7

Health Promotion and the Family

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OBJECTIVES

After completing this chapter, the reader will be able to:

- Describe various theoretical approaches to the study of families.
- Assess families throughout the life span using the functional health pattern framework.
- Describe examples of the clinical data to collect in each health pattern during each family developmental phase.
- Provide examples of behavioral changes (functional, potentially dysfunctional, and actually dysfunctional) within the health patterns of families.
- Describe developmental and cultural characteristics of the family to consider when identifying risk factors or etiological factors of potential or actual dysfunctional health patterns.
- Plan, implement, and evaluate nursing interventions in health promotion with families.
- Evaluate a specific health-promotion plan based on family assessment, nursing diagnosis, and contributing risks or etiological factors.

KEY TERMS

Cultural competence
Developmental theory
Ecomap
Family
Family developmental tasks
Family function
Family health status
Family nursing diagnosis
Family nursing interventions
Family pattern
Family resilience
Family risk factors
Family strengths
Family structure
Family theory
Genogram
Risk-factor theory
Systems theory

THINK ABOUT IT

Caring for Older Adults

Adult family members, who may have health problems of their own, find themselves caring for their older adult parents as well as grandchildren. Increased life expectancies combined with increased age at the birth of the first child present adults with the caring for older parents along with young children (Suh, 2016). This population, known as the sandwich generation, is expected to become more prevalent in the coming years. An increasing number of parents of children older than 18 years provide financial support or care for grandchildren younger than 18 years along with caring for an older parent aged more than 65 years (Suh, 2016).

- What are the implications of this growing situation for individuals? For families? For communities? For the nation?
- How will this trend affect individual lives personally and professionally?
- How does multigenerational caring affect family finances?

A **family** consists of a group of interacting individuals related by blood, marriage, cohabitation, or adoption who interdependently perform relevant functions by fulfilling expected roles. Relevant family functions include practices and values placed on health. Family health practices, whether effective or ineffective, encompass activities performed by individuals or families as a whole to promote health and prevent disease. How well families complete developmental tasks and how well families, including individuals within a family, generate health-promoting behaviors determine a family's potential for enhancement of family health practices.

How family members relate to one another influences their understanding of behavior, which is demonstrated in the family's structural, functional, communicational, and developmental patterns (Glover & Justis, 2015). Families provide the structure for many health-promotion practices; therefore family assessment informs health-promotion and disease-prevention planning. Within families, children and adults are nurtured, provided for, and taught about health values by word and by example. Family members first learn to make choices to promote health within the family structure (Table 7-1). Appreciating how families make decisions and encouraging family participation in all aspects of

TABLE 7-1 Variety of Family Structures

Configuration	Positions in Family
Single parent (separated, divorced, or widowed)	Mother or father, sons(s), daughter(s)
Unmarried single parent (never married)	Mother or father, sons(s), daughter(s)
Unmarried cohabitating couple	Two adults living together in a long-term relationship that resembles marriage
Unmarried parents	Two adults, sons(s), daughter(s)
Commune family	Mothers, fathers, adults, shared son(s), daughters(s) living together
Stepparents	Adults with son(s), daughter(s) from previous marriage
Adoptive family	Adults who provide a permanent home to son(s) and/or daughter(s) through a legal process
Family of choice	Adults with selected partners and family members
Married couple	Two cohabitating adults living in a recognized legal union
Same sex couple	Two persons of the same gender sharing an intimate, romantic, or sexual relationship
Married parents	Mother and father, son(s), daughter(s)
Nuclear family	Mother and father, son(s), daughter(s)
Gay, lesbian, transgender family	Adults and children living together with one or more members of the group who identifies as gay, lesbian, or transgender
Immigrant family	Adults and children living together with one or more members of the group who is foreign born
Biracial or multiracial family	Mother, father, adults, or children include two or more races
Transracial family	Mother, father, adults, or children include at least one member who is born of one race and decides to represent themselves as another race
Blended family	Mother, father, adults, or children represent members of from previous unions
Joint-custody family	Adults living with children who are legally awarded to both biological parents
Conditionally separate families	A family member is separated from the family but remains a significant member of the family (military service, incarceration, distant employment, hospitalization)
Extended family	Significant family members beyond the nuclear family that may include grandparents, aunts, uncles, and other adults who live nearby or in one household
Foster family	Adults, serving as state-certified caregivers, for children placed into a ward, group home, or private home
Grandparent(s)	Grandchildren, son(s) and/or daughter(s) Grandmother and/or grandfather

Modified from Brown, S. L., Manning, W. D., & Payne, K. K. (2016). Family structure and children's economic well-being: Incorporating same-sex cohabiting mother families. *Population Research and Policy Review, 35*(1), 1–21; Edwards, J. O. (2009). *The many kinds of family structures in our communities.* https://www.scoe.org/files/ccpc-family-structures.pdf.

care from acute care to health promotion helps families and individuals acquire new behaviors (Parkinson et al., 2016).

Families influence children's lifestyle choices. *Healthy People 2020* views families in the United States as a means of providing important opportunities for health promotion and disease prevention (US Department of Health and Human Services, 2015). Through family planning, parents assume the responsibility of caring for their children. Prenatal care and breastfeeding give infants a healthy start. Nutritious diets support physical growth and development. Children first observe and learn behaviors within their family. Patterns of nutrition, activity, oral hygiene, and coping develop at early ages, supported by the example of family members. Patterns of alcohol consumption and tobacco use are similarly established within families. Learning about human development fosters a healthy self-concept, including positive awareness of the family member's sexuality. Promoting self-esteem and reinforcing positive behaviors also strengthen the health of children. Primary care providers support positive behaviors by offering family members scientifically sound health-promotion and clinical preventive services, such as anticipatory guidance for developmental tasks, immunizations, screening for early detection, and appropriate counseling.

This chapter uses **family theory**, **systems theory**, **developmental theory**, and **risk-factor theory** to guide the nursing process with families. The 11 functional health patterns described in Chapter 6 establish the structure for interview questions during data collection. The analysis phase of the nursing process categorizes these data within stages of family development, and from the analysis, nursing diagnoses are formulated. **Family health status** is considered functional, potentially dysfunctional (potential problem), or dysfunctional (actual problem) (Gordon, 2016). The planning phase begins when family goals and objectives are stated. The family, the nurse, or another health professional facilitates implementation. Later in this chapter, four types of interventions for health promotion and disease prevention are discussed: increasing knowledge and skills; increasing strengths; decreasing exposure to risks; and decreasing susceptibility. Nurses assume various roles throughout the stages of family development, and these roles are also presented. Evaluation of a family plan considers outcomes that are specific, objective, and measurable

and that rely on the family's subjective interpretation of concerns and probability of success, as well as that at the population level (Maurer & Smith, 2014).

THE NURSING PROCESS AND THE FAMILY

The nursing process when promoting the health of families includes the family as a group and the interactions among family members. The National Center on Parent, Family, and Community Engagement (NCPFCE) views the entire family as the participant that guides assessment from a holistic framework (NCPFCE, 2015). Partnerships with families begin with an assessment (NCPFCE, 2015). The home is a natural environment for health-promotion encounters, although the process may occur in other settings as well. Different age groups (infants, children, and older adults) are likely to be present in the home. Nurses observe physical surroundings firsthand during home visits. For example, household safety hazards are observed directly. Nurses also monitor family unit rituals, roles, and interpersonal interactions. Generally the nurse contacts the family and establishes an appointment time for visiting the family. Including each family member in the visit provides a broad perspective. During visits, the nursing process develops mutually with families; it is not a treatment done for the family. Families collaborate with nursing in all phases of the process. Guidelines for home visits are presented in Box 7-1.

BOX 7-1 Guidelines for Home Visits to Promote Health and Prevent Disease

Planning the Visit
- Make arrangements with the family.
- Study information regarding the family from agency records, referral forms, and other sources.
- Contact family and state the purpose of the visit.
- Obtain appropriate supplies and teaching aids for visits.

Making the Visit
- Offer an introduction and explain the purpose of the visit.
- Establish rapport.
- Show respect. Include all family members in the discussion.
- Identify the family's request for assistance.
- Understand the situation from the family's perspective.
- Identify appropriate activities for health promotion and disease prevention.
- Identify how the home visit is to be financed.
- Make a contract with the family that states specific goals and objectives that the family wants to reach.
- Think about safety before and during the visit.
- Identify and respond to health and home safety issues.
- Terminate the visit with specific instructions and information about the next visit: when it will occur, what will happen, who will be present, and what the family must accomplish before then.
- Carry through promptly on agreements made.
- Record notes promptly.

Modified from Alaska Parent Information and Resource Center. (n.d.). *Home visiting guidelines.* http://akpirc.org/wp-content/uploads/2011/04/Home-visiting.pdf; Vanderbilt Kennedy Center. (n.d.). *Home visits.* http://kc.vanderbilt.edu/kennedy_files/HomeVisitsTipsandResourcesJune2011.pdf.

Comprehensive family assessment provides the foundation to promote family health (NCPFCE, 2015). Several factors influence family assessment, such as nurses' perceptions about family constitution; theoretical knowledge; norms; standards; and communication abilities during visits. In addition to factors that pertain to the nurse, familial factors also influence assessments, such as family cooperation, mutual agreement to work toward goals, and family ability to recognize the relevance of health-promotion plans. Useful health-promotion family assessments involve listening to families, engaging in participatory dialogue, recognizing patterns, and assessing family potential for active, positive change (NCPFCE, 2015).

The assessment phase of the nursing process seeks and identifies information from the family about health-promotion and disease-prevention activities. To obtain this information, nurses follow family progress through developmental tasks and identify strengths in the family's ability to generate behaviors associated with disease prevention. The approaches considered in this chapter include the developmental framework, strength-based assessment, and the risk-factor estimate. Developmental phases for families as proposed by Duvall and Miller (Duvall, 1988; Duvall & Miller, 1985), strength-based assessment using a standardized tool (e.g. Canadian Family Assessment Tool) proposed by Wright and Leahy (2013), and risk-factor estimates delineated by *Healthy People 2020* can be used to guide nurses through the steps of the nursing process when they are working with families.

The Nurse's Role

Nurses collaborate with families using a systems perspective to understand family interaction, family norms, family expectations, effectiveness of family communication, family decision-making, and family coping mechanisms. The nurse's role in health promotion and disease prevention includes the following tasks:
- Become aware of family attitudes and behaviors toward health promotion and disease prevention.
- Act as a role model for the family.
- Collaborate with the family to assess, improve, enhance, and evaluate family health practices.
- Assist the family in growth and development behaviors.
- Assist the family in identifying risk-taking behaviors.
- Assist the family in decision-making about lifestyle choices.
- Provide reinforcement for positive health-behavior practices.
- Provide health information to the family.
- Assist the family in learning behaviors to promote health and prevent disease.
- Assist the family in problem-solving and decision-making about health promotion.
- Serve as a liaison for referral or collaboration between community resources and the family.

Nurses use family theoretical frameworks to guide, observe, and classify situations. Nursing roles for families in various stages of development are presented in Table 7-2.

FAMILY THEORIES AND FRAMEWORKS

Family theory stems from a variety of interrelated disciplines (Atkin et al., 2015). Family systems theory explains patterns of

TABLE 7-2 Possible Nurse's Roles in Health Promotion and Disease Prevention Through Stages of Family Development

Stage	Possible Nursing Role
Couple	Counselor on sexual and role adjustment Teacher of and counselor on family planning Teacher of parenting skills Coordinator for genetic counseling Facilitator in interpersonal relationships
Childbearing family	Monitor of prenatal care and referrer for problems of pregnancy Counselor on prenatal nutrition Counselor on prenatal maternal habits Emotional support for amniocentesis Counselor on breastfeeding Coordinator with pediatric services Supervisor of immunizations Referrer to social services Assistant in adjustment to prenatal role
Family with preschool or school-age children	Monitor of early childhood development; referrer when indicated Teacher of first-aid and emergency measures Coordinator with pediatric services Counselor on nutrition and exercise Teacher of dental hygiene Counselor on environmental safety in home
Family with adolescents	Facilitator in interpersonal relationships Teacher of risk factors to health Teacher of problem-solving issues regarding alcohol, smoking, diet, and exercise Facilitator of interpersonal skills with adolescents and parents Direct supporter of, counselor on, or referrer to mental health resources Counselor on family planning Referrer for sexually transmittable disease
Family with young or middle-aged adults	Participant in community organizations involved in disease control Teacher of problem-solving issues regarding lifestyle and habits Participant in community organization involved in environmental control Case finder in home and community Screener for hypertension, Pap test, breast examination, mental health, and dental care Counselor on menopausal transition
Family with older adults	Facilitator of interpersonal relationships among family members Referral for work and social activity, nutritional programs, homemakers' services, and nursing home Monitor of exercise, nutrition, preventive services, and medications Supervisor of immunization Counselor on safety in home Counselor on bereavement

Modified from Australian College of Nursing. (2015). *Community & primary health care nursing position statement.* https://www.acn.edu.au/sites/default/files/advocacy/Community_and_Primary_Health_Care_Postition_Statement.pdf.

living among the individuals who comprise family systems. In systems theory, behaviors and family members' responses influence patterns. Meanings and values provide the vital elements of motivation and energy for family systems. Every family has its unique culture, value structure, and history. Values provide a means for interpreting events and information, passing from one generation to the next. Values usually change slowly over time. Families process information and energy exchange with the environment through values. For example, holiday food traditions may be changed slightly by a daughter-in-law, whose own daughter may then adjust the traditional recipe within her own nuclear family.

System boundaries separate family systems from their environment and control information flow. This characteristic forms a family internal manager that influences and defines interactions and relationships with one another and with those outside the family system. The family forms a unified whole rather than the sum of its parts—an integrated system of interdependent functions, structures, and relationships. For example, one drug-dependent individual's health behavior influences the entire family unit.

Living systems are open systems. As living systems, families experience constant exchanges of energy and information with the environment. Change in one part or member of the family

results in changes in the family as a whole. For example, loss of a family member through death changes roles and relationships among all family members. Change requires adaptation of every family member as roles and functions assume new meanings. Changes families make are incorporated into the system.

When the system is the family, issues can be clarified by family processes, communication interaction among family members, and family group values. In Bowen's family systems theory, birth order is considered an important determinant of behavior. In addition, family patterns of behavior differentiate one family from another (Vedanthan et al., 2016; Vess & Lara, 2016). When an individual family member expresses behaviors that differ from the learned family pattern, differentiation of self occurs. Interaction among family members and the transmission of these interaction patterns from one generation to the next provide the framework for the family systems approach (Rothenberg et al., 2016).

The framework for health promotion introduced by Pender and colleagues (2014) recognizes the family as the unit of assessment and intervention because families develop self-care and dependent-care competencies; foster resilience among family members; provide resources; and promote healthy individuation within cohesive family structures. Furthermore, because the family often provides the structure for implementation of health promotion, family assessment becomes an integral tool to foster health and healthy behaviors (Pender et al., 2014).

BOX 7-2 Characteristics and Indicators of Healthy Families

Nurturing RELATIONSHIPS
- Maintains trust traditions and shares quality time.
- Communications are open and members listen to each other.

Establishing ROUTINES
- Maintains routines that promote health patterns of nutrition, hygiene, rest, physical activity, and sexuality.
- Maintains routines to promote safety and injury prevention; health protection; disease prevention; smoking and alcohol or substance abuse; and/or violence.
- Establishes patterns to promote mental health: interacting, communicating, and expressing affection, aggression, sexuality, and similar interactions.

Maintaining EXPECTATIONS
- Maintains morale and motivation, rewarding achievement, meeting personal and family crises, setting attainable goals, and developing family traditions, loyalties, and values.

ADAPTING to challenges
- Evolves during crises and respects each member of the group.
- Promotes strategies to make decisions about health and illness.

Connecting to COMMUNITY
- Family table time and conversation occur regularly.
- Members act as interactive caregivers across the life span to socialize children and adolescents, to participate in the community, and to support members as they age.

Modified from Search Institute. (2016). *Family strengths.* http://www.search-institute.org/research/family-strengths.

THE FAMILY FROM A DEVELOPMENTAL PERSPECTIVE

Building on Erikson's (1998) theory of psychosocial development, Duvall and Miller (1985) identified stages of the family life cycle and critical family developmental tasks. Although Duvall's classification has been criticized for its middle class homogeneity and lack of diversity in family forms, this conceptual model helps to anticipate family events and has formed the basis for more contemporary developmental models (Duvall & Miller, 1985). Knowing a family's composition, interrelationships, and particular life cycle helps nurses predict the overall family pattern. Box 7-2 lists characteristics of healthy families. From Duvall's perspective, most families complete these basic family tasks. Each family performs these tasks in a unique expression of its personality. Progression through the stages occurs in a linear fashion; however, regression may occur and families may experience tasks in more than one stage at a time (Duvall & Miller, 1985). Specific tasks arise as growth responsibilities during family development. Failure to accomplish a developmental task leads to negative consequences. For example, intimate partner violence or child abuse or neglect may result in intervention by police, welfare, health department, or other agencies. Life cycle tasks build upon one another. Success at one stage is dependent on success at an earlier stage. Early failure may lead to developmental difficulties at later stages.

As families enter each new developmental stage, transition occurs. Families move through new stages as a result of events ranging from marriage (heterosexual, homosexual), gay and lesbian relationships, childbirth, single-led families, joint custody, or remarried families; to adolescents maturing into young adults and leaving the home; to the aging years.

Each new developmental stage requires adaptation with new responsibilities. Concurrently, developmental stages provide opportunities for families to realize their potential. Nurses anticipate change through analysis of progress through each stage. Each new stage presents opportunities for health promotion and intervention. Family developmental stages, although reflective of traditional nuclear families and extended family networks, also apply to nontraditional family configurations (Coyne et al., 2016; Edwards, 2009). A family systems approach addresses the interaction of these multiple family configurations. For example, couples may marry and bring children from a previous marriage to a blended family that works toward achieving developmental tasks of couples along with family stages for the children. Both the couple and their children possess values and beliefs from the past that must integrate within the present union. Childless couples present developmental tasks that are different from those proposed for couples with children. One family conceptual model proposed by Vedanthan and colleagues (2016) illustrates the multiple connections among interdependence among family systems, shared environment, parenting style, caregiver perceptions, and genomics to promote cardiovascular health.

Nurses collect data to determine progress toward family developmental task attainment during the family assessment. Use of assessment tools that include gathering factors that strengthen and protect the family such as the Canadian Family Assessment Tool and the Family Development Matrix used in California

provides more robust information (Harper Browne, 2014). These newer assessment tools focus on the assessment of family assets and social network resources that families currently use. These kinds of assessments intend to build on strengths at particular developmental stages to promote healthy family environments. Assessment of family developmental stages entails use of guidelines to analyze progress toward developmental tasks, family growth, and health-promotion needs.

THE FAMILY FROM A STRUCTURAL-FUNCTIONAL PERSPECTIVE

Families consist of both structural and functional components. Family structure refers to family composition, including roles and relationships, whereas family function consists of processes within systems as information and energy exchange occurs between families and their environment.

THE FAMILY FROM A RISK-FACTOR PERSPECTIVE

Family risk factors can be inferred from lifestyle; biological factors; environmental factors; social, psychological, cultural, and spiritual dimensions; and the health care system. As outlined in the Frank Thompson case study in Chapter 1, lifestyle habits such as overeating, drug dependency, high sugar and cholesterol intake, and smoking influence health outcomes. Biological risk factors may include the elements of genetic inheritance, congenital malformation, and mental retardation. To fully explore environmental risk factors that influence family function, nurses explore work pressures, peer pressure, stress, anxieties, tensions, and air, noise, or water pollution. Social and psychological dimensions such as crowding, isolation, or rapid and accelerated rates of change are areas to consider when nurses are assessing family risk factors. Cultural and spiritual aspects may include traditions of preventing illness such as daily prayer and meditation practices. Finally, health care system factors such as overuse, underuse, inappropriate use, or accessibility are considered in the family risk assessment.

To reduce risk factors, nurses help families focus on influencing health behaviors of their members. Society glamorizes many hazardous behaviors through advertising and mass media promotions that minimize negative health consequences. Families influence their members to weigh the consequences of risk-taking behavior. Awareness of risk factors may prompt families to reduce modifiable risk factors. Healthy behavior, including use of preventive health care services, is a significant area of family responsibility.

