COMMUNICABLE DISEASES

Community Acquired Methicillin Resistant Staphylococcus Aureus: Staphylococcal infection that is resistant to certain antibiotics. MRSA in the community is increasing in occurrence throughout the US. These infections range from minor skin rashes to abscesses to serious, complicated, life threatening infections.

**Nursing Assessment:** Symptoms include a bump of skin area that is red, swollen, painful, and warm to touch. It may also include fever, fluctuance, and purulent drainage. Risk factors include playing contact sports, openings in the skin such as abrasions and cuts, contact with contaminated items and surfaces, poor hygiene and crowded living conditions.

**Nursing Management:** Care will typically be at home. Antibiotics with microbial susceptibility will often be prescribed. Comprehensive wound care if needed. Educate family on importance of taking antibiotics as directed and finishing. Teach the child and parents proper hand washing.

Scarlet Fever: An infection resulting from group A streptococci. It usually occurs with a group A Streptococci throat infection. However, in Scarlet Fever, the bacteria produce a toxin that causes a rash. Not all children will develop a rash. Scarlet fever usually seen in children younger than 18 years of age. After exposure the incubation period is 2-5 days. Communicability is highest during acute infection, and the child is no longer contagious 24 hours after the invitation of appropriate antimicrobial therapy.

**Nursing Assessment:** Fever greater than 101, chills, body aches, loss of appetite, nausea, and vomiting. Pharynx usually very red and swollen. Tonsils may have yellow or white specs of pus, and cervical lymph nodes may be swollen. Inspect skin for most STRIKING SYMPTOM of Scarlet fever, which is an erythematous rash appearing on the face, trunk and extremities. The rash is typically absent from the palms and soles of feet. Looks like sunburn feels like sandpaper. Diagnosis is made by ID of group A strept throat culture.

**Nursing Management:** Usually cared for at home. Penicillin V is the antibiotic of choice. Those sensitive to penicillin, erythromycin may be used. Educate family on importance of taking as directed and finishing all the medicine. Encourage fluid intake to maintain adequate hydration due to fever.

Diphtheria: Caused by an infection with Corynebacterium Diphtheria and may affect the nose, larynx, tonsils, or pharynx. Tonsillar and pharyngeal infections are the most common and will be the focus of this discussion. A pseudomembrane forms over the pharynx, uvula, tonsils, and soft palate. The neck becomes edematous and lymphadenopathy develops. The pseudomembrane
causes airway obstruction and suffocation. Therapeutic Management involves administration of antibiotics and antitoxin, as well as airway management.

**Nursing Assessment:** Children at risk for diphtheria are those who are unionized. Note history of sore throat and fever, usually less than 38.9 As the pseudomembrane forms, swallowing becomes difficult and signs of airway obstruction become apparent. A specimen of the membrane may be cultured for C. Diphteriae.

**Nursing Management:** Close observation of respiratory status is of utmost importance. Administration of antibiotics and the antitoxin is critical to encourage sloughing of the membrane. The child should remain on strict droplet precautions in addition to standard precautions and should maintain bed rest.

**Pertussis:** An acute respiratory disorder characterized by paroxysmal cough (whooping cough) and copious secretions. The highest incidence is seen in children younger than 1 year and children younger than 6 months of age are at greatest risk for severe disease and death.

**Therapeutic Management:** Focuses on eradication of the bacterial infection and providing respiratory support. CDC guidelines recommends antimicrobial treatment. Over 1 month old should use erythromycin, clarithromycin, and azithromycin. For younger infants, azithromycin should be used.

**Nursing Assessment:** Most important risk factor is lack of immunization. The history may reveal cold and cough symptoms progressing to paroxysmal coughing spells. Child might cough 10-30 times in a row, followed by a whooping sound. Might be accompanied by redness in the face, progressive cyanosis and protrusion of the tongue. Saliva, mucus, and tears from the mouth, nose, and eyes. Between the episodes the child might rest well and appear unaffected. Auscultate lungs for air exchange.

**Tetanus:** Acute, often fatal neurologic disease caused by the toxins produced by Clostridium Tetant. Characterized by increased muscle tone and spasm. Most commonly found in soil, dust, and feces from human or animals such as sheep, cattle, chickens, dogs, cats, and rats. The spores can enter the body through a wound that is contaminated, through a burn or by injecting contaminated street drugs.

**Neonatal Tetanus:** Most common worldwide, affecting newborns born to an unionized mother in the first week of life secondary to an infected umbilical stump or unsterile surgical technique during circumcision.

**Cephalic Tetanus:** Which is associated with recurrent otitis media or head trauma. Affects facial nerves
**Generalized Tetanus:** Most common form and results in spasms that progress in a descending fashion beginning at the jaw. The most profoundly affected muscles are those of the neck and back.

