Chapter 30

Basic Pediatric Nursing Care

History of Child Care—Then and Now

• Industrialization in America
  ➢ Population shifted from rural to urban settings
  ➢ People lived in overcrowded and unsanitary conditions
  ➢ Children were looked at as little adults and worked in factories 12-14 hours a day
  ➢ They had no legal rights and there were no work laws

History of Child Care—Then and Now (Cont.)

• 1860: Dr. Abraham Jacobi, a New York physician referred to as the “father of pediatrics,” first lectured to medical students on the special diseases and health problems of children
• At “milk stations,” infants were weighed and mothers were taught how to prepare milk before giving it to their babies
• Late 1800s: Increasing concern developed for the social welfare of children, especially those who were homeless or employed as factory laborers
History of Child Care—Then and Now (Cont.)

- Lillian Wald: founder of public health or community nursing
- Early 1900s: Children with contagious diseases were isolated from adult patients; parents were prohibited from visiting
- 1940s: Famous works of Spite and Robertson on institutionalized children; the effects of isolation and maternal deprivation were recognized
- 1909: White House Conference on Children focused on issues of child labor, dependent children, and infant care
- 1912: US Children’s Bureau was established

- 1919: First funded program for mothers and children
- 1929: Depression caused conditions for children to decline once again
- 1987: National Commission on Children formed; served as a forum on behalf of the children of the nation
- Children are the focus of many reform initiatives in the twenty-first century

Pediatric Nursing

- Purpose of pediatric nursing
  - Preventing disease or injury
  - Assisting all children, including those with a permanent disability or health problem, to achieve and maintain an optimum level of health and development
  - Treating and rehabilitating children who have health deviations
Pediatric Nursing (Cont.)

- Must enjoy working with children of all ages
- Family-centered nursing in its truest sense
- Must have keen observation skills
- Support children through difficult procedures or illnesses
- Requires establishing a level of trust
- Must convey respect, talk at their level, and be honest
- Function as a child and family advocate
- Ability to communicate effectively essential

Pediatric Nursing (Cont.)

- Children with special needs
  - Infants and children may have congenital abnormalities, malignancies, gastrointestinal disease, or central nervous system anomalies
  - With appropriate services and support, even children with very severe disabilities are living at home with their families and attending school with their peers

Pediatric Nursing (Cont.)

- A philosophy of care that recognizes the family as the constant in the child’s life and holds that systems and personnel must support, respect, encourage, and enhance the strengths and competence of the family
- Nurses and others in the community support families in their natural caregiving and decision-making roles by building on the family’s and individual member’s unique strengths
Pediatric Nursing (Cont.)

- Partnerships with parents
  - Concept of partnerships with parents
  - Parental involvement in their children’s care has evolved from that of relinquishing their role to institutions to today’s role of planners, in addition to recipients, of services
  - Treated as equals in deciding what is important for themselves and their family
  - Parents of special needs children often become experts on their child’s condition

Pediatric Nursing (Cont.)

- Future challenges for the pediatric nurse
  - Shift from treatment of disease to promotion of health is likely to further expand nurses’ roles in ambulatory care, with prevention and health teaching receiving a major emphasis
  - Technologic advances will influence the pediatric nurse to increase technical skills related to patient care
  - Need to keep abreast of developments in adolescent medicine and continually adapt their care to the cultural environment in which they practice

Pediatric Nursing (Cont.)

- Nursing implications of growth and development
  - Identifying an infant or child who is demonstrating cognitive impairment
  - Use a developmental rather than a chronologic approach to pediatric nursing care
  - Select age-appropriate toys for the infant or young toddler and devise activities that appeal to the school-age child or adolescent
  - Basis for anticipatory guidance with parents
Physical Assessment of the Pediatric Patient

- Growth measurements
  - Key element in evaluation of the health status of children
  - Plotted by percentiles on growth carts and compared with those of the general pediatric population to determine deviation from the norm

Physical Assessment of the Pediatric Patient (Cont.)

- Growth measurements
  - Length
    - Measurements are taken when children are supine; recumbent length is usually measured until 2 years of age
  - Height
    - Measurement is of a child standing upright

Physical Assessment of the Pediatric Patient (Cont.)

- Growth measurements
  - Weight
    - Fluid loss and inadequate calories are reflected in a child’s weight
    - The child should be weighed at the same time every day on the same scale
  - Skin thickness
    - Skinfold thickness should be determined at one site with at least two measurements
    - Arm circumference measures muscle mass
Physical Assessment of the Pediatric Patient (Cont.)