Traditionally, epidemiology has used levels and trends of mortality and morbidity rates as indirect evidence of health. Data such as infant mortality rates, stillbirth rates, and leading causes of death have long been used as indicators of collective community health. Healthy family functioning links the family life cycle stages with specific risk factors. Epidemiology often describes a disease association in terms of risk. Health risks can be physiological or psychological. Physiological risks arise from genetic background, whereas psychological risks include those related to low self-image. Risks also arise from environmental considerations, including the physical environment and socioeconomic condition (Freudenberg et al., 2011). Risk-factor theory considers families a pivotal part of the environment and also an important support system used to decrease health risks for individuals. As young family members mature developmentally and seek more independence from the family, peers may influence risk to compete with family values.

Risk estimates calculate differences between two groups: one with the risk factor and one without. The frequency of deaths, illnesses, or injuries with some specific risk factor compared with those for another group without the risk factor, or the population as a whole, determines the risk estimate. Some diseases (e.g., sickle cell anemia in Black-American families and Tay-Sachs disease in families of Ashkenazi Jewish descent) occur more frequently in certain families and can be identified by carrier screening (Azimi et al., 2016). Other recessive genetic disorders (e.g., cystic fibrosis and Gaucher disease) have decreased in incidence with prenatal carrier screening with genetic counseling in couples with suspect family histories (Azimi et al., 2016). Azimi and colleagues (2016) compared current strategies that target specific high-risk families to next-generation DNA sequencing (NGS) that provide high-level sensitivity and specificity for carrier screening. They developed a mathematical model to screen individuals for 14 recessive disorders commonly recommended for screening in targeted populations. The mathematical model provides support to transition from traditional lower-accuracy genotyping to more accurate NGS techniques focused on the most prevalent disorders (Azimi et al., 2016). Other diseases such as iron-deficiency anemia may not be attributed to a specific genetic background. The natural history of a chronic disease predisposes family members to greater risk, but specific causes may be difficult to identify. Well siblings, particularly adolescents, may be affected. Larsen (2016) describes nine phases that individuals and families may experience as they progress through chronic illness adaptation from the time before the disorder is recognized through a stable adjustment phase to the final relinquishment of life interest and activities.

The probabilities of risk change may also change depending on the family's activities in health promotion and disease prevention. Stages of family development are used to classify risk factors. Age-specific developmental stages, along with their associated age-specific health risks, are given in Table 7-3, which displays periods during which families become most sensitive to certain problems, with corresponding key times for health promotion and disease prevention. The risk behaviors highlighted include tobacco and alcohol use, faulty nutrition, overuse of medications, fast driving, stress, and relentless pressure to achieve. Habits learned in family settings help to develop individual lifestyle behaviors. In fact, 5 habits—nutrition, smoking, exercise, alcohol use, and stress—affect at least 7 of the 10 leading causes of death listed in *Healthy People 2020* (USDHHS, 2015). See Box 7-3: *Healthy People 2020* for selected objectives related to families.

GORDON'S FUNCTIONAL HEALTH PATTERNS: ASSESSMENT OF THE FAMILY

Gordon's (2016) 11 functional health patterns help organize basic family assessment information. Patterns form the standardized

TABLE 7-3 Family Stage: Specific Risk Factors and Related Health Problems

Stage	Risk Factors	Health Problems
Beginning childbearing	Lack of knowledge of family planning Adolescent marriage Lack of knowledge concerning sexual and marital roles and adjustments Low-birth-weight infant Lack of prenatal care Unmarried status First pregnancy before age 16 years or after age 35 years History of hypertension and infections during pregnancy Rubella, syphilis, gonorrhea, and AIDS Genetic factors Lack of safety in home	Premature baby in family Birth defects Birth injuries Accidents Sudden infant death syndrome (SIDS) Sterility Pelvic inflammatory disease Fetal alcohol syndrome Mental retardation Injuries Birth defects Underweight
Family with school-age children	Working parents with inappropriate use of resources for child care Generational pattern of using social agencies as way of life Multiple, closely spaced children Low family self-esteem Children used as scapegoats for parental frustration Repeated infections, accidents, or hospitalizations Parents immature, dependent, and unable to handle responsibility Unrecognized or unattended health problems Strong beliefs about physical punishment Toxic substances unguarded in the home	Behavior disturbances Speech and vision problems Communicable diseases Dental caries School problems Learning disabilities Injuries Chronic diseases Homicide Violence
Family with adolescents	Health disparities Lifestyle and behavior patterns leading to chronic disease Lack of problem-solving skills Family values of aggressiveness, competition, rigidity, and inflexibility Daredevil risk-taking attitudes Conflicts between parents and children Pressure to live up to family expectations	Violent deaths Unwanted pregnancies Sexually transmitted diseases
Family with middle-aged adults	Hypertension Smoking High cholesterol levels Genetic predisposition Use of oral contraceptives Geographical area or occupation Residence	Cardiovascular disease, principally coronary artery disease and cerebrovascular accident (stroke) Diabetes Accidents Homicide Abnormal fetus Mental illness Periodontal disease and loss of teeth
Family with older adults	Age Drug interactions Metabolic disorders Pituitary malfunctions Cushing syndrome Hypercalcemia Chronic illness Retirement Loss of spouse Past environments and lifestyle Lack of prevention for death	Mental confusion Reduced vision Hearing impairment Hypertension Acute illness Infectious disease Influenza Pneumonia Injuries such as burns and falls Death without dignity

Risks of poverty, abuse, neglect, substance abuse, poor nutrition, denial behavior, and socioeconomic status affect all ages. Depression, suicide, cancer, overweight, obesity, sedentary lifestyles, and respiratory distress syndrome affect most age groups. Therefore, these items have been excluded from the table.

Modified from US Department of Health and Human Services. (2015). *2020 topics and objectives.* http://www.healthypeople.gov/2020/topics-objectives.

BOX 7-3 HEALTHY PEOPLE 2020

Selected Examples of National Health-Promotion and Disease-Prevention Objectives for Families

BDBS-2 (Developmental) Increase the proportion of persons with a diagnosis of hemoglobinopathies and their families who are referred for evaluation and treatment.

BDBS-8 (Developmental) Increase the proportion of persons with hemoglobinopathies who receive care in a patient/family-centered medical home.

EMC 2.3 Increase the proportion of parents who read to their young child.

WS-13 Reduce household food insecurity and in doing so reduce hunger.

EH-15 Increase the percentage of new single-family homes constructed with radon-reducing features, especially in high radon–potential areas.

Family Planning Objectives

FP-1 Increase the proportion of pregnancies that are intended.

FP-2 Reduce the proportion of females experiencing pregnancy despite use of a reversible contraceptive method.

FP-3 Increase the proportion of publicly funded family planning clinics that offer the full range of FDA-approved methods of contraception, including emergency contraception, on-site.

FP-4 (Developmental) Increase the proportion of health insurance plans that cover contraceptive supplies and services.

FP-5 Reduce the proportion of pregnancies conceived within 18 months of a previous birth.

FP-6 Increase the proportion of females or their partners at risk of unintended pregnancy who used contraception in the most recent sexual intercourse.

FP-7 Increase the proportion of sexually active persons who received reproductive health services.

FP-8 Reduce pregnancy rates among adolescent females.

FP-9 Increase the proportion of adolescents aged 17 years or younger who have never had sexual intercourse.

FP-10 Increase the proportion of sexually active persons aged 15 to 19 years who use condoms to both effectively prevent pregnancy and provide barrier protection against disease.

FP-11 Increase the proportion of sexually active persons aged 15 to 19 years who use condoms and hormonal or intrauterine contraception to both effectively prevent pregnancy and provide barrier protection against disease.

FP-12 Increase the proportion of adolescents who received formal instruction on reproductive health topics before they were 18 years old.

FP-13 Increase the proportion of adolescents who talked to a parent or guardian about reproductive health topics before they were 18 years old.

FP-15 Increase the proportion of females in need of publicly supported contraceptive services and supplies who receive those services and supplies.

G-1 Increase the proportion of women with a family history of breast and/or ovarian cancer who receive genetic counseling.

DH-20 Increase the proportion of children with disabilities, from birth through age 2 years, who receive early intervention services in home or community-based settings.

From US Department of Health and Human Services. (2015). *2020 topics and objectives.* http://www.healthypeople.gov/2020/topics-objectives.

format for family assessment using a systems approach with emphasis on developmental stages and risk factors. Assessment includes evaluation of dysfunctional patterns within families, with corresponding details in one or more of the other interdependent patterns (see Chapter 6).

The presence of risk factors predicts potential dysfunction. Developmental risk and risk arising from dysfunctional health patterns increase whole family risk (see Table 7-3). Gordon (2016) interprets risk states as potential problems. To formulate nursing diagnoses, nurses identify problems along with their associated and etiological factors. Influencing factors may precede or occur concurrently with the problem and are used to plan care. Interventions aim to modify influencing factors to promote positive change.

Family history begins with the health perception–health management pattern. Exploring issues within this pattern first provides an overview to help locate where problems exist in other patterns and to determine which problems require more thorough assessment. Interviewing from the family's perspective helps families define situations. The roles-relationships pattern defines family structure and function. The remaining nine patterns address lifestyle indicators.

Health Perception–Health Management Pattern

Characteristics of family health perceptions, health management, and preventive practices emerge with assessment of the health perception–health management pattern. The National Survey of Children's Health (http://www.childhealthdata.org/) and other data sources contribute additional information to help identify health-promoting behaviors of families. Data collected in the Survey of Children's Health include information about the frequency of family meals; attendance at religious services; characteristics of parental relationship with children; parental coping abilities while parents are raising children; and methods for handling family disagreements. The intent of the survey is to provide a data source to explore research questions related to *Healthy People 2020* and the variables correlated with drug use. However, such data have also been associated with eating disorders and risk behaviors other than drug use. These assessment indicators also provide data to guide the remaining functional health pattern assessment. Patterns overlap, and findings in one pattern may encourage further assessment in another pattern. The following are some research questions that concern family health promotion:

- What are the chief concerns of parents and other adults in the household about their children's development, learning, and behavior?
- How do children's health status and the health practices (physical activity and smoking behavior) of the adults compare?
- What health-related behaviors, such as eating three meals a day at regular times, eating breakfast every day, exercising for a minimum of 2 or 3 days a week, sleeping for 7 to 8 hours each night, and abstaining from smoking, are practiced by the family?
- How safe are homes, schools, and neighborhoods from the perspective of the family?

Health practices differ from family to family. Families identify and perform health-maintenance activities based on their beliefs

about health. Exploration during the assessment also includes the following areas:

- What is the family's philosophy of health? Does each family member hold similar beliefs? Do family members practice what they believe?
- In what negative behaviors or lifestyle practices, such as smoking, alcohol, and drug abuse, do the family engage?
- What chronic disease risk behaviors are exhibited within the family?
- Are risk factors present for infections, such as lack of immunization, lack of knowledge of transmittable diseases, and poor personal hygiene?
- Are risk factors for bodily injury, accidents, or substance abuse present in the home?
- Do older adult members know what medications they are taking and the reasons for their using them?
- Does the family discard outdated medications or those not used?
- What unattended health problems exist?
- Is there a history of repeated infections and hospitalization?
- Is the home understimulating or overstimulating?
- Where does the family obtain health and illness care?
- Is the family engaged in a dental program?
- How does the family describe previous experiences with nurses and other health care professionals?

Nutritional-Metabolic Pattern

The nutritional-metabolic pattern depicts characteristics of the family's typical food and fluid consumption and metabolism (Gordon, 2016). Included in it are growth and development patterns, pregnancy-related nutritional patterns, and the family's eating patterns. Risk factors for obesity, diabetes, anorexia, and bulimia are identified.

Dietary habits, learned within the family context, involve behavioral patterns central to daily life. Keeping a diary of intake for a week is a useful strategy for assessing family food and fluid intake patterns. Assessment notes both meals shared with the whole family as well as additional consumption by individuals. Recent research provides evidence that family meal sharing is associated with healthier eating habits. For example, Utter and colleagues (2013) report that family meal sharing in their sample of New Zealand adolescents ($n = 9101$) was positively associated with higher well-being scores, lower depression scores, and fewer risk-taking behaviors. In a follow-up report of this same population, Utter and colleagues (2016) found the same positive associations with better nutritional indicators (fruit and vegetable intake), better mental health indicators (fewer depressive symptoms), and stronger family connections in adolescents who knew how to prepare food compared with those adolescents without the cooking abilities. However, the adolescents with cooking ability were more likely to have higher body mass index.

Exploration during nutrition pattern assessment includes the following areas:

- What kinds of foods are typically consumed?
- Who eats together at mealtimes?
- How is food viewed (reward/punishment)?
- Is there adequate storage and refrigeration?
- How is food purchased?
- How is food prepared?
- Who prepares food?

Elimination Pattern

The elimination pattern describes characteristics of regularity and control of the family's excretory functions (Gordon, 2016). Bowel and bladder function and environmental factors such as waste disposal in the home, neighborhood, and community that influence family life are considered in this pattern.

Questions are phrased according to the age-specific developmental stage of the family. For example, when the nurse is attempting to determine whether there is a problem in the preschool stage, it would be appropriate to ask whether the child is being toilet trained. In families with adolescents, the nurse may ask how often individuals have bowel movements and whether there have been any changes from usual patterns. The nurse may ask older adult members whether they have any problems with constipation. Issues that particularly concern older adults include constipation, diarrhea, polyuria, and incontinence, as well as use of antacids and constipation-relieving agents and strategies. The nurse evaluates whether use of these strategies is appropriate or possibly contributing to poor health.

Activity-Exercise Pattern

The activity-exercise pattern represents family characteristics that require energy expenditure (Gordon, 2016). The nurse reviews daily activities, exercise, and leisure activities. Families create settings for individual members to be physically active, sedentary, or apathetic toward physical activity. The quantity of sedentary activities such as television and video game screen time is explored.

Exploration during assessment of this pattern includes the following areas:

- How does the family exhibit its beliefs about regular exercise and physical fitness being necessary for good health?
- What types of daily activities include physical exercise and who does what with whom?
- What are the television viewing habits of children?
- How are other screen-viewing activities (computers, video games) incorporated into the daily routines?
- How often do children exercise?
- How are these activity and exercise factors related to children's health?
- What does the family do to have fun (Figure 7-1)?

Sleep-Rest Pattern

Rest habits characterize the sleep-rest pattern (Gordon, 2016). Without the restorative function of sleep, individuals exhibit decreased performance, bad temper, and decreased stress tolerance, and may rely on alcohol or other chemicals to induce sleep. Regular, sufficient sleep patterns are linked to better mental status, including learning and decision-making. Most families have sleeping patterns, although in some families these patterns may

FIGURE 7-1 Family outings can be **(A)** leisurely and restful or **(B)** adventurous and exciting.

not be readily apparent. It is important to elicit the data about sleep and rest from the family's perspective.

Assessment of the sleep-rest pattern includes the following:

- What are the usual sleeping habits of the family?
- How suitable are they to the age and health status of the family members?
- What are the usual hours established for sleeping?
- Who decides when and how children go to sleep?
- Do family members take naps or have other regular means of resting or relaxing?
- How early does the family rise? What are the patterns related to bedtime and rising?
- Do all family members have the same general sleep-rest pattern?
- Is there a family member with sleep disruption?

Cognitive-Perceptual Pattern

The cognitive-perceptual pattern identifies characteristics of language, cognitive skills, and perception that influence desired or required family activities (Gordon, 2016). Specifically, this pattern concerns how families access information to make decisions, how concrete or abstract the thought processes are, and whether the decisions focus on present or future issues. Decision-making in families is associated with power in family functioning. Highly educated families usually have greater repertoires for problem-solving. Power and ability to solve problems are linked to leadership; family leaders must be acknowledged if nursing interventions are to be implemented.

Cognitive-perceptual pattern assessment includes the following:

- How does the family access and interpret information, especially about health (e.g., newspaper, books, computer, television, or radio)?
- What are the usual family reading patterns and strategies used for ongoing learning (e.g., continuing education programs)?
- What kinds of materials does the family read to the children?
- How does the family usually make decisions about health promotion and disease prevention?
- How do family members contribute to the decision-making process?
- How knowledgeable is the family about risk factors and developmental milestones?
- How are choices made regarding lifestyle?
- How knowledgeable are family members about correct information?
- How do family members acquire information?
- How accurate are the information sources used to make health-promotion choices?
- How do family members describe whether their health behavior is constructive or destructive?
- How do family members recognize signs and symptoms of deteriorating health?
- How do family members decide when medical attention is necessary?
- Who makes the decisions about when to seek health care?
- What factors contribute to delays from the time of onset to the time of treatment?
- How long do families wait before seeking care?
- What are some of the cues that signal to families that care is needed?
- How is professional care accessed?
- What type of health care is generally used health maintenance for immunizations (well-child care or emergency/urgent care facilities)?
- How are decisions made about the use of over-the-counter medications or the use of alternative or traditional health practices?

Self-Perception–Self-Concept Pattern

The self-perception–self-concept pattern identifies characteristics that describe the family's self-worth and feeling states (Gordon, 2016). Rapport between the family members and the nurse facilitates disclosure. Families have perceptions and concepts about their image, their status in the community, and their competencies as a family unit. Families manifest these perceptions through shared aspirations, values, expectations, fears, successes, and failures. Relationships in families determine the amount of sharing that occurs. Situations affecting one member influence perceptions of the entire family group. How each member describes the family often gives clues to the family self-concept.

Exploration during assessment includes the following:

- How is this family similar to or different from other families?
- How does this family perceive itself to be similar to and different from other families?
- What special assets does each member contribute to the family?
- What changes would each member like to see occur in the family?
- What kinds of feelings do family members have for each other?
- Describe the general tone of feelings in the family. Is the tone indifferent, secretive, angry, or open?
- How does the family think it assimilates into the neighborhood and community?
- How does the family handle stress and crisis situations?
- How does the family experience changes in the way it feels about itself?
- How does the family describe the events that led to a change?

Roles-Relationships Pattern

The roles-relationships pattern identifies characteristics of family roles and relationships (Gordon, 2016). Both structural and functional aspects of the family are assessed. Structural aspects of families include each member's name, age, sex, education, occupation, and role in the family. Traditionally, families have been described as nuclear and extended. The traditional nuclear family consists of husband, wife, and children, with an extended family that would include aunts, uncles, cousins, and grandparents. Today there are many varieties of nuclear and extended families. Edwards (2009) describes various contemporary family structures: traditional nuclear family, extended families, single-parent families, stepfamilies, cohabiting families, gay and lesbian families, grandparent-headed families, foster families, and fragmentary families. Traditional nuclear family structure has been influenced by societal changes, such as the women's movement, employment of mothers, divorce, and remarriage. Exploration of family origin and genetic heritage completes family identification data collection. Cultural practices in the home may or may not reflect the family's genetic heritage; therefore it is important to explore the diversity of cultural and ethnic practices during the family assessment (Andrews & Boyle, 2015).

The American Academy of Pediatrics regards the family as the most enduring link to health for children. For example, findings from the Early Childhood Longitudinal Study, Birth Cohort ($n = 5000$) maternal health behaviors at each phase of early development (9 months, 2 years, 4 years, 5 years) indicated the importance of the mother-child relationship in health promotion (Prickett & Augustine, 2016). The US Census Bureau (2014) released information in 2011 from the *Annual Report of Families and Living Arrangements*. The proportion of young adults aged 15 to 34 years living in their parents' homes increased from 14% in 2005 to 19% in 2011 and has extended beyond the economic recession. In regard to children aged 5 to 15 years, 69% live with both parents. Children living with only one parent are more likely to live with their mother. Grandparents live in 10% of the homes that have children younger than 18 years. The proportion of children with stay-at-home mothers decreased from 24% in 2007 to 23% in 2011. There is also an overall trend of increasing proportions of individuals living alone in their home, increasing from 13% in 1960 to 28% in 2011.

Schoon and colleagues (2012) suggest that children in the United Kingdom experiencing poverty for the first 5 years of life are at higher risk of impaired cognitive development than those who do not experience poverty. These data indicate the need to identify family structure for poverty-related factors to determine those families at risk and effectively intervene (see Figures 7-1, 7-2, and 7-3). Family structure and function influence family stability and pose a challenge to the nurse in health promotion and disease prevention.

Divorce and remarriage involve a complex transition that requires the disintegration of one family structure and reorganization to another (Hiyoshi et al., 2015). How parents cope during situational crises, as well as after the divorce, is a significant variable in long-term individual and family adjustment. See the case study at the end of this chapter for the presentation of a stepfamily situation. Developmental levels of children, individual temperaments of children, and quality of environmental support for children all contribute to family response to crises. For example, Feise and Bost (2016) explore how families' responses impact obesity risk in children. They link family system factors, such as family meal routines and distress during meals, with the biological risk of obesity.

