). Understanding readmissions in children undergoing surgery: A pediatric NSQIP analysis. *Journal of Pediatric Surgery, 53*(7), 1280-1287.

238. Parikh, K., Hall, M., Kenyon, C. C., Teufel II, R. J., Mussman, G. M., Montalbano, A., . . . & Morse, R. B. (2018). Impact of discharge components on readmission rates for children hospitalized with asthma. *The Journal of Pediatrics*, *195*, 175-181.
239. Heiser Rosenberg, C. E., Terhaar, M. F., Ascenzi, J. A., Walbert, A., Kokoszka, M., Perretta, J. S., & Miller, M. R. (2017). Becoming parent and nurse: High-fidelity simulation in teaching ambulatory central line infection prevention to parents of children with cancer. *The Joint Commission Journal on Quality and Patient Safety, 43*(5), 251-258.
240. Nakamura, M. M., Toomey, S. L., Zaslavsky, A. M., Berry, J. G., Lorch, S. A., Jha, A. K., . . . & Schuster, M. A. (2014). Measuring pediatric hospital readmission rates to drive quality improvement. *Academic Pediatrics*, *14*(5), S39-S46.
241. Auger, K. A., Teufel, R. J., Harris, J. M., Gay, J. C., Del Beccaro, M. A., Neuman, M. I., . . . & Simon, H. K. (2017). Children's hospital characteristics and readmission metrics. *Pediatrics*, *139*(2), e20161720.
242. Friedman, A. J., Cosby, R., Boyko, S., Hatton-Bauer, J., & Turnbull, G. (2011). Effective teaching strategies and methods of delivery for patient education: A systematic review and practice guideline recommendations. *Journal of Cancer Education, 26*(1), 12-21.
243. Badaczewski, A., Bauman, L. J., Blank, A. E., Dreyer, B., Abrams, M. A., Stein, R. E. K., . . . Sharif, I. (2017). Relationship between teach-back and patient-centered communication in primary care pediatric encounters. *Patient Education and Counseling, 100*, 1345-1352.
244. Klingbeil, C., & Gibson, C. (2018). The teach back project: A system-wide evidence based practice implementation. *Journal of Pediatric Nursing, 42*, 81-85.
245. 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.
246. Zoucha, J., Hull, M., Keniston, A., Mastalerz, K., Quinn, R., Tsai, A., . . . Burden, M. (2018). Barriers to early hospital discharge: A cross-sectional study at five academic hospitals. *Journal of Hospital Medicine,13*(12), 816-822.
247. Turner, T., Cull, W. L., Bayldon, B., Klass, P., Sanders, L. M., Frintner, M. P., . . . Dreyer, B. (2009). Pediatricians and health literacy: Descriptive results from a national survey. *Pediatrics, 124*(3), S299-S305.
248. Al-Yateem, N. S., Issa, W. B., & Rossiter, R. (2015). Childhood stress in healthcare settings: Awareness and suggested interventions. *Issues in Comprehensive Pediatrics Nursing, 38*(2), 36-153.
249. Butler, S. C., Huyler, K., Kaza, A., & Rachwal, C. (2017). Filling a significant gap in the cardiac ICU: implementation of individualised developmental care. *Cardiology in the Young, 27*(9), 1797-1806.
250. Lerwick, J. L. (2013). Psychosocial implications of pediatric surgical hospitalization. *Seminars in Pediatric Surgery, 22*, 129-133.
251. Peterson, J. K., & Evangelista, L. S. (2017). Developmentally supportive care in congenital heart disease: A concept analysis. *Journal of Pediatric Nursing, 36*, 241-247.
252. Aley, K. E. (2002). Developmental approach to pediatric transplantation. *Progress in Transplantation, 12*(2), 86-91.
253. Brynes, N., Lee, H., Ren, D., & Beach, M. (2017). Improvement of Patient-and Family-Specific Care for Children with Special Behavioral Needs in the Emergency Setting: A Behavioral Needs Education. Journal of Emergency Nursing, 43(3), 202-207.
254. Jensen, E. J., Geisthardt, C., & Sarigiani, P. A. (2019). Working with children with autism spectrum disorder in a medical setting: Insights from Certified Child Life Specialists. *Journal of Autism and Developmental Disorders*, 1-10.
255. Johnson, N. L., & Rodriguez, D. (2013). Children with autism spectrum disorder at a pediatric hospital: A systematic review of the literature. *Pediatric Nursing*, 39(3), 131-141.
256. Action for Sick Children - National Association for the Welfare of Children in Hospital. (2013). *Action for Sick Children- National Association for the Welfare of Children in Hospital Recommendations* (Vol. 2029339). UK. Retrieved from
http://www.actionforsickchildren.org.uk/sites/default/files/downloads/RECOMMENDATIONS-18-6-13.pdf.

257. Desai, P. P., Ng, J. B., & Bryant, S. G. (2002). Care of children and families in the CICU: A focus on their developmental, psychosocial, and spiritual needs. *Critical Care Nursing, 23*(3), 88-97.

258. Turner, J. C., & Fralic, J. (2009). Making explicit the implicit: Child life specialists talk about their assessment process. *Child Youth Care Forum, 38*, 39-54.

259. Als, H., & McAnulty, G. B. (2011). The Newborn Individualized Developmental Care and Assessment Program (NIDCAP) with Kangaroo Mother Care (KMC): Comprehensive care for preterm infants. *Current Women's Health Reviews, 7*(3), 288-301.

260. Lambert, V., Coad, J., Hicks, P., & Glacken, M. (2014). Social spaces for young children in hospital. *Child: Care, Health, and Development, 40*(2), 195-204.

261. Bjork, M., Nordstrom, B., & Hallstrom, I. (2006). Needs of young children with cancer during their initial hospitalization: An observational study. *Journal of Pediatric Oncology Nursing, 23*(4), 210-219.

262. Haiat, H., Bar-Mor, G., & Shochat, M. (2003). The world of the child: A world of play even in the hospital. *International Pediatric Nursing, 18*(3), 209-214.