**Therapeutic Management:** Directed toward supporting respiratory and cardiovascular function. Tetanus immunoglobulin may be given as well as the tetanus vaccine. Removal of offending organism, by debridement of the wound may occur and IV antibiotics such as metronidazole may be initiated. In severe cases the child may require intensive nursing care with mechanical ventilation.

**Nursing Assessment:** Initial signs such as headache, spasms, crankiness, and cramping of the jaw, followed by difficulty swallowing and a stiff neck. Tetanus progresses in a descending fashion to other muscle groups, causing spasms of the neck, arms, legs, and stomach. Seizures may be present. Spasms might be strong enough in children to cause fractures.

**Nursing Management:** Focuses on observing for signs of respiratory distress. Provide a quiet environment with reduced external stimuli to decrease the incidence of spasms. Manage pain. Encourage proper nutrition and hydration.

**Viral Exanthems:** Exanthem means rash or skin eruption.

**Mumps:** A contagious disease caused by paramyxovirus, characterized by fever and parotitis (inflammation and swelling of the parotid gland). Mumps is spread via contact with infected droplets. Infected individuals are contagious for 1-7 days prior to onset of symptoms and for 7-9 days after parotid swelling begins.

**Nursing Assessment:** Note history of exposure to infected individuals as well as immunization status. Determine history of low grade fever and onset of progression of parotid swelling. History may include malaise, anorexia, headache, and abdominal pain. The parotid swelling is easily obsessed as swelling of the neck either bilaterally or unilaterally. In boys, note orchitis (swelling of 1 testicle).

**Nursing Management:** Acetaminophen or ibuprofen is used for fever management and occasionally narcotic analgesics are required for pain management. Oral fluids are encouraged to prevent dehydration. If orchitis is present, ice packs to the testicles and gentle testicular support may be helpful. Hospitalized children should be confined to respiratory isolation to prevent
spread of disease. Infected children are considered no longer contagious 9 days following onset of parotid swelling.

**The mumps vaccine is not 100% effective and mumps infection can occur in vaccinated individuals. During an outbreak it is essential to define the population at risk and transmission setting, and isolate suspected cases, and identify and vaccinate susceptible individuals.**

**Cat Scratch Disease:** Caused by the bacteria Bartonella Benselae. Occurs in both children and adults but more common in children. Cats can carry the bacteria in their saliva. In 90% of cases the child has had recent interaction with cats and kittens. Therapeutic management is supportive and is aimed at management of symptoms. Disease is usually self limited, resolving on it's own in 2-4 months. If lymphadenopathy persists or if the child is immunocompromised, antibiotics may be needed. Painful, swollen nodes may be treated with needle aspiration to provide symptom relief.

**Nursing Assessment:** History of headaches, fever, anorexia, and fatigue. History may include interaction or rough play with cats or kittens resulting in a scratch.

**Nursing Management:** Administer antibiotics if ordered. No isolation is required. Educate the child and family about prevention and control measures. Cats should never lick open wounds, avoid getting scratched, etc.

**Rabies:** Preventable viral infection of the CNS. Transmitted to other animals and humans through close contact with the saliva of a rabid animal, usually by a bite. Most cases are due to wild animals such as skunks, raccoons, bats, and foxes.

**Nursing Assessment:** Note history of animal bite, especially if provoked, and exposure to bats. Nonspecific symptoms such as fever, headache, and general malaise. Child may complain of pain, pruritus, and paresthesia at the bite site. As the virus spreads to the CNS, encephalitis develops. The disease will have progressive neurologic manifestations, which may include insomnia, confusion, anxiety, changes in behavior, agitation or excitation, hallucinations, hypersalivation, dysphagia, and hydrophobia which results from aspiration when swallowing liquid or saliva.

**Nursing Management:** Few people survive once symptomatic rabies infection develops. Intensive supportive care is required but recovery is extremely rare. Therefore it is vital to educate children and families about the importance of seeking medical care after any animal bite to prevent death from rabies infection.
**Lymes Disease:** Most common reported vector borne disease in the US. Transmitted to humans via tick bite of an infected black legged (deer) tick. Incidence is highest among children between 5-9 years of age.

**Therapeutic Management:** Can be cured by antibiotics, especially if they are started early in the illness. Doxycycline is the drug of choice for children older than 8. Because it can cause discoloration of the teeth, children younger than 8 should be treated with amoxicillin

**Nursing Assessment:** Clinical signs of lyme disease is divided into early localized, early disseminated, and late disease.

**Rocky Mountain Spotted Fever:** Most severe and frequently reported rickettsial illness in the US. Caused by Rickettsia Rickettsii. The american dog tick and Rocky Mountain wood tick are the primary vectors although others have been implicated.