A **family resilience** framework may be useful to promote strategies for prevention efforts aimed at strengthening families as they face life challenges. Masten and Monn (2015) describe an integrated method for understanding and promoting resilience in children and families. Family disruption has been associated with substance abuse and psychosocial maladjustment in adolescents and young adults. Family supports are associated with adherence, and substance abuse may decrease healthy social support systems. Moreover, both family dissolution and family disruption may be associated with substance abuse, alcohol consumption, and externalizing behaviors such as theft, property destruction, fighting, and assault (Masten & Monn, 2015). The current literature provides support for the importance of the roles-relationships patterns in the development of health-promoting behaviors (Gordon, 2016; Masten & Monn, 2015).

Family organization influences performance of health-promotion and disease-prevention functions. For example, a single parent without an extended family network may be in need of more community resources to help raise the children. A two-parent family living near its extended family may need less support to raise children, but family members may need to know about growth and developmental stages and immunization schedules. Individuals may experience a variety of family structures in one lifetime. A person may be part of a nuclear family as an infant, a single-parent family after the parents have divorced, a stepparent family after the mother or father has remarried, and an unmarried couple family when the person is one of two adults who share a household. The person brings the values and beliefs about health promotion and disease prevention that were practiced in previous unions to each new family configuration. Divergent values may result in conflicting expectations unless the new union forms a set of integrated values and beliefs. The current trend away from the nuclear family with the extended family may influence the general direction of the health care system and the strategies used to promote health with other family configurations.

Certain health-promotion issues are of particular concern to the nurse while he or she is assessing family health promotion and disease prevention. Violence is a health problem that threatens the integrity of all families. Alhusen and colleagues (2015) provide an overview of several studies reporting that the National Violent Death Reporting System lists a rate of 2.9 homicides per 100,000 live births. Often pregnancy-associated suicides involved intimate partner conflict attributable to the suicide, and almost half of the pregnancy-related homicides are related to family violence (Alhusen et al., 2015). According to Alhusen and colleagues (2015) these homicides outnumber the reported numbers of deaths from some of the common obstetrical causes. Furthermore, bullying contributes to violence issues that pertain to families. Bullying is addressed in *Healthy People 2020 Objectives* (USDHHS

2015). The measure used for this objective (IVP-35 Reduce bullying among adolescents) is the percentage of children bullied on school property during the 12 months before the survey (USDHHS, 2015). The midterm measure in 2013 (19.6%) was a 10% reduction since 2010 and moved toward the 2020 target of 17.9%. The role of the family dysfunction and support is linked to bullying behavior (Kann et al., 2013). Furthermore, bullying within families among siblings also occurs (Berry & Adams, 2016).

Family violence includes child abuse, spousal abuse, and elder abuse, with women being victimized more often during pregnancy. Death in pregnancy is often associated with domestic violence (Alhusen et al., 2015). Health promotion and violence prevention require a complex set of skills. Nurses use approaches to reduce violence-related injuries and deaths by acquiring the role of advocate and helping to eliminate victim blaming (Box 7-4: Research for Evidence-Based Practice). Explorations to assess families for health promotion and violence prevention may include the following:

- What formal positions and roles does each of the family members fulfill?
- What roles are considered acceptable and consistent within the family's expectations?
- What kind of flexibility in roles occurs when needed?
- What informal roles exist? Who plays informal roles and with what consistency?
- What purpose do the informal roles serve?
- How are the family social support networks associated with health and development?
- Who were the role models for the couples or single people as parents?
- Who were the role models for marital partners and what were their characteristics?
- How does the family manage daily living? How are the household tasks divided?
- How are problems handled? How are problems with children handled?

BOX 7-4 RESEARCH FOR EVIDENCE-BASED PRACTICE

Twenty Latina women who had experienced domestic violence participated in this mixed-methods single subject design. Participant journaling and one-on-one interviews with research assistants were included in the design. Data were collected at multiple intervals during the 5-week training period for *promotoras* (community health workers).

These women were all born outside the United States. Average age of 36 years and 10.6 years of completed education, employment in the service industry characterized the sample. Quantitative measures, interviews, and journals revealed that the training increased leadership competency.

These findings provide support for recognizing the contribution of *promotoras* to community and public health. These types of development programs may also empower the *promotoras* to continue their community participation and model their engagement within their communities for other women.

From Serrata, J. V., Hernandez-Martinez, M., & Macias, R. L. (2016). Self-empowerment of immigrant Latina survivors of domestic violence: A promotora model of community leadership. *Hispanic Health Care International, 14*(1), 37–46.

- Who is employed outside the home?
- Who takes care of the children when both parents are employed outside the home?
- How does the family care for its ill members? How does it care for its older adult members?
- Are behaviors appropriate for family stages of development?
- Is decision-making allocated to the appropriate members?
- Does the family respond appropriately to its members' developmental needs?
- Is there fair distribution of tasks among family members?
- Is the family's emotional climate conducive to growth and development?
- Is there a connection between family and community crime?

In their study of 413 adolescents, Hardaway and colleagues (2016) provide evidence that family relationships protect adolescents from harm in violent communities. They report that interaction with the extended family and parental engagement act as resources for youth who are exposed to violence in their neighborhoods. These findings indicate that nurses working with families should encourage parents to maintain open communication within the family and that parents should enlist additional support from their extended family members as a larger network of positive influence for their children.

When this initial assessment reveals possible neglect, abuse, or violence, further assessment is warranted with a branched assessment that may include the following assessment parameters and questions:

- What cues are present to indicate chemical abuse?
- Who are the significant adult members of the household? (Determine the presence of a boyfriend/girlfriend.)

Nursing diagnoses and planning stem from a thorough assessment. High-quality evidence-based intervention is based on this systematic approach to assessment. For example, quality intervention for victims of intimate partner violence can be planned in advance to promote the safety and well-being of the victims (Box 7-5: Quality and Safety Scenario).

Genogram

A **genogram**, or family diagram, represents the family on the basis of identification data that depict each member of the family with connections between the generations. This useful technique gathers data on at least three generations, including the current one; their parents, grandparents, aunts, uncles; and their children. The genogram explores clues within family histories contributing to health problems. Figure 7-2 depicts accepted genogram symbols, with a sample genogram of the fictional Graham family portrayed in Figure 7-3 (Stanhope & Lancaster, 2015). The Graham family genogram shows a variety of family structures, including changes resulting from marriage, divorce, death, and childbearing. This information highlights family health patterns to use for anticipatory health guidance; for example, in the case of the Graham family, hypertension, type 2 diabetes, cancer, and hypercholesterolemia. Family histories provide the unique perspective of family risk of inherited diseases as well as the family environmental contribution (Pender et al., 2014). Although *My Family Health Portrait* (https://familyhistory.hhs.gov/FHH/html/index.html)

BOX 7-5 QUALITY AND SAFETY SCENARIO

Domestic Violence: Intimate Partner Violence

If the person is still in the relationship:

- Think of a safe place to go if an argument occurs—avoid rooms with no exits (bathroom) or rooms with weapons (kitchen).
- Think about and make a list of safe people to contact.
- Keep a cell phone with you at all times.
- Memorize all important numbers.
- Establish a "code word" or "sign" so that family, friends, teachers, or coworkers know when to call for help.
- Think about what to say to the partner if he/she becomes violent.
- Remind the individual that he/she has the right to live without fear and violence.

If the person has left the relationship:

- Change the phone number.
- Screen calls.
- Save and document all contacts, messages, injuries, or other incidents involving the batterer.
- Change locks, if the batterer has a key.
- Avoid staying alone.
- Plan how to get away if confronted by an abusive partner.
- If a meeting is necessary, have it in a public place.
- Vary the routine.
- Notify school and work contacts.
- Call a shelter.

If the individual is leaving the relationship or thinking of leaving, that person should take important papers and documents to facilitate application for benefits or take legal action. Important papers include Social Security cards and birth certificates for self and children, marriage license, leases or deeds, checkbook, charge cards, bank statements and charge account statements, insurance policies, proof of income (pay stubs or W-2s), and any documentation of past incidents of abuse (e.g., photos, police reports, medical records).

The National Coalition Against Domestic Violence provides information to health care providers, a network of shelters, and counseling programs, and operates a national hotline: 800-799-SAFE (7233); website: http://www.ncadv.org; address: One Broadway, Suite B210, Denver, CO 80203; phone: 303-839-1852; fax: 303-831-9251; telecommunication device (TTY): 303-839-1681; e-mail: mainoffice@ncadv.org.

Adapted from information on the National Coalition Against Domestic Violence. http://www.ncadv.org/.

takes a more traditional approach to family history, encouraging families to visit the website helps them explore their own family history. Resources for this continuously evolving topic of genomics can be found at the National Human Genome Research Institute (http://www.genome.gov/HealthProfessionals/), and on-line genetics education resources can be found at the National Institute of Health's National Genetics Research Institute at http://www.genome.gov/10000464. Box 7-6 explores how family assessment incorporates genomics.

Ecomap

The ecomap, which is similar to the genogram, uses pictorial techniques to document family organizational patterns with visual clarity. A genogram is constructed for a family or household. It begins with a circle in the center of the page. Outside the circle, smaller circles are drawn and labeled with the names of significant people, agencies, and institutions in the family's social environment. Lines are drawn from the family-household to each circle. Solid lines indicate strong relationships. Dotted lines reflect fragile or tenuous connections. Slashed lines signify stressful relationships. Arrows can be drawn parallel to the lines to indicate the direction for the energy flow or for resources (Stanhope & Lancaster, 2012). Figure 7-4 shows an ecomap for the fictional Graham family. Both the genogram and the ecomap provide useful information and can be incorporated into family systems assessment (O'Brien, 2014; Tramonti & Fanali, 2015). The ecomap helps to overcome the issues of the genogram encountered when one is assessing nontraditional families. The ecomap uses a functional rather than a structural approach to the assessment of family roles and function.

Health-promotion nursing relevance cannot be underestimated. Nurses who maintain competency position themselves to determine the most accurate risk profiles and family risk assessment.

Sexuality-Reproductive Pattern

Sexuality is the expression of sexual identity. The sexuality-reproductive pattern describes sexuality fulfillment (Gordon, 2016), including behavioral patterns of reproduction. This pattern also includes perceptions of satisfaction or disturbances in sexuality, sexual relationships, reproduction (including contraception), and developmental changes throughout the life span, such as menarche and menopause. The sexuality-reproductive pattern addresses transmission of information within the family about sexuality, as well as sexuality for the couple, including their sexual relationship, perception of problems, manner in which problems are handled, and actions taken to solve problems (Gordon, 2016). Information transmission during childhood is an important area to explore to better understand how issues related to sexuality and gender identity are addressed within the family (Gordon, 2016).

Topics to explore during the assessment may include the following areas:

- How do the adults in the family communicate their needs to each other?
- How do family members commit to, love, and care for each other, as well as fulfill their obligations and responsibilities toward one another?
- How do the adults in the family view marriage, parenthood, and their relationship as lovers?
- How does the family address family planning and birth control?
- How do family members participate in the choice of family planning and contraceptives used?

When needed, complete pregnancy histories include sexual practices and partners, the number and ages of children, the number and outcome of pregnancies (including live births, miscarriages, spontaneous/therapeutic abortions), and the birth control methods used. Nurses also observe the comfort levels the adults demonstrate when discussing their own sexuality, or if an adult seems uninformed when discussing sexual subjects with children. Because of the impact that sexual relationships within the family have on children, exploring the variety of sexual

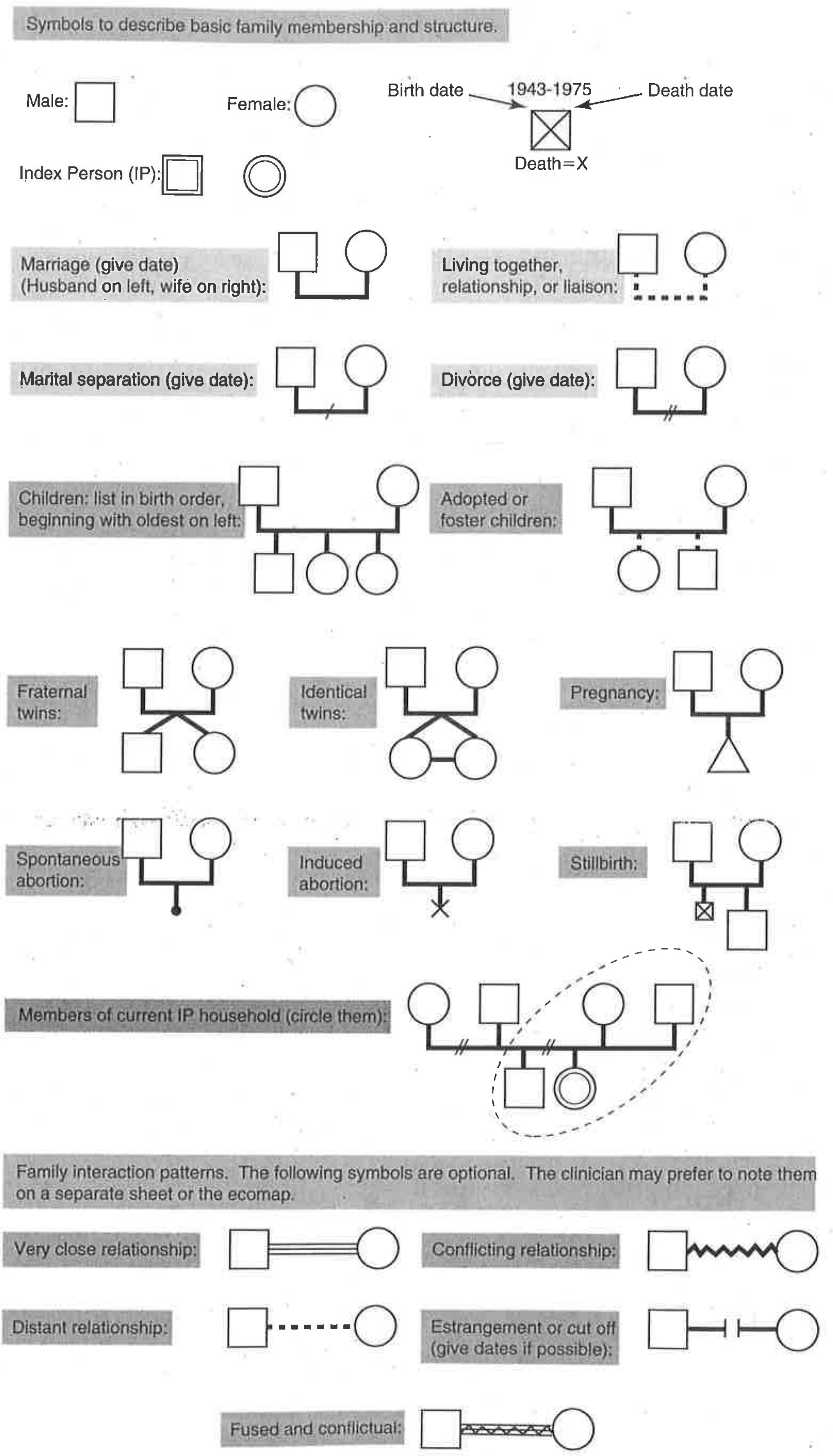

FIGURE 7-2 Genogram symbols. (Modified from McGoldrick, M., Gerson, R., & Petry, S. [2008]. *Genograms: Assessment and intervention* [3rd ed.]. New York: Norton.)

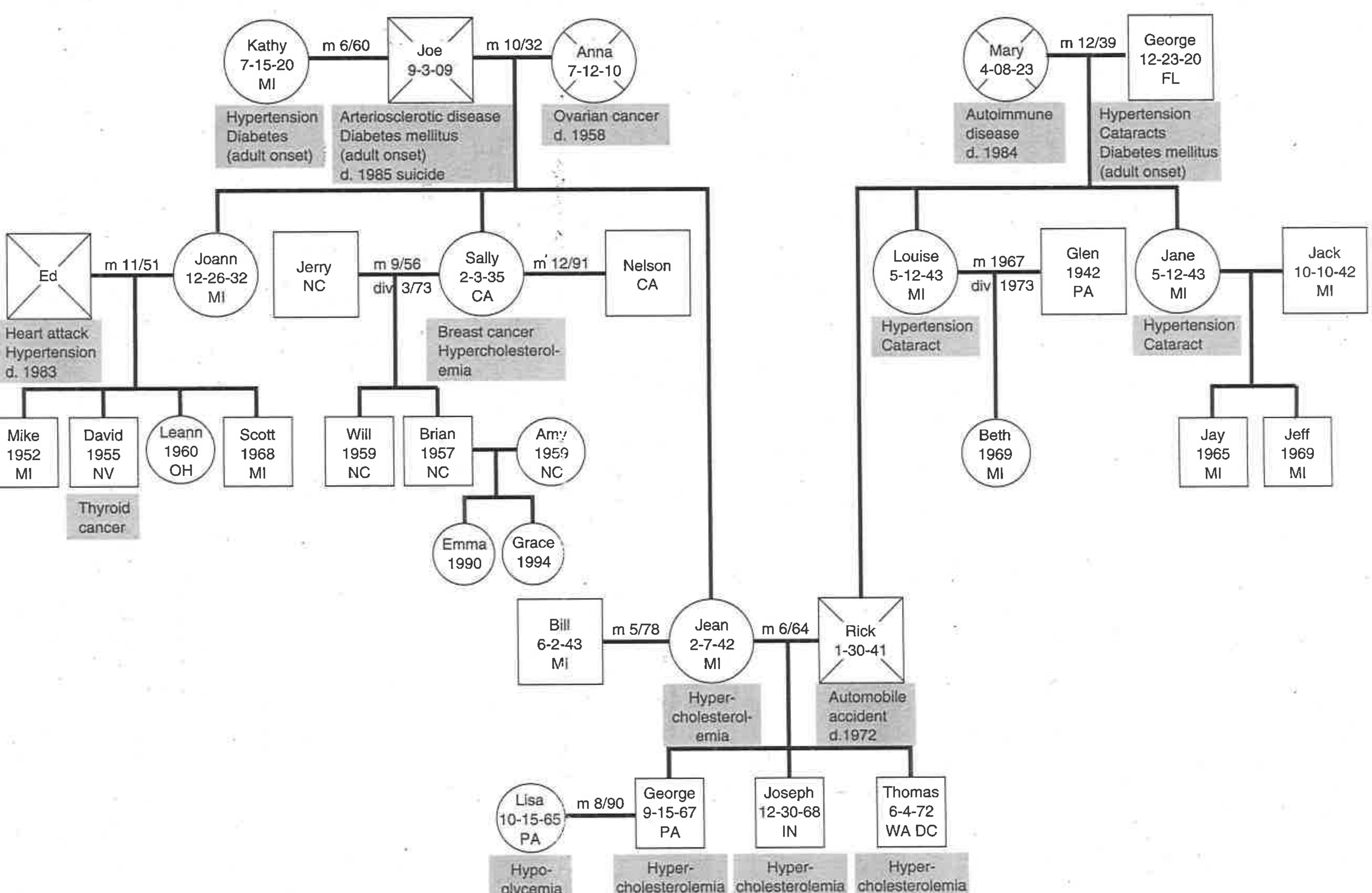

FIGURE 7-3 Genogram of the Graham family. (From Stanhope, M., & Lancaster, J. [2015]. *Public health nursing: Population-centered health care in the community* [9th ed., p. 632]. St. Louis: Mosby.)

BOX 7-6 Genomics and Family Assessment

Family assessment is the first line of assessment for genetic testing. Family assessment encompasses both genetic and environmental risks shared among family members. Family assessment provides the foundation for the complex process of genetic assessment, which includes nondirective genetic counseling to facilitate the balance of risk versus benefit (Wilson & Nicholls, 2015).

Thanksgiving Day, a day in the United States when families customarily gather, has been designated by the US government's Family History Initiative as Family History Day. Family History Day sets aside Thanksgiving Day as a time when family members can discuss their health history (https://www.genome.gov/17516481/). Multiple tools have now been designed to facilitate gathering and sharing information in preparation for use in an electronic health record (EHR) environment. The design of these tools is intended to improve quality, while decreasing disease burden and cost.