263. Zahr, L. (1998). Therapeutic play for hospitalized preschoolers in Lebanon. *Pediatric Nursing, 24*(5), 449-454.

264. Oremland, E. K. (2000). The pediatric playroom: a multiple play partners environment. In J. D. Oremland (Ed.), *Protecting the emotional development of the ill child: The essence of the child life profession* (pp. 17-32). Madison, CT: Psychosocial Press.

265. Weber, F.S. (2010). The influence of playful activities on children's anxiety during the preoperative period at the outpatient surgical center. Jornal de Pediatria, 86(3), 209-214.

266. Koukourikos, K. Tzeha, L., Pantelidou, P., & Tsaloglidou, A. (2015). The importance of play during hospitalization of children. *Materia Socio-Medica, 27*(6), 438-441.

267. Vilas, D. (2014). Report on findings of play practices and innovations survey: The state of play in North American hospitals. Arlington, VA: Child Life Council. Retrieved from http://www.childlife.org/docs/default-source/resources/resource-library/the_state_of_play_in_north_american_hospitals.pdf?sfvrsn=2

268. Almqvist, L., Hellnas, P., Stefansson, M., Granlund, M. (2006). I can play! Young children's perception of health. *Pediatric Rehabilitation, 9*(3), 275-284.

269. Campos, M., Rodrigues, K., & Pinto, M. (2009). Evaluation of the behavior of the preschool one just admitted in the unit of pediatrics and the use of the therapeutic toy. *Einstein (São Paulo), 8*(1), 10-17.

270. Nijhof, S. L., Vinkers, C. H., van Geelen, S. M., Duijff, S. N., Achterberg, E. M., van der Net, J., . . . van der Brug, A. W. (2018). Healthy play, better coping: The importance of play for the development of children in health and disease. *Neuroscience & Biobehavioral Reviews, 95,* 421-429.

271. Cox, E. (2017, November 8). The power of play in children's health. *U.S. News and World Report.* Retrieved from https://health.usnews.com/health-care/for-better/articles/2017-11-08/the-power-of-play-in-childrens-health

272. McCue, K. (1988). Medical play: An expanded perspective. *Children's Health Care, 16*(3), 75-85.

273. Bolig, R. (2018). Play in children's health-care settings. In J. A. Rollins, R. Bolig, & C. C. Mahan (Eds.), *Meeting children's psychosocial needs across the health-care continuum* (pp. 77-117). Austin, TX: Pro-Ed.

274. Jones, M. (2018). The necessity of play for children in health care. *Pediatric Nursing, 44*(6), 303-305.

275. Davis, M., & Burns-Nader, S. (2017). Examining differences in affect displayed during non-medical pretend play and medical pretend play. *Early Child Development and Care, 189*(10), 1657-1665*.*

276. Dionigi, A. (2017). Clowning as a complementary approach for reducing iatrogenic effects in pediatrics. *AMA Journal of Ethics, 19*(8), 775-782.

277. Koller, D., & Gryski, C. (2007). The life threatened child and the life enhancing clown: Towards a model of therapeutic clowning. *eCAM, 5*(1), 17-25.

278. McCullough, A., Ruehrdanz, A., Jenkins, M., Gilmer, M. J., Olson, J., Pawar, A., . . . O'Haire, M. (2018). Measuring the effects of an animal-assisted intervention for pediatric oncology patients and their parents: A multisite randomized controlled trial. *Journal of Pediatric Oncology Nursing, 35*(3), 159-177.
279. Boles, J., Winsor, D., Mandrell, B., Gattuso, J., West, N., Leigh, L., & Grissom, S. (2017). Student/patient: The school perceptions of children with cancer. *Educational Studies, 43*(5), 549-566.
280. Rodriguez, E., Dunn, M., Zuckerman, T., Vannatta, K., Gerhardt, C. & Compas, B. (2012). Cancer-related sources of stress for children with cancer and their parents. *Journal of Pediatric Psychology, 37*(2). 185-197.
281. Boles, J. (2017). School attendance for children with chronic illnesses. *Pediatric Nursing, 43*(6), 305-306.
282. Shiu, S. (2001). Issues in the education of students with chronic illness. *International Journal of Disability, Development and Education, 48*(3), 269-281.
283. Burns, S., Hernandez-Reif, M., & Jessee, P. (2008). A review of pediatric HIV effects on neurocognitive development. *Issues in Comprehensive Pediatric Nursing*, *31*(3), 107-121.
284. Compas, B., Jaser, S., Reeslund, K., Patel, N., & Yarboi, J. (2017). Neurocognitive deficits in children with chronic health conditions. *American Psychological Association, 72(4)*, 326-338.
285. Shaw, S., & McCabe, P. (2008). Hospital-to-school transition for children with chronic illness: Meeting the new challenges of an evolving health care system. *Psychology in the Schools, 45*(1), 74-87.
286. Thies, K. M. (1999). Identifying the educational implications of chronic illness in school children. *Journal of School Health, 69*(10), 392-397.
287. Irwin, M., Elam, M., & Merianos, A. (2015). Coordination of care between health and education systems for patients with a hematologic or oncologic diagnosis: A time study analysis. *Journal of Pediatric Nursing, 20,* 244-253.
288. Schilling, E., & Getch, Y. (2017). School reentry services for students with chronic health conditions: An examination of regional practices. *Psychology in the Schools, 55,* 1027-1040.
289. Thompson, A., Christiansen, H., Elam, M., Hoag, H., Irwin, M., Pao, M., . . . Kelly, K. (2015). Academic continuity and school reentry support as a standard of care in pediatric oncology. *Pediatric Blood Cancer, 62*, S805-S817.
290. Worchel-Prevatt, F., Heffer, R., Prevatt, B., Miner, J., Young-Saleme, T., Horgan, D., . . . Frankel, L. (1998). A school reentry program for chronically ill children. *Journal of School Psychology, 36*(3), 261-279.
291. Weiner, P., Hoffman, M., & Rosen, C. (2018). Child life and education issues: The child with a chronic illness or special healthcare needs. In R. H. Thompson (Ed.), *The handbook of child life: A guide for pediatric psychosocial care* (pp. 527-549). Springfield, IL: Charles C. Thomas.
292. Michael, A. I., Ademola, S. A., Olawoye, O. A., Iyun, A. O., Arowojolu, O., & Oluwatosin, O. M. (2019, in press). Time to return to school in child and adolescent burn patients from a sub-Saharan tertiary hospital. *Burns*.
293. National Research Council (2015). Investing in the health and well-being of young adults. Washington, DC: The National Academies Press. Available from http://nap.edu/18869
294. The Society for Adolescent Health and Medicine (2017). Young adult health and well-being: A position statement of the Society for Adolescent Health and Medicine. *Journal of Adolescent Medicine, 60*, 758-759,
295. Spencer, D.L., McManus, M., Call, K.T., Turner, J., Harwood, C., White, P., & Alarcon, G. (2018). Health care coverage and access among children, adolescents, and young adults, 2010-2016: Implications for future health reforms. *Journal of Adolescent Medicine, 62*, 667-673.
296. Dwyer-Matzky, K., Blatt, A., Asselin, B. L., & Wood, D. L. (2017). Lack of preparedness for pediatric to adult-oriented health care transition in hospitalized adolescents and young adults. *Academic Pediatrics, 18*(1), 102-110.