**Therapeutic Management:** Fatality decreases with wide spread use of antimicrobial therapy. Tetracyclines such as Doxycycline are drug of choice. Length of treatment is 7-14 days.

**Nursing Assessment:** History of early signs of RMSF, such as sudden onset of fever, headache, malaise, nausea, and vomiting. Incubation period from 2-14 days. Inspect skin for a rash, which starts on the forearms, wrists and ankles. The rash spreads rapidly over the entire body, including the soles and palms. After several days the rash will appear red, spotted, and petechial or hemorrhagic. Low leukocyte count or low or decreasing platelet count, and hyponatremia.

**Nursing Management:** Similar to lyme disease, educate family about completing antibiotic course, preventing tick bites, and appropriate tick removal.

**Epiglottitis:** Inflammation ad swelling of the epiglottis. Most often caused by Haemophilus influenza type B. Most often occurs in children between 2-7 Years and can be life threatening. Respiratory arrest and death may occur if the airway becomes completely occluded. Additional complications include pneumothorax and pulmonary edema. Therapeutic management focuses on airway maintenance and support. IV antibiotic therapy is necessary. The child will be managed in the ICU.
**Do not under any circumstance attempt to visualize the throat. Reflex laryngospasm may occur, precipitating immediate airway occlusion.**

**Nursing Management:** Do not leave child unattended. Keep child and parents as calm as possible. Allow child to assume position of comfort. Provide 100% oxygen in the least invasive manner that is acceptable to the child. If complete airway occlusion occurs, emergency tracheostomy may be necessary.

**Epiglottitis** is characterized by **DYSPHAGIA, DROOLING, ANXIETY, IRRITABILITY**, and **SIGNIFICANT RESPIRATORY DISTRESS.** Prepare for the event of sudden airway occlusion.

**Pneumonia:** Inflammation of the lung parenchyma. Can be caused by a virus, bacteria, mycoplasma, or a fungus. Respiratory Viruses are the most common cause of pneumonia in younger children. Viral pneumonia is usually better tolerated in children of all ages. Children with bacterial pneumonia are more apt to present with a toxic appearance, but they generally recover rapidly if appropriate antibiotic treatment is instituted early. **STREPTOCOCCUS PNEUMONIAE** is a common cause of bacterial pneumonia in all ages of children.

**Community Acquired Pneumonia** refers to the pneumonia in a previously healthy person that is contracted outside of the hospital setting. CAP is a common cause of lower respiratory infection in North America.

**Asthma:** Chronic inflammatory airway disorder characterized by airway hyper responsiveness, airway edema, and mucus production. Airway obstruction resulting from asthma might be partially or completely reversed. Severity ranges from long periods of control with infrequent acute exacerbations in some children to the presence of persistent symptoms in others. It is the most common chronic illness of childhood and affects over 6 million American Children.

**Therapeutic Management:** Current goals of medical therapy are avoidance of asthma triggers and reaction or control of inflammatory episodes. The most recent recommendations by the NAEPP suggest a stepwise approach to medication management as well as control of environmental factors and comorbid conditions that affect asthma. The stepwise approach to asthma treatment involves increasing medications as the child’s condition worsens, then backing off treatment as he or she improves.
Short acting bronchodilators may be used in the acute treatment of bronchoconstriction and long acting forms may be used to prevent bronchospasm. Exercise induced bronchospasm may occur in any child with asthma or as the only symptom in the child with mild intermittent asthma.

**Metered dose inhalers using cholorfluorocarbon (CFC) as the propellant are no longer on the market. Environmentally friendly formulations of hydrofluoalkane are now used in all metered dose inhalers.

**Nursing Management:** Initial nursing management of the child with an acute exacerbation of asthma is aimed at restoring a clear airway and effective breathing pattern as well as promoting adequate oxygenation and ventilation (gas exchange).

**The NAEOO recommends use of a spacer or holding chamber with metered dose inhalers to increase the bioavailability of medication in the lungs.

**Young children with asthma receiving inhaled medications via a nebulizer should use a snugly fitting mask to ensure accurate deposition of medication to the lungs. Discourage blow by via nebulizer as medication delivery is variable and unreliable.

**Teach the child and family that exposure to cigarette smoke increases the need for medications in children with asthma as well as the frequency of asthma exacerbations. Both indoor air quality and environmental pollution contribute to asthma in children.

**Acute Otitis Media:** Common illness in children resulting from infection (bacterial or viral) of fluid in the middle ear. Increased susceptibility in infants and young children may be partly explained by the short length and horizontal positioning of the eustachian tube, limited response to antigens, and lack of previous exposure to common pathogens.