Evidence supports multiple genomic interventions that are derived from accurate family assessment. A number of conditions have been identified as tier 1 disorders. Tier 1 designation indicates that genomic and family health history synthesized studies support implementation of the evidence into practice. Currently the following disorders that rely on accurate family assessment are classified as tier 1:

Breast/Ovarian Cancer

- Hereditary breast and ovarian cancer in women (see Box 6-6: Genomics)
  - *BRCA1* and *BRCA2* genes related
  - Deleterious mutation of the BRCA gene
- Chemoprevention of breast cancer

Colorectal Cancer

- Newly diagnosed colorectal syndrome (test for Lynch syndrome; see Box 6-6: Genomics)
- Known Lynch syndrome in family
- Metastatic colorectal cancer (*KRAS* gene, cetuximab, panitumumab)
- Invasive colorectal cancer (carcinoembryonic antigen–related cell adhesion molecule 5)

Cardiovascular Disease

- Familial hypercholesterolemia (DNA testing and low-density lipoprotein cholesterol concentration measurement)
- Cholesterol screening

Other

- Osteoporosis screening in Women—parental history of hip fracture
- Hereditary hemochromatosis–family health history, especially siblings
- Newborn screening of 31 core conditions

Other tier 1 genomic applications, in addition to family assessment, could be used to reduce morbidity among affected people and their families (Douglas & Dotson, 2015).

Adding family health history to meaningful use standards for EHRs may also decrease the gaps between the evidence and how it is implemented in practice. Promoting the importance of family assessment through education and policy may facilitate identification of at-risk families (Kolor & Khoury, 2015).

From Douglas, M. P., & Dotson, W. D. (2015). Evidence matters in genomic medicine, round 2 from the Office of Public Health Genomics, Centers for Disease Control and Prevention. http://blogs.cdc.gov/genomics/2012/08/23/evidence-matters-in-genomic-medicine-round-2/; Kolor, K. & Khoury, M. J. (2015). Evidence matters in genomic medicine–round 3: Integrating family health history into preventive services. http://blogs.cdc.gov/genomics/2012/09/27/evidence-matters-in-genomic-medicine-round-3/; Wilson, B. J., & Nicholls, S. G. (2015). The Human Genome Project, and recent advances in personalized genomics. *Risk Management and Healthcare Policy*, (8)2, 9–20.

practices within heterosexual, homosexual, and bisexual relationships in the family is an important part of health-promotion assessment (Hockenberry & Wilson, 2015). The onset of the use of electronic health records in many settings provides an opportunity to systematically assess and intervene to provide best practices and eliminate disparities in these populations (Donald & Ehrenfeld, 2015).

Coping–Stress Tolerance Pattern

The coping–stress tolerance pattern helps to depict the family's adaptation to both internal and external pressures (Gordon, 2016). On a daily basis, family members generate energy to face evolving needs. Society continually compels families to adapt to new situations. Survival and growth depend on coping mechanisms as families face external demands required to move from one developmental stage to the next. The family's ability to cope with everyday living demands determines family success. Family relationships support coping or generate more stress. Life events, such as divorce, moving, or developmental stages of the life cycle, and economic hardships, such as loss of a job, provoke stress and mobilize family coping strategies. Exploration of coping and stress tolerance includes the following assessment areas:

- How does the family cope with stressful life events?
- What experiences have family members had with chemical abuse?
- What strengths does the family have and use to counterbalance the stresses?
- What stressful family situations are experienced?
- How does the family view the association between stress and children's health and development?
- How does the family make appraisals of the situations, and are they realistic?
- Describe the family's resources. How do family members use knowledge or links to family networks or community resources?
- What kinds of dysfunctional adaptive strategies are used, such as chemical abuse or violence?

Values-Beliefs Pattern

The values-beliefs pattern characterizes the family's perspective and attitudes about life meanings, values, beliefs, and spirituality and the way these issues affect behavior (Gordon, 2016). Assessment, diagnosis, and intervention are based on these attitudes. Assessment of this pattern enhances the interpretation of family behavior. Exploration of values and beliefs includes the following assessment areas:

- What are the values and beliefs held by the family?
- How flexible are rules?
- How do family members interact (calm, aggressive, competitive, or rigid)?
- How do family members view spirituality?

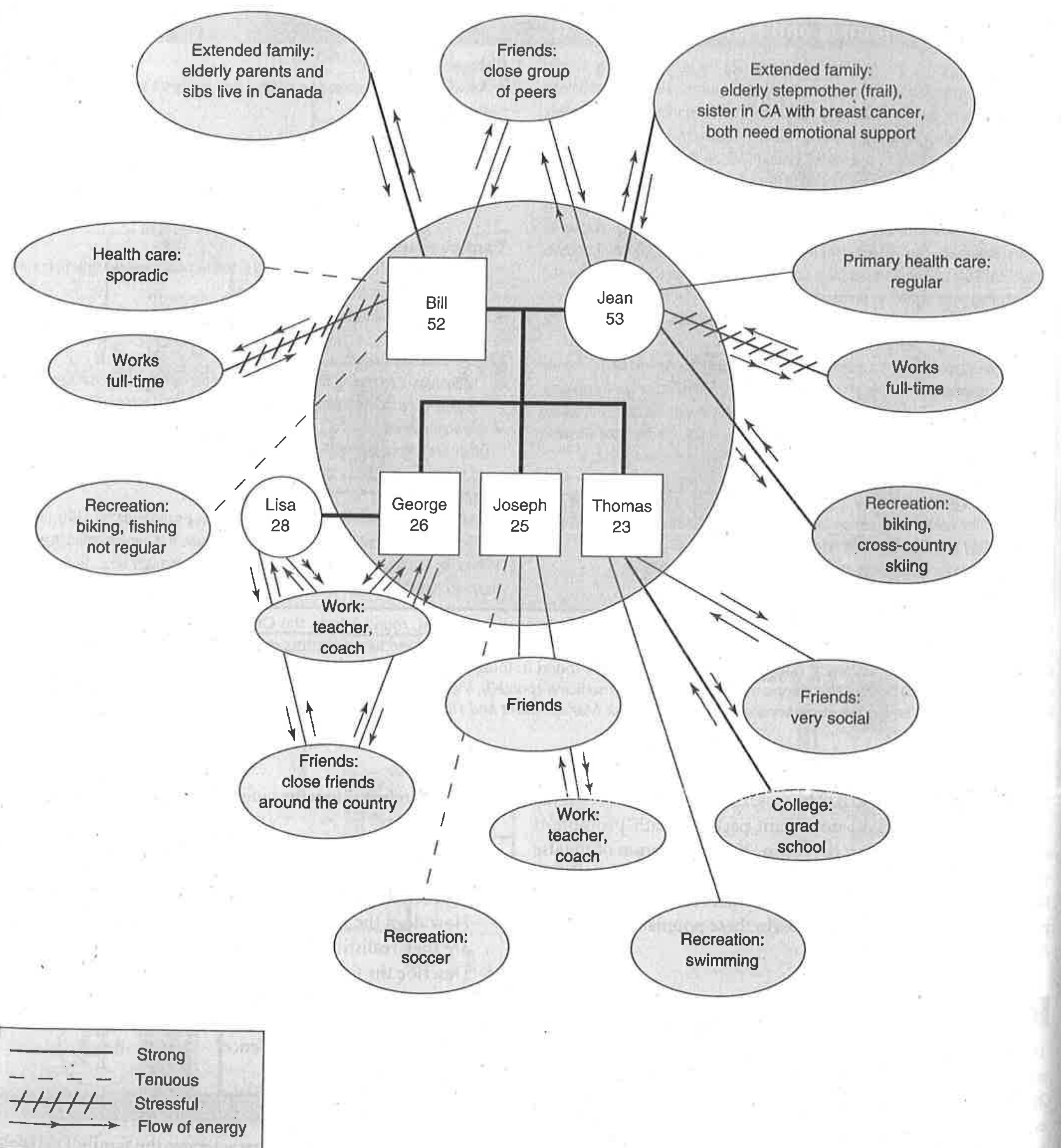

FIGURE 7-4 Ecomap of the Graham family. (From Stanhope, M., & Lancaster, J. [2012]. *Public health nursing: Population-centered health care in the community* [8th ed., p. 636]. St. Louis: Mosby.)

- Describe the cultural or ethnic group with which the family identifies. What family practices are consistent with the norms of that ethnic group? How are the practices inconsistent with these norms?
- What are the family's traditions and practices?
- How do the significant cultural beliefs affect health or illness?
- Describe the role that religion plays in the family on a regular basis and during times of stress. How does the family rely on religious practices?
- How does the family perceive its competency during crisis?
- What are the family goals, and do members perceive that they are attaining these goals?
- How are value conflicts demonstrated within the family?
- How do identified family values affect the health status of the family?

Spirituality, defined as life purpose and connection with others, affects health. The metaphysical and transcendental phenomenon of spirituality, as well as the religious and nonreligious systems of belief within families, should be assessed (Denham et al., 2015). How well families communicate their unconditional love and forgiveness for injury or betrayal may contribute to physical symptoms within families. Clearly, spirituality and social skills promote health and prevent disease.

Data collected in the 11 functional patterns reveal ideas about family health-promotion and disease-prevention practices. Risks to healthy family functioning may be identified in each pattern. Risk factors may be found in more than one area. For example, passive smoke from one family member's cigarettes may be identified as an environmental risk factor in the home. However, the family's reaction to passive smoking determines the family members' perceived susceptibility, their perceived severity of the problem, and whether they will make a change in the environment to promote family health. The pattern indicates high risk if chronic asthma is described during the family history. In this situation, several other pattern areas support the finding. The nurse determines each risk behavior along with its effects on the others.

ENVIRONMENTAL FACTORS

The environment also influences family health and well-being. The home, neighborhood, and community constitute the family environment. Assessment includes exploration of the following home environment areas (Figure 7-5):

- What type of dwelling is it (condominium, single dwelling, low-income apartment, or temporary shelter)?
- How has the family acquired the home (purchase, rental)?
- What is the condition of the home (interior/exterior: glass, trash, broken stairs, peeling paint, inadequate insulation, inadequate lighting on stairs, or broken fixtures)?
- Are the number and type of rooms adequate for the size of the family?
- How satisfactory are the furnishings to meet the needs of the family (enough chairs and beds, and a kitchen table)?
- How comfortable is the temperature (warm in winter and cool in summer, insulated)?
- How adequate is lighting for reading, sewing, and other activities?

FIGURE 7-5 Assessment of the home includes environmental assessment of the yard.

- How adequate is the water supply (sufficient/clean/fluoridated/polluted)?
- Does the family have access to a telephone, and are emergency numbers available?
- How safe are the kitchen sanitation and refrigeration capabilities?
- How adequate are the bathroom sanitation facilities, water supply, toilet, and towels and soap?
- Are the sleeping arrangements adequate for family members, considering age, sex, relationships, and spatial needs?
- How adequate is the plan for escape in an emergency (smoke detectors/escape route/plan inside the home)?
- What are the arrangements for and knowledge of first aid (directions posted for poisons, burns, lacerations, and other first-aid needs)?
- What signs of rats, mice, or cockroaches are present inside or outside the home?
- What are the family's impressions about the home? How do the family members describe the adequacy of their living space for privacy, their own interests, and status?
- How are chemicals stored in the home (out of reach of children)?
- How is safety ensured in the home? What safety issues are evident?

The areas to explore for neighborhood assessment are as follows:

- What is the condition of the dwellings and streets (maintenance/deterioration)?
- How and when is the garbage collected?
- What is the incidence of violent crime, burglaries, and automobile accidents?
- What kinds of industry are nearby and do they produce air pollution or toxic waste?

- What are the social class and ethnic characteristics of the neighborhood?
- What are the occupations and interests of the families in the neighborhood?
- What is the population density?
- How available and accessible is public transportation? Why is public transportation not used if it is available?

Exploration during assessment of the community includes the following areas:

- What resources, such as schools, church, transportation, shopping, and recreational facilities, are available for family use?
- How accessible are the health facilities, such as physician's office, clinic, hospital, gym, swimming pool, natural food store, and weight-reduction clinic?

By driving or walking around the area, the nurse can obtain neighborhood and community data. Other sources of information include the family, health professionals, teachers, business people, and others who work in the area. Official resources, such as the reports from the US Census Bureau (http://www.census.gov/) or statistics from the city or state health departments and libraries, are also helpful in describing a neighborhood and community.

ANALYSIS AND NURSING DIAGNOSIS

Analyzing Data

After completing the data collection, the nurse and the family analyze the data. Several approaches are used to analyze health data, including systems theory, developmental theory, and risk-estimate theory. A systems approach categorizes families as open or closed, with permeable or rigid boundaries determining both structural and functional components of family systems.

Developmental theory approaches families from the perspective of tasks and progression through cycles. Nurses analyze data to identify accomplishment of family life cycle stages and family tasks needed to function successfully. Family developmental needs are determined considering the wide variety of family structures and functions in society. Although most family models are based on nuclear family structures, additional family structures should be explored as indicated by current population trends (Brown et al., 2016; Coyne et al., 2016; Edwards, 2009). The stages of family development guide the baseline data analysis. Gaps, missing data, or conflicting information is identified and clarified.

Couple Family

The first stage of family development begins when adults define themselves as a family regardless of the legal status. When individuals move from their family of origin to a new couple relationship, adaptation to role expectations of a partner becomes a developmental task for each individual. Establishing a mutually satisfying adult relationship that converges with the kinship network is one family developmental task. Adjustment for couples includes learning how to weave together two personalities, two life histories, and two aspirations of growth. Decisions in this stage include whether adults are gainfully employed, how money is managed, where they live, how they socialize with friends and other family members, patterns of sexual activities, and whether the couple has decided to have children. Determining how to divide household tasks of cooking, washing, cleaning, and shopping occurs either consciously or subconsciously.

Developmental tasks that integrate health practices and habits into the couple's lifestyle require consideration during analysis. Health behavior constitutes particular actions to promote health and prevent disease. Examples of health-promotion and disease-prevention activities may include maintaining well-balanced rest, exercise, diet, and contraception; attending smoking-cessation classes; wearing seat belts; and directing activities toward self-actualization. Each individual brings values and beliefs to the relationship. Practices from the family of origin and values from personal experiences combine to form the adult beliefs of the individual. Achieving mutually satisfying relationships also depends on couples' conflict management. Strategies that stem from congruent value systems facilitate couple's adjustment. When couples use divergent strategies, problem-solving tends to be less effective.

Childbearing Family

Decisions about adding children to the family commit couples to more complex long-term responsibility. Family development and primary health needs change to focus on additional members. To analyze the learning needs of couples with a pregnant member, nurses consider aspects of decisions and motivations involved with the pregnancy. With single-parent families (usually mothers) becoming increasingly common through divorce, death, adoption, or the choice to have a child out of wedlock, analysis of family function addresses these diverse family structures (Atkin et al., 2015; Coyne et al., 2016; Edwards, 2009).

Attitudes and practices in society regarding sexuality have influenced the incidence of sexually transmitted diseases, such as genital herpes, gonorrhea, and syphilis. Acquired immunodeficiency syndrome (AIDS), first described in 1981, poses a threat to the family and society, in addition to affected individuals. Human immunodeficiency virus (HIV) is transmitted through heterosexual, homosexual, or oral sexual intercourse, as well as through direct contact with infected blood, shared needles during intravenous drug use, and perinatal transfer from infected mothers to their infants. Prevention of HIV transmission requires abstinence from and modification of relevant behaviors.

Risk factors associated with sexuality include lack of knowledge of safe sexual practices, the reproductive system, and personal hygiene; lack of prenatal care; pregnancy before age 16 years; pregnancy after age 35 years; a history of hypertension or infection during pregnancy; and unplanned or unwanted pregnancy.

Risk factors for premature pregnancies and unsatisfying marriage consist of ignorance about, or values regarding, family planning; adolescent age; and sexuality and role adjustment problems. In unplanned pregnancies, adolescent parents put themselves and their developing child at risk. Lack of knowledge of prenatal care, childbirth, and childrearing practices compounds the risks for both the mother and the child. Parents who are unable to perform parenting roles risk an unsatisfying relationship and inappropriate developmental growth for this beginning stage

BOX 7-7 DIVERSITY AWARENESS

Preconception Care

Preconception care is a significant health-promotion opportunity for the whole family. The importance of this care has been recognized by *Healthy People 2020*, the Institute of Medicine, and the Public Health Services Expert Panel on the Content of Prenatal Care.

One important area of preconception care is evaluating a couple's genetic history as documented on the standard family genogram. Further evaluation should be considered for couples who are related outside marriage or who have ethnic backgrounds such as Mediterranean, black, or Ashkenazi Jew, and for women older than 35 years or younger than 16 years who have preexisting medical conditions. Couples who have family histories of any of the following health problems should be referred for further genetic testing and counseling: cystic fibrosis, hemophilia, phenylketonuria, Tay-Sachs disease, thalassemia, sickle cell disease or trait, birth defects, or mental retardation.

Modified from Johnson, K. A., Floyd, R. L., Humphrey, J. R., Biermann, J., Moos, M. K., Drummon, M., et al. (2014). Action Plan for the National Initiative on Preconception Health and Health Care (PCHHC). A report of the PCHHC Steering Committee. http://www.cdc.gov/preconception/documents/ActionPlanNationalInitiativePCHHC2012-2014.pdf.

of the family life cycle. If couples decide to remain childless, learning needs include information about contraception.

The birth or adoption of a child begins a new family unit. Family members adjust to new roles as the unit expands in function and responsibility. As described more fully in the section Formulating Family Nursing Diagnoses, parents' history as a dyad and their experiences in other groups, particularly their families of origin, influence the development of the triad (Box 7-7: Diversity Awareness). Accommodating new members disrupts family equilibrium. As a group, families explore ways to meet each other's needs, to minimize differences, and work together. First-time parents often feel a lack of emotional support during the first several months of parenthood. Some, but not all, new parents have available family leave policies that may facilitate this transition. Without a family network or friends, the first days after the birth or adoption may be difficult. Parents may care for the child proficiently, but may need assistance to grow in the parenting role. If parents are both employed outside the home, they may encounter difficulty with the routines of baby care and being confined to the house more for child care. Anxiety about the adequacy of income may cause parents to increase their work hours to increase their income. Exhaustion for both parents is common from working full-time while providing child care as the infant develops. Single parents, usually mothers, carry these same burdens alone. Emotional support may be limited, particularly if one has not found satisfaction in parenthood. The families of origin or other support systems, such as self-help groups, neighbors, or friends, assist family members as they struggle to adapt to a new member. King and colleagues (2015) reported their findings from a US longitudinal study (Adolescent and Adult Health). Their structural equation modeling indicated that perceived family belonging for adolescents of stepfather families ($n = 2085$) was strongly associated with the perceived quality of parent relationships particularly with both the stepfather and the birth mother. Nurses facilitate processes within families of origin, families of choice, or other support systems to promote health in the newly formed family unit.

Some parents thrive during the period when an infant needs almost constant care and nurturing. These parents find support in a network of family and friends. Couples who find satisfaction in parenthood seem to realize that parental influence begins at birth and is the single most important factor in the child's physical, emotional, and cognitive development. The parents' ability to assume responsibility depends on a complex array of factors: their own maturity; how they were nurtured as children; their conceptions about self, culture, social class, and religion; their relationship with each other; their values and philosophy of life; their perceptions of and experiences with children and other adults; and the life stresses they have experienced.

In analyzing the needs of childrearing families, nurses consider many factors, including providing for physical health, economic support, and nurturing actions that are vital to learning and social development of children. In analyzing couples' needs during this stage, nurses recognize the importance of interactions among the triad. Observing decision-making helps nurses determine family functioning, member roles, and effectiveness of family members. Risks associated with role relationships include working parents with insufficient resources for child care, abuse or neglect of children, multiple closely spaced children, low family self-esteem, children used as scapegoats for parental frustration, immature parents who are dependent and unable to handle responsibility, and strong beliefs about physical punishment or obedience.

Family With Toddlers/Preschool Children

Families may have more than one child, each growing and developing at an individual pace. Preschool children place great demands on families. Families adjust to each new member with space and equipment for expansion. The needs and interests of preschool children influence home environments. Nurses assess the quality of the home environment for whether children have healthy amounts of stimulation-promoting opportunities. Safety balanced with exploration by the child results in health-promoting home environments. Rather than removing children from the kitchen or garden, finding ways to include them in a cooking or planting activity provides learning experiences. Other environmental influences affecting the child's rate and style of development include religious practices, ethnic background, education, and discipline techniques.