297. Fenton, N., Ferris, M., Ko, Z., Javalkar, K., & Hooper, S. R. (2015). The relationship of health care transition readiness to disease-related characteristics, psychosocial factors, and health care outcomes: Preliminary findings in adolescents with chronic kidney disease. *Journal of Pediatric Rehabilitation Medicine, 8*, 13-22.
298. Gray, W. N., Schaefer, M. R., Resmini-Rawlinson, A., & Wagoner, S. T. (2018). Barriers to transition from pediatric to adult care: A systematic review. *Journal of Pediatric Psychology, 43*(5), 488-502.
299. Shepard, C. L., Doerge, E. J., Eickmeyer, A. B., Kraft, K. H., Wan, J., & Stoffel, J. T. (2018). Ambulatory care use among patients with spina bifida: Change in care from childhood to adulthood. *The Journal of Urology, 199*, 1050-1055.
300. Campbell, F., Biggs, K., Aldiss, S. K., O'Neill, P. M., Clowes, M., McDonagh, J., . . . Gibson, F. (2016). Transition of care for adolescents from paediatric services to adult health services. *Cochrane Database of Systematic Reviews, 4*, 1-67.
301. Bowen, M. E., Henske, J. A., & Potter, A. (2010). Health care transitions in adolescents and young adults with diabetes. *Clinical Diabetes, 28*(3), 99-106.
302. Goralski, J. L., Nasr, S. Z., & Uluer, A. (2017). Overcoming barriers to a successful transition from pediatric to adult care. *Pediatric Pulmonology, 52*, S52-S60.
303. National Child Traumatic Stress Network. (2003, September). *Definition of medical traumatic stress* . Paper presented at the Medical Traumatic Stress Working Group meeting, Philadelphia, PA.
304. Ari, A., Peri, T., Margalit, D., Galili-Weisstub, E., Udassin, R., & Benarroch, F. (2018). Surgical procedures and pediatric medical traumatic stress (PMTS) syndrome: Assessment and future directions. *Journal of Pediatric Surgery, 53*, 1526-1531.
305. Bonanno, G., & Mancini, A. (2008). The human capacity to thrive in the face of potential trauma. *Pediatrics, 121*(2), 369-375.
306. Boles, J. (2017). Trauma-informed care: An intentional approach. *Pediatric Nursing, 43*(5), 250-253.
307. Clinton, J., Feller, A. F., & Williams, R. C. (2016). The importance of infant mental health. *Paediatric Child Health, 21*(5), 239-241.
308. Lawless, A., Conveney, J., & MacDougall, C. (2013). Infant mental health promotion and the discourse of risk. *Sociology of Health & Illness, 36*(3), 416-431.
309. Marcellus, S., & Cross, S. (2016). Trauma-informed care in the NICU: Implications for early childhood development. *Neonatal Network, 35*(6), 359-366.
310. Sampaio, A., & Lifter, K. (2014). Neurosciences of infant mental health development: Recent findings and implications for counseling psychology. *Journal of Counseling Psychology, 61*(4), 513-520.
311. Simpson, T., Condon, E., Price, R., Finsh, B. K., Sdler, L. S., & Ordway, M. R. (2015). Demystifying infant mental health: What the primary care provider needs to know. *Journal of Pediatric Health Care, 30*(1), 38-48.
312. Tomlin, A. M., Deloian, B., & Wollesen, L. (2016). Infant/early childhood mental health and collaborative partnerships: Beyond the NICU. *Newborn & Infant Nursing Reviews, 16*(4), 309-315.
313. Wheeler, R., Ludtke, M., Helmer, J., Barna, N., Wilson, K., & Oleksiak, C. (2013). Implementation of the PICCOLO in infant mental health practice: A case study. *Infant Mental Health Journal, 34*(4), 352-358.
314. Weatherston, D. (2017). Reflecting on the practice of infant mental health and the reduction of risk in infancy and early parenthood: A case study. *Infant Mental Health Journal, 38*(1), 143-149.
315. Fernandez Medina, I. M., Granero-Molina, J., Fernandez-Sola, C., Hernandez-Padilla, J. M., Avila, M. C., & Lopez Rodriguez, M. (2018). Bonding in neonatal intensive care units: Experiences of extremely preterm infants' mothers. *Women and Birth, 31*, 325-330.
316. Makela, H., Axelin, A., Feeley, N., & Niela-Vilen, H. (2018). Clinging to closeness: The parental view on developing a close bond with their infants in the NICU. *Midwifery, 62*, 183-188.
317. Guillaume, S., Michelin, N., Amrani, E., Benier, B., Durrmeyer, X., Lescure, S., . . . Caeymaex, L. (2013). Parents’ expectations of staff in the early bonding process with their premature babies in the intensive care setting: A qualitative multicenter study with 60 parents. *Pediatrics, 13*(1), 18.