**Therapeutic Management:** Viral Causes of AOM usually resolve spontaneously, but bacterial causes may require treatment with an antibiotic. It is unreasonable to obtain a culture of middle ear fluid with every episode of AOM to determine the specific cause. Certain diagnosis of AOM is based on rapid onset of symptoms, signs of fluid in the middle ear, and signs of symptoms of inflammation in the middle ear.

**Nursing Assessment:** Consists of health history and physical examination.

- Fever, complaints of otalgia (ear pain), fussiness or irritability, crying inconsolably, particularly when lying down…. 
Risk factors include: young age, day care attendance, previous history of AOM or OME, antecedent or concurrent upper respiratory infection.

- On examination the tympanic membrane will have a dull or opaque appearance and is bulging and/or red. Sometimes pus (greenish or yellowish) may be visible behind the ear drum.

**Nursing Management:** Mainly supportive in nature. It focuses on pain management, family education, and prevention of AOM.

**Croup:** Children between 3 months and 3 years are most frequently affected. AKA LARYNGOTRACHEOBRONCHITIS because inflammation and edema of the larynx, trachea, and bronchi occur as result of viral infection. Parainfluenza is responsible for the majority of croup cases. The inflammation and edema obstruct the airway, resulting in symptoms. Narrowing of the subglottic area of the trachea results in audible inspiratory stridor. Edema of the larynx causes hoarseness. Inflammation in the larynx and trachea cases the characteristic barking cough of croup

-Symptoms often occur at night, presenting suddenly, with resolution of symptoms in the morning. Usually treated from home with corticosteroids, usually a single dose, used to decrease inflammation, and racemes epinephrine aerosols demonstrate the x-adrenergic effect of mucosal vasoconstriction, helping decrease edema.

**Nursing Assessment:** Note the age of the child. History may present with viral croup, may reveal a **cough that developed during the night (most common presentation)** and that sounds like barking (or a seal). A lateral neck radiograph may be obtained to rule out epiglottis.

**The child with fever, a toxic appearance, and increasing respiratory distress despite appropriate croup treatment may have bacterial trachetitis.** Notify the physician or nurse practitioner of these findings in a child with croup.

**Nursing Management:** If childs care is at home, advice parents about the symptoms of respiratory distress and instruct them to seek treatment if the child’s respiratory condition worsens. Teach parents about exposing their child to humidified air. Administer dexamethasone if ordered or teach parents about home administration. Explain to the parents that the effects of racemic epinephrine last about 2 hours and the child must be observed closely as occasionally a child will worsen again, requiring another aerosol.
MENINGITIS

**Bacterial Meningitis:** Infection of the meninges, the lining that surrounds the brain and spinal cord. It is a serious illness in children and can lead to brain damage, nerve damage, deafness, stroke, and even death. The leading cause of bacterial meningitis in newborns is GROUP B STREPTOCOCCUS, GRAM NEGATIVE ENTERIC BACILLI SUCH AS E-COLI.
- Causes inflammation, swelling, purulent exudates, and tissue damage to the brain. It can occur as a secondary infection to upper respiratory infections, sinus infections, or ear infections, and can also be the result of direct introduction through LP. Skull fracture or severe head injury; neurosurgical intervention, etc.

**Therapeutic Management:** A medical emergency and requires prompt hospitalization and treatment. Deterioration may be rapid and occur in less than 24 hours, leading to long term neurologic damage and even death. IV antibiotics will be started immediately after the LP and blood cultures have been obtained if bacterial meningitis is suspected. Corticosteroids may be ordered to help reduce the inflammatory process.

**Nursing Assessment:** Full health history, common signs and symptoms may include:
- Sudden onset of symptoms
- Preceding respiratory illness or sore throat
- Presence of fever and chills
- Headache
- Vomiting
- Photophobia
- Stiff neck
- Rash
- Irritability
- Drowsiness
- Lethargy
- Muscle Rigidity
- Seizures

*Symptoms in infants can be more subtle and atypical, but the history may reveal*
- Weak cry
- Lethargy
- Vomiting

**Physical Examination**
Observe general appearance of child. Infant with bacterial meningitis may rest in the OPISTHOTONIC POSITION (Hea d and neck are hyperextended to relieve discomfort). Infant a bulging fontanel may be present, which is often a late sign and the infant may be consolable while lying still as opposed to being held.

**Abrupt eruption of a petechial or purplish rash can be indicative of meningoccemia, immediate medical attention is warranted.**
**Nursing Management:** Quickly initiate supportive measures to ensure proper ventilation, reduce the inflammatory response, and help prevent injury to the brain. Interventions are aimed at reducing ICP and maintaining cerebral perfusion along with treating fluid volume deficit, controlling seizures, and preventing injury that may result from altered LOC or seizure activity. Infants and children with bacterial meningitis will be placed on droplet isolation until 24 hrs of antibiotics have been received to help prevent transmission of other diseases.

