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Cerebral Palsy

Introduction

Cerebral Palsy (CP) can be a debilitating disorder that can negatively impact the health, overall well-being, and quality of life of those affected. The question is, how can health care professionals safely and effectively care for those patients suffering from CP, while working to improve patient outcomes? This course will answer that very question, while providing health care professionals with the necessary insight and recommendations to optimize patient care.

Section 1: Cerebral Palsy (CP)

New parents present to a health care facility with their five-month-old, male child. Upon questioning from a health care professional, the new parents report that their child's head seems to "pitch backwards" when they pick him up, and their child feels "floppy" when they hold him. Upon hearing the parent's reports about their child, the health care professional considers CP. The question that remains is, how can health care professionals safely and effectively care for those patients suffering from CP, while working to improve patient outcomes? The straightforward answer to the aforementioned question is to incorporate the three essential elements of CP patient care into daily practice. With that in mind, this section of the course will review the first essential element of CP patient care, which is to possess insight into CP. The information found within this section of the course was derived from materials provided by the Centers for Disease Control and Prevention (CDC) unless, otherwise, specified (Centers for Disease Control and Prevention [CDC], 2021).

What is Cerebral Palsy (CP)?

- Cerebral palsy (CP) may refer to a group of disorders that affect movement, balance, and posture.
- Health care professionals should note the following: CP is the most common motor disability in childhood; research presented by the CDC suggests that an average of 1 in 345 children in the U.S. have CP; CP can affect male and female children, however CP is more common among male children; CP is permanent (i.e., there is no cure for CP); CP is not progressive (i.e., CP does not get worse over time).

What causes CP?

- Research presented by the CDC indicates that CP is caused by abnormal development of the brain or damage to the developing brain that affects an individual's ability to control his or her muscles.

- Health care professionals should note the following: the abnormal development of the brain or damage that leads to CP can happen before birth, during birth, within a month after birth, or during the first years of a child's life, while the brain is still developing. Health care professionals should also note the following: congenital CP may refer to CP related to abnormal development of the brain or damage to the brain that happened before or during birth; the majority of CP cases are congenital (e.g., 85% -90% of CP cases); acquired CP may refer to CP related to brain damage that occurs more than 28 days after birth.

What are the risk factors associated with CP?

- **Preterm birth** - one of the first risk factors that may initially come to mind when considering CP is preterm births. A preterm birth may refer to the birth of a live baby that is born before 37 weeks of pregnancy have been completed (note: the average length of a full-term pregnancy is between 39 - 40 weeks; the term preterm baby may refer to any baby born preterm). Typically, preterm births are associated with congenital CP. Health care professionals should note the following: children who were born before the 37th week of pregnancy, especially if they were born before the 32nd week of pregnancy, have a greater chance of having CP.

- **Low birth weight** - another risk factor they may initially come to mind when considering CP is low birth weight. Health care professionals should note the following: low birth weights are typically associated with congenital CP; children who weigh less than 5 1/2 pounds (2,500 grams) at birth, and especially those who weigh less than 3 pounds, 5 ounces (1,500 grams) have a greater chance of having CP.

- **Multiple births** - one risk factor that may not initially come to mind when considering CP is multiple births. However, multiple births can lead to congenital CP. The term multiple births may refer to the act or process of giving birth to twins, triplets, quadruplets, quintuplets, sextuplets, septuplets, or octuplets.

Health care professionals should note the following: twins, triplets, and other multiple births have a higher risk for CP, especially if a baby's twin or triplet dies before birth or shortly after birth; the increased risk of CP associated with multiple births is due, at least in part, to the fact that children born from multiple pregnancies often are born early or with low birth weight, or both.

- **Assisted reproductive technology (ART) infertility treatment** - assisted reproductive technology (ART) infertility treatment may refer to any health care intervention that is used to address infertility. Health care professionals should note the following: children born from pregnancies resulting from the use of some ART infertility treatments have a greater chance of having congenital CP; the increased risk of CP associated with ART infertility treatment is related to preterm delivery or multiple births, or both; both preterm delivery and multiple births are increased among children conceived with ART infertility treatments.

- **Infections during pregnancy** - research presented by the CDC suggests that some types of infection during pregnancy (e.g., chickenpox, rubella, and cytomegalovirus [CMV]) may lead to CP in children. Health care professionals should note the following: infections can lead to increases in certain proteins called cytokines; cytokines circulate in the brain and blood of a baby during pregnancy; increased levels of cytokines can lead to inflammation, which, subsequently, can lead to brain damage in the baby and, ultimately, to CP.

- **Infections during infancy/early childhood** - infections during infancy (e.g., meningitis) may lead to acquired CP. Health care professionals should note that infections of the brain may have a higher rate of resulting CP when compared to other types of infection.

- **Jaundice and kernicterus** - jaundice may refer to a condition in which the skin, whites of the eyes, and mucous membranes turn yellow. Jaundice is typically related to high levels of bilirubin in the blood (note: bilirubin may refer to a yellowish-orange compound that is formed during the normal breakdown of red blood cells). When left untreated, jaundice can lead to kernicterus. Kernicterus may refer to a type of brain damage that can result from high levels of bilirubin in the blood. Kernicterus may lead to CP. Health care professionals should note the following: at a minimum, new born babies should be checked for jaundice every 8 to 12 hours in the first 48 hours of life; jaundice/kernicterus treatment may include light therapy.

- **Medical conditions of the mother** - mothers with thyroid problems, intellectual disability, or seizures have a higher risk of giving birth to a child with CP. Health care professionals should note the following: research presented by the CDC suggests that mothers suffering from hypothyroidism may have a higher risk of giving birth to a child with CP (note: hypothyroidism may refer to a condition characterized by low levels of thyroid hormone in the blood).
- **Birth complications** - the detachment of the placenta, uterine rupture, or problems with the umbilical cord during birth could result in a disruption of oxygen to the baby and ultimately to CP. Health care professionals should note the following: when the flow of oxygen to a baby's brain is interrupted during childbirth, cells in the brain quickly begin to die; brain cell death may lead to CP.
- **Injuries during early childhood development** - injuries during early childhood development (e.g., head injuries) may lead to acquired CP. Health care professionals should note that child abuse and neglect may result in injuries that could lead to CP. Health care professionals should also note the following: child abuse and neglect may refer to any recent act or failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse or exploitation; an act or failure to act which presents an imminent risk of serious harm (U.S. Department of Health and Human Services, 2021). Additionally, health care professionals should note the following signs and symptoms of child abuse and neglect: unexplained burns, bites, bruises, broken bones, and/or black eyes; a child appears frightened of the parents and protests or cries when it is time to go home; a child reports injury by a parent or another adult caregiver; a child is frequently absent from school; a child lacks needed medical or dental care, immunizations, or glasses.

What are the signs/symptoms of CP?

- Due to the potential for congenital CP and acquired CP, the signs/symptoms of CP may vary depending on the age of the child (note: one of the main signs that a child may be suffering from CP is a delay in reaching movement milestones [e.g., rolling over, sitting, standing, or walking]; the term movement milestones may refer to physical skills observed in infants and children as they grow and develop). Specific information regarding age-related signs/symptoms of CP may be found below.

- Children younger than six months of age - the signs/symptoms of CP in children younger than six months of age include the following:
    - The child's head lags when the child is picked up, and while the child is lying on his or her back
    - The child feels stiff
    - The child feels floppy
    - When the child is held cradled in the arms, the child seems to overextend his or her back and neck
    - When the child is picked up, the child's legs get stiff and they cross or scissor
- Children older than six months of age - the signs/symptoms of CP in children older than six months of age include the following:
    - The child doesn’t roll over in either direction
    - The child cannot bring his or her hands together
    - The child has difficulty bringing his or her hands to the mouth
    - The child reaches out with only one hand while keeping the other hand fisted
- Children older than 10 months of age - the signs/symptoms of CP in children older than 10 months of age include the following:
    - The child crawls in a lopsided manner, pushing off with one hand and leg while dragging the opposite hand and leg
    - The child scoots around on his or her buttocks or hops on his or her knees, but does not crawl on all fours
- Children older than 12 months of age - the signs/symptoms of CP in children older than 12 months of age include the following:
    - The child cannot get into a sitting position without help
    - The child cannot stand on his or her own

- The child cannot walk on his or her own
- The child cannot run on his or her own
- The child cannot walk up steps on his or her own
- The child cannot climb onto and down from furniture without help
- The child cannot jump in place
- The child cannot stand on one foot for 10 seconds or longer

Are there different types of CP?