- **Vital signs**
  - **Temperature**
    - Reflects metabolism
    - Fairly stable from infancy through adulthood
    - Measure body temperature to detect abnormally high or low values
    - Routes: oral, rectal, axillary, and tympanic
    - Normal findings approximately 97°F to 99°F

- **Heart rate/pulse**
  - Great variations exist
  - Infection and physical activity increase heart rate; note irregularities in volume, rate, and rhythm
  - Apical pulse is taken on infants and young children; a radial pulse on children 5 years of age and older
  - Pulse rate should be counted for 1 full minute
  - Apical beat of a newborn may be 152 bpm and gradually slows to 72-76 bpm by adolescence

- **Respirations**
  - Infants’ respirations are mainly diaphragmatic; observe abdominal movement for 1 full minute
  - In older children, respirations are chiefly thoracic
  - Respiratory rate slows as a child progresses from infancy to adolescence
  - Newborns are obligate nasal breathers
  - Rate, depth, and quality should be assessed
  - Rate may be as rapid as 40-50 breaths per minute, gradually slowing to 25-32 per minute
Physical Assessment of the Pediatric Patient (Cont.)

- Vital signs
  - Blood pressure
    - Blood pressure should be measured in children 3 years of age and older
    - Blood pressure is low in a newborn and gradually rises; at the end of adolescence, it is about 120/78 mm Hg
    - It is important to use the correct-sized cuff to ensure accuracy
    - Measure blood pressure before any anxiety-producing procedures

- Head-to-toe assessment
  - Skin
    - Genetic and physiologic factors affect assessment of color
    - Pallor may be a sign of anemia, chronic disease, edema, or shock
    - Erythema may be the result of increased temperature, local inflammation, or infection
    - Skin texture should be smooth, soft, and slightly dry to the touch

- Head-to-toe assessment
  - Accessory structures
    - Hair
      - Should be lustrous, silky, elastic
    - Nails
      - Should be pink, convex, smooth, and hard but flexible
    - Handprints and footprints
      - Palm normally shows three flexion creases
Physical Assessment of the Pediatric Patient (Cont.)

- Head-to-toe assessment
  - Eyes
    - At birth, visual acuity is 20/400; when holding a baby, assume an en face position
    - By the second week of life, tear glands begin to function
    - Newborns can follow bright, colorful objects by the second or third week of life
    - Vision improves to 20/30 by age 2-3 years
    - Accommodation and refraction are present by school age

- Ears
  - Inspect for general hygiene
  - Advise parents and children to clean the ears with a washcloth; wipe only the outer portion of the canal with a swab
  - Mineral oil may be used to soften cerumen

- Nose, mouth, and throat
  - Nose should lie from the center point between the eyes to the notch of the upper lip
  - Normally there is no discharge from the nose
  - Inspect the lining of the mouth and the number of teeth
Physical Assessment of the Pediatric Patient (Cont.)

- Head-to-toe assessment
  - Lungs
    - Make sure the child is not crying
    - Have them "blow out" a otoscope light
    - Listen systematically
  - Chest
    - Chest is almost circular
    - As the child grows, the chest normally increases in a transverse direction
    - Asymmetry may indicate serious underlying problems

- Back
  - Newborn is C-shaped
  - Older child typically has S-shaped curve
  - Marked curvature in posture is abnormal

- Abdomen
  - Inspection: cylindrical and flat
  - Auscultation: listen for peristalsis

- Extremities
  - Examine for symmetry, range of motion, and signs of malformation
  - Fingers and toes should be counted
  - Toddlers are usually bowlegged
  - Observe for arch development and correct gait
  - School-aged walking posture is more graceful and balanced
  - During puberty, adolescents may experience awkward posture from rapid growth of extremities
Physical Assessment of the Pediatric Patient (Cont.)

- Head-to-toe assessment
  - Renal function
    - Functional deficiency in the kidney’s ability to concentrate urine and to cope with conditions of fluid and electrolyte fluctuation, such as dehydration or fluid overload
    - Urine output varies and depends on the size of the infant or child
    - Urine is colorless and odorless
  - Anus
    - Check the anal sphincter
    - History of bowel movements should be noted
    - Assess for perianal itching; may be pinworms
  - Genitalia
    - Excellent time to elicit questions concerning body functions or sexual activity

Question 1

An infant’s weight should increase by what amount by the age of 1 year?

1. 50%
2. Double
3. Triple
4. Quadruple
Question 2

Which of these would not require further investigation?
1. Children whose height and weight percentiles are widely disparate
2. Children who consistently remain in the 50th percentile
3. Children who fail to show the expected growth rates in height and weight, especially during the rapid growth periods of infancy and adolescence
4. Children who show a sudden increase, except during puberty, or a decrease in a previously steady growth pattern

Factors Influencing Growth and Development

- Nutrition
- Metabolism
- Sleep and rest
- Speech and communication
- Nonverbal communication

Child Maltreatment

- Child neglect
  - Physical
  - Emotional
- Child abuse
  - Physical
  - Emotional
  - Sexual
Child Maltreatment (Cont.)