**Aseptic Meningitis:** Most common type of meningitis, and the majority of children affected are younger than 1 years of age. If the causative organism can be identified, it is usually a virus. Enteroviruses, such as echovirus and coxsackievirus, account for many causes of aseptic meningitis.

**Therapeutic Management:** Prompt diagnoses and treatment are essential to improve outcomes. Child is treated aggressively as if they had bacterial meningitis. Antibiotics are administered and continued until the causative organism is recognized. If the cause is viral, antibiotics may be discontinued and antiviral agents may be started at this time.

**Nursing Assessment:** Fever, general malaise, headache, photophobia, poor feeding, nausea, vomiting, irritability, lethargy, neck pain, positive kerning and brudzinski signs.

**Nursing Management:** Similar to bacterial meningitis and will focus on comfort measures to reduce pain and fever. Aseptic meningitis can be managed successfully at home if the child's neurologic status is stable and he or she is tolerating oral intake.

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**COMMON CHILDHOOD PROBLEMS EG PEDICULOS CAPITUS, RINGWORM**

**Pediculosis Capitis (Head Lice):** Transmitted by direct contact with hair of infested people, less commonly with personal belongings, such as combs and hats, of those infested. Incubation period from laying of eggs to hatching of nymph is 6-10 days; adult lice will appear 2-3 weeks later. *Extreme pruritus is the most COMMON SYMPTOM.* Adult eggs (nits) or lice may be seen, especially behind the ears and at the nape of the neck.

**Diagnosis** by ID of eggs, nymph, and lice with the naked eye is possible. Adult lice is rarely seen.

**Treatment:** Washing hair with a penculicide such as permethrin, pyrethrins, lindane, and malathion. Careful instructions on proper use of any product should be given and strict adherence to application instructions encouraged. Pretreatment is usually recommended depending on treatment used. Detection of living lice 24 hours after treatment suggests incorrect use, a very heavy infestation, reinfestation, or resistance to treatment.
Isolation/Control Measures/ Concerns: After treatment check hair and comb nits and lice from hair shafts every 2-3 days to prevent reinfestation. Household and other close contacts should be examined and if infested, treated. Bedmates should be treated prophylactically. Head lice do not survive long once they have fallen off. Most children can be treated effectively without treating their clothing and bedding.

COGNITIVE DISSABILITIES
SUCH AS SOCIALIZATION; SEXUAL EDUCATION

Sexual Education: Adolescents have special needs when working to accomplish their developmental tasks and making a smooth transition to young adulthood. One of the biggest areas of need is sexual health. Adolescents commonly lack the info, skills, and services necessary to make informed choices related to their sexual and reproductive health. Unplanned pregnancies occur.

REYES SYNDROME

Reyes Syndrome: A disease that primarily affects children younger than 15 years of age who are recovering from a viral illness. It has been found that Reye Syndrome is a reaction triggered by the use of salicylate or salicylate containing products to treat a viral infection. This reaction causes BRAIN SWELLING, LIVER FAILURE, and DEATH in hours if treatment is not initiated

Nursing Assessment: Common signs and symptoms may be: Severe and continual vomiting, changes in mental status, lethargy, irritability, confusion, and hyperreflexia.

- Ingestion of salicylate containing products within 3 weeks of the start of the viral illness. Elevated liver function tests and elevated serum ammonia levels can confirm diagnoses.

Nursing Management: Early recognition and treatment are the most important aspects of managing this illness. Nursing management is aimed at maintaining cerebral perfusion, managing and preventing increased ICP, providing safety measures due to changes in LOC and risk for seizures, and monitoring fluid status to prevent dehydration and overhydration.

IM INJECTIONS AT DIFFERENT AGES
**Intramuscular Administration:** Used infrequently in children because it is painful and children often lack adequate muscle mass for medication absorption. THE PREFERRED SITE OF INJECTION IN INFANTS IS THE VASTUS LATERALIS. The Dorsogluteal site used in adults is not recommended in children younger than 5 years of age.

The deltoid muscle is used as an IM injection site in children OLDER THAN 3 and may be used in toddlers if the muscle mass is sufficient. Insert the needle into the skin at a 90-degree angle, aspirating and, if not blood was present, injecting the med was the the TRADITIONAL PROCEDURE. However, now is rapid injection, without aspiration.