There are four main types of CP, which include: spastic cerebral palsy, dyskinetic cerebral palsy, ataxic cerebral palsy, and mixed cerebral palsy. Specific information regarding each type of CP may be found below.

- **Spastic cerebral palsy** - spastic cerebral palsy may refer to a type of CP characterized by increased muscle tone, which leads to muscle stiffness and movements that may appear stiff and jerky. Health care professionals should note that spastic cerebral palsy is the most common type of CP. Health care professionals should also note the following: spastic cerebral palsy may affect different parts of the body; depending on the affected part of the body, spastic cerebral palsy may be described or classified as spastic diplegia/diparesis cerebral palsy, spastic hemiplegia/hemiparesis cerebral palsy, or spastic quadriplegia/ quadriparesis cerebral palsy. Specific information regarding the aforementioned descriptions/classifications of spastic cerebral palsy may be found below.
    - **Spastic diplegia/diparesis cerebral palsy** - spastic diplegia/diparesis cerebral palsy may refer to a description/classification of spastic cerebral palsy characterized by muscle stiffness in mainly in the legs, with the arms less affected or not affected at all. Health care professionals should note that individuals suffering from spastic diplegia/diparesis cerebral palsy may have difficulty walking because tight hip and leg muscles may cause the legs to pull together, turn inward, and cross at the knee.
    - **Spastic hemiplegia/hemiparesis cerebral palsy** - spastic hemiplegia/ hemiparesis cerebral palsy may refer to a description/classification of spastic cerebral palsy characterized by increased muscle tone/stiffness on

one side of the body. Health care professionals should note the following: spastic hemiplegia/hemiparesis cerebral palsy, typically, only affects one side of the body; often the arm, on one side of the body, is more affected than the leg.

- **Spastic quadriplegia/quadriparesis cerebral palsy** - spastic quadriplegia/ quadriparesis cerebral palsy may refer to a description/classification of spastic cerebral palsy characterized by increased muscle tone/stiffness in all four limbs, the trunk, and the face. Health care professionals should note that spastic quadriplegia/quadriparesis cerebral palsy is considered to be the most severe form of spastic cerebral palsy; individuals with spastic quadriparesis usually cannot walk and often have other developmental disabilities (e.g., intellectual disability; seizures; or problems with vision, hearing, or speech).

- **Dyskinetic cerebral palsy** - dyskinetic cerebral palsy may refer to a type of CP characterized by an inability to adequately control the movements of the hands, arms, feet, and legs, making it difficult to sit and walk. Health care professionals should note the following: individuals suffering from dyskinetic cerebral palsy may display movements that appear to be uncontrolled, slow and writhing, and/or rapid and jerky; the face and tongue may also be affected by dyskinetic cerebral palsy causing the individual to have difficulty sucking, swallowing, and talking; an individual with dyskinetic cerebral palsy may experience muscle tone that changes (e.g., varying from too tight to too loose) from day to day, and even hour to hour.

- **Ataxic cerebral palsy** - ataxic cerebral palsy may refer to a type of CP characterized by difficulties with balance and coordination (e.g., poor balance and coordination). Health care professionals should note the following: individuals suffering from ataxic cerebral palsy may have a hard time with quick movements or movements that need a lot of control (e.g., writing); individuals suffering from ataxic cerebral palsy may have a hard time controlling their hands or arms when they reach for an object.

- **Mixed cerebral palsy** - mixed cerebral palsy may refer to a type of CP that occurs when an individual exhibits symptoms of more than one type of CP. Health care professionals should note the following: the most common type of mixed cerebral palsy is spastic-dyskinetic cerebral palsy; spastic-dyskinetic cerebral palsy may

refer to a type of mixed cerebral palsy that occurs when individuals exhibit symptoms of both spastic cerebral palsy and dyskinetic cerebral palsy.

How may children potentially suffering from CP present?

- Children potentially suffering from CP may present at various ages, stages of development, and with different signs/symptoms. However, most children suffering from CP will present with some form or type of delay in reaching movement milestones (e.g., rolling over, sitting, standing, or walking). Therefore, health care professionals should assess and observe presenting children for any potential delays in movement milestones.
- When assessing/observing presenting children for any potential delays in movement milestones, health care professionals should consider the age-related signs/symptoms of CP, as well as the different types of CP.
- In addition to observing a child potentially suffering from CP, health care professionals should ask the parents or caregivers of a presenting child questions related to CP signs/symptoms to help effectively identify the potential presence of CP. Examples of the aforementioned types of questions may be found below.
    - Does your child's head lag when the child is picked up, and while the child is lying on his or her back?
    - Does your child feel stiff when picked up or held?
    - Does your child feel floppy when picked up or held?
    - Does your child seem to overextend his or her back and neck when picked up or held?
    - When you pick up your child, does the child's legs get stiff or cross over?
    - Can your child roll over in either direction?
    - Can your child bring the hands together?
    - Does your child have difficulty bringing the hands to the mouth?
    - Does your child reach out with one hand while keeping the other hand fisted?

    - Does your child crawl in a lopsided manner?
    - When crawling does your child push off with one hand and leg while dragging the opposite hand and leg?
    - Does your child scoot around on the buttocks or hop on the knees instead of crawling on all fours?
    - Can your child crawl on all fours?
    - Can your child stand?
    - Can your child stand without assistance?
    - Can your child walk?
    - Can your child walk without assistance?
    - Can your child run?
    - Can your child walk up steps?
- In addition to the types of questions found above, health care professionals should also consider asking the parents or caregivers of presenting children questions related to the potential risk factors for CP (note: any information regarding potential risk factors for CP may help health care professionals effectively identify the potential presence CP). Examples of the aforementioned types of questions may be found below.
    - Was your child born preterm?
    - Was your child born with a low birth weight?
    - What was the weight of your child at birth?
    - Was your child part of a multiple birth?
    - Did the mother of the child undergo infertility treatment?
    - Did the mother of the child suffer from an infection during pregnancy?
    - Did your child recently have an infection of any kind?
    - Did your child recently suffer from a high fever?

    - Did your child recently appear yellow or orange?
    - Did your child recently display yellowish eyes?
    - Were there any complications during the birth of your child?
    - Did your child suffer from any complications during birth?
    - Did your child recently experience an injury or blow to the head?
- Health care professionals should note that patient observation and effective communication with parents and/or caregivers may be essential to effectively identifying a child potentially suffering from CP. Health care professionals should also note the following: effectively identifying a child potentially suffering from CP can help ensure the child undergoes CP screening and diagnosis; CP screening and diagnosis can be essential to the overall health and well-being of a child potentially suffering from CP.

How is CP diagnosed?

The diagnostic process for CP typically involves three key steps, which include: developmental monitoring, developmental screening, and developmental and medical evaluation. Specific information regarding each of the aforementioned steps may be found below.

- **Developmental monitoring** - developmental monitoring, also referred to as surveillance, may refer to the act or process of observing and tracking a child's growth and development over time. In order to effectively carry out developmental monitoring, health care professionals should complete the following: ask parents and/or caregivers questions about their child's development and growth; ask parents and/or caregivers if they have any concerns about their child's development; update a child's developmental history; observe a child during an exam to note how he or she moves; and document relevant information. Health care professionals should note the following: it is essential for health care professionals to observe and monitor the development of all children, especially those who are at a higher risk for developmental problems due to preterm birth or low birth weight; if any concerns about a child's development are raised during developmental monitoring, then a developmental screening test should be performed as soon as possible.