Evidence increasingly demonstrates the link between environment and health. Home environments that contain contaminated air, water, or food increase health risks. For example, lead poisoning, a preventable disease that continues to affect thousands of children, often results from lead paint and other factors in the home, such as water. Although restrictions exist in the United States to limit lead-based paint to exteriors, many homes have lead in the interior. Generally, lead in water is attributed to poor infrastructure in the home plumbing or the city. As a result, poorer neighborhoods are at higher risk of lead poisoning from their water source. For example, families in Flint, Michigan,

experienced increased lead in the water coming into their homes when the local government changed their water source. Hanna-Attisha and colleagues (2016) reported the incidence of elevated blood lead levels within the city ($n = 1473$; before change 736; after change 737) increased from 2.4% to 4.9% ($p < 0.05$) after a water source change without a comparable change in blood lead levels outside the city ($n = 2202$; before change 1210; after change 992). The incidence of elevated blood lead levels was highest in neighborhoods with poor families. Both homes and automobiles are also considered possible sources of exposure to the poisonous agent carbon monoxide. Nurses also review data for home safety, including storage of dangerous materials, such as detergents, insecticides, and medications.

Health-promotion needs for young children include proper foods, adequate exercise and sleep, and dental hygiene. Parents teach children through modeling and use of positive reinforcement. Family developmental tasks include adjusting to fatigue resulting from parenting demands. Nurses explore alternatives to relieve parents. Parents need time for themselves, individually and as a couple (e.g., to exercise, socialize), while knowing their children are safe with a responsible person. Economic restraints may limit relaxation time away from the children. Sharing child care with friends and the family provides one source of support for new parents.

FIGURE 7-6 School-age girl learns about her family heritage and presents this information through a school project.

Family With School-Age Children

A family with children in school may have reached its maximal size in numbers and interrelationships. The parents' major problem during this stage is the dichotomy between pursuing self-interests and finding fulfillment in producing the next generation. Family developmental tasks revolve around goals of reorganization to prepare for the expanding world of school-age children. School achievement becomes a critical task for socialization. Viewing social and educational goals from the perspective of family culture and parents' defined goals becomes particularly important during this developmental stage. For example, many opportunities for health education exist in schools, including influencing healthy beliefs and behaviors. However, school health programs focus on problems such as tobacco and substance abuse with messages aimed at problems and crises rather than healthy behaviors. Families influence health at home and in school both by teaching children ways to assess and manage risky situations and by describing the benefits to expect when healthy behaviors are practiced.

As children's activities broaden away from the home, another important developmental task for both the parent and the child becomes "letting go." Parents become involved in community groups such as the parent-teacher association, scout groups, sports teams, and other volunteer organizations. Encouraging children to join in family discussions to learn about their heritage can foster understanding of self within the family network (Figure 7-6). Children exposed to unsafe home environments are at risk of behavior disturbances, school problems, and learning disabilities. Parents who cannot manage their children in growth-promoting ways soon experience energy depletion and may turn to dysfunctional relief from parenting (e.g., drug and alcohol abuse).

Family With Adolescents

Parents with adolescent children may experience a late pregnancy, resulting in care for an infant while other children in the family are in school. A new family member at this stage may be a source of joy or frustration for the family. The overall goal with adolescent members is to loosen family ties to allow greater responsibility and freedom in preparation for releasing young adults. Although each member of the family strives to achieve individual developmental tasks in the midst of social pressures, the family as a whole has tasks to accomplish. Strengthening the marital relationship to build a foundation for future family stages is a critical task during this time.

Open communication is often difficult during this stage, partly because of the differing developmental tasks of adolescents and adults. Adolescents seek their own identity, and adults attempt to facilitate adolescent decision-making processes. Choices about values and lifestyles may differ. Adolescents may challenge family values and standards. Although parents maintain some authority, adolescents tackle their own desires and needs. Adolescents want to do what their friends do, have their own cars, and make their own money to spend in ways that they see fit. Parents who give adolescent members opportunities to experience social, emotional, and ethical situations with others are providing learning opportunities to enhance their sense of autonomy and responsibility. As adolescents become mature and emancipated, families face balancing freedom with responsibility. Health problems in this age group include violent deaths, including suicide, injuries, and alcohol and drug abuse. Contributing risk factors involve lack of problem-solving skills, family values of aggressiveness and competition, socioeconomic factors, peer relationships, rigid and inflexible family values, daredevil risk-taking attitudes, and conflicts between parents and children. Environmental risk–related

violent deaths and injuries are influenced by the highway system, automobile manufacturers, and the legislation of standards of safety. Families rely on public health officials and nurses' efforts as advocates to reduce environmental risks.

Families support adolescents in this stage of development by including them in decision-making and ensuring that they experience the positive and negative consequences of their choices. Family values of winning at all costs, aggressiveness, and competition may need to be explored during this period. Adolescents may discard these values if they are no longer applicable. Considerable change in adolescent values produces conflict and poses a threat to family cohesiveness. Families may place pressure on adolescents to conform to family values. In matters of life and death—for example, in regard to driving rules—parents must stay firm.

Families with adolescents experience identity crises for the adolescent, the adults, and the family as a whole. Adolescents move from childhood to adulthood while adults progress beyond parenthood. Adolescents struggle to find independent identities that remain connected to their family. Adults, in midlife, must resolve their own adolescent fantasies to move toward an identity for their remaining life.

Family With Young Adults

Families with young adults act as a launching center when children begin to leave home. As children leave home, parents relinquish their parenting roles of many years to return to the marital dyad. The couple builds a new life together while maintaining relationships with aging parents, children, grandchildren, and in-laws. Couples focus on redefining relationships during this stage. As children develop, they no longer need a primary caregiver, often their mother, in the same way as during childhood. When mothers/caregivers devote years to raising children, their role and purpose within the family changes as children develop. Transition from a life with children as the priority to new or renewed interests (e.g., career, community service) may require assistance and support from the entire family. Careers at this stage may become more stable. Developmental tasks at this stage for the family's adults require focus on future prospects. In addition to individual changes occurring at this stage, families with young adults may experience other pressures. Aging parents and adult children may require financial or emotional support. Financial and emotional responsibilities to other family members hinder the couple's ability to focus on relationships during this developmental phase. Health-promoting activities to be focused on during this stage include coping with pressures of social roles and occupational responsibilities, maintaining health tasks to promote healthy aging, and reassessing life goals.

Family With Middle-Aged Adults

Families consisting of only two members are able to enhance self-concept and support their relationship during middle age. Usually children have left home and adults experience a sense of freedom and well-being. Some relationships, by this stage, have reached a level of security, stability, and meeting each other's needs. Parenting pressures diminish, allowing parents to enjoy the accomplishments of their children and grandchildren. Couples have acquired a network of friends. Long-time acquaintances seek participation from the couple in neighborhood rituals and events. Economic security and personal self-esteem may be at a peak.

In contrast, some relationships falter at this time. Departed children create a quiet house with less activity, known as the "empty nest." When individuals are unprepared for this stage, they might seek opportunities to enhance self-concept from outside of the family. With parenting roles now complete, adults may develop feelings of inadequacy or begin new relationships, start new families, or resort to substance abuse. In addition, this life phase may include becoming grandparents, parenting grandchildren, coping with the needs of middle-aged children, and caring for older adults (children, siblings, or parents).

Health tasks in this developmental stage require new awareness of susceptibility or vulnerability to health problems. Couples adjust their lifestyle and habits to cope with health risks. Losses promote health problems, and at this stage couples begin to cope with deaths among family and friends, along with declining income. If either member has developed physical or mental illness, the other adjusts to the resultant physical and mental impairments, redefining self-concept.

Middle-aged families face a host of risk factors leading to three prevalent causes of death: heart disease, cancer, and cerebrovascular accident (stroke). Family lifestyle may decrease risks by placing a high value on being physically active, refraining from smoking, maintaining adequate and sound nutritional habits, and consuming moderate amounts of alcohol. Lifestyle habits that are transmitted through role modeling have a greater influence on the younger members of the family than any verbal edict. Middle-aged members positively influence their health if they are able to choose environments low in water and air pollution and free from crippling stress factors such as excessive noise, traffic, and overcrowding. Family members can also apply pressure on key members of the community to decrease risks in the environment.

Family With Older Adults

Retirement affects many aspects of life for couples and each individual in the family and their relationships with others. Besides decreased work hours, retirement also means reduction in income and fixed incomes for most people. Adjusting living standards to retirement income and being able to supplement this income with wage-earning activity is one task of the family with older adults. Other tasks during this stage include ensuring a safe and comfortable home environment, preparing for end of life, and adjusting to the loss of a spouse and finding meaning in the grief process (MacKinnon et al., 2016). In their qualitative pilot study, MacKinnon and colleagues (2016) reported that participants ($n = 12$) used group intervention (meaning-based group counseling) to establish effective coping strategies, adapt to their loss, and reframe life goals.

Health promotion aims to maintain functional ability, limit the effects of disabling conditions, and maintain quality of life. Older adults may fear becoming helpless, feeling useless, and being incapable of caring for themselves. When analyzing risk factors in the aging family, nurses look for the couple's ability

FIGURE 7-7 As with all people, older adults hope for a state of well-being that allows them to function at their highest capacity physically. Medicare now has a yearly wellness visit for those older than 65 years.

to function well enough to carry out normal roles and responsibilities. As with all people, older adults hope for a state of well-being that will allow them to function at their highest capacity physically, psychologically, socially, and spiritually (Figure 7-7). Many older adults remain in their own homes, and most of these individuals are vigorous and completely independent. Assuming that most older adults prefer to remain in their own homes, assessment of the family for this age group should consider predictors of independence or those factors that indicate a need for institutionalized care such as assisted living, adult day care, or nursing homes. In their report of a longitudinal 22-year study of 1032 Finnish adults aged from 73.1 to 92.3 years (average age 83.5 years), Salminen and colleagues (2016) reported that falling several times a year, absence of nearby assistance, diminished cognitive function, and both high and low body mass index significantly increased the likelihood of institutionalization. These findings highlight the importance of assessing fall risk, social support networks, cognitive function, and body weight in families with older adults.

Ego integrity (the union of all previous phases of the life cycle) is the challenge in this stage and demands successful aging through continued activity. Having gone through the various stages of family development, the couple accepts what they have done as their own. At this time, they may need family or professional support to pursue other interests or maintain former activities to feel needed and useful.

The nurse and the family jointly analyze the information, comparing the family's data with documented norms of health promotion and disease prevention in older adults. Norms or expected values can be derived from the family's baseline information of 11 functional pattern areas, knowledge of growth and development for all age groups and the family as a whole, risk-factor estimates, and population norms. Population norms specify normal ranges for these groups. For example, age is associated with various risk factors; some disorders are so common that they are referred to as diseases of the older person. In certain diseases, such as lung cancer, there is a long period of exposure. Risk increases with cumulative exposure; therefore the incidence and prevalence of diseases increase with age.

Sexuality. Because of the popular perception that older adults are asexual, their sexual concerns may be disregarded (Salladay, 2016). The strength of sexual desire of the older women may be more influenced by age, education, and attitude than by biomedical factors.

General population norms for values, beliefs, self-perception, or role relationships may be less available than physical population norms. Cultural, ethnic, and religious factors contribute to values and beliefs about health. Family baseline information provides important comparative criteria for analysis. Family records provide useful information when available. The first contact assessment provides baseline information for subsequent comparison and evaluation of progress. Whether the family perceives situations to be problematic should also be considered in the analysis phase. Nurse and family perceptions about problems may differ.

Formulating Family Nursing Diagnoses

Writing a family nursing diagnosis helps families promote health throughout the life cycle and prevents disease through decreasing risk-taking behaviors. Nurses derive diagnoses from assessed validated data. As a concise summary statement of a problem or potential problem, diagnoses provide direction for outcomes and interventions by identifying negative health states and factors to change to alleviate or prevent the problem (see Chapter 6). Describing health and validating potential or actual health problems with families facilitates cooperation. Assessment and negotiation continue until agreement occurs and a plan for resolution develops.

Cultural competence and respect for familial beliefs forms a foundation for the nursing process of assessing, determining nursing diagnoses, planning, intervening, and evaluating (see Chapter 2 for more detail). With changing trends in families and shifts in heritage within society, cultural competence and cultural attunement become priorities for family assessment and nurses. Pandit and colleagues (2014) define "socio-cultural attunement (SCA) as the ongoing process of experiencing clients' emotions around the intersection of socio-cultural contexts (i.e., gender, race, ethnicity, religion, sexual orientation, etc.)." Their definition of sociocultural attunement (SCA) was derived from a study that developed a working model of SCA in which 13 therapists and five couples participated in a total of 25 therapy sessions. Four cycles of qualitative analysis resulted in a working model for the SCA process. The process of SCA these researchers designed includes three recursive phases: the initial guiding lens, sociocultural interpretation, and client and therapist resonance (Pandit et al., 2014).

Cultural values, such as those connected to nutrition, influence most health-promotion practices. As globalization occurs, diversity will also expand, and competent care for indigenous populations and migrating populations will be needed (Andrews & Boyle, 2015). Cultural competence increases the efficacy of health promotion for all families, particularly families from within vulnerable populations (Andrews & Boyle, 2015).

PLANNING WITH THE FAMILY

Intervention planning stems from complete assessment, analysis, and nursing diagnosis. The plan's purpose aims for behavioral change in families to promote health or prevent dysfunction. As in the assessment phase, family members play an active role in the planning process. Family responsibility for personal health status enhances the success of behavioral change outcomes. The planning process involves several steps, with the nurse and family identifying the following:

- Order of priority for problems or potential problems
- Items that can be handled by the nurse and the family and items that must be referred to others
- Actions and expected outcomes

The nursing plan provides direction for implementation and the framework for evaluation (see the care plan at the end of this chapter).

As mentioned, a family's health status can be diagnosed as functional, potentially dysfunctional, or dysfunctional. Functional family health status warrants verification by the nurse with a plan for periodic reevaluation that is formulated jointly. Plans to continue healthy living behaviors are reinforced. The nurse provides specific information requested by the family, such as immunization schedules, growth and development milestones, and recommended dietary allowances. In working with healthy families, the nurse controls the assessment and analysis phases of the nursing process. If the health status is judged functional, then planning health-education materials, scheduling periodic examinations, and providing accessibility of the nurse remain professional responsibilities. Implementation and evaluation of health-promotion activities become family responsibilities.

In health-promotion and disease-prevention settings, life-threatening situations rarely occur; however, when such situations do occur, they become the highest priority for intervention. For other identified potential or actual problems, the nurse relies on the family to decide which problem or potential problem to approach. After the ordering of priorities has been established, the family and nurse determine who will work on the problem. Problems or potential problems to be resolved by the nurse are identified separately from those requiring referral or family intervention. Problems for the family to handle or those the family is already addressing are considered strengths and are acknowledged and supported by the nurse. For example, when there is consistency among values and actions, physical fitness, weight management, and ability to cope with stress, the family is already taking informed and responsible action in these areas. The extent to which family members can provide their own health promotion and disease prevention will depend on their knowledge, skills, motivation, and orientation toward health.

Problems that need medical, legal, or social attention are referred to appropriate agencies. The nurse should have a directory of resources in the community when referrals are needed. Nursing intervention requires clearly stated actions that are purposeful, moral, capable of being accomplished, and adapted to the particular life situation, beliefs, and expectations of the family.

Goals

Goals are statements describing desired outcomes. Family outcome statements include expected family behaviors, circumstances for exhibited behaviors, and criteria for determining performance. Health-promotion goals reflect a desire to function at a higher level of health and to grow beyond maintaining health or preventing disease.

IMPLEMENTATION WITH THE FAMILY

The implementation phase is dynamic. As the nurse and family work together, new information is used to adapt and change the plan as necessary. Family nursing interventions aim to assist families in performing functions that members cannot perform for themselves. In health promotion and disease prevention, nurses assist families to improve their capacity to act on their own behalf. Ten studies were identified in a systematic review of the literature about family interventions (Deek et al., 2016). This review linked reduced readmission rates, emergency department visits, and anxiety levels and family-centered interventions. Evidence to support the use of family-centered interventions, including active learning strategies, transitional care, and appropriate follow-up in families with chronic conditions, was presented.

Families may know that they take risks by smoking, drinking, and engaging in a stressful lifestyle. As the nurse explains the rationale behind the proposed changes, families may choose to deny how they jeopardize their future health and continue their risk-taking behaviors. Factors that the nurse has not considered may cause the family's resistance. For example, families may have more pressing basic needs such as food, clothing, and housing. The Patient Protection and Affordable Care Act (2010) addressed some of these health care issues of the family by permitting parents to retain children on their health insurance plans until the age of 26 years, regardless of their marital status, living situations, or employment (unless in some cases where health insurance is an employee benefit). New insurance plans must cover preventive benefits such as well-child visits and immunizations without additional cost to the insured. Although the Patient Protection and Affordable Care Act (PL 111-148) became law on March 23, 2010, and was amended by the Health Care and Education Reconciliation Act of 2010 (PL 111-152), the statute was brought before the US Supreme Court beginning March 26, 2012, as unconstitutional, citing four major arguments (requiring the individual mandate, applying the Anti-Injunction Act, lacking a severability clause, and expanding Medicaid). The Supreme Court ruled in favor of the statute in June 2012.

Health promotion and disease prevention may not have been part of the family's life experiences, giving the nurse the educational task to try to change attitudes and values by expanding the options for families to consider health promotion. Four types

of nursing interventions appear in health-promotion and disease-prevention planning: increasing knowledge and skills; increasing strengths; decreasing exposure; and decreasing susceptibility. Increasing knowledge and skills to improve family capacity for health-promotion and disease-prevention behavior may be the primary strategy. Use of this strategy helps families make informed choices about healthful lifestyle behaviors and to eliminate harmful environmental influences that affect health. Improved knowledge aims to create awareness as the nurse and family work together to uncover actual or potential problems. Nurses recognize particular families at risk and move toward motivating and supporting behavioral change in these families. Box 7-8: Innovative Practice presents an example of one program that provides education and support to people with cancer and their families.

Family strengths or forces that contribute to family unity and solidarity foster the development of inherent family potential (Carrascosa, 2015). These factors include:

- Physical, emotional, and spiritual factors
- Healthy childrearing practices and discipline
- Meaningful and clear communication
- Support, security, and encouragement
- Growth-producing relationships and experiences
- Responsible community relationships
- Growth with and through children
- Self-help and acceptance of help
- Flexibility in family functions and roles
- Mutual respect for individuality
- Crisis as a means for growth
- Family unity and loyalty and intrafamily cooperation
- Adaptability of family strengths

In recent years, a shift of family health care from an illness or problem and deficiency focus to a strength-based focus has occurred (Aston et al., 2015). Multiple models in nursing view families as systems and base their assessment and nursing process on strengths rather than deficits. These models of nursing provide the framework to assess and plan care using family strengths and resources (Carrascosa, 2015). Family members develop and maintain health-promoting behaviors by using commitment, appreciation, affection, positive communication, time together, a sense of spiritual well-being, and ability to cope with stress and crisis. Multiple assessment tools are available for nurses to use to generate discussion among family members about their strengths. Aston and colleagues (2015) describe the importance of corresponding nursing interventions to support and further develop the family dynamics of socialization, support, and nurturance.

Families with significant strengths may need to learn new, unfamiliar skills for mastering a specific technique, such as meditation, and to apply new tools for decision-making. These families rarely require ongoing supervision or support of sustained interventions aimed at changing their coping patterns, communication, or role behavior. They may be highly capable of seeking and using information. Assisting functional families may simply involve providing information in terms that can be understood and offering opportunities to ask questions and clarify information. Unit 3 contains individual chapters devoted to many of the strategies commonly used in health-promotion intervention, such as health teaching and counseling.

Decreasing exposure to risk factors may include enhancing parents' ability to assess and adjust their behavior to their child's temperament. Parents with limited literacy may need assistance to learn to respond constructively to their child's communication attempts. Health promotion includes teaching parents to avoid exposure to risks—for example, to use adequate restraints in automobiles, to protect their toddler from wandering into dangerous streets, and to supervise children to avoid falls and hazardous materials.