**Infant:** Vastus Lateralis: .5mL with 5/8 to 1 inch, 22-25 gauge needle.

**Toddler:** 0.5-1mL in Vastus Lateralis, .5mL in Deltoid, 1mL in Ventrogluteal, with 5/8-1inch, 22-25 gauge needle.

**Preschooler:** 1mL in Vastus Lateralis, .5mL in Deltoid, 1.5mL in Ventrogluteal, with 5/8-1inch, 22-25 gauge needle.

**School Age:** 1.5-2mL in Vastus Lateralis, .5-1mL in Deltoid, 1.5-2mL in ventrogluteal, 1.5-2mL in dorsogluteal, with 5/8 to 1.5 inch, 22-25 gauge needle.

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**GENETIC DISORDERS EG: CYSTIC FIBROSIS; DOWN SYNDROME**

**Cystic Fibrosis:** An autosomal recessive disorder that affects 30,000 children and adults in the US. A deletion occurring on the long arm of chromosome 7 at the cystic fibrosis transmembrane regulator is the responsible gene mutation. DNA testing can be used prenatally and in newborns to identify the presence of the mutation.

**Therapeutic Management:** Aimed toward minimizing pulmonary complications, maximizing lung function, preventing infection, and facilitating growth. All children with cystic fibrosis who have pulmonary involvement require chest physiotherapy with postural drainage several times daily to mobilize secretions from the lungs.

**Nursing Assessment:** Children known to have cystic fibrosis are often admitted to the hospital for pulmonary exacerbations or other complications of the disease.

**Nursing Management:** Focuses on minimizing pulmonary complications, promoting growth and development, and facilitating coping and adjustment by the child and family. Maintaining patent airway, preventing infection, maintaining growth promoting family coping, and preparing the child and family for adulthood with CF.
**Massage Therapy** performed by the parent, nurse, or licensed massage therapist may help to improve mood or relieve pain in the child with cystic fibrosis. It may have the added benefit of improving respiratory status, but it does not replace chest physiotherapy.

**Down Syndrome:** Trisomy 21, an entire chromosome is added.

**Chapter 30**

**Atraumatic Care:** Defined as therapeutic care that minimizes or eliminates the psychological and physical distress experienced by children and their families in the health care system.

**Preventing/Minimizing Stressors:**
- The use of atraumatic care to help minimize the physical and emotional stress.

**Child Life Specialist:** A specially trained individual who provides programs that prepare children for hospitalization, surgery, and other procedures that could be painful.

- Goal of the CLS is to decrease the anxiety and fear of the child while improving and encouraging understanding and cooperation of the child. The CLS considers the needs of siblings or other children who many be affected by the child’s illness or trauma.

**Therapeutic Hugging:** A holding position that promotes close physical contact between the chid and a parent or caregiver, may be used for certain procedures or treatments where the child must remain still.

**Family Centered Care:** Involves a partnership between the child, family, and health care providers in planning, providing, and evaluating care. Based on the concept that family is the constant in the child’s life and the primary sources of strength and support for the child.

**Effective Communication:** With children and their parents is critical to providing atraumatic quality nursing care. Effective communication is the foundation of the therapeutic relationship and leads to increased knowledge an health care behaviors on the part of the child and family.
Medical Home: The primary physician who has a long-term and comprehensive relationship with the family. To be effective the medical home must be accessible, family centered, culturally effective, and community based.

Characteristics of a medical home:
- Care accessible, all insurance including medicaid accepted, concern for wellbeing of child and family, respect for family culture and religious beliefs, etc.

Components of Health Supervision:

Developmental Surveillance: Ongoing collection of skilled observations made over time during health care visits. Components include:
- Noting and addressing parental concerns.
- Obtaining a developmental history
- Making accurate observations
- Consulting with relevant professionals

Developmental Screenings: Brief assessment procedures that identify children who warrant more intensive assessment and testing. Developmental screening assessments may be observational or by caregiver report.

Injury and Disease Prevention

Screening Tests: Procedures or laboratory analyses used to identify children with a certain condition. Ensured that no child with a disorder is missed.

Risk Assessment: Performed by the physician in conjunction with the child and includes objective as well as subjective data to determine the likelihood that the child will develop a condition.

Universal Screening: An entire population is screened regardless of the child’s individual risk. This type of screening is performed when a reliable risk assessment procedure is not available.
Selective Screening: Done when a risk assessment indicates the child has one or more risk factors for the disorder.

DTAP Vaccine: Given in a series of 5 injections, at 2, 4, and 6 months, between 15 and 18 months, and between 4 and 6 years. A TdaP booster is needed by 11-12 years.

Chapter 32

Preparing for the Health History:

Gathering Materials: Either computer or chart paper, private space with adequate lighting, chairs for adults and the nurse, and a bed or examination table for the child

Approaching the Parent or Caregiver: Greet parent or caregiver by name. Provide toys or books to occupy the child allowing the parent to concentrate on the questions. Using open ended questions and avoid making judgmental comments.