- **Developmental screening** - developmental screening may refer to a test that is administered to children to note if a child has specific developmental delays, such as motor or movement delays. Health care professionals should note the following: developmental screening tests can include interviews and/or questionnaires completed by parents, and specific tests for children; the American Academy of Pediatrics recommends that all children be screened for developmental delays during regular well-child office visits at 9 months, 18 months, and 24 or 30 months. Health care professionals should also note the following: a developmental screening test can also be given at any time if a child's parents, caregiver, and/or a health care professional involved in the care of the child have concerns about the child's development; if the results of the screening test are cause for concern, then developmental and medical evaluations should take place.
- **Developmental and medical evaluation** - developmental and medical evaluation may refer to the process of evaluating a child to diagnose the specific type of disorder that affects a child. To effectively carry out developmental and medical evaluations, health care professionals should closely examine a child's motor skills, muscle tone, reflexes, and posture, and take a careful medical history from the parents. Health care professionals should note the following: CP is typically diagnosed during the first or second year after birth; if a child's symptoms are mild, it may be difficult to make a CP diagnosis until the child is over the age of two.

Section 1 Summary

CP may refer to a group of disorders that affect movement, balance, and posture. Research presented by the CDC indicates that CP is caused by abnormal development of the brain or damage to the developing brain that affects an individual's ability to control his or her muscles. CP can be congenital or acquired. The risk factors associated with CP include the following: preterm birth; low birth weight; multiple births; ART infertility t-reatment; infections during pregnancy; infections during infancy/early childhood; jaundice and kernicterus; medical conditions of the mother; birth complications; and injuries during early childhood development. One of the main signs that a child may be suffering from CP is a delay in reaching movement milestones (e.g., rolling over, sitting, standing, or walking). The four main types of CP include: spastic cerebral palsy, dyskinetic cerebral palsy, ataxic cerebral palsy, and mixed cerebral palsy. The diagnostic

process for CP typically involves three key steps, which include: developmental monitoring, developmental screening, and developmental and medical evaluation. Finally, health care professionals should work to effectively identify children potentially suffering from CP.

Section 1 Key Concepts

- The first essential element of CP patient care is to possess insight into CP.
- CP is the most common motor disability in childhood; CP is permanent (i.e., there is no cure for CP); CP is not progressive (i.e., CP does not get worse over time).
- Research presented by the CDC indicates that CP is caused by abnormal development of the brain or damage to the developing brain that affects an individual's ability to control his or her muscles.
- The abnormal development of the brain or damage that leads to CP can happen before birth, during birth, within a month after birth, or during the first years of a child's life, while the brain is still developing.
- CP can be congenital or acquired.
- The risk factors associated with CP include the following: preterm birth; low birth weight; multiple births; ART infertility treatment; infections during pregnancy; infections during infancy/early childhood; jaundice and kernicterus; medical conditions of the mother; birth complications; and injuries during early childhood development.
- One of the main signs that a child may be suffering from CP is a delay in reaching movement milestones (e.g., rolling over, sitting, standing, or walking).
- The signs/symptoms of CP in children younger than six months of age include the following: the child's head lags when the child is picked up, and while the child is lying on his or her back; he child feels stiff; the child feels floppy; when the child is held cradled in the arms, the child seems to overextend his or her back and neck; when the child is picked up, the child's legs get stiff and they cross or scissor.
- The signs/symptoms of CP in children older than six months of age include the following: the child doesn't roll over in either direction; the child cannot bring his or her hands together; the child has difficulty bringing his or her hands to the

mouth; the child reaches out with only one hand while keeping the other hand fisted.

- The signs/symptoms of CP in children older than 10 months of age include the following: the child crawls in a lopsided manner, pushing off with one hand and leg while dragging the opposite hand and leg; the child scoots around on his or her buttocks or hops on his or her knees, but does not crawl on all fours.
- The signs/symptoms of CP in children older than 12 months of age include the following: the child cannot get into a sitting position without help; the child cannot stand on his or her own; the child cannot walk on his or her own; the child cannot run on his or her own; the child cannot walk up steps on his or her own; the child cannot climb onto and down from furniture without help; the child cannot jump in place; the child cannot stand on one foot for 10 seconds or longer.
- The four main types of CP include: spastic cerebral palsy, dyskinetic cerebral palsy, ataxic cerebral palsy, and mixed cerebral palsy.
- Children potentially suffering from CP may present at various ages, stages of development, and with different signs/symptoms; most children suffering from CP will present with some form or type of delay in reaching movement milestones (e.g., rolling over, sitting, standing, or walking).
- Patient observation and effective communication with parents and/or caregivers can be essential to effectively identifying a child potentially suffering from CP.
- Effectively identifying a child potentially suffering from CP can help ensure the child undergoes CP screening and diagnosis; CP screening and diagnosis can be essential to the overall health and well-being of a child potentially suffering from CP.
- The diagnostic process for CP typically involves three key steps, which include: developmental monitoring, developmental screening, and developmental and medical evaluation.

Section 1 Key Terms

Cerebral Palsy (CP) - a group of disorders that affect movement, balance, and posture

Congenital CP - CP related to abnormal development of the brain or damage to the brain that happened before or during birth

Acquired CP - CP related to brain damage that occurs more than 28 days after birth

Preterm birth - the birth of a live baby that is born before 37 weeks of pregnancy have been completed

Preterm baby - any baby born preterm

Multiple birth - the act or process of giving birth to twins, triplets, quadruplets, quintuplets, sextuplets, septuplets, or octuplets

Assisted reproductive technology (ART) infertility treatment - any health care intervention that is used to address infertility

Jaundice - a condition in which the skin, whites of the eyes, and mucous membranes turn yellow

Bilirubin - a yellowish-orange compound that is formed during the normal breakdown of red blood cells

Kernicterus - a type of brain damage that can result from high levels of bilirubin in the blood

Hypothyroidism - a condition characterized by low levels of thyroid hormone in the blood

Child abuse and neglect - any recent act or failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse or exploitation; an act or failure to act which presents an imminent risk of serious harm (U.S. Department of Health and Human Services, 2021).

Movement milestones - physical skills observed in infants and children as they grow and develop

Spastic cerebral palsy - a type of CP characterized by increased muscle tone, which leads to muscle stiffness and movements that may appear stiff and jerky

Spastic diplegia/diparesis cerebral palsy - a description/classification of spastic cerebral palsy characterized by muscle stiffness in mainly in the legs, with the arms less affected or not affected at all

Spastic hemiplegia/hemiparesis cerebral palsy - a description/classification of spastic cerebral palsy characterized by increased muscle tone/stiffness on one side of the body

Spastic quadriplegia/quadriparesis cerebral palsy - a description/classification of spastic cerebral palsy characterized by increased muscle tone/stiffness in all four limbs, the trunk, and the face

Dyskinetic cerebral palsy - a type of CP characterized by an inability to adequately control the movements of the hands, arms, feet, and legs, making it difficult to sit and walk

Ataxic cerebral palsy - a type of CP characterized by difficulties with balance and coordination

Mixed cerebral palsy - a type of CP that occurs when an individual exhibits symptoms of more than one type of CP

Spastic-dyskinetic cerebral palsy - a type of mixed cerebral palsy that occurs when individuals exhibit symptoms of both spastic cerebral palsy and dyskinetic cerebral palsy

Developmental monitoring *(also referred to as surveillance)* - the act or process of observing and tracking a child's growth and development over time

Developmental screening - a test that is administered to children to note if a child has specific developmental delays, such as motor or movement delays

Developmental and medical evaluation - the process of evaluating a child to diagnose the specific type of disorder that affects a child

Section 1 Personal Reflection Question

How can health care professionals effectively identify individuals potentially suffering from CP?