318. Duhn, L. (2010). The importance of touch in the development of attachment. *Advances in Neonatal Care, 10*(6), 294-300.
319. Reda, N. M., & Hartshorne, T. S. (2008). Attachment, bonding, and parental stress in CHARGE syndrome. *Mental Health Aspects of Developmental Disabilities, 11*(1), 10-21.
320. Pennestri, M., Gaudreau, H., Bouvette-Turcot, A., Moss, E., Lecompte, V., Atkinson, L., . . . Meaney, M. J. (2015). Attachment disorganization among children in neonatal intensive care unit: Preliminary results. *Early Human Development, 91,* 601-606.
321. Bialoskurski, M., Cox, C. L., & Hayes, J. A. (1999). The nature of attachment in a neonatal intensive care unit. *The Journal of Perinatal & Neonatal Nursing, 13*(1), 66-77.
322. Schuengel, C., De Schipper, J. C., Sterkenburg, P. S., & Kef, S. (2013). Attachment, intellectual disabilities and mental health: Research, assessment and intervention. *Journal of Applied Research in Intellectual Disabilities, 26*, 34-46.
323. Boztepe, H., Ay, A., Yildiz, G. K., & Cinar, S. (2016). Does the visibility of a congenital anomaly affect maternal-infant attachment levels? *Journal for Specialists in Pediatric Nursing, 21*, 200-211.
324. Fleckman, J. F., Kuint, J., & Eidelman, A. I. (1999). The nature of the mother's tie to her infant: Maternal bonding under conditions of proximity, separation, and potential loss. *Child Psychology and Psychiatry, 40*(6), 929-939.
325. Nonnenmacher, N., Noe, D., Ehrenthal, J. C., Reck, C. (2016). Postpartum bonding: The impact of maternal depression and adult attachment style. *Archives of Women's Mental Health, 19*(5), 927-935.
326. Davies, K. A., Macfarlane, G. J., McBeth, J., Morriss, R., & Dickens, C. (2009). Insecure attachment style is associated with chronic widespread pain. *Pain, 343*, 200-205.
327. Puig, J., Englund, M. M., Simpson, J. A., & Collins, W. A. (2013). Predicting adult physical illness from infant attachment: A prospective longitudinal study. *Health Psychology, 32*(4), 409-417.
328. McWilliams, L. A., & Bailey, S. J. (2010). Associations between adult attachment ratings and health concerns: Evidence from the national comorbidity survey replication. *Health Psychology, 29*(4), 446-453.
329. Coughlin, M. E. (2017). *Trauma-informed care in the NICU: Evidence-based practice guidelines for neonatal clinicians.* New York, NY: Spring Publishing Company.
330. Ferro, M. A. (2016). Major depressive disorder, suicidal behaviour, bipolar disorder, and generalised anxiety disorder among emerging adults with and without chronic health conditions. *Epidemiology and Psychiatric Sciences, 25*(5), 462-474.
331. Ferro, M. A., & Boyle, M. H. (2015). The impact of chronic physical illness, maternal depressive symptoms, family functioning, and self-esteem on symptoms of anxiety and depression in children. *Journal of Abnormal Child Psychology, 43*(1), 177-187.
332. Whitney, D. G., & Peterson, M. D. (2019). US national and state-level prevalence of mental health disorders and disparities of mental health care use in children. JAMA pediatrics, 173(4), 389-391.
333. Burstein, B., Agostino, H., & Greenfield, B. (2019). Suicidal attempts and ideation among children and adolescents in US emergency departments, 2007-2015. JAMA pediatrics, 173(6), 598-600.
334. Curtis, C. E., & Luby, J. L. (2008). Depression and social functioning in preschool children with chronic medical conditions. *The Journal of Pediatrics, 153*(3), 408-413.
335. Immelt, S. (2006). Psychological adjustment in young children with chronic medical conditions. *Journal of Pediatric Nursing, 21*(5), 362-377.
336. Merikangas, K. R., Calkins, M. E., Burstein, M., He, J. P., Chiavacci, R., Lateef, T., . . . Gur, R. E. (2015). Comorbidity of physical and mental disorders in the neurodevelopmental genomics cohort study. *Pediatrics, 135*(4), e927.
337. Vessey, J. A. (1999). Psychological comorbidity in children with chronic conditions. *Pediatric Nursing, 25*(2), 211