Approaching the Child: Show a professional demeanor while still being warm and friendly to the caregivers and child. Elicit the child’s cooperation by allowing him or her control over the pace and order of the health history, or anything else that the child can control while still allowing the nurse to obtain the information needed.

Determining the Type of Health History Needed: If the physician rarely sees the child or if the child is critically ill, a complete and detailed history is in order, no matter what the setting.

Demographics: Initially, questions should be simple and nonintrusive, once a rapport between the nurse and patient is started, sensitive questions can be asked. First obtain data such as the child’s name, nickname, birth date, and gender. Do not assume the adult with the child is their parent.

Chief Complaint and History of Present Illness: Reason for the visit. “What can I help you with today?” Address onset, duration, characteristics, and course (location, signs, symptoms, exposures, and so on).
Past Health History: Ask about prenatal history, any problems with pregnancy, any problem with delivery, past illnesses, etc. Meds, allergies, animals, environmental or contact agents, or latex products.

Family Health History: Obtain info about the family’s health is a key part of a health interview. Perform a three generation family health history.

Review of Systems: Growth and development, skin, head and neck, eyes and vision, ears and hearing, mouth, teeth, and throat, respiratory system and breasts, and cardiovascular system, etc.

Developmental History: Determine the age when landmarks in gross motor control were achieved. Such as sitting, standing, walking, pedaling and so on. The rate of the developmental skill acquisition may vary from child to child, but the sequence of skill attainment should remain the same.

Functional History: Should contain info about the childs daily routine.

Physical Examination

Newborns and Infants: If the infant is asleep, auscultate the heart, lungs, and abdomen first while the baby is quiet. Count the heart rate and respiratory rate before undressing the baby. Completely undress newborns down to their diaper, removing it at the end to examine genitalia, anus, spine, and hips. Perform assessment in a head to to manner, leaving the most traumatic procedures such as examination of the ears, nose, mouth, and throat for last. ***Make sure the infant is within the parents view to decrease their anxiety.

Toddlers: Usually prefer to remove their clothing one item at a time as needed for the examination. Introduce equipment to be used slowly, explaining briefly what is going to happen. Toddlers are egocentric. Telling a toddler how well another child behaved will not be helpful in gaining the young childs cooperation.

Preschoolers: The preschooler may fear body invasion and mutilation and will withdraw from any procedure or assessment that is viewed as intrusive. Otherwise, the sense of initiative often leads the preschooler to be cooperative. Use simple explanations to inform the child about each step of the examination, offering reassurance as appropriate. Allow them to “help” by holding the stethoscope or penlight. Preschoolers like to play games. To encourage deep breathing during lung auscultation, hold up a finger or penlight and instruct the child to “blow it out”.

School Age Children: Avoid using medical jargon and words that may have a double meaning to a young child. Always respect a childs desire to avoid pain and insult. Allow children to wear their underpants under their examination gown to provide a sense of security. Describing and
commenting on your findings during the physical examination is interesting to the school-age children of this age like to learn about how the body work.

**Adolescent:** Demonstrate an attitude of respect. Perform head to toe assessment, exposing only the area to be examined. Assure the adolescent that there are no dumb questions. Teenage girls should remove their bras so that the nurse can perform breast examination, teach breast self-examination, and check for scoliosis.

**Vital Signs**

Infant HR: 80-150  
Toddler HR: 70-120  
Preschooler HR: 65-110  
School Age HR: 60-100  
Adolescent HR: 55-95  
Infant RR: 25-55  
Toddler RR: 20-30  
Preschooler RR: 20-25  
School Age RR: 14-22  
Adolescent RR: 12-18

**Chapter 33**

Children’s Reactions to Hospitalization:

**Separation Anxiety:** Distress related to removal from family and familiar surroundings.

**Regression:** Return to a previous stage of development, acting out, and other types of defense mechanisms to cope with these effects.

**Chapter 35**

*8 Rights of Pediatric Medication Administration*

- Right Medication
Developmental Issues and Concerns

**Always administer medications promptly, assist the child in holding still using a comforting position for the child, and reward positive behavior.**

**Dose Determination by Body Weight**

The most common method for calculating pediatric medication doses is based on body weight.

1. Weigh the child
2. If the child's weight is in pounds, convert it to KG (Divide by 2.2)
3. Check a drug reference for the safe dose range.
4. Calculate the low safe dose
5. Calculate the high safe dose
6. Determine if the dose is ordered is within the range.

**Generally, once the child weighs 50kg, the adult dose is prescribed. However, it is important to always verify that the does does not exceed the recommended adult dose.**

**Dose Determination by Body Surface Area**

Need to know child's height and weight which will be plotted on the graph (Nomogram).