Section 2: Complications and Conditions Associated with CP

The second essential element of CP patient care is to possess insight into the complications and conditions associated with CP. This section of the course will review

specific complications and conditions associated with CP. The information found within this section of the course was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

Complications Associated with CP

- CP is often associated with a variety of complications. Information regarding some of the most common complications typically associated with CP may be found below.
- **Mobility limitations** - mobility may refer to the ability to move around an environment with ease and without restriction. Unfortunately, individuals suffering from CP typically experience mobility limitations. Individuals suffering from CP often have difficulties walking, running, walking up and down steps, rolling over in bed, and/or transitioning from one position to another. Children suffering from CP may have varying degrees of difficulty with movement depending on the type of CP, the severity of the CP, and the area of their body affected. Health care professionals should note the following: the severity of a child's CP can be classified as mild, moderate, or severe; the severity of a child's CP can be determined by several measuring systems, which include: the Gross Motor Function Classification System, the Manual Ability Classification System, and the Communication Function Classification System. Health care professionals should also note the following: the Gross Motor Function Classification System (GMFCS) is one of the most common measuring systems for CP; the GMFCS measures voluntary movement, as well as children's' ability to function and move around in their daily life with an emphasis on how well they can sit, move between positions, and walk; the GMFCS has five classification levels. Specific information regarding each GMFCS classification level may be found below.
    - GMFCS Level 1 - the individual walks without limitations
    - GMFCS Level 2 - the individual walks with limitations
    - GMFCS Level 3 - the individual walks using a hand-held mobility device
    - GMFCS Level 4 - the individual displays self-mobility with limitations; the individual may use self-operated/powered mobility
    - GMFCS Level 5 - the individual is transported in a manual wheelchair

- **Physical injury** - due to mobility limitations, CP may lead to a fall or another type of incident involving physical injury. The types of physical injuries associated with CP may include the following: broken bones, fractures, bruising, and sprains. Health care professionals should note that some CP patients presenting to a health care facility may require treatment for physical injuries.

- **Dysphagia** - dysphagia may refer to difficulty swallowing (e.g., it takes more time and effort for an individual to move food or liquid from the mouth to the stomach). Individuals suffering from CP are at risk of dysphagia due to poor muscle and motor function control. Health care professionals should note the following signs/symptoms of dysphagia: inability to swallow and/or pain when trying to swallow; regurgitation; heartburn; feeling stomach acid in the throat; unusual weight loss; hoarse voice; food often stuck in the chest area and/or throat; gagging and coughing when attempting to swallow; drooling; delayed or sometimes absent swallowing reflex; back pain; and sore throat.

- **Cognitive impairment** - CP primarily impacts motor function, however the brain damage that results in CP may also lead to cognitive impairment. Cognitive impairment may refer to impairment characterized by the following: inadequate memory, learning difficulties, an inability to concentrate, and/or an inability to make decisions regarding daily life. Health care professionals should note the following information regarding cognitive impairment: cognitive impairment can range from mild to severe; mild impairment may affect individuals' cognitive functions - however, they are still able to carry out daily activities; severe levels of cognitive impairment can lead to losing the ability to understand the meaning or importance of something and the ability to talk or write, resulting in the inability to carry out daily activities and live independently. Health care professionals should also note the following signs/symptoms of cognitive impairment: memory loss, frequently asking the same question, repeating the same story over and over, unable to recognize familiar people and places, trouble exercising judgment (e.g., not knowing what to do in an emergency), mood changes, vision problems, and difficulty planning and carrying out tasks (e.g., following a recipe or keeping track of monthly bills).

- **Vision problems** - individuals suffering from CP are at risk for vision problems such as cerebral vision impairment, strabismus, and hyperopia. Health care professionals should note the following: cerebral vision impairment may refer to a vision disorder related to damage to the parts of the brain that process vision;

strabismus may refer to a disorder in which both eyes do not line up in the same direction (e.g., crossed eyes); hyperopia may refer to a vision condition that causes nearby objects to appear blurry. Health care professionals should also note the following: CP-related vision problems may lead to or contribute to the following: impaired learning abilities, difficulties with learning to read and write, and accident-prone behavior.

- **Digestive problems** - individuals suffering from CP may experience long-term digestive problems. Health care professionals should note that CP related digestive issues may lead to the following: constipation, incontinence, unusual weight gain or weight loss, bladder infections, vomiting, and fatigue.

- **Impaired function** - due to mobility limitations, potential cognitive impairment, and other associated complications, CP may lead to impaired function. Essentially, CP can impede an individual's ability to carry out daily tasks, work, and attend school. Health care professionals should note that individuals suffering from CP may require caregivers to assist in daily functions.

- **Low self-esteem** - individuals suffering from CP may struggle with low self-esteem. Self-esteem may refer to an individual's subjective evaluation of his or her own value or worth. Health care professionals should note the following signs of low self-esteem: poor confidence; self-doubt; negative view of oneself; talking about oneself in a negative manner; negative outlook towards life; an inability to accept acknowledgement or positive feedback; outward feelings of shame; anxious mood; and depressed mood.

- **Relationship problems** - due to low self-esteem and or related contributing factors, individuals suffering from CP may have problems maintaining relationships with other individuals (e.g., individuals suffering from CP cannot sustain long-term romantic or platonic relationships with other individuals). Health care professionals should note that CP-associated mobility limitations, dysphagia, vision problems, and digestive problems may contribute to relationship problems.

- **Social isolation** - CP-associated low self-esteem and relationship problems often lead to social isolation (note: the term social isolation may refer to a lack of social connections that may impact an individual's health and quality of life). Health care professionals should note that CP-associated mobility limitations, dysphagia, vision problems, and digestive problems may contribute to social isolation.

- **Suicidal ideation** - CP-associated low self-esteem, relationship problems, and social isolation may, collectively or independently, lead to suicidal ideation. Suicidal ideation may refer to thoughts of suicide and/or thoughts of planning suicide. Suicidal ideation may lead to a suicide attempt and/or suicide. A suicide attempt may refer to a non-fatal self-directed and potentially injurious behavior with any intent to die as a result of the behavior (note: a suicide attempt may or may not result in injury). Suicide may refer to a death caused by injuring oneself with the intent to die. Health care professionals should work to prevent patient suicide. Specific information regarding suicide and suicide prevention may be found below. The information found below was derived from materials provided by the Joint Commission (Joint Commission, 2021).

    - The suicide of a patient while in a staffed, round-the-clock care setting is a frequently reported type of sentinel event; the term sentinel event may refer to an unanticipated event in a health care setting that results in death or serious physical or psychological injury to a patient(s), not related to the natural course of the patient's illness.

    - The identification of individuals at risk for suicide while under the care of or following discharge from a health care organization is an important step in protecting at-risk individuals.

    - Health care organizations/health care professionals should consider conducting an environmental risk assessment that identifies features in the physical environment that could be used to attempt suicide; the health care organization takes necessary action to minimize the risk(s) (e.g., removal of anchor points, door hinges, and hooks that can be used for hanging).

    - Health care organizations/health care professionals should consider implementing procedures to mitigate the risk of suicide for patients at high risk for suicide such as: one-to-one monitoring; removing objects that pose a risk for self-harm if they can be removed without adversely affecting the patient’s medical care; assessing objects brought into a room by visitors; and using safe transportation procedures when moving patients to various parts of a health care facility.

    - Health care organizations/health care professionals should consider screening all patients for suicidal ideation who are being evaluated or

treated for behavioral health conditions as their primary reason for care using a validated screening tool.

- Health care organizations/health care professionals should consider utilizing an evidence-based process to conduct a suicide assessment of patients who have screened positive for suicidal ideation.
- Health care organizations/health care professionals should consider documenting patients' overall level of risk for suicide and the plan to mitigate the risk for suicide.
- Health care organizations/health care professionals should consider developing and following policies and procedures addressing the care of patients identified as at risk for suicide.
- Health care organizations/health care professionals should consider developing and following policies and procedures for counseling and follow-up care at discharge for patients identified as at risk for suicide.
- Health care organizations/health care professionals should consider monitoring the implementation and effectiveness of policies and procedures for screening, assessment, and management of patients at risk for suicide and take action as needed to improve compliance.

Conditions Associated with CP

CP may lead or contribute to several health-related conditions. Information regarding some of the most common conditions typically associated with CP may be found below.