338. Barlow, J. H., & Ellard, D. R. (2006). The psychosocial well-being of children with chronic disease, their parents and siblings: An overview of the research evidence base. *Child: Care, Health and Development, 32*(1), 19-31.
339. Butler, A., Van Lieshout, R. J., Lipman, E. L., MacMillan, H. L., Gonzalez, A., Gorter, J. W., . . . Ferro, M. A. (2018). Mental disorder in children with physical conditions: A pilot study. *BMJ Open, 8*(1), e019011.
340. Leeman, J., Crandell, J., Lee, A., Bai, J., Sandelowski, M., & Knafl, K. (2016). Family functioning and the well-being of children with chronic conditions: A meta-analysis. *Research in Nursing & Health, 39*(4), 229-243.
341. Butwicka, A., Frisén, L., Almqvist, C., Zethelius, B., & Lichtenstein, P. (2015). Risks of psychiatric disorders and suicide attempts in children and adolescents with type 1 diabetes: A population-based cohort study. *Diabetes Care, 38*(3), 453-459.
342. Butwicka, A., Olén, O., Larsson, H., Halfvarson, J., Almqvist, C., Lichtenstein, P., Serlachius, E., Frisen, L., & Ludvigsson, J. F. (2019). Association of childhood-onset inflammatory bowel disease with risk of psychiatric disorders and suicide attempt. *JAMA pediatrics*, *173*(10), 969-978.
343. Christiansen, E., & Stenager, E. (2012). Risk for attempted suicide in children and youths after contact with somatic hospitals: a Danish register based nested case–control study. *Journal of Epidemiological Community Health*, 66(3), 247-253.
344. Eblin, A. (2019). Reducing seclusion and restraints on the inpatient child and adolescent behavioral health unit: A quality improvement study. *Journal of Child and Adolescent Psychiatric Nursing, 32,* 122-128.
345. Ferro, M. A., Avison, W. R., Karen Campbell, M., & Speechley, K. N. (2011). The impact of maternal depressive symptoms on health-related quality of life in children with epilepsy: A prospective study of family environment as mediators and moderators. *Epilepsia*, *52*(2), 316-325.
346. Reaume, S. V., & Ferro, M. A. (2019). Chronicity of mental comorbidity in children with new-onset physical illness. *Child: Care, Health and Development, 45*(4), 559-567.
347. Hornsby, N., Blom, L., & Sengoelge, M. (2019, in press). Psychosocial interventions targeting recovery in child and adolescent burns: a systematic review. *Journal of Pediatric Psychology*.
348. Bethell, C., Jones, J., Gombojav, N., Linkenbach, J., & Sege, R. (2019). Positive childhood experiences and adult mental and relational health in a statewide sample: associations across adverse childhood experiences levels. JAMA pediatrics, 173(11), e193007-e193007.
349. Deavin, A., Greasley, P., & Dixon, C. (2018). Children's perspectives on living with a sibling with a chronic illness. *Pediatrics, 142*(2), e20174151.
350. Fleary, S. A., & Heffer, R. W. (2013). Impact of growing up with a chronically ill sibling on well siblings' late adolescent functioning. *International Scholarly Research Notices - Family Medicine, 2013.*
351. Nabors, L., Liddle, M., Graves, M., Kamphaus, A., & Elkins, J. (2018). A family affair: Supporting children with chronic illnesses. *Child: Care, Health, & Development, 45*, 227-233.
352. Alderfer, M. A., Labay, L. E., & Kazak, A. E. (2003). Brief report: Does posttraumatic stress apply to siblings of childhood cancer survivors? *Journal of Pediatric Psychology, 28*(4), 281-286.
353. Dolgin, M. J., Somer, E., Zaidel, N., & Zaizov, R. (1997). A structured group intervention for siblings of children with cancer. *Journal of Child and Adolescent Group Therapy, 7*(1), 3-20.
354. Hashemi, F., & Shokrpour, N. (2010). The impact of education regarding the needs of pediatric leukemia patients' siblings on the parents' knowledge and practice. *Health Care Manager, 29*(1), 75-79.
355. Roberts, R. M., Ejova, A., Giallo, R., Strohm, K., Lillie, M., & Fuss, B. (2015). A controlled trial of the SibworkS group program for siblings of children with special needs. *Research in Developmental Disabilities, 43-44,* 21-31.
356. Gursky, B. (2007). The effect of educational interventions with siblings of hospitalized children. *Journal of Developmental and Behavioral Pediatrics, 28,* 392-398.

357. White, T. E., Hendershot, K. A., Dixon, M. D., Pelletier, W., Haight, A., Stegenga, K., . . . Pentz, P. D. (2017). Family strategies to support siblings of pediatric hematopoietic stem cell transplant patients. *Pediatrics, 139*(2), e20161057.
358. Wiener, L., Hoag, J. A., Pelletier, W., Shah, N. N., Shaw, B. E., Pulsipher, M. A., . . . Guilcher, G. (2019). Transplant center practices for psychosocial assessment and management of pediatric hematopoietic stem cell donors. *Bone Marrow Transplantation, 1.* Advance online publication.
359. Sisk, C., Walker, E., Gardner, C., Mandrell, B., & Grissom, S. (2012). Building a legacy for children and adolescents with chronic disease. *Journal of Pediatric Nursing, 27*, e71-e76.
360. Boles, J. (2014). Creating a legacy for and with hospitalized children. *Pediatric Nursing, 40*(1), 43-44.
361. Foster, T., Dietrich, M., Friedman, D., Gordon, J., & Gilmer, M. (2012). National survey of children's hospitals on legacy-making activities. *Journal of Palliative Medicine, 15*(5), 573-578.
362. Otis-Green, S. (2003). Legacy building. *Smith College Studies in Social Work, 73*(3), 395-405.
363. Allen, R., Hilgeman, M., Ege, M., Shuster, J., & Burgio, L. (2008). Legacy activities as interventions approaching end of life. *Journal of Palliative Medicine, 11*(7), 1029-1038.
364. Foster, T., Gilmer, M., Davies, B., Barrera, M., Fairclough, D., Vannatta, K., & Gerhardt, C. (2009). Bereaved parents' and siblings' reports of legacies created by children with cancer. *Journal of Pediatric Oncology Nursing, 26*(6), 369-376.
365. Hunter, E. (2008). Beyond death: Inheriting the past and giving to the future, transmitting the legacy of one's self. *OMEGA-Journal of Death and Dying, 56*(4), 313-329.
366. Snaman, J. M., Kayce, E. C., Torres, C., Gibson, D. V., & Baker, J. N. (2016). Parental grief following the death of a child from cancer: The ongoing odyssey. *Pediatric Blood Cancer, 63,* 1594-1602.
367. Kreicbergs, U., Lannen, P., Onelow, E., & Wolfe, J. (2007). Parental grief after losing a child to cancer: Impact of professional support on long-term outcomes. *Journal of Clinical Oncology, 25,* 3307-3312.
368. Morris, S., Dole, O., Joselow, M., Duncan, J., Renaud, K., & Branowicki, P. (2016). The development of a hospital-wide bereavement program: Ensuring bereavement care for all families of pediatric patients. *Journal of Pediatric Health Care, 31*(1), 88-95.
369. Suttle, M., Jenkins, T., & Tamburro, R. (2017). End-of-life and bereavement care in pediatric intensive care units. *Pediatric Clinics of North America, 64*(5), 1167-1183.
370. Kreicbergs, U., Valdimarsdóttir, U., Onelöv, E., Henter, J. I., & Steineck, G. (2004). Anxiety and depression in parents 4–9 years after the loss of a child owing to a malignancy: A population-based follow-up. *Psychological medicine*, *34*(8), 1431-1441.
371. Ljungman, L., Hovén, E., Ljungman, G., Cernvall, M., & vos Essen, L. (2015). Does time heal all wounds? A longitudinal study of the development of posttraumatic stress symptoms in parents of survivors of childhood cancer and bereaved parents. *Psycho-Oncology, 24*, 1792-1798.
372. Stroebe, M., Hansson, R., Stroebe, W., & Schut, H. (2001). Introduction: Concepts and issues in contemporary research on bereavement. In M. Stroebe et al. (Eds*.), Handbook of bereavement research* (pp. i-xv). Washington, DC: American Psychological Association.
373. Li, J., Precht, D., Mortensen, P., & Olsen, J. (2003). Mortality in parents after death of a child in Denmark: A nationwide follow-up study. *Lancet, 361,* 363-367.
374. Espinosa, J., & Evans, W. (2013). Maternal bereavement: The heightened mortality of mothers after the death of a child. *Economics and Human Biology, 11,* 371-381.
375. Cleiren, M. (1993). *Bereavement and adaptation: A comparative study of the aftermath of death.* Washington, DC: Hemisphere.
376. Sedig, L. K., Spruit, J. L., Paul, T. K., Cousino, M. K., Pituch, K., & Hutchinson, R. (2019, forthcoming). Experiences at the end of life from the perspective of bereaved parents: Results of a qualitative focus group study. *American Journal of Hospice and Palliative Medicine*, 1-9.