Although no substitute can be found for continuous supervision of a child, homes can be made safer if common hazards are moved out of children's reach. This effort includes storing all cleaning solutions and medications beyond children's reach; erecting barriers in front of exposed heaters, high windows, and stairways; keeping pots and pans turned inward on the stove;

BOX 7-8 INNOVATIVE PRACTICE

The Wellness Community and Gilda's Club

The Wellness Community, which was founded in the 1982 by Dr. Harold Benjamin in California, has many local chapters throughout the United States. Comedian Gilda Radner attended the Wellness Community during her battle with ovarian cancer and shared her experiences in her book *It's Always Something*. After her death, Joel Siegel and Mandy Patinkin began Gilda's Club and opened the first club house in New York in 1991 with the support of her spouse Gene Wilder. These two organizations shared 45 years of offering free educational and support programs for people with cancer and their families on both coasts. Emphasis is placed on the family to acknowledge that no person with cancer makes the journey alone. Weekly support groups help family members support one another, explore new ways of coping with the stresses of cancer, and learn ways to become the most effective partners possible with their health care teams. These two organizations have now partnered to continue their vision with the Cancer Support Community to "ensure that all people impacted by cancer are empowered by knowledge and strengthened by action, and sustained by community."

These communities now offer a wide variety of workshops and programs (Gentle Strength and Stretch, Meditation and Guided Imagery, Nutrition Matters, Nutrition and the Immune System, Nutrition at Midlife: Preventing Heart Disease and Osteoporosis, tai chi, yoga, mindfulness, and feng shui). Social events are organized (comfort food potluck dinner, couples networking groups, singles networking group, family and friends networking group). Although chapters generally do not charge for their services, donations are appreciated and necessary to help serve the thousands of people with cancer and their families.

Contact Information:
Cancer Support Community
1050 17th Street, NW
Suite 500
Washington, DC 20036
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Toll-free: 888-793-9355
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E-mail: help@cancersupportcommunity.org
Website: http://cancersupportcommunity.org/default.aspx

fencing in a yard or a swimming pool; and teaching children to avoid dangerous areas. Becoming aware of peeling paint and toxic chemicals that parents might carry home from the job on their clothing can also protect the child.

Decreasing susceptibility means educating families about prevention principles. Families who realize how diseases are spread are better able to avoid transmission from person to person; through air, water, and food; and by insects and the rodents on which insects live. Health promotion includes emphasizing the role of personal hygiene and cleanliness to avoid infection. Families who know signs and symptoms that require medical attention and how to treat minor illnesses are better able to maintain healthy environments.

Pender and colleagues (2014) cite research that demonstrates how perceived susceptibility predicts preventive behavior. Perceived susceptibility is the family's estimated subjective probability that a specific health problem will be encountered. Family members' perceptions of health risks and their susceptibility to them will determine how they change their behavior. If the overweight family believes obesity is a threat to the health of the family, the family members are more likely to react positively to the changes suggested by the nurse than is a family who perceives no health threat. Nurses who introduce threat as a motivator to action are morally obligated to reduce the threat by meaningful and purposeful interventions. Table 7-2 lists various nursing roles used in the implementation stage.

EVALUATION WITH THE FAMILY

The purpose of evaluation is to determine how the family has responded to the planned interventions and whether these interventions were successful. Goals and objectives that are stated in specific behavioral terms will make evaluation much easier than when they are given in general terms. The criteria used to evaluate interventions, such as weight change, increased lung capacity from an exercise program, and lower pulse rate as a result of relaxation exercises, are simple to measure. Other results of health promotion and disease prevention are not as easy to measure but must be considered in the evaluation step of the nursing process. When considering such factors as values, beliefs, self-perceptions, or role relationships, the nurse may base the evaluation on whether the family indicates that the interventions were successful. Additionally, the family's baseline data are used as comparative criteria in evaluation. The nurse reassesses the situation and compares the new information with that on the original assessment to determine whether change has occurred.

The following five measures of family functioning can be used to determine the effectiveness of interventions: changes in interaction patterns; effective communication; ability to express emotions; responsiveness to needs of members as individuals; and problem-solving ability. Using these measures, the nurse returns to the original assessment of the family's functioning and compares current observations with previous data. These characteristics of family functioning continue to provide a useful framework even today, when family structures are becoming more diverse and the nuclear family is becoming less prevalent (Brown et al., 2016; Coyne et al., 2016; Edwards, 2009).

When, during the planning phase of the nursing process, the nurse has identified the criteria (norms and standards) for the desired outcomes, these outcomes are the basis of evaluation. Data from the family that describe the behavior of family members relative to the desired outcomes determine whether the nursing care was successful. With the criteria stated, the goals and objectives outline how the family can demonstrate a successful outcome and the behavior change expected to result from nursing intervention. The more objective and measurable the desired outcome is, the more reliable the results of evaluation will be.

After the goals and objectives have been reached, the problem no longer exists. If evaluation shows the nursing actions did not achieve the goals or objectives, the nurse must review the nursing process to determine whether there were gaps in the assessment data, errors in analysis or nursing diagnosis, or alternative interventions that might have been considered. The nurse also needs to review the process with the family to determine whether the family members have contributed to outcome failure. Finally, the agency employing the nurse may be another factor; if intervention is costly or a shortage of staff exists, then health promotion and disease prevention may have low priority.

CASE STUDY

Family Member With Alzheimer Disease: Mark and Jacqueline

Mark and Jacqueline have been married for 30 years. They have grown children who live in another state. Jacqueline's mother has moved in with the couple because she has Alzheimer disease. Jacqueline is an only child and always promised her mother that she would care for her in her old age. Her mother is unaware of her surroundings and often calls out for her daughter Jackie when Jacqueline is in the room. Jacqueline reassures her mother that she is there to help, but to no avail. Jacqueline is unable to visit her children on holidays because she must attend to her mother's daily needs. She is reluctant to visit friends or even go out to a movie because of her mother's care needs or because she is too tired. Even though she has eliminated most leisure activities with Mark, Jacqueline goes to bed at night with many of her caregiving tasks unfinished. She tries to visit with her mother during the day, but her mother rejects any contact with her daughter. Planning for the upcoming holidays seems impossible to Mark, because of his wife's inability to focus on anything except her mother's care. Jacqueline has difficulty sleeping at night and is unable to discuss plans even a few days in advance. She is unable to visit friends and is reluctant to have friends visit because of the unpredictable behavior of her mother and her need to attend to the daily care.

Reflective Questions

- How do you think this situation reflects Jacqueline's sense of role performance?
- How do you think that Jacqueline may be contributing to her own health?

CARE PLAN

Family Member With Alzheimer Disease: Mark and Jacqueline

***NURSING DIAGNOSIS: Risk of ineffective role performance related to caring for a family member with Alzheimer disease**

Defining Characteristics

- Feeling exhausted
- Inability to complete tasks
- Feeling loss of usual or expected relationship with care receiver
- Increased stress or nervousness about the future
- Preoccupation with care routine
- Withdrawal from social contacts or change in leisure activities

Related Factors

- Illness severity of care receiver
- Increasing needs of care receiver
- Addiction or codependency of caregiver or care receiver
- Conflicting role demands
- Caregiver health impairment
- Unpredictable illness course or instability in the care receiver's health
- Psychological or cognitive problems in the care receiver
- Caregiver not developmentally ready for caregiving role
- Developmental delay or retardation of the care receiver or caregiver
- Marginal family adaptation or dysfunction before the caregiving situation began
- Marginal coping patterns of caregiver
- Providing direct, ongoing in-home care
- History of poor relationship between caregiver and care receiver
- Care receiver who exhibits deviant, bizarre behavior
- Incontinence in the care receiver

Expected Outcomes

- Caregiver distinguishes obligations that must be fulfilled from those that can be controlled or limited.
- In conjunction with the nurse, the caregiver develops a plan of care for the individual.
- Caregiver receives and accepts appropriate levels of support from family members, friends, and others.
- Caregiver describes help available from informal and formal support systems in the community and takes steps to obtain help.

Interventions

- Assess the level of the caregiver's stress.
- Assist the caregiver in developing a realistic plan of care, considering the care receiver's abilities and limitations; the plan will require modification as the person decompensates.
- Instruct the caregiver to encourage the person to participate, to the greatest extent possible, in social and self-care activities such as bathing, dressing, dining out with friends, and playing cards.
- Facilitate a family meeting to help the primary caregiver seek assistance from other family members.
- Support the caregiver and family members as they adjust to the degenerative nature of the disease; be aware that over time the stress associated with caring for the person increases.
- Identify community resources that may offer the caregiver relief from constant supervision of the individual (home health aides, respite care, and adult day care).
- Help the caregiver contact informal sources of support, such as church groups, extended family, and community volunteers.
- Encourage the caregiver to attend an Alzheimer disease support group.
- Refer the caregiver to the Alzheimer's Association.

*NANDA Nursing Diagnoses—Herdman, T. H. & Kamitsuru, S. (Eds.). Nursing Diagnoses–Definitions and Classification 2015–2017. Copyright © 2014, 1994–2014 NANDA International. Used by arrangement with John Wiley & Sons Limited. In order to make safe and effective judgments using the NANDA-I nursing diagnoses it is essential that nurses refer to the definitions and defining characteristics of the diagnoses listed in this work.

SUMMARY

Learning about health promotion and disease prevention begins at birth, with the family providing the stimulus for incorporating health in the value system of its members. From a systems perspective, the family has both structure and function; relevant functions include values and practices related to health. The effective execution of health-related functions involves the family's progression through its developmental tasks and its ability to generate low risk-producing behaviors associated with disease prevention.

Developmental and risk-estimate theories can be applied effectively to the nursing process with the family. The nurse uses functional patterns (an inherent part of both theories) to collect data for assessment. After organizing information on family life cycle stages for analysis with the family, the nurse writes the nursing diagnosis and plans, implements, and evaluates the interventions used to promote health and prevent disease in the family.

EVOLVE CHAPTER FEATURES

http://evolve.elsevier.com/Edelman/

- Study Questions

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8

Health Promotion and the Community

Anne Rath Rentfro

OBJECTIVES

After completing this chapter, the reader will be able to:

- Describe the 11 functional health patterns and explain how they are used for data collection to assess communities.
- Evaluate community characteristics that indicate risk.
- Identify developmental aggregates of potential or actual dysfunctional health patterns.
- Explain methods of community data collection and sources of information.
- Describe a method of planned change for the community.
- Discuss the planning, implementation, and evaluation of nursing interventions in health promotion with communities.
- Develop a health-promotion plan based on community assessment (including resources), nursing diagnoses, and other contributing factors.

KEY TERMS

Advocate
Ambient
Community
Community diagnosis
Community evaluation
Community health promotion
Community nursing intervention
Community outcomes
Community pattern
Community risk factors
Demography
Developmental theory
Focus groups
Function of a community
Interview data
Key informants
Lobbying
Lobbyist
Measurement data
Observation data
Policy decision-making
Risk-factor theory
Structure of a community
Systems theory
Windshield survey

THINK ABOUT IT

Teenagers: Drinking and Driving

In a small rural community, seven teenagers have died in alcohol-related car accidents within the past 3 months. Alcohol and drug education is taught during the first year at the local high school, but driver's education classes are not offered because the school cannot afford the program. Parents within this community are extremely concerned.

- What other information must be acquired before a diagnosis is made?
- What health-promotion ideas could be recommended based on the information provided?

In the last few decades, several social trends in the United States have increased public interest in health promotion and disease prevention. The *Healthy People 2020* initiative shifts the focus of health care from reactive to proactive with its emphasis on disease prevention and health promotion (US Department of Health and Human Services, 2015). By stating national health objectives as population-specific risks to good health, this venture guides community strategies to promote health, thereby reducing disease risk factors. Box 8-1: *Healthy People 2020* highlights the emphasis this initiative takes in an environmental and community context.

Another social trend creating interest for health promotion is the changing population of the United States (see Chapter 2). As baby boomers entered older age beginning in 2011, the older population continues to expand and will grow more in the next 2 decades (Figure 8-1). The proportion of those older than 85 years has also increased by almost 5% (8.8% in 1980; 13.6% in 2010) as the US older population continues to age (West et al., 2014). These changes in the rates of the oldest-old contribute to a growing number of older people with disability in our communities (He & Larsen, 2014). Community assessment for health promotion will need to consider disability more thoroughly, because disability is currently viewed from a social model perspective (resulting from social and physical barriers). Older people also tend to have more chronic diseases and consume larger portions of health care resources than people in other age groups. This aging population will require more home services than previous generations because of increased life span and the

BOX 8-1 HEALTHY PEOPLE 2020

Select Examples of National Health-Promotion and Disease-Prevention Goals and Objectives for Communities

The *Healthy People 2020* framework has expanded its focus to accentuate health-enhancing social and physical environments. Because the *Healthy People 2020* framework addresses health and health behaviors at multiple levels, almost all *Healthy People 2020* goals and objectives could be listed as examples of national health-promotion and disease-prevention objectives for communities. The following list consists of selected exemplars aimed specifically for aggregates and for health promotion rather than those that are individual level objectives with a tertiary care focus. When multiple objectives for one topic are pertinent to community assessment, the more general goal rather than specific objectives is listed.

AH-Goal	Improve the healthy development, health, safety, and well-being of adolescents and young adults.
AOCBC-11	Reduce hip fractures among older adults.
BC-13	(Developmental) Decrease the prevalence of adults having high-impact chronic pain.
BDBS-Goal	Prevent illness and disability related to blood disorders and the use of blood products.
C-15-18	Increase the proportion of individuals who receive cancer screening and counseling.
CKD-1	Reduce the proportion of the US population with chronic kidney disease.
DIA-2	Reduce the proportion of preventable hospitalizations in adults aged 65 years or older with diagnosed Alzheimer disease and other dementias.
D-16	Increase prevention behaviors in persons at high risk of diabetes with prediabetes.
DH-Goal	Maximize health, prevent chronic disease, improve social and environmental living conditions, and promote full community participation, choice, health equity, and quality of life among individuals with disabilities of all ages.
EMC-4	Increase the proportion of elementary, middle, and senior high schools that require school health education.
ECBP-Goal	Increase the quality, availability, and effectiveness of educational and community-based programs designed to prevent disease and injury, improve health, and enhance quality of life.
EH-Goal	Humans interact with the environment constantly. These interactions affect quality of life, years of healthy life lived, and health disparities. The World Health Organization defines environment, as it relates to health, as "all the physical, chemical, and biological factors external to a person, and all the related behaviors." Environmental health consists in preventing or controlling disease, injury, and disability related to the interactions between people and their environment.
FP-Goal	Improve pregnancy planning and spacing, and prevent unintended pregnancy.
GH-2	Reduce the tuberculosis case rate for foreign-born persons living in the United States.
HC/HIT-13	Increase social marketing in health promotion and disease prevention.
HRQOL/WB-1	Increase the proportion of adults who self-report good or better physical and mental health.
ENT-VSL-Goal	Reduce the prevalence and severity of disorders of hearing and balance; smell and taste; and voice, speech, and language.
HDS-Goal	Improve cardiovascular health and quality of life through prevention, detection, and treatment of risk factors for heart attack and stroke; early identification and treatment of heart attacks and strokes; and prevention of repeat cardiovascular events.
HIV-Goal	Prevent HIV infection and its related illness and death.
IID-1	Increase immunization rates and reduce preventable infectious diseases.
IVP-Goal	Prevent unintentional injuries and violence, and reduce their consequences.
LGBT-1	Increase the number of population-based data systems used to monitor *Healthy People 2020* objectives that include in their core a standardized set of questions that identify lesbian, gay, bisexual, and transgender populations.
MICH-Goal	Improve the health and well-being of women, infants, children, and families.
MPS-2.1	(Developmental) Reduce the proportion of patients suffering from untreated pain due to a lack of access to pain treatment.
MHMD-2, 12	Reduce suicide attempts by adolescents and increase the proportion of homeless adults with mental health problems who receive mental health services.
NWS-Goal	Promote health and reduce chronic disease risk through the consumption of healthful diets and achievement and maintenance of healthy body weights.
OSH-1-2	Reduce nonfatal injuries and deaths and from work-related injuries.
OA-1-3 & 12	Increase the proportion of older adults who use the Welcome to Medicare benefit, have received current clinical preventive services, and report confidence in managing chronic conditions, and make information publicly available for older adults on the characteristics of victims, perpetrators, and cases of elder abuse, neglect, and exploitation.
OH-8, 9 & 13	Increase the proportion of low-income children and adolescents who received any preventive dental service during the past year and increase the proportion of school-based health centers with an oral health component and increase the proportion of the US population served by community water systems with optimally fluoridated water.
PA-2, 3 & 15	Increase the proportion of adults and adolescents who meet current federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity and increase legislative policies for the built environment that enhance access to and availability of physical activity opportunities.
PHI-2	(Developmental) Increase the proportion of tribal, state, and local public health personnel who receive continuing education consistent with the core competencies for public health professionals.

BOX 8-1 HEALTHY PEOPLE 2020—cont'd

Select Examples of National Health-Promotion and Disease-Prevention Goals and Objectives for Communities

RD-7-8	Increase the proportion of persons with current asthma who receive appropriate asthma care according to National Asthma Education and Prevention Program guidelines and increase the number comprehensive asthma surveillance systems for tracking asthma cases, illness, and disability.
STD Goal	Promote healthy sexual behaviors, strengthen community capacity, and increase access to quality services to prevent sexually transmitted diseases and their complications.
SH Goal	Increase public knowledge of how adequate sleep and treatment of sleep disorders improve health, productivity, wellness, quality of life, and safety on roads and in the workplace.
SA-Goal	Reduce substance abuse to protect the health, safety, and quality of life for all, especially children.
TU-Goal	Reduce illness, disability, and death related to tobacco use and secondhand smoke exposure.
U-20	Increase the number of states and the District of Columbia, territories, and tribes with sustainable and comprehensive evidence-based tobacco control programs.
V-Goal	Improve the visual health of the nation through prevention, early detection, timely treatment, and rehabilitation.

From US Department of Health and Human Services. (2015). *2020 topics and objectives.* http://www.healthypeople.gov/2020/topics-objectives.

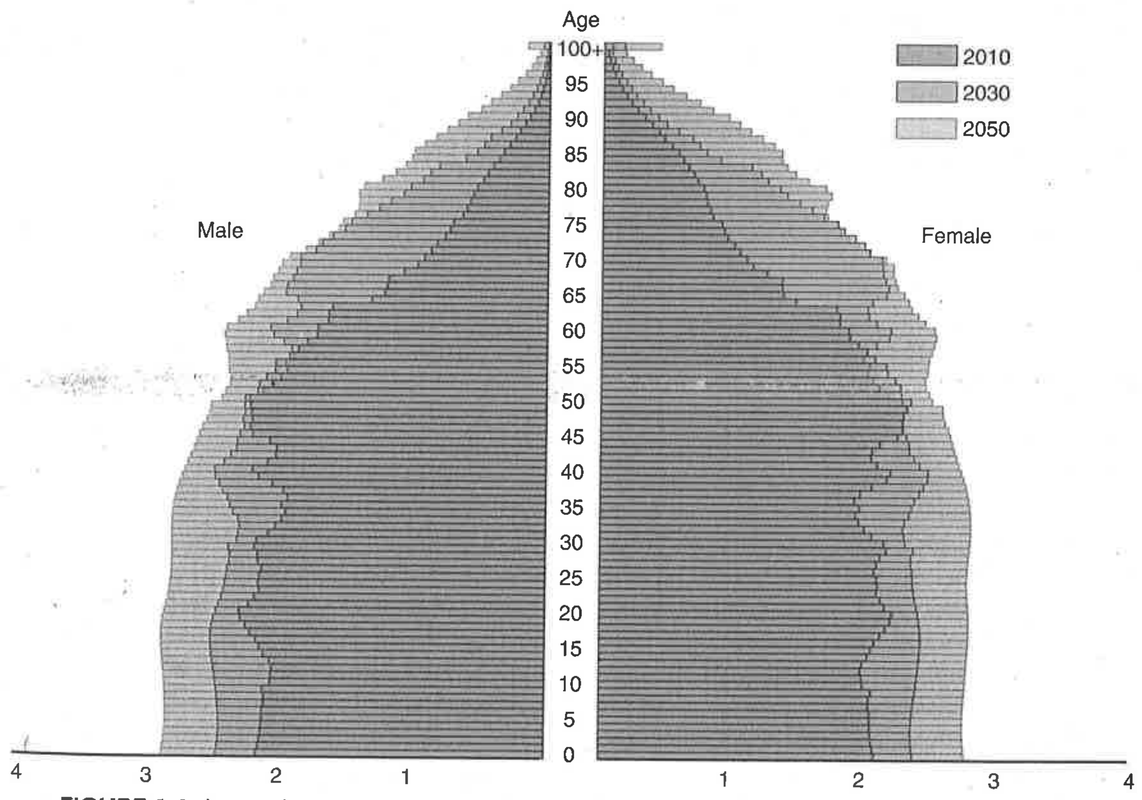


FIGURE 8-1 Age and gender structure of the population for the United States: 2010, 2030, 2050. (From Ortman, J. M., & Guarneri, C. E. [2009]. *United States population projections: 2000 to 2050.* http://www.census.gov/population/projections/files/analytical-document09.pdf.)

concurrences of health problems (including altered levels of functioning).