- **Scoliosis** - scoliosis may refer to a condition in which a person's spine curves to one side of the body. Signs and symptoms of scoliosis include the following: back pain, leaning to one side, muscle spasms, physical deformity, and an uneven waist. Health care professionals should note the following: some individuals may develop spine deformities that get more severe as they grow; severe scoliosis can be painful and disabling.
- **Autism spectrum disorder (ASD)** - ASD may refer to a complex developmental disorder that affects how an individual behaves, interacts with others, communicates, and learns. Signs/symptoms associated with ASD may include the following: eye-contact avoidance; resistant to physical contact; trouble

understanding other individual's feelings; trouble talking about his or her own feelings; gives unrelated answers to questions; unusual language use; does not point or respond to pointing; uses few or no gestures (e.g., does not wave hello or goodbye); exhibits repetitive motions; talks in a flat, robot-like, or sing-song voice; often gets upset by minor changes; has obsessive interests; and has to follow certain routines. Health care professionals should note that ASD is referred to as a spectrum disorder because there is a wide variation in the type and severity of ASD symptoms.

- **Attention-deficit/hyperactivity disorder (ADHD)** - ADHD may refer to a type of brain/ neurodevelopmental disorder that is characterized by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development. Symptoms associated with ADHD may include the following: an inability to maintain focus; an inability to maintain sustained mental effort for long periods of time; a capacity to consistently make mistakes; disorganization; forgetfulness; and restlessness. Health care professionals should note that ADHD is one of the most common neurodevelopmental disorders of childhood.

- **Epilepsy** - epilepsy may refer to a neurological disorder marked by sudden recurrent seizures. A seizure may refer to a short change in normal brain activity; a sudden, uncontrolled electrical disturbance in the brain. Specific information regarding epilepsy and seizures may be found below.

    - There are different types of seizures. Seizures are typically classified into one of the following two major seizure categories: generalized seizures and focal seizures.

    - **A generalized seizure** may refer to a type of seizure that affects both sides of the brain. Individuals experiencing a generalized seizure may exhibit the following signs/symptoms: confusion, loss of consciousness, muscle stiffness, periods of shaking, and short jerking movements in different parts of the body (e.g., arms; legs). The two major types of generalized seizures include absence seizures and tonic-clonic seizures.

        - **Absence seizures** - an absence seizure, otherwise known as a petit mal seizure, may refer to a seizure characterized by a brief, sudden lapse of consciousness. Signs/symptoms of an absence seizure may include the following: staring spells (i.e., appearing to stare into space for a few seconds), mental confusion, lip smacking, eyelid

fluttering, and chewing motions. Health care professionals should note that absence seizures are more common in children than in adult patient populations.

- **Tonic-clonic seizures** - a tonic-clonic seizure may be the first type of seizure that comes to mind when considering seizures or epilepsy. A tonic-clonic seizure, otherwise known as a grand mal seizure, may refer to a seizure characterized by a loss of consciousness and violent muscle contractions. Signs/symptoms of a tonic-clonic seizure may include the following: confusion, loss of consciousness, falling to the ground, drooling, lip and/or tongue biting, blue skin from poor circulation, and violent muscle contractions. Typically, tonic-clonic seizures occur in two stages. During the first stage of a tonic-clonic seizure, an individual will lose consciousness and, most likely, fall to the ground if standing or slouch over/double over if sitting. The first stage of a tonic-clonic seizure lasts about 10 to 20 seconds. During the second stage of a tonic-clonic seizure, an individual will experience muscle convulsions that usually last for less than two minutes. Health care professionals should note that an individual may feel tired after a tonic-clonic seizure.

- **A focal seizure** may refer to a type of seizure that affects one area of the brain. Individuals experiencing a focal seizure may exhibit the following signs/symptoms: muscle contractions, followed by relaxation, contractions on just one side of the body, unusual head or eye movements, numbness, tingling, a sensation that something is crawling on the skin, abdominal pain, and rapid heart rate or pulse. The three major types of focal seizure include: simple focal seizures, complex focal seizures, and secondary generalized seizures.

    - **Simple focal seizures** - a simple focal seizure may refer to a seizure characterized by unusual electrical activity in one, small area of the brain. Signs/symptoms of a simple focal seizure may include the following: twitching, stiffness, a sensation of a "wave" going through the head, a strange taste in the mouth, and the sensation of a strange smell. Health care professionals should note the following: typically an individual does not lose consciousness during a simple focal seizure.

        - **Complex focal seizures** - a complex focal seizure may refer to a seizure characterized by unusual activity in one hemisphere of the brain. Signs/symptoms of a complex focal seizure may include the following: decreased awareness, confusion, and a sensation of being "dazed." Health care professionals should note that an individual may not be able to respond to questions, directions, or external stimuli for, up to, a few minutes after experiencing a complex focal seizure.

        - **Secondary generalized seizures** - a secondary generalized seizure may refer to a seizure that starts in one part of the brain, and then spreads to both sides of the brain. Signs/symptoms of a secondary generalized seizure may include: confusion, muscle stiffness, and periods of shaking. Health care professionals should note the following: essentially, when an individual experiences a secondary generalized seizure, he or she first has a focal seizure, followed by a generalized seizure.

    - Some epileptic individuals may suffer from what is referred to as reflex epilepsies. Reflex epilepsies may refer to epileptic seizures that occur consistently in relation to a specific trigger.

    - A trigger, as it relates to seizures, may refer to a factor that comes before a seizure; a factor that may lead to a seizure. Specific triggers associated with seizures include the following: illness, fever, bright lights, flashing lights, alcohol use, illicit drug use, low blood sugar, prescribed medications, insufficient sleep (i.e., not getting enough sleep), and stress (Epilepsy Foundation, 2020).

    - The signs/symptoms associated with epilepsy include: seizures (note: individuals suffering from epilepsy experience few symptoms between seizures); temporary paralysis after a seizure; abnormal behavior (e.g., tense for no apparent reason); fear centered around seizures; fatigue.

- **Depressive disorders** - a depressive disorder may refer to a mental health disorder characterized by a persistent depressed mood and/or anhedonia, which ultimately causes significant interference in daily life (note: anhedonia may refer to a loss of interest in previously enjoyable activities). Specific information regarding depressive disorders may be found below.

    - There are many different types of depressive disorders such as: major depressive disorder, persistent depressive disorder, psychotic depression, and atypical depression.
    - **Major depressive disorder** - major depressive disorder may refer to a form of depression that occurs most days of the week for a period of two weeks or longer leading to clinically significant distress or impairment in social, occupational, or other important areas of functioning.
    - **Persistent depressive disorder** - persistent depressive disorder may refer to a chronic form of depression.
    - **Psychotic depression** - psychotic depression may refer to a form of depression that is accompanied by psychotic symptoms such as: hallucinations, delusions, and paranoia.
    - **Atypical depression** - atypical depression is a condition characterized by periods of depression that are typically resolved by "positive events."
    - One of the most common forms or types of depressive disorders is major depressive disorder.
    - The signs and symptoms of major depressive disorder may include the following: depressed mood, anhedonia (a loss of interest in previously enjoyable activities), appetite changes, weight changes, sleep difficulties, psychomotor agitation or retardation, fatigue or loss of energy, diminished ability to think or concentrate, feelings of worthlessness or excessive guilt, and suicidality.
- **Anxiety disorders** - an anxiety disorder may refer to a mental health disorder characterized by prolonged periods of persistent, excessive worry about a number of events or activities, which cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (note: within the context of an anxiety disorder, excessive worry may refer to worrying when there is no specific reason/threat present or in a manner that is disproportionate to the actual risk of an event, activity, and/or situation). Specific information regarding anxiety disorders may be found below.
    - There are many different types of anxiety disorders such as: generalized anxiety disorder, separation anxiety disorder, social anxiety disorder, and agoraphobia.

- **Generalized anxiety disorder** - generalized anxiety disorder may refer to a mental health disorder characterized by excessive anxiety and worry occurring more days than not for at least six months, about a number of events or activities (such as work or school performance), which is difficult to control and leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning.

- **Separation anxiety disorder** - separation anxiety disorder may refer to a form of an anxiety disorder characterized by excessive worry and/or fear centered around being apart from select individuals.