377. Brooten, D. A., Youngblut, J. M., Roche, R. M., Caicedo, C. L., & Page, T. F. (2018). Surviving siblings' illnesses, treatments/health services over 13 months after a sibling's death. *Journal of Child and Family Studies, 27,* 2049–2056.
378. Lövgren, M., Jalmsell, L., Wallin, A., Steineck, G., & Kreicbergs, U. (2016). Siblings' experiences of their brother's or sister's cancer death: a nationwide follow-up 2–9 years later. *Psycho-Oncology, 25*, 435–440.
379. Kobayashi, M., Heiney, S. P., Osawa, K., Ozawa, M., & Matsushima, E. (2017). Effect of a group intervention for children and their parents who have cancer. *Palliative & Supportive Care, 15*(5), 575-586.
380. McCue, K., & Bonn, R. (2011). *How to help children through a parent's serious illness: Supportive, practical advice from a leading child life specialist*. New York: St. Martin's Griffin Press.
381. Crider, J. D., & Pate, M. (2011). Helping children say goodbye to loved ones in adult and pediatric intensive care units: Certified Child Life Specialist—critical care nurse partnership. *AACN Advanced Critical Care, 22*(2), 109-112.
382. Hanley, J. B., & Piazza, J. (2012). A visit to the intensive care unit: A family-centered culture change to facilitate pediatric visitation in an adult intensive care unit. *Critical Care Nursing Quarterly, 35*(1), 113-122.
383. Mori, M., Elsayem, A., Reddy, S., Bruera, E., & Fadul, N. (2012). Unrelieved pain and suffering in patients with advanced cancer. *American Journal of Hospice and Palliative Medicine, 29*(3), 236-240.
384. Sutter, C., & Reid, T. (2012). How do we talk to the children? Child life consultation to support the children of seriously ill adult inpatients. *Journal of Palliative Medicine*, *15*(12), 1362-1368.
385. Hicks, M. (Ed.). (2008). *Child life beyond the hospital.* Arlington, VA: Child Life Council.
386. Kleinberg, S. (1987). Child life in the 1990s: Changing roles, changing times. *Children's Health Care*, *15*(4), 240-244.
387. Association of Child Life Professionals. (2019). ACLP 2019-2021 strategic plan. Retrieved from: https://www.childlife.org/docs/default-source/about-aclp/aclp-2019-2021-strategic-plan.pdf
388. Geisse, J. (2013). *Child life specialists in the camp setting: An exploration of presence, roles, and perspectives* (Unpublished master's thesis). Mills College, Oakland, CA.
389. Glasrud, P., & Feigal, R. (1984). Child life and children's dentistry: Broadening our scope of concern. *Children's Health Care*, *12*(3), 143-147.
390. Hinze, T. (2010). *Effectiveness of child life intervention on uncooperative pediatric patients in the dental clinic setting* (Unpublished master's thesis). Texas A&M, College Station, TX.
391. Schwartz, B., & Albino, J. (1983). Effects of psychological preparation on children hospitalized for dental procedures. *The Journal of Pediatrics, 102*(4), 634-638.
392. Oldfield, B. J., Nogelo, P. F., Vázquez, M., Ayala, K. O., Fenick, A. M., & Rosenthal, M. S. (2019). Group Well-Child Care and Health Services Utilization: A Bilingual Qualitative Analysis of Parents' Perspectives. Maternal and Child Health Journal, 1-7.
393. Palau, R. (2012). *Integrating and establishing child life outside of the hospital setting: The role of a child life specialist in schools* (Unpublished master's thesis). Mills College, Oakland, CA.
394. Coleman, C. (2013). *An assessment of the education and training of victim advocates to work with abused children in North Carolina: An investigation of the possible role for child life in courtrooms* (Unpublished master's thesis). East Carolina University, Greenville, NC.
395. Tucker, J., & McCann, L. (2013). Collaborating for family-centered care: Integrating child life specialists in the prenatal setting. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 42*(1), S49.
396. Manheimer, L. (2000). Child life in a non-hospital setting: A play group for substance abusers and their drug-exposed infants and toddlers. In E. K. Oremland & J. D. Oremland (Eds.), *Protecting the emotional development of the ill child: the essence of the child life profession* (pp. 173-189). Madison, CT: Psychosocial Press.