The term **community** is used in various contexts with various meanings, depending on the frame of reference. Nursing generally adopts a broad sense of community that includes the concepts of groups of people that share social relationships, generally live within the same geographical location, and share common interests (Stanhope & Lancaster, 2015). A broad definition of community encompasses a wide variety of settings, such as school, workplace, and the international community.

Nurses in the nation's schools serve youth and provide access to community resources. Linking school nurses with communities can increase access to resources to improve health-promoting behaviors. *Healthy People 2020* addresses this issue: "ECBP-5: Increase the proportion of the Nation's elementary, middle, and senior high schools that have a full-time registered school nurse-to-student ratio of at least 1:750" (US Department of Health and Human Services, 2015). In 2006 the Health Indicators Warehouse (http://www.healthindicators.gov/) reported that 40.6% (confidence interval 35.3–45.9%) of US schools had the

specified full-time registered nurse-to-student ratio (1:750). The 2012 evaluation of this indicator is not yet available.

People are integral to any concept of community; human beings give each community shape, character, and form. The diversity within a community and the diversity among various communities contribute to the health of that community. Individual health is reflected in each community through each person's contribution to its statistical rates and cultural and psychological makeup. Conversely, the context of the community is reflected in the individual through similar modes of expression (Pender et al., 2014).

This chapter focuses on the application of the nursing process to the community with independent, interdependent, and dependent nursing activities. Globalization has affected communities. Swift methods of travel and Internet communication impact community health (Petersen et al., 2016; Young et al., 2016). Communities globally are exposed to emerging infectious diseases such as Zika virus disease, Ebola fever, severe acute respiratory syndrome (SARS), human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS), and pandemics of tuberculosis and influenza (Petersen et al., 2016). For example, in 2016 the World Health Organization declared Zika virus disease a global emergency because of its associated serious newborn neurological disorders (microcephaly) and Guillain-Barré syndrome, and more than 50 countries reporting cases (http://www.who.int/emergencies/zika-virus/situation-report/28-april-2016/en/). Infected female mosquitos transmit most Zika virus infections. Although sexual intercourse, blood transfusions, and perinatal transmission have been proposed as alternative means of contracting the virus, among mothers who delivered infants ($n = 35$) with microcephaly, 74% remembered rashes in the first or second trimester (21 in the first trimester). Most infected individuals (80%) experience few symptoms. The symptoms, such as fever, malaise, rash, conjunctivitis, headache, and muscle and joint pain, occur about 1 week after the insect bite, then last for about 1 week after onset (Petersen et al., 2016).

Disparities in health across the world are associated with poverty, industrialization, violence, social disruption, education, food access, and maternal health. Even in developed countries with health resources, disparity occurs. Health may be different in urban versus rural geographical areas. Rural communities are doubly disadvantaged, with lower levels of health-promotion behaviors and limited resources from local, state, and federal public health agencies (Harris et al., 2016). Compared with urban Americans, rural people have increased levels of all the following: death from chronic obstructive pulmonary disease, suicide, and obesity (Harris et al., 2016). Furthermore, rural individuals (23%) are more likely to lack health insurance than their suburban counterparts (19%) (Harris et al., 2016; Meit et al., 2014).

Methods of data collection and sources of information about communities differ from individual sources. **Systems theory**, **developmental theory**, and **risk-factor theory** guide the nursing process. Developmental theory refers to a variety of explanations of phases of human development—physical, psychosocial, cognitive, and spiritual dimensions—based on descriptive research studies. Similarly, risk-factor theory identifies human characteristics and behaviors that increase the likelihood of the manifestation of health problems. Diverse communities require comprehensive assessment techniques that gather information about the unique characteristics of the population (e.g., cultural health practices or herbal remedies).

Gordon's (2016) functional health patterns provide the assessment framework for this chapter. Although other community assessment strategies exist, Gordon's (2016) patterns are useful to align community assessment findings with those of families and individuals to plan health promotion. An example of a data collection guide pattern is presented to facilitate the comprehension, synthesis, and application of **observation data**, **interview data**, **focus groups**, and **measurement data**. An example of data analysis, nursing diagnosis, planning, implementation, and evaluation follows, along with a description (Table 8-1).

THE NURSING PROCESS AND THE COMMUNITY

Community nursing stems from a theoretical base that recognizes the impact of systems on health. General systems theory (described in Chapter 7) provides a foundation for most methods community nurses use to assess, plan, and evaluate (Stanhope & Lancaster, 2015). Because nursing theories often address self-care and individual-environment interaction, nurses are well prepared to function in this setting. Public health theory uses a population focus with risk identification to assess communities. Assessing aggregates is therefore an important part of community nursing assessment (Thomas et al., 2016).

The approach to community nursing assessment addresses each community as unique and provides the rationale for the assessment. The community nurse may use a comprehensive needs-assessment approach that includes all aspects of the community and is the traditional rigorous approach (Thomas et al., 2016). The approach selected by the nurse determines the data to be collected. In strength-based approaches and Gordon's functional pattern approach, positive factors play a consistent role in the information gathering.

Gordon's (2016) health-related patterns provide a useful guide to collect observation, interview, and measurement data. Health-related patterns depend on community settings, assessment focus, and the preference of each community. Assessing all pattern areas provides a basic data set to analyze and use for comparison during evaluation (see Chapter 6).

Risk factors and development also influence health patterns. For example, health concerns may occur in one pattern area, such as the increased age-related factor of teenage pregnancy (sexuality-reproductive pattern). Data from other areas may reveal that parental opposition (values-beliefs pattern) tends to restrict sex education and limit sex education in schools (coping-stress tolerance pattern). Attempting to restrict sex education or "ignoring" it in school and primary care may place the community at risk of unwanted pregnancy in its young people of childbearing age. Factors from several pattern areas may form clusters of risk for certain groups (see Chapter 6).

THE NURSE'S ROLE

Community health nursing combines nursing practice and public health concepts to promote the health of populations without

TABLE 8-1 Implementation of Community Health Plans With Objectives and Rationale

Nursing Diagnosis: Potential for increasing the incidence of fatal motor vehicle accidents in high school population related to alcohol use and driving.

Goal: North High School population will have reduced incidence (at least 20%) of fatal motor vehicle accidents related to alcohol use and abuse by December.

Objective	Plans	Rationale
1. Community will have access to information about incidence of fatal motor vehicle accidents and drunken driving arrests of its high school population for the past 5 yr by March	Interview local police about the incidence of fatal automobile accidents and substance abuse in the community. Interview parents of deceased high school students, students, teachers, physicians, clergy, and emergency department personnel about the incidence of the problem and suggested measures for decreasing the incidence; suggest that interviews be broadcast over the high school radio station. Have several people write to the community newspaper, commenting on the broadcast and the problem.	*Unfreezing:* For change to occur, the community has to become dissatisfied with the status quo and sense a need for change. *Empiric-rational strategy:* People are rational; discussion of facts can result in support for change. Important elements for preventing the problem include educating the public and having key community leaders discuss their views; concern lends credibility and is necessary for action. People tend to listen to those with informal power. Keeping the issue before the community can raise consciousness.
2. Community will take action to inform the population at risk about responsible drinking and driving by June	Suggest to the school principal and the school board the creation of a task force of community residents to plan a health program on individual responsibility and alcohol use in high school. Conduct focus group discussions with the task force and develop collaborative group goals and strategies. The task force should include teachers, students, parents, clergy, police, nurses, and physicians. The task force will examine ways to determine and teach content, integrate it into the curriculum, and recommend that community members, such as a nurse, be involved in teaching content.	*Changing:* Moving to a new level; community involvement will influence acceptability of changes. Community residents like to be involved in decision-making. It is important to establish trust and collaboration among community groups; this opens communication channels between adolescents and the health community. Community involvement facilitates acceptance of change.
3. Community will implement an educational program for its high school population related to use of alcohol and individual responsibility	Implement educational plans.	*Refreezing:* Moving to level of change brought about by community forces. Educational strategies built around the concept of individual responsibility are essential elements in promoting health of young adults.

limitation to any particular individual or group of individuals (Stanhope & Lancaster, 2015). Nursing concerns become the community's responses to existing and potential health-related problems, including such health-supporting responses as monitoring and teaching population groups. Nurses supply educational information to at-risk communities to develop health-oriented skills, attitudes, and related behavioral changes.

Community nurses also develop essential relationships aimed at accomplishing the community's health-related missions. Complex and dynamic communities, with their increasing public involvement in health and health policy, highlight the importance of human interactions inherent in nurses' responses to potential health problems, needs, and expectations. For example, active participation in environmental issues, such as decreasing control of toxic substances, provides an avenue for nurses to promote healthy environments by influencing policy.

In June 2015, the US Congress passed a bill to reform the Toxic Substances Control Act of 1976. The US Senate passed legislation in December 2015 that will move the bill to conference committee to be reconciled with the bill passed by Congress. Nurse opinion at this stage in the development of the new law may influence legislators to construct a law that considers issues related to public health, such as preventing toxic toys from being imported and maintaining the states' influence over chemical regulation. According to Katie Huffling (2015), "Nurses have been instrumental in states like Maryland, Washington, New York, and Connecticut in pushing for laws to protect children and families from toxic chemicals. By taking away the rights of states to regulate these chemicals, dangerous chemicals are protected regulation for years before the federal government acts."

Concern about harmful effects of environmental contaminants includes decreased fertility in women, demasculinization of men exposed to plastics, and premature maturation of the reproductive tract with a trend toward earlier sexual maturation. Community nursing practice, therefore, requires a broad knowledge base derived from the natural, behavioral, and humanistic sciences with application of intellectual, interpersonal, and technical skills using the nursing process.

Influencing Health Policy

The primary responsibility of the nurse is to the individual, family, group, or community served. A major portion of the

nurse's role is to be an advocate not only for the individual but also for justice in health care delivery. Nurses need to be aware of issues that have an effect on the health of the American people and know how to influence necessary change.

Health and the environment are integrally connected; therefore nurses who engage in all planning aspects facilitate the health potential of those communities they serve. Involvement that includes attention to policy decisions and political action affects broader aspects of environmental, biophysical, and socioeconomic conditions of homes, schools, workplaces, communities, and health care delivery. For example, nurses could take active roles in how plastics impact population health (http://envirn.org/pg/groups/3755/environmental-health-scope-and-standards-of-practice), and in safeguarding natural resources. One organization, the Alliance of Nurses for Healthy Environments (ANHE), has created a website called the Knowledge Network (http://envirn.org/) to facilitate nurses' participation and competence in environmental health issues. In 2010 ANHE and the American Nurses Association (ANA) joined forces to develop the ANA's *Scope and Standards of Practice for Nurses* (Leffers et al., 2015). By virtue of their numbers, nurses, who constitute the largest group of health care providers in the United States, have tremendous potential to influence decision-making.

Participation in policy decision-making requires that nurses take a proactive stance to determine needs before a problem arises. Policy development and change occur on many levels, from within the nurse's agency or work group to the community, state, and national levels. At the institutional level, clinical decisions influence policy, as do management issues. The nurse examines the rationales underlying existing or planned policy and determines their current relevance. Nurses, by virtue of their education and experience, develop communication skills and apply change theory to influence policy.

Health-related decision-making often results from legislation at the local, state, or national level. Laws—rules enforced by a ruling authority by which society is governed—and regulations—agency or department rules developed to implement laws—define the services offered. Politics influence change and provide an arena for nursing to participle in shaping the future of health care. Political involvement may include voting, communicating with local representatives, supporting candidates, contributing time or financial support, and running for city, county, state, or national office. Voting, after nurses have become well informed on current issues and candidates, and serving on local and state committees are important ways for nurses to be actively involved.

In addition, knowing local representatives, informing them about health care issues, and advising them as to their constituents' needs are other ways nurses become involved. Legislators are influenced by the information that they receive and by the sources of that information. Nurses have a wealth of knowledge about health care. The process of seeking to influence legislators' views and votes is called lobbying. When an individual is employed to lobby, he or she is known as a lobbyist and is required to register as the representative of a special interest group. The ANA, located in Washington, DC, employs nurse lobbyists, as do many states. Individual nurses, however, can support colleagues who represent nursing's interests and who run for political office. The ANA Nurses Strategic Action Team (N-STAT) network is an organized grassroots effort by nurses to help elect endorsed candidates and to inform legislators about policy issues of concern to nurses. When nurses join N-STAT, they receive alerts and updates detailing specific legislative issues. Financial contributions to Nurses for Political Action Coalition, the ANA's political arm, increase the power base of nurses. Membership of professional and community groups provides nurses with the collective voice to influence legislators.

Communicating with a legislator is essential and can be done by phone, writing a letter, personal visits, or e-mail correspondence. Legislators have staffs of experts in various areas, and each legislator is assigned to committees. To understand the legislative process, the nurse follows the progress of a bill. Thousands of bills are introduced at both the state level and the federal level and must be passed within 2 years or they will die by default. Once a bill has been introduced, it is referred to committee, and the committee chairperson determines which bills will be considered. Hearings are then held on the considered bills. When hearings have finished in committee, a bill is "reported out" at the federal level to the floor of the Senate or House of Representatives for a vote. Both the Senate and the House of Representatives must pass identical versions of the bill and, once passed by both chambers, it is forwarded to the President for signing. If signed, it is enacted into law (Bhushan, 2015). It is important for nurses to lobby, to inform legislators of new issues, and to give expert testimony on introduced bills. Nurses who are politically aware extend the collective nursing voice to its full potential.

Unfortunately, nursing's collective voice is rarely heard. Only about 20% of the entire nursing workforce are members of a collective professional organization (Woodward et al., 2015). Other health care professionals, such as members of the American Medical Association, have more united professional organizations with large memberships, providing a united voice and political clout that influences health care policy and law. Nurses have multiple professional organizations. With high membership dues, nurses likely join only a few groups and may gravitate toward their specialty organization. Without a single national organization with the majority of nurses as members, nursing's voice is diluted. When organizations promote an issue, the collective voice of the group rather than the voice of the individual sends a more powerful message to influence policymakers. Without a collective voice, nursing's influence on shaping health care policy is weakened.

To strengthen nursing's collective voice, the ANA has undergone significant reorganization with emphasis on increasing membership, by collaborating with its state constituent organizations, specialty organizations, and nonnursing health organizations. Engaging students in these strategies early in legislative processes will help to provide more well-informed practicing nurses. Well-informed, empowered professional nurses play significant roles in supporting legislative initiatives that promote and protect the health of the public. Other ways for nurses to be involved in policy change are to support candidates and run for office. Volunteering during campaigns to help a specific candidate or to encourage voter registration and voting are ways that nurses can influence

policy. Many nurses now represent their local constituencies and have increasing visibility at the state and national levels. For example, five nurses currently serve in the United States 114th Congress (http://www.nursingworld.org/MainMenuCategories/Policy-Advocacy/Federal/Nurses-in-Congress).

Community nurses' roles include the interaction of independent, interdependent, and dependent functions. Independent functions include assessing, analyzing, diagnosing, planning, implementing, and evaluating communities for health promotion and health education. Interdependent functions include collaboration with community members and interdisciplinary teamwork functions that are crucial to effective community health. Dependent functions include implementing the therapeutic plans of team members.

Community health promotion includes all the following (US Department of Health and Human Services, 2015):

- Community participation, with representatives from multiple community sectors, including government, education, business, faith organizations, health care, media, voluntary agencies, and the public
- Assessment guided by a community-planning model to determine health problems, resources, perceptions, and priorities for action
- Targeted and measurable objectives to address health outcomes, risk factors, public awareness, services, and protection
- Comprehensive, multifaceted, culturally relevant interventions that have multiple targets for change
- Monitoring and evaluation of the objectives and strategies used

METHODS OF DATA COLLECTION

Nurses obtain community assessment data through observation, interviews (including focus groups), and measurement. These three methods are used most frequently in various combinations to ensure the validity of the information. Obtaining data through observation—often referred to as the **windshield survey** approach to assessment—includes the use of the senses (sight, touch, hearing, smell, and taste) to determine community appearances. These appearances include the types and condition of residential dwellings and their people and also physical and biological characteristics, such as animal and plant life, temperature, transportation, sounds, and odors. Some communities have a characteristic "flavor." A community's physical characteristics influence health. What type of space is available? Children need space to run and play; young and middle-aged adults require space for recreation and exercise. What spatial barriers exist? Where is this space located in relation to traffic and schools? What does the air feel and smell like? What does the water taste like?

Community nurses obtain abundant subjective data by simply walking or riding around a community. Data obtained by observation provide important clues about the community, its actual or potential health problems, and its strengths. Technological advances such as the use of geographical information systems (GIS) enhance nurses' ability to assess communities. For example, Keddem and colleagues (2015) identified community vacant properties, illegal dumping, parks, tree canopy, aggravated assaults, and theft to assess neighborhood irritants, neighborhood safety, walkability, pollen, and environmental allergens. The influence and intensity of these community features on asthma control was analyzed by use of GIS.

Analysis of observation data generates hypotheses to explore further with use of interview, focus group, and measurement data.

Interview data, the most common source of information from people, include verbal statements from community residents, key community officials, health care personnel, and various community agency staff. **Key informants** provide useful ways to learn how members perceive their community. Key community leaders often provide important information about community health concerns, necessary health resources, and community strengths, along with particular health beliefs and community health goals. Community residents provide useful information about their perceptions of health, health concerns, and needs, as well as their perceptions of the availability, accessibility, and acceptability of health services. Health agency personnel provide data about health resources, the population served, availability, and perceptions of concerns and needs. Developing a basic set of questions in advance enhances the relevance of interview data.

Community partners can be approached in groups to participate in assessment, planning, intervention, and evaluation (Andrews et al., 2012b; Frerichs et al., 2016). Community nurses who have expertise in building partnerships engage the community partnership model to conduct assessment, planning, the choosing of effective strategies, and evaluation (Stanhope & Lancaster, 2015). Andrews' research team uses this strategy for multiple community issues and health-promotion projects. The toolkit used for assessing partnership readiness is available on-line at http://academicdepartments.musc.edu/sctr/programs/community_engagement/Documents/SCTR%20CCHP%20Are%20We%20Ready%20Toolkit.pdf. Strategies initiated by engaged community members empower community partners and enhance the ability to transfer evidence-based strategies into their unique communities.

Measurement data use instruments to quantify data during information collection. Measurement data include population statistics, pollution indices, morbidity and mortality rates, census statistics, and epidemiological data. These data can be accessed by the Internet or locally in community libraries; health departments; environmental protection agencies; schools; police and fire departments; local health system agencies; and town, city, or state planning offices. Publicly supported agencies share their information, and community nurses readily use such data.

SOURCES OF COMMUNITY INFORMATION

Census information available from http://www.census.gov, and also found in libraries and public agencies, is the most complete source for population information. Because the US Census is completed once every 10 years at the beginning of a decade, data for most communities become less accurate as the decade progresses. Community agencies and local planning commissions, project statistics, and developmental trends are how nurses

understand population patterns and dynamics. Many communities and states also have databases available for public use.

Environmental measurement data can be obtained from the local branch of the US Environmental Protection Agency. Generally, local health departments monitor water, food, and sanitation systems. Nurses may be called on to facilitate safeguarding of natural resources protecting communities from industrial toxins. In areas that use well water, testing should be performed regularly. Community health nurses can participate in interventions to promote testing to assure the safety of water used in home. For example, Nova Scotia and areas across the northern United States risk exposure to arsenic that occurs naturally in the groundwater (Chappells et al., 2015). At-risk private well users should be testing their well water regularly. Community nurses in this setting could intervene using an integrated knowledge-to-action method. This method would include strategies including community outreach, home visits, and environmental home assessment planning. These strategies use community partnerships and home visits for informing the public and testing water in the private wells. Possible long-term public health initiatives for involvement of community health nurses include trainings that include awareness, testing, and treatment; low-cost or no-cost convenient testing stations; and mandatory regulated enforced testing at the point of property transfer or when new wells are constructed (Chappells et al., 2015).