- **Social anxiety disorder** - social anxiety disorder may refer to a form of an anxiety disorder characterized by irrational and excessive anxiety, worry, and/or fear regarding social situations.

- **Agoraphobia** - agoraphobia may refer to a form of an anxiety disorder characterized by fear and avoidance of places and situations which lead to feelings of panic, helplessness, being trapped, and/or embarrassment. Health care professionals should note that other more specific phobias may be present among patient populations.

- One of the most common forms or types of anxiety disorders is generalized anxiety disorder.

- The signs and symptoms of generalized anxiety disorder may include the following: excessive anxiety, excessive worry, restlessness, persistent feelings of being keyed up or on edge, easily fatigued, difficulty concentrating, mind feeling blank at times (i.e., mind going blank), irritability, muscle tension, and sleep difficulties.

- **Sleep disorders** - the term sleep disorders may refer to a group of disorders that affect the way individuals sleep. Health care professionals should note that CP patients may suffer from a variety of different sleep disorders. Information regarding specific sleep disorders may be found below.

    - **Insomnia** - insomnia may refer to a sleep disorder characterized by an inability to fall asleep and/or stay asleep. Insomnia may also be characterized by early morning awakening (i.e., an individual awakens early in the morning or several hours early and is unable to resume sleeping). Symptoms of insomnia include: daytime fatigue, low energy, difficulty

concentrating, mood disturbances, and decreased performance at work or at school. Health care professionals should note that insomnia can be acute or chronic. Acute insomnia may refer to a form of short-term insomnia that typically lasts for a few days or a few weeks. Acute insomnia may also be referred to as adjustment insomnia because it typically results from events that require a life-style adjustment (e.g., starting a new job, starting school, and/or initiating a new schedule). Chronic insomnia may refer to a form of long-term insomnia that occurs at least three nights per week and lasts at least three months. Health care professionals should also note the following: insomnia, as well as other sleep disorders, may lead to sleep deprivation; sleep deprivation may refer to a lack of sufficient sleep (i.e., an individual does not get enough sleep).

- **Restless leg syndrome (RLS)** - restless leg syndrome (RLS) may refer to a sleep disorder characterized by an overwhelming urge to move the legs when they are at rest. Health care professionals should note that the overwhelming urge to move the legs, associated with RLS, may be different for each individual. In other words, the overwhelming urge to move the legs may be related to a different type of feeling. For example, the overwhelming urge to move the legs may be related to a bug crawling feeling on the legs or a sensation of liquid running through the legs. In essence, the RLS experience may be different for each patient. Health care professionals should also note the following: abnormalities in dopamine have been associated with RLS; dopamine may refer to a neurotransmitter that sends messages between nerve cells.

- **Sleep apnea** - sleep apnea may refer to a sleep disorder characterized by interrupted breathing during sleep. Symptoms of sleep apnea include chronic snoring and daytime sleepiness. Factors that increase the risk of sleep apnea include: having a small upper airway; having a large tongue, tonsils, or uvula; being overweight or obese; having a recessed chin, small jaw, or a large overbite; having a large neck; smoking; alcohol use; and age. Health care professionals should note the following: individuals with sleep apnea may use a continuous positive airway pressure (CPAP) device; a CPAP device may refer to a medical device that uses mild air pressure to keep an individual's breathing airways open.

- **Substance use disorder** - the term substance use disorder may refer to a medical condition characterized by a cluster of symptoms that do not allow an individual to stop using legal or illegal substances such as: alcohol, marijuana, cocaine, and/or opioids. Specific information regarding substance use disorder may be found below.

    - Signs of alcohol abuse may include the following: slurred speech, an active tremor, shakiness, poor coordination, sweating, nausea, vomiting, memory loss, agitation, compulsive behavior, and cravings.

    - Some individuals suffering from substance use disorder may engage in binge drinking. Binge drinking may refer to a pattern of drinking that brings an individual's blood alcohol concentration (BAC) to 0.08 g/dl or above; the act of consuming four or more alcoholic beverages per occasion for women or five or more alcoholic beverages per occasion for men.

    - Some individuals suffering from substance use disorder may engage in heavy drinking. Heavy drinking may refer to the act of consuming eight or more alcoholic beverages per week for women or 15 or more alcoholic beverages per week for men.

    - Signs of drug abuse may include: red eyes, dry mouth, drowsiness, involuntary eye movements, dilated pupils, nasal congestion, mouth sores, nausea, vomiting, slowed reaction time, sedation, dizziness, confusion, and needle marks (note: the signs of drug abuse may vary depending on the drug(s) of abuse).

    - Some individuals suffering from substance use disorder may misuse/abuse opioids such as prescription opioids, pharmaceutical Fentanyl, or illegal opioids such as heroin (note: prescription opioids may refer to opioids prescribed by a health care professional to treat pain; anyone who takes prescription opioids can become addicted to them; pharmaceutical Fentanyl may refer to a synthetic opioid, approved for treating severe pain; Fentanyl is 50 to 100 times more potent than morphine; heroin may refer to an illegal, highly addictive opioid drug processed from morphine and extracted from certain poppy plants).

    - An individual suffering from a substance use disorder involving opioids may be at risk for an opioid overdose, and related death. Health care professionals should be aware of the following signs of an opioid overdose:

constricted pupils, loss of consciousness, slow/shallow breathing, choking sounds, limp body, and pale, blue cold skin. Health care professionals should note the following: prescription opioid overdose deaths often involve benzodiazepines; benzodiazepines are central nervous system depressants used to sedate, induce sleep, prevent seizures, and relieve anxiety; examples of benzodiazepines include alprazolam, diazepam, and lorazepam. Health care professionals should also note the following: the medication naloxone, an opioid antagonist, may be used for the emergency treatment of a known or suspected opioid overdose; naloxone may be used to reverse the life-threatening respiratory depression associated with an opioid overdose; a variety of naloxone products are available (e.g., nasal spray, injection, auto-injection) to respond to a potential opioid overdose; individuals may possess naloxone products in case of an opioid overdose; health care professionals may be required or called upon to administer naloxone to patients suffering from a potential opioid overdose.

Section 2 Summary

The second essential element of CP patient care is to possess insight into the complications and conditions associated with CP. Some of the most common complications typically associated with CP include the following: mobility limitations, physical injury, dysphagia, cognitive impairment, vision problems, digestive problems, impaired function, low self-esteem, relationship problems, social isolation, and suicidal ideation. Some of the most common conditions typically associated with CP include the following: scoliosis, ASD, ADHD, epilepsy, depressive disorders, anxiety disorders, sleep disorders, and substance use disorder. Health care professionals should work to identify the complications and conditions associated with CP when caring for CP patients to help improve patient outcomes.

Section 2 Key Concepts

- The second essential element of CP patient care is to possess insight into the complications and conditions associated with CP.
- Some of the most common complications typically associated with CP include the following: mobility limitations, physical injury, dysphagia, cognitive impairment,

vision problems, digestive problems, impaired function, low self-esteem, relationship problems, social isolation, and suicidal ideation.

- Some of the most common conditions typically associated with CP include the following: scoliosis, ASD, ADHD, epilepsy, depressive disorders, anxiety disorders, sleep disorders, and substance use disorder.