397. Bodner, K., D’Amico, S., Luo, M., Sommers, E., Goldstein, L., Neri, C., & Gardiner, P. (2018). A cross-sectional review of the prevalence of integrative medicine in pediatric pain clinics across the United States. *Complementary Therapies in Medicine*, *38*, 79-84.
398. Decosimo, C. A., Hanson, J., Quinn, M., Badu, P., & Smith, E. G. (2019). Playing to live: Outcome evaluation of a community-based psychosocial expressive arts program for children during the Liberian Ebola epidemic. *Global Mental Health, 6,* 1-12.
399. Brock, K., Snaman, J., Kaye, E., Bower, K., Weaver, M., Baker, J., . . . Ullrich, C. (2019). Models of Pediatric Palliative Oncology Outpatient Care - Benefits, Challenges, and Opportunities. *Journal of Oncology Practice, 15(9)*, 476-487.
400. Kim, D. H. & Yoo, I. Y. (2010). Factors associated with resilience of school age children with cancer. *Journal of Pediatrics and Child Health, 46*, 431-436.
401. Greup, S. R., Kaal, S. E. J., Jansen, R., Manten-Horst, E., Thong, M. S. Y., van der Graaf, W. T. A., . . . Husson, O. (2018). Post-traumatic growth and resilience in adolescent and young adult cancer patients: An overview. *Journal of Adolescent and Young Adult Oncology, 7*(1), 1-14.
402. Shapiro, E. R. (2002). Chronic illness as a family process: A social-developmental approach to promoting resilience. *Journal of Clinical Psychology in Session: Psychotherapy in Practice, 58*(22), 1375-1384.
403. Carter, B., Edwards, M., & Hunt, A. (2015). 'Being a presence': The ways in which family support workers encompass, embrace, befriend, accompany and endure with families of life-limited children. *Journal of Child Health Care, 19*(3), 304-319.
404. Im, Y. J. & Kim, D. H. (2011). Factors associated with the resilience of school-aged children with atopic dermatitis. *Journal of Clinical Nursing, 21*, 80-88.
405. Rosenberg, A. R., Starks, H., & Jones, B. (2014). "I know it when I see it." The complexities of measuring resilience among parents of children with cancer. *Supportive Care in Cancer, 22*, 2661-2668.
406. Boles, J. (2013). When everything changes: Supporting resilience in children with acquired brain injuries. *Pediatric Nursing, 39*(6), 314-289.
407. Kazak, A. E. (2006). Pediatric psychosocial preventative health model (PPPHM): Research, practice and collaboration in pediatric family systems medicine. *Families, Systems, and Health, 24*(4), 381-395.
408. McManus, R. P. (2002). Adolescent care: Reducing risk and promoting resilience. *Clinical Practice, 29*, 557-569.

Contributors

Jessika Boles, PhD, CCLS is a Certified Child Life Specialist and team lead at Monroe Carell Jr. Children's Hospital at Vanderbilt, and an Adjunct Professor in the Department of Psychology and Human Development at Vanderbilt University. In her current positions and her prior tenure at St. Jude Children's Research Hospital, Dr. Boles has served infants, children, adolescents, and young adults with chronic, life-threatening, or terminal illnesses and injuries. The diversity of her educational background - a bachelor of arts in Religious Studies from Rhodes College, a master's of education in Applied Child Studies from Vanderbilt University, and a doctorate in Educational Psychology from the University of Memphis - shapes her clinical work and research, both of which aim to break down the discursive barriers that can limit children's understanding of and participation in their healthcare experiences. Her publications and presentations similarly address topics such as children's involvement in healthcare research, their conceptions of abstract constructs such as legacy and loss, and the ways in which they access and respond to medical information. Additionally, Dr. Boles is a former board member of the Association of Child Life Professionals and regularly contributes her time to institutional initiatives for improving bereavement care, increasing patient mobility, and mitigating trauma and distress in pediatric critical care environments.

Camille Fraser, MS, CCLS, CIMI is a Child Life Specialist II at Monroe Carell Jr. Children's Hospital at Vanderbilt and an Adjunct Professor in the Department of Family Science at Lipscomb University. In her clinical role, she works in the pediatric cardiology department providing services to the outpatient cardiology clinic, pediatric cardiac intensive care unit, and cardiac step-down unit. Camille has helped lead both unit-specific and institution-wide initiatives to improve bereavement support, facilitate the formation of infant attachment, and enhance sensory support measures to aid in long-term coping and regulation. She has held previous child life positions working in acute care and PRN roles. Her educational background includes a Bachelor of Arts degree in family relations from Lipscomb University and a Master of Science degree in child life from Bank Street College of Education.

Katherine Bennett, MEd, CCLS, has worked as a Certified Child Life Specialist at Monroe Carell, Jr. Children's Hospital since 2001. She has worked with children and families in the areas of operative surgery, community outreach/education, PICC, inpatient medicine with all age groups, and in the burn center. Currently, she serves as the educator for Child Life & Volunteer Services, planning and coordinating the clinical training experiences for emerging child life professionals, onboarding new employees, working with the department's clinical advancement program and providing education about the needs of children in healthcare settings to colleagues both in and outside the Vanderbilt community. She has written and presented at international conferences and in several published outlets about such topics as medical play and its impacts, developmental theory applied to hospitalized children, and teaching child life in the clinical and university settings.

Maile Jones, MEd(c), CIMI is a graduate student pursuing her Master of Education degree in Applied Child Studies at Vanderbilt University, where her coursework and clinical experiences have focused on pediatric healthcare. After obtaining her Bachelor of Science degree in Psychology and Health and Wellness from Tulane University, Maile spent a year in Australia working for the Starlight Children's Foundation to expand her knowledge in international child life practice. The diversity of her experiences both locally and internationally have shaped her research interests in understanding how children, adolescents, and caregivers cope with stress and adversity in their lives. Maile currently works on several research projects including examining the effect of group medical play interventions on children's anxiety in the preoperative waiting area, and investigating the legacy perceptions described by pediatric patients, caregivers, and healthcare professionals. Her publications and presentations similarly include the importance of play in healthcare settings, pediatric patient and caregiver perceptions of legacy, and the ways in which children's anxiety level and self-reported fear are influenced by medical play interventions.