- Etiology
  - Parental factors
  - Child's factors
  - Situational factors
- Clinical manifestations
- Nursing interventions

Hospitalization of a Child

- Preadmission programs
- Admission
- Hospital policies

Hospitalization of a Child (Cont.)

- Developmental support for the child
- Pain management
- Surgery
- Parent participation
Common Pediatric Procedures

- **Bathing**
  - This provides an opportunity for skin assessment
  - Check temperature of water
  - If umbilical cord is still present, give sponge bath and clean around cord with alcohol
  - Be careful to remove soap, rinse, and dry creases
  - Use dry hands to pick up the infant
  - The child should never be left in a tub without supervision

Common Pediatric Procedures (Cont.)

- **Feeding**
  - Breastfeeding
  - Formula
  - Solids
  - Gavage
  - Gastrostomy
  - Total parenteral nutrition

Common Pediatric Procedures (Cont.)

- **Safety reminder devices**
  - Types
    - Elbow safety reminder
    - Mummy safety reminder
    - Clove-Hitch safety reminder
    - Jacket safety reminder
Common Pediatric Procedures (Cont.)

- Urine collection
  - Collecting specimen can be a major problem when the child is not toilet-trained
  - Methods of collection
    - Suprapubic bladder tap
    - Plastic urine collection bags
    - Catheterizations

- Venipunctures to obtain blood specimens
  - In infants and young children, a jugular or femoral vein may be used to obtain a blood specimen
  - The nurse’s responsibility is to prepare, position, and restrain the child
  - Holding the head or lower extremities absolutely immobile is critical
  - Pressure should be applied to the site to prevent the formation of a hematoma
  - Sometimes the veins of the extremities, especially the arm and the hand, are used

- Lumbar puncture
  - Explain the procedure and answer any questions
  - EMLA, a local anesthetic cream, may be applied to the lumbar area
  - Position the child at the edge of the exam bed, on the side, facing nurse with neck and legs gently flexed
  - Observe for any signs of difficulty
  - A toddler may need to have the legs wrapped in a blanket
  - The child should be held securely until the spinal tap is completed
Common Pediatric Procedures (Cont.)

- **Oxygen therapy**
  - Used to improve the child’s respiratory status by increasing the amount of oxygen in the blood
  - Infants and young children receiving oxygen are monitored on an oximeter
  - **Methods**
    - Hood and incubator
    - Mist tents
    - Nasal cannula

Common Pediatric Procedures (Cont.)

- **Suctioning**
  - Used when secretions are audible in the airway or when signs of airway obstruction or oxygen deficit are present
  - Various devices are used to suction children such as a bulb syringe or a straight suction catheter
  - **Depth:** approximately 1/4 to 1/2 inch
  - **Timing:** not more than 5 seconds
  - **Frequency:** allow 30 seconds between attempts

Common Pediatric Procedures (Cont.)

- **Intake and output**
  - Many health disorders require accurate monitoring of the amount of solids and liquids taken in and the amount excreted
  - All fluids given to a child are documented on a record kept at the bedside
  - All urine voided is measured before it is discarded; weigh diapers if appropriate
Common Pediatric Procedures (Cont.)

- Medication administration
  - The nurse must know how to compute the dose correctly and administer it properly
  - All computed dosages must be checked by a second nurse for safety
  - The right amount of the right medication must be given to the right child at the right time and via the right route
  - Observe and document a child’s response to the drug
  - Calculating dosages for children consider age, body weight, and body surface area

Common Pediatric Procedures (Cont.)

- Medication administration
  - Routes of administration
    - Oral
    - Intradermal, subcutaneous, and intramuscular
    - Intravenous
    - Optic, otic, and nasal
    - Rectal

Safety

- Protecting a child from harm is a major issue in pediatrics
- Anticipatory guidance for parents of infants and toddlers and health teaching for school-age children and adolescents are two methods of preventing accidents
- Injuries cause more deaths and disabilities in children than do all causes of disease combined
- Parents and children should talk and listen to each other to prevent many accidents
- The adult who is a role model can influence a child immensely
Question 3

Which of these would not promote effective communication with a preschooler?
1. Avoid quick approaches. Let the child make the first move whenever possible.
2. Stand over the child speaking down to him or her.
3. Avoid extended eye contact until the child is comfortable.
4. Substitute words that have potentially threatening interpretations with words that are less emotionally charged.

Question 4

Oxygen levels should be checked how often?
1. Every 8 hours
2. Hourly
3. Daily
4. Every 2 hours

Question 5

What behavior would not signal a child’s readiness to cooperate with an assessment?
1. Sitting on a parent’s lap
2. Allowing physical touching
3. Making eye contact
4. Talking to the nurse