Section 2 Key Terms

Mobility - the ability to move around an environment with ease and without restriction

Dysphagia - difficulty swallowing

Cognitive impairment - impairment characterized by the following: inadequate memory, learning difficulties, an inability to concentrate, and/or an inability to make decisions regarding daily life

Cerebral vision impairment - a vision disorder related to damage to the parts of the brain that process vision

Strabismus - a disorder in which both eyes do not line up in the same direction

Hyperopia - a vision condition that causes nearby objects to appear blurry

Self-esteem - an individual's subjective evaluation of his or her own value or worth

Social isolation - a lack of social connections that may impact an individual's health and quality of life

Suicidal ideation - thoughts of suicide and/or thoughts of planning suicide

Suicide attempt - a non-fatal self-directed and potentially injurious behavior with any intent to die as a result of the behavior

Suicide - a death caused by injuring oneself with the intent to die

Sentinel event - an unanticipated event in a health care setting that results in death or serious physical or psychological injury to a patient(s), not related to the natural course of the patient's illness (Joint Commission, 2021)

Scoliosis - a condition in which a person’s spine curves to one side of the body

Autism spectrum disorder (ASD) - a complex developmental disorder that affects how an individual behaves, interacts with others, communicates, and learns

Attention-deficit/hyperactivity disorder (ADHD) - a type of brain/neurodevelopmental disorder that is characterized by an ongoing pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development

Epilepsy - a neurological disorder marked by sudden recurrent seizures

Seizure - a short change in normal brain activity; a sudden, uncontrolled electrical disturbance in the brain

Generalized seizure - a type of seizure that affects both sides of the brain

Absence seizure *(otherwise known as a petit mal seizure)* - a seizure characterized by a brief, sudden lapse of consciousness

Tonic-clonic seizure *(otherwise known as a grand mal seizure)* - a seizure characterized by a loss of consciousness and violent muscle contractions

Focal seizure - a type of seizure that affects one area of the brain

Simple focal seizure - a seizure characterized by unusual electrical activity in one, small area of the brain

Complex focal seizure - a seizure characterized by unusual activity in one hemisphere of the brain

Secondary generalized seizure - a seizure that starts in one part of the brain, and then spreads to both sides of the brain

Reflex epilepsies - epileptic seizures that occur consistently in relation to a specific trigger

Trigger *(as it relates to seizures)* - a factor that comes before a seizure; a factor that may lead to a seizure

Depressive disorder - a mental health disorder characterized by a persistent depressed mood and/or anhedonia, which ultimately causes significant interference in daily life

Anhedonia - a loss of interest in previously enjoyable activities

Major depressive disorder - a form of depression that occurs most days of the week for a period of two weeks or longer leading to clinically significant distress or impairment in social, occupational, or other important areas of functioning

Persistent depressive disorder - a chronic form of depression

Psychotic depression - a form of depression that is accompanied by psychotic symptoms such as: hallucinations, delusions, and paranoia

Atypical depression - a condition characterized by periods of depression that are typically resolved by "positive events"

Anxiety disorder - a mental health disorder characterized by prolonged periods of persistent, excessive worry about a number of events or activities, which cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

Excessive worry *(within the context of an anxiety disorder)* - worrying when there is no specific reason/threat present or in a manner that is disproportionate to the actual risk of an event, activity, and/or situation

Generalized anxiety disorder - a mental health disorder characterized by excessive anxiety and worry occurring more days than not for at least six months, about a number of events or activities (such as work or school performance), which is difficult to control and leads to clinically significant distress or impairment in social, occupational, or other important areas of functioning

Separation anxiety disorder - a type of an anxiety disorder characterized by excessive worry and/or fear centered around being a part from select individuals

Social anxiety disorder - a type of an anxiety disorder characterized by irrational and excessive anxiety, worry, and/or fear regarding social situations

Agoraphobia - a form of an anxiety disorder characterized by fear and avoidance of places and situations that lead to feelings of panic, helplessness, being trapped, and/or embarrassment

Sleep disorders - a group of disorders that affect the way individuals sleep

Insomnia - a sleep disorder characterized by an inability to fall asleep and/or stay asleep

Acute insomnia *(also referred to as adjustment insomnia)* - a form of short-term insomnia that typically lasts for a few days or a few weeks

Chronic insomnia - a form of long-term insomnia that occurs at least three nights per week and lasts at least three months

Sleep deprivation - a lack of sufficient sleep; an individual does not get enough sleep

Restless leg syndrome (RLS) - a sleep disorder characterized by an overwhelming urge to move the legs when they are at rest

Dopamine - a neurotransmitter that sends messages between nerve cells

Sleep apnea - a sleep disorder characterized by interrupted breathing during sleep

Continuous positive airway pressure (CPAP) device - a medical device that uses mild air pressure to keep an individual's breathing airways open

Substance use disorder - a medical condition characterized by a cluster of symptoms that do not allow an individual to stop using legal or illegal substances such as: alcohol, marijuana, cocaine, and/or opioids

Binge drinking - a pattern of drinking that brings an individual's blood alcohol concentration (BAC) to 0.08 g/dl or above; the act of consuming four or more alcoholic beverages per occasion for women or five or more alcoholic beverages per occasion for men

Heavy drinking - the act of consuming eight or more alcoholic beverages per week for women or 15 or more alcoholic beverages per week for men

Prescription opioids - opioids prescribed by a health care professional to treat pain

Pharmaceutical Fentanyl - a synthetic opioid, approved for treating severe pain

Heroin - an illegal, highly addictive opioid drug processed from morphine and extracted from certain poppy plants

Benzodiazepines - central nervous system depressants used to sedate, induce sleep, prevent seizures, and relieve anxiety

Section 2 Personal Reflection Question

How can insight into the complications and conditions associated with CP help health care professionals improve patient outcomes?

Section 3: CP Patient Care Recommendations

The third and final essential element of CP patient care is to follow related recommendations. This section of the course will review CP patient care recommendations. The information found within this section of the course was derived from materials provided by the CDC unless, otherwise, specified (CDC, 2021).

CP Patient Care Recommendations

- **Possess insight into CP treatment options** - unfortunately, CP can't be cured, however, treatment can often improve an individual's capabilities and ability to function. Treatment options for CP include the following: physical therapy; occupational therapy; speech therapy; medications to control seizures; medications to relax muscle spasms; pain medications; surgery to correct anatomical abnormalities or release tight muscles; braces and other orthotic devices; wheelchairs and rolling walkers; and communication aids, such as computers with an attached voice synthesizer (National Institute of Neurological Disorders and Stroke [NINDS], 2019). Health care professionals should note the following: the earlier treatment begins the better chance CP patients have of overcoming developmental disabilities or learning new ways to accomplish the tasks that challenge them; early intervention, supportive treatments, medications, and surgery can help CP patients improve their muscle control, health, overall well-being, and quality of life (NINDS, 2019).
- **Possess insight into intervention services** - intervention services, within the context of this course, may refer to assistance and services available through the Individuals with Disabilities Education Act (IDEA). Due to the nature of CP, individuals suffering from CP may benefit from intervention services. Health care professionals should note that early intervention services may include the following: family training, counseling, and home visits; occupational, physical, or speech therapy; hearing loss services; health, nutrition, social work, and assistance with service coordination; assistive technology devices and services;

special education; and transportation. Health care professionals should also note the following: Part C of the IDEA applies to early intervention services (birth through 36 months of age); Part B of the IDEA applies to services for school-aged children (3 through 21 years of age).

- **Work to identify CP patients that may have special needs and/or requirements** - health care professionals should work to identify CP patients that may have special needs and/or requirements. Some CP patients may have special needs and/or requirements due to the various complication and conditions associated with CP. Health care professionals should work to identify such patients to ensure their needs and requirements (e.g., walking aids) are met. Health care professionals should note that a failure to do so may leave CP patients vulnerable to health care-associated complications.

- **Apply fall precautions to CP patients** - as previously mentioned, CP patients may suffer from mobility limitations, therefore, health care professionals should apply fall precautions to CP patients. Specific fall precautions include the following: familiarize the patient with his or her environment; have the patient demonstrate call light use; maintain the call light within patient reach; keep a patient's personal possessions within safe reach of the patient; have sturdy handrails in patient bathrooms, rooms, and hallways; place the patient's bed in a low position when a patient is resting in bed; raise the patient's bed to a comfortable height when the patient is transferring out of bed; keep patient bed brakes locked; keep wheelchair wheel locks in the locked position when stationary; keep non slip, comfortable, well-fitting footwear on the patient; use night lights or supplemental lighting; keep floor surfaces clean and dry; clean up all spills promptly; keep patient care areas uncluttered; follow safe patient handling practices. Health care professionals should note the following: fall precautions constitute the basics of patient safety and should be applied in all health care facilities to all patients.