Jenna Dunbar, MEd(c), CIMI is a graduate student in the Applied Child Studies program at Vanderbilt University's Peabody College of Education and Human Development pursuing an emphasis in pediatric healthcare, and a specialization in poverty and intervention. She will graduate with her M.Ed. in May 2020 and is currently completing her child life internship at the Children's Hospital of Philadelphia. Using her bachelor's degree in journalism from the University of Missouri, professional experience at both large and small magazines and in advertising, as well as her present and evolving experience in pediatric psychosocial care, Jenna incorporates creativity and effective communication into all aspects of her work. She often employs her nontraditional path to child life to formulate unique interventions and treatment strategies for pediatric patients and their families, applying her well-rounded knowledge of the ways in which adversity, poverty, and marginalization in childhood impact development. Jenna maintains involvement in research and has been involved in quality improvement initiatives at Monroe Carell Jr. Children's Hospital at Vanderbilt that address the influences of child development and early adversity in pediatric healthcare, such as the study of how legacy and loss are conceptualized by pediatric patients and their families, as well as improving the treatment of newborns exposed to opioids in utero and procedures for diagnosing neonatal abstinence syndrome (NAS).

Ashlie Woodburn, MEd, CCLS, CIMI is a Certified Child Life Specialist working at Monroe Carell Jr. Children's Hospital at Vanderbilt and serving the pediatric cardiology population. Ashlie has experience implementing a wide range of child life interventions that meet the needs of diverse patients and families across outpatient clinic, inpatient acute and critical care settings. Ashlie is particularly interested in meeting the developmental needs of infants with chronic medical conditions. Ashlie has completed certification as an infant massage instructor and has worked to implement programs to increase the utilization of child life support during infant procedures and encourage developmentally appropriate sensory support in the Pediatric Cardiac Intensive Care Unit. Her academic training includes Bachelor of Science degrees in Psychology and Family and Human Development from Arizona State University and a Master of Education degree in Child Studies from Vanderbilt University.

Mary Ann Gill, MEd(c), is a graduate student at Vanderbilt University, where she is pursuing a Master of Education in Applied Child Studies with a concentration in Pediatric Healthcare. While completing a Bachelor of Science in Psychology at St. Mary's College of Maryland, Mary Ann spent several summers working at the Center for Courageous Kids, a residential camp for children with serious illnesses. Her diverse professional experiences there, in the special education field, and at Flying Horse Farms, another medical specialty camp, have shaped her interests in teaching emotional literacy, incorporating mindfulness into coping skills education, providing adaptive care for children with developmental disabilities, and supporting adolescents and emerging adults through healthcare transitions. Other publications, presentations, and research experiences include projects related to sibling support, therapeutic camp programs, and behavioral interventions in pediatric endocrinology. In the spring of 2020, she is completing a child life internship at Riley Hospital for Children at Indiana University Health.

Anne Duplechain, MEd(c), is a graduate student at Vanderbilt University pursuing her Master of Education degree in Applied Child Studies, with a concentration in pediatric healthcare. After completing her Bachelor of Arts degree in elementary education at Texas Christian University, Annie served children and their families around the world through humanitarian work in Central America, Africa, and Asia. She then returned to Texas to teach in a Title I school but felt a continued passion for providing psychosocial support to children and families in healthcare settings. In her graduate studies, with aspirations to become a child life specialist in a critical care environment, Annie has concentrated her coursework, research, and service on best practices for bereavement programs and the ways in which child life and spiritual care can partner to provide holistic, patient-and-family-centered care. She has published and presented on this work at national and regional conferences for a wide range of stakeholder audiences to provide multidisciplinary clinicians with evidence-based approaches for ameliorating negative psychological sequelae associated with hospitalization and loss. After completing her internship, Annie will pursue certification and continue to establish her identity as a child life specialist.

Erin Munn, MS, CCLS is a Child Life Specialist III at Monroe Carell Jr. Children’s Hospital at Vanderbilt in Nashville, Tennessee, with twenty-five years of experience as a Certified Child Life Specialist. Over her fifteen years at Johns Hopkins Children’s Medical Center in Baltimore, Maryland and nine years at Vanderbilt, Erin has served children and families across a wide range of inpatient and outpatient areas - cardiology, critical care, pre-surgery, burn/trauma, and specialty clinics – as well as her current role with a quality improvement initiative focused on opioid-exposed newborns and their mothers. Throughout her career, she has maintained a commitment to the professional development of child life students and staff, serving as co-chair of the Internship Task Force for the Association of Child Life Professionals (ACLP) and developing standardized curriculum modules and a supervisor manual for child life internship programs. In addition to numerous presentations at conferences in the United States, Erin has been an invited speaker for conferences and education series in New Zealand, the Philippines, and in the Balkans. Erin has been an active member of ACLP since 1995 and is a former President of the organization; most recently, she was named as the recipient of the Mary Barkey Clinical Excellence Award to acknowledge her exemplary child life care and high level of clinical skill.

Katy Hoskins, CCLS is a Certified Child Life Specialist in the Neonatal Intensive Care Unit at Monroe Carell Jr. Children's Hospital at Vanderbilt in Nashville, TN. Katy's interests and advocacy centers around infant mental health, non-pharmacological pain management/procedural support for infants, prenatal psychosocial support for parents and siblings in Maternal Fetal medicine, preterm developmental needs, and family-centered end of life care. Katy has been a child life specialist for four years with previous clinical experience in the emergency department and inpatient neurology. Katy was instructed and mentored by Dr. Cara Sisk, Ph.D. at Tennessee Tech University and graduated in 2015 with a Bachelor of Science degree in Human Ecology with a concentration in Child Life. Katy serves on many hospital committees, including chair of the NICU Bereavement Committee, and is also an ACLP Bulletin committee member.

ACLP Vision

ACLP advances psychosocial care and the emotional safety of children, youth, and families impacted by healthcare and significant life experiences.

ACLP Mission

ACLP fosters child life professionals through:

- Standards and credentialing
- Connection, collaboration and community
- Evidence-based practice
- Professional development
- Championing the child life profession

ASSOCIATION OF
Child Life
Professionals

www.childlife.org