1. Measure child's height
2. Determine the child's weight
3. Using the nomogram, draw a line to connect the height measurement in the left column and the weight measurement in the right column,

4. Determine the point where this line intersects the line in the surface area column. This is the BSA, expressed in meters squared (m²)

**Oral Administration**

Generally, children younger than the age of 5-6 are at risk for aspiration because they have difficulty swallowing tablets or capsules.

**Certain drugs cannot be crushed. Before crushing a pill or opening a capsule, always check that this will not alter the intended effects of the drug.**

**Use the medicine cup of syringe with proper calibration instead of household cups or measuring spoons since they are not calibrated and may deliver an incorrect dose of medication.**

**Never force an oral medication into a child's mouth or pinch the child’s nose. Doing so increases the risk for aspiration and interferes with the development of a trusting relationship.**

**Ophthalmic Administration**

Parents and caregivers need instruction about how to administer this med. If a child is uncooperative, he or she may need to be immobilized in order to administer the eye drops.

**Otic Administration**

For the child YOUNGER than 3, the nurse pulls the pinna DOWN AND BACK.

For the child OLDER than 3, the nurse pulls the pinna UP AND BACK.

**Nasal Administration**

**In infants, instill the medication in one naris at a time, since they are obligate nose breathers.**

**IM Injection**

**Some experts no longer recommend use of the dorsogluteal site at any age due to the risk of damaging the sciatic nerve.**

In children older than 3, the Deltoid is used as an IM injection site and may be used in toddlers if the muscle mass is sufficient. The goal is to choose the smallest length and needle gauge to deposit the medication into the muscle.
Subcutaneous and Intradermal Administration

Choose the appropriate needle size due to the amount of fat.

Preferred sites are the anterior thigh, lateral upper arms, and abdomen.

Use a 3/8 or 5/8 inch, 23-25 gauge needle for SQ.

Intravenous Administration

Watch for fluid overload.

Preventing Medication Errors

- Always weight the child in KG

- Double check med calculations, utilize another healthcare provider when possible, especially for high risk meds.

- If a dose seems unusually small or large, verify the order.

- Utilize med ordering and dispensing systems if available.

- Always report med errors or near miss errors to help prevent future mistakes.

IV Sites

Can be a peripheral vein or a central vein.

Peripheral: Hands, feet, and forearms. In neonates and young infants, the scalp veins may be used.

**When selecting an IV site in an extremity, always choose the most distal site. Doing so prevents injury to the veins superior to the site and allows additional access sites should complications develop in the most distal site.

Central: Administered through a large vein, such as the subclavian, femoral, or jugular vein or the vena cava. The tip of the device lays in the superior vena cava just at the entrance the right atrium.

**Some facilities have policies in place allowing only one stick per nurse with a maximum of 2 sticks, then the DR needs to be notified unless the situation is an emergency.

IV Fluid Administration

100mL per kg of body weight for the first 10kg

50mL per kg of body weight for the next 10kg

20mL per kg of body weight for the remainder of body weight in kg.
**When measuring the output of an infant or child who is not toilet trained or who is incontinent, weigh the diaper to determine the output. Remember that 1 gram of weight is equal to 1 mL of fluid.**

**Preventing Complications**

Strict aseptic technique is necessary when inserting the device and caring for the site.

Check insertion site every 1-2 hours for inflammation or infiltration (inadvertent infusion of a nonirritant solution or medication into the surrounding tissue).

Typically in Adults, the IV site is changed every 72 to 96 hours and at any time when the integrity of the system has been compromised or contamination is suspected.

However, with children, the 72-96 hour time frame may need to be adjusted to minimize the child's exposure to the repeated trauma of insertion.

**Providing Nutritional Support**

*Enteral Nutrition:* Delivery of nutrition into the GI tract via a tube.

*Gavage Feedings:* Nasogastic or orogastric feedings, a tube from the nose to the stomach or from the mouth to the stomach.

Enteral feedings are indicated for children who have a functioning GI tract but cannot ingest enough nutrients orally. They may be unconscious or have a severely debilitating condition that interferes with his or her ability to consume adequate food and fluids.

*Parenteral Nutrition:* IV delivery of nutritional substances.

**Infectious and communicable diseases are one of the leading causes of death worldwide.**

**Infectious Process**

WBC’s use phagocytosis to ingest and destroy the pathogen.

**Fever**

Infection or inflammation caused by bacteria, viruses, or other pathogens stimulate the release of endogenous pyrogens (interleukins, tumor necrosis factor, and interferon).

Fever is defined as a temperature greater than 38 Celsius (100.4 F)