- **Complete effective health care documentation** - effective health care documentation can be essential to the CP diagnostic process, as well as CP patient care. Therefore, health care professionals should work to complete effective health care documentation. Health care documentation may refer to a digital or an analog record detailing the administration of health care to patients. If completed effectively, health care documentation can be used in daily practice by health care professionals to communicate vital patient information to other health care professionals in order to facilitate positive health care outcomes and

to decrease the potential for negative health care outcomes, such as adverse events and patient mortalities. Effective health care documentation may be used as a method to review patient cases and to ensure all aspects of an individual patient's health care are noted and evaluated to maximize therapeutic outcomes.

In order for health care documentation to be considered effective, it must function as a viable form of communication, as well as a means to establish a detailed record of health care administration. There are many different forms of health care documentation - however, if health care professionals include specific characteristics in their documentation, they can ensure their documentation will be effective.

The first characteristics of effective health care documentation are objectivity and accuracy. Health care documentation should include objective information free of subjective judgment, bias, or opinion. Health care documentation should also be accurate - meaning it should include information which can be measured or verified by another individual.

Additional characteristics of effective health care documentation include clarity and completeness. Clarity, as it relates to health care documentation, may refer to a quality which enables multiple health care professionals to obtain meaning from recorded data and/or information relating to health care. Completeness, as it relates to health care documentation, may refer to a state where all of the necessary components and/or parts are present. Only when clarity and completeness are achieved can health care documentation be considered effective.

Finally, the information found within health care documentation should be readily accessible and available to all those who require it. Thus, health care professionals must include accurate times and dates of health care administration when completing their health care documentation to further its effectiveness. Health care professionals should note that completing effective health care documentation can help health care professionals foster effective communication and ensure patients receive the care they require.

- **Work to prevent medical errors from occurring** - a medical error may refer to a preventable adverse effect of care that may or may not be evident or causes harm to a patient (Joint Commission, 2021). Medical errors can pose a significant risk to patients suffering from CP, as well as jeopardize their overall health and well-

being. Thus, health care professionals should work to prevent medical errors from occurring. Health care professionals can work to prevent medical errors from occurring by the following methods: use at least two patient identifiers when providing care, treatment, and services; verify all medication or solution labels both verbally and visually; label each medication or solution as soon as it is prepared; immediately discard any medication or solution found unlabeled (Joint Commission, 2021). Health care professionals should note the following: medical errors can occur in virtually all stages of diagnosis and treatment.

- **Conduct medication reconciliations** - due to the nature of CP, CP patients may be on various medications. Therefore, health care professionals should conduct a medication reconciliation when a CP patient is admitted into a health care facility. The term medication reconciliation may refer to the process of comparing the medications an individual is taking (or should be taking) with newly ordered medications (Joint Commission, 2021). Health care professionals should note the following information regarding medication reconciliations: medication reconciliations are intended to identify and resolve medication discrepancies; medication reconciliations should address medication duplications, omissions, and interactions, and the need to continue current medications; the type of information health care professionals should use to reconcile medications include (among others) medication name, dose, frequency, route, and purpose; health care professionals should identify the information that needs to be collected in order to reconcile current and newly ordered medications and to safely prescribe medications in the future (Joint Commission, 2021).

- **Practice effective hand hygiene** - health care-associated infections are a patient safety issue affecting all types of health care organizations and patient populations, including CP patients. Thus, health care professionals should work to prevent health care-associated infections when administering health care to CP patients. One of the most important and effective ways to address health care-associated infections is effective hand hygiene. Hand hygiene may refer to the process of cleaning hands in order to prevent contamination and/or infections. Hand hygiene is most effective when dirt, soil, microorganisms, and other contaminants are removed from the hands. Health care professionals should note the following: health care professionals should complete effective hand hygiene when evaluating, assessing, and treating CP patients.

- **Don personal protective equipment (PPE), when appropriate** - another way health care professionals can help limit health care-associated infections is by donning personal protective equipment (PPE), when appropriate (e.g., when cleaning an open wound; when trying to prevent the airborne transmission of an infectious agent). PPE may refer to equipment designed to protect, shield, and minimize exposure to hazards that may cause serious injury, illness, and/or disease. Essentially, donning PPE can prevent the spread of infectious materials and agents to CP patients. Health care professionals should note that PPE can include a variety of different types of equipment, such as: masks, face shields, respirators, gowns, and gloves. Health care professionals should also note the following: health care professionals should not touch a contaminated piece of PPE; health care professionals should place used PPE in the appropriate waste container; health care professionals should wash their hands or use an alcohol-based hand sanitizer after removing all PPE.

- **Work to prevent the transmission of the virus that cause coronavirus disease 2019 (COVID-19)** - health care professionals should work to prevent the transmission of the virus that causes COVID-19 while administering care to CP patients (note: coronavirus disease 2019 (COVID-19) may refer to a respiratory illness that can spread from person to person that is caused by a virus known as the severe acute respiratory syndrome coronavirus 2 [SARS-CoV-2]). Health care professionals should note the following: it is currently believed that the virus that causes COVID-19 is transmitted or spread through person to person contact; the term person-to-person contact may refer to the transmission of a communicable disease/illness from a host to a healthy individual by way of body fluids (e.g., respiratory droplets, blood); COVID-19 may spread through respiratory droplets produced when an infected person coughs or sneezes; COVID-19 may spread between people who are in close contact with one another (e.g., within approximately six feet). Health care professionals should also note that they may work to prevent the transmission of the virus that causes COVID-19 by the following means: practicing effective hand hygiene, donning PPE (when appropriate), and by obtaining relevant vaccination.

- **Pursue opportunities to further health care education and remain up to date on relevant health care topics** - finally, health care information is always being updated, therefore, health care professionals should pursue opportunities to further their education. Remaining up to date on relevant health care topics can help health care professionals in their daily practice and can further their

understanding of how to provide safe and effective health care to patients suffering from CP. Health care professionals should note the following: health care professionals should work to remain up to date on COVID-19.

Section 3 Summary

The third and final essential element of CP patient care is to follow related recommendations. CP patient care recommendations include the following: possess insight into CP treatment options; possess insight into intervention services; work to identify CP patients that may have special needs and/or requirements; apply fall precautions to CP patients; complete effective health care documentation; work to prevent medical errors from occurring; conduct medication reconciliations; practice effective hand hygiene; don PPE, when appropriate; work to prevent the transmission of the virus that cause COVID-19; pursue opportunities to further health care education and remain up to date on relevant health care topics.

Section 3 Key Concepts

- The third essential element of CP patient care is to follow CP patient care recommendations.

Section 3 Key Terms

Intervention services (within the context of this course) - assistance and services available through the Individuals with Disabilities Education Act (IDEA)

Health care documentation - a digital or an analog record detailing the administration of health care to patients

Clarity (as it relates to health care documentation) - a quality which enables multiple health care professionals to obtain meaning from recorded data and/or information relating to health care

Completeness (as it relates to health care documentation) - a state where all of the necessary components and/or parts are present

Medical error - a preventable adverse effect of care that may or may not be evident or causes harm to a patient (Joint Commission, 2021)

Medication reconciliation - the process of comparing the medications an individual is taking (or should be taking) with newly ordered medications (Joint Commission, 2021)

Hand hygiene - the process of cleaning hands in order to prevent contamination and/or infections

Personal protective equipment (PPE) - equipment designed to protect, shield, and minimize exposure to hazards that may cause serious injury, illness, and/or disease

Coronavirus disease 2019 (COVID-19) - a respiratory illness that can spread from person to person that is caused by a virus known as the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)

Person-to-person contact - the transmission of a communicable disease/illness from a host to a healthy individual by way of body fluids

Section 3 Personal Reflection Question

How can health care professionals use the above recommendations to safely and effectively care for patients suffering from CP?

Conclusion

CP can be a debilitating disorder that can negatively impact the health, overall well-being, and quality of life of those affected. Therefore, patients suffering from CP must receive safe and effective health care. Health care professionals can safely and effectively care for patients suffering from CP, as well as improve patient outcomes by incorporating the following three essential elements of CP patient care into their daily practice: possess insight into CP; possess insight into the complications and conditions associated with CP; and follow CP patient care recommendations.

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