Health departments along with school nurses and administrators provide school health information. Town, city, or county administrators provide information about land use, boundaries, housing conditions, utilities, and community services. Community newspapers supply information about community dynamics, health-related concerns, cultural activities, and community decision-making. The documentation techniques for community observation, interview, and measurement data are similar to those used for individuals and families. A triple-column format that separates the data obtained with each method facilitates recording.

COMMUNITY FROM A SYSTEMS PERSPECTIVE

Systems theory provides an overall framework to connect and integrate community data. Systems consist of interrelated, interacting parts or components within boundaries that filter both the type and the rate of input and output (Frerichs et al., 2016). Similarly to how families form systems (see Chapter 7), communities viewed as systems have both structure and function. Assessment of communities includes exploration of aspects of the population within specific geographical areas.

Structure

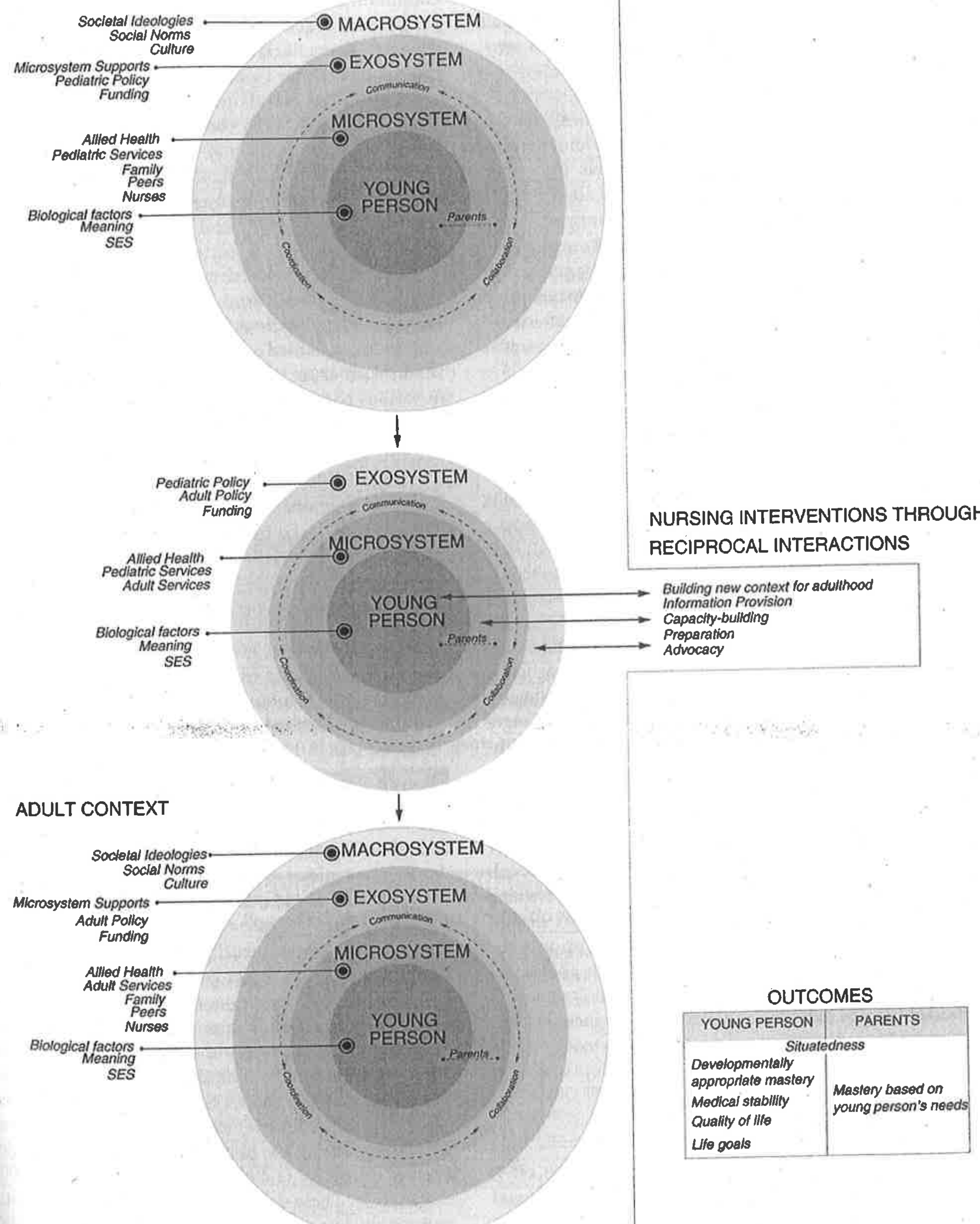
The **structure of a community** system or subsystem consists of a formal or informal arrangement of parts, including both animate and inanimate properties. Nursing, which operates within the context of the health system, can be considered within the context of community systems. Figure 8-2 shows the arrangement of a community system. The macrosystem includes societal ideologies, social norms, and culture, and shapes the larger part of the system that encompasses numerous subsystems, the exosystem, microsystem, and the individual (Joly, 2016). Communities' structural parts form the subsystems, each of which is in itself a system. Health agencies, schools, fire departments, and governmental bodies are examples of structural parts. Joly (2016) places Bronfenbrenner's bioecological theory into a contemporary context. The subsystems, such as individuals, family, school, and community, lie within overarching macrosystems. These systems and subsystems interact and change over time within a social context. For example, development during adolescence and young adulthood influences the disparity found in social determinants that subsequently impact health (Joly, 2016). The arrangement and organization of a community, such as age distribution and types of health-promotion/protection programs, change over time. The parts fluctuate depending on environmental processes occurring locally and within the larger environment.

Community leadership provides direction for both health-promotion and health-protection activities; therefore community assessment includes exploration of various community systems as they relate to health. The practice of viewing community structure as a population (collection of people) and considering the arrangement of the community's health care parts (existing health services) plays an important role in the assessment process.

The study of populations is referred to as **demography**. A population is a group defined as an aggregate of people who share similar personal or environmental characteristics. Demography provides information about population characteristics—such as size and racial composition, along with the distribution of age, sex, marital status, nationality, language, religious affiliations, education, and occupation. Demographic data provide the basis for analysis and a means to identify groups who may have high risk of health concerns. Such information also provides direction for health strategies. For example, examination of the age distribution over several years reveals important population shifts with associated needs for additional health-promotion activities. The increasing numbers of individuals older than 65 years require changes in community health priorities that reflect this group's needs. Comparing population characteristics statistically enables nurses to make inferences about the community. Comparisons are made among three systems: the town, which is a part of the county; the county, which is a part of the larger system; and the state. Comparisons between affluent and poor communities, rural and urban communities, and diverse and homogeneous communities may provide important information for planning.

Function

The **function of a community** refers to the process of dynamic change with adaptation in the system's parts and the ways that community systems and subsystems interact. Decision-making and allocation of health-promotion and health-protection resources are important considerations for community assessment. As health educators, nurses interact with communities to promote health. Community health promotion involves a complex array of responsibilities. Nurses act as advocates using proactive planning and collaboration with other disciplines and agencies. As a community liaison, the nurse establishes priorities for programming, matches resources with needs determined by a community needs assessment, empowers community members, and facilitates social, environmental, and political change. These multifaceted



Interacions within and berween the microsystem, exosystem and macrosystem can impact the achievement of transition outcomes. Interventions are depicted for context changes related to the movement between pediatric and adult services. Other contextual changes can occur in medical/biological factors or microsystem components, for example. Interventions start even before the context changes and continue over time until situatedness in th new context is achieved

FIGURE 8-2 Community systems and subsystems model. *SES*, Socioeconomic status. (From Joly E. [2016]. Integrating transition theory and bioecological theory: A theoretical perspective for nurses supporting the transition to adulthood for young people with medical complexity. *Journal of Advanced Nursing, 72*[6], 1251–1262.)

functions require expertise in communication and interpersonal relations that involve a deliberate approach. Using such an intentional process, while maintaining the community's vision, nurses can produce effective change.

Interaction

Through dynamic interaction with the environment, systems exchange matter, energy, and information (in such communication forms as verbal and behavioral) to make decisions. Interaction also contributes to community systems' survival ability, as well as to protect and promote the health of community members. Through environmental interactions, community systems use adaptation mechanisms. Nurses determine how communities apply these mechanisms toward health services. For example, policy that removes soft drink and candy sales from schools must consider lost revenue from these unhealthy but lucrative structures within the school system.

Various health-related patterns emerge from these interactions. For example, certain human-activity patterns negatively alter natural environmental patterns, which in turn influence human health patterns. Gordon's (2016) assessment framework focuses on 11 health-related functional patterns that assume community and environment interaction from a systems perspective.

COMMUNITY FROM A DEVELOPMENTAL PERSPECTIVE

A framework based on developmental theory can also be used to identify existing or potential health problems for particular age groups in communities. Community nurses, focusing on the total community population, use a developmental, age-correlated approach to identify health-promotion and health-protection activities.

Nurses identify age-related risks at each life stage, taking steps to maximize wellness and health promotion as a lifelong concern (US Department of Health and Human Services, 2015). For example, adolescent single mothers of infants, at risk both emotionally and physically of medical problems, require parenting skills. Accidents are the greatest threat to children's health; therefore accident-prevention activities become a priority for communities with a young population and with adolescent mothers. Age-related risk factors (see Chapters 6 and 7) associated with individuals and families can be extended to include community groups based on the demographics of the community.

COMMUNITY FROM A RISK-FACTOR PERSPECTIVE

Risk factors associated with disease, illness, and death rates, although not causally associated with them, predict the likelihood of a particular adverse health condition in communities of interest (US Department of Health and Human Services, 2015). Risk factors include a combination of demographic, psychological, physiological, and environmental characteristics (or they may include a single characteristic). The influence of various risk factors differs from person to person and from group to group because of genetic composition, geographical location, lifestyle patterns, resources, socioeconomic status, education level, and community, neighborhood, or environmental variation (Box 8-2: Genomics and Community Assessment). For example, age, sex, race, geographical location, consumption pattern, or lack of health services may be considered risk factors, because one or more may contribute to disease or death and place the population sharing them at risk (Box 8-3: Research for Evidence-Based Practice). Some groups may be at high risk from a single risk factor, such as insufficient immunizations or exposure to asbestos. A combined potential for adverse health effects exists when many risk factors are present, because they interact in multiple ways and synergistically influence each other.

Communities therefore experience substantial variability in health conditions in regard to both incidence and susceptibility. Risk-factor theory views health and disease as multifactorial, with cause attributed to no single risk factor. For example, risk factors such as air pollution, smoking, and forms of radiation in various combinations may be related to high rates of lung cancer, emphysema, and bronchitis in a community. The potential to control risk factors and to provide relevant health-related resources forms the basis for health-promotion and health-protection activities.

GORDON'S FUNCTIONAL HEALTH PATTERNS: ASSESSMENT OF THE COMMUNITY

A variety of functional health pattern assessments are used with communities. Nurses use Gordon's (2016) functional health reference assessment as exemplified in this chapter or other assessments described in the literature.

Health Perception–Health Management Pattern

The health perception–health management pattern identifies data about community health status, health-promotion and disease-prevention practices, and community members' perceptions of health (Gordon, 2016). Residents may perceive a substance abuse problem in adolescents or a high rate of unwanted pregnancies, breast cancer, or sexually transmitted disease as concerns. Community health nurses provide data to address perceived health issues and develop community health management plans. For example, national data provide evidence for the extent of the perceived health issue of increases in their community's injection drug use. Injection drug use has declined in Canada (Roy et al., 2016); however, US data indicate increases in heroine use (Jones, 2013; Jones et al., 2015). The annual average rates of past-year heroin use in people aged 12 years or older nearly doubled from 2002 (1.6 per 1000) to 2013 (2.6 per 1000) (Jones et al., 2015). These data exceed the number of fatalities from motor vehicle accidents (US Department of Transportation National Center for Statistics and Analysis, 2008, 2012). Community partners compare these data with local data to determine public health issues to pursue.

Valuable information can be elicited by nurses conducting focus group discussions and by interviewing key community members about their health concerns and issues. Mortality and

BOX 8-2 GENOMICS

Community Assessment

Combinations of genetic, individual, and environmental factors interact to affect the risk of and/or protection from many chronic disorders, such as diabetes, Alzheimer disease, cardiovascular disease, and depression. Genetic modifications at both the individual level and the community level impact these disorders. Moreover, these disorders modify genetic expression in both individuals and communities. Exchanges between the environment and genetics alter manifestations of these complex disorders. In contrast, manifestation of the disorder alters the environment and genetics. Community environment may influence mental health issues such as depression (Ware et al., 2016). Socioeconomic factors, chronic stressors (violence, unemployment, visual appeal), and community cohesion provide general measures in many studies.

In their study about predicting depressive symptoms, Ware and colleagues (2016) describe findings from studies linking community measures with genetic predictors of depression or depressive symptoms. The studies explored to provide support for their research included gene (serotonin transporter gene [5-HTT] promoter variant) interactions with the environment. The designs included only narrow individual-level samples or the wider county-level samples, rather than smaller less heterogeneous community samples. The findings from these few studies include gene interactions with environmental factors, such as a personal history of stressful life events, the proportion of individuals receiving public assistance (county level), county-level infant mortality rates, and county-level crime rates. These findings indicate that different risks of depression exist for different genotypes depending on their individual environment and their broader environment.

Use of phenotypic approaches to sample selection (depression symptoms) rather than diagnosed depression increases the sample size and extends the research to genome-wide/gene-region analysis rather than candidate gene analyses (Ware et al., 2016). Gene-region analysis explores the effects of genetic variability on phenotypic variability. Important genetic predictors have already been identified by analysis of genetic regions. Genetic predictors for numerous disorders have been identified after single nucleotide polymorphism (SNP) analysis revealed no statistically significant associations. Predictors for disorders such as bipolar disorder, coronary artery disease, hypertension, Parkinson disease, amyotrophic lateral sclerosis, Crohn disease, rheumatoid arthritis, type 1 and type 2 diabetes, and age-related eye disease arose from the analysis of gene regions rather than SNPs (Peng et al., 2010).

The Multi-Ethnic Study of Atherosclerosis, a longitudinal cohort study, included six sites participating in the National Institutes of Health (NIH) SNP Health Association Resource (SHARe) project (http://www.nhlbi.nih.gov/research/resources/genetics-genomics/share). Approximately 1 million SNPs were genotyped, and the use of programs available from the NIH increased the number of available SNPs to about 2.5 million markers.

Ware and colleagues (2016) provide evidence to support SNP interactions in gene region 9 neighborhood index score (G 9 NIS) of depressive symptoms within the neighborhood level. This significant neighborhood gene region involves regulatory function of depressive symptoms. The gene-expression foundation for regulation of depression may be established early in life, with changes in depressive symptoms later in life. Molecular-level adaptation and brain response to local stimuli may depend on G 9 NIS changes. These community-level interactions in the G 9 NIS region may interact to influence depressive symptoms.

This novel study explored the influence of gene-region interactions on depressive symptoms and supports the idea that community or neighborhood context may interact with genetic factors in shaping depressive symptoms. Replication in other samples is necessary before firm conclusions can be drawn.

From Peng, G., Luo, L., Siu, H., Zhu, Y., Hu, P., Hong, S., et al. (2010). Gene and pathway-based second-wave analysis of genome-wide association studies. *European Journal of Human Genetics, 18*(1), 111–117; Ware, E. B., Smith, J. A., Mukherjee, B., Lee, S., Kardia, S. L. R., & Diez-Roux, A. V. (2016). Applying novel methods for assessing individual and neighborhood-level social and psychosocial environment interactions with genetic factors in the prediction of depressive symptoms in the Multi-Ethnic Study of Atherosclerosis. *Behavior Genetics, 46*(1), 89–99.

BOX 8-3 RESEARCH FOR EVIDENCE-BASED PRACTICE

Associations Among Parent/Peer Relationships and Individual Characteristics of Children

Salzinger and colleagues (2011) use socioecological theory as a foundation to explore associations among parent/peer relationships and individual characteristics in their sample of 667 children. Three rounds of data were collected over 3 years. Each round consisted of a 45- to 90-minute interview with the guardian of the child. Instruments were used to measure internalization of problems (depression, anxiety), externalization of problems (aggressive behavior), exposure to community violence, exposure to family violence, attachment to parents, attachment to friends, delinquency of friends, self-reported competence, moral disengagement (justification for the use of aggression), household dysfunction, and mental health of guardians. The consent process explained that counseling services would be available and child abuse would be reported. Stepwise hierarchical linear regression was used to analyze the data. High exposure to violence was associated with little protection from normally protective factors (e.g., attachment to parents) compared with low exposure to violence. In the low exposure to violence setting, peer protective factors (e.g., friends) were effective. Less internalizing of problems was independently associated with individual competence. Externalizing problems was independently associated with variables from all domains, and exposure. Parent attachment and other protective factors were associated with decreased problems, whereas increased problems were associated with risk factors, such as a friend's delinquency.

In a meta-analysis of the research literature on peer attachment and youth internalizing problems, Gorrese (2016) reported that Salzinger and colleagues' (2011) research clearly delineated the links between the quality of peer attachment relationships and internalizing symptoms over time. Gorrese's (2016) meta-analysis provides additional evidence for the implementation of community violence reduction, health-promotion, and health-prevention programs that emphasize and promote protective factors with parents and peers. Initiating such programs may decrease adverse behavioral outcomes in adolescents.

From Gorrese, A. (2016). Peer attachment and youth internalizing problems: A meta-analysis. *Child & Youth Care Forum, 45*(2), 177–204; Salzinger, S., Feldman, R. S., Rosario, M., & Ng-Mak, D. S. (2011). Role of parent and peer relationships and individual characteristics in middle school children's behavioral outcomes in the face of community violence. *Journal of Research on Adolescence, 21*(2), 395–407.

morbidity statistics and other public health information sources provide measurement data (see Chapter 2).

Nutritional-Metabolic Pattern

The nutritional-metabolic pattern identifies data relevant to community consumption habits as reflected in accessibility and availability of food stores and subsidized food programs for infants, children, and older adults. Community well-being, which depends on adequate dietary habits, food intake, and supply of nutrients, is influenced by culture, the presence or absence of kitchen facilities, and adequate plumbing.

Community assessment includes the collection of data by driving or walking through the community while using all five senses; it provides information about grocery stores, fast-food establishments, ethnic shopping facilities, and street corner vendors. Even affluent and developed countries contain areas without adequate access to food, or "food deserts," places where fresh food is not available. Income and food insecurity are highly correlated. Urban food insecurity (15% of city dwellers) in the US has grown with the growth in the urban poor population. As less than 2% of inhabitants still farm, movements to respond to food insecurity and access have evolved, promoting strategies such as backyard gardening, community gardening, community-supported agriculture, or local markets (Clendenning et al., 2016). Government programs, private soup kitchens, and food donations by houses of worship also provide information about nutritional patterns of communities.

Elimination Pattern

The elimination pattern identifies environmental factors, including exposure to pollutants in the community through contaminated soil, water, and air, and the food chain. This pattern further classifies environmental factors into the two broad categories—physical and biological. Alterations in environmental processes threaten the health and integrity of communities, necessitating health-promotion and health-protection activities. For example, humans eliminate most endocrine-disrupting chemicals, pharmaceuticals, and personal care products into the environment (Noguera-Oviedo & Aga, 2016). Antibiotics and hormones from animals and fish also contaminate the environment. Groundwater, drinking water, surface water, and treatment plant effluents can be affected. Furthermore, some contaminants transform into contaminants that are more toxic than the original substance. For example, the antiviral acyclovir is excreted as a transformed product that is more toxic than the original drug (Schlüter-Vorberg et al., 2015).

Physical agents include geological, geographical, climatic, and meteorological aspects of the community. Certain population groups are particularly susceptible to acute respiratory disease and aggravated asthmatic episodes when the air quality is poor (Solomon et al., 2016). For example, when schools are located in high-pollution or high-traffic areas, children are exposed to polluted air. In addition, when home cooking devices pollute home air, families are exposed to polluted air (Pillarisetti et al., 2016). Use of solid fuel combustion such as wood or coal for cooking inside produces polluted home air. Community health nurses can use the Household Air Pollution Intervention Tool to plan interventions (Pillarisetti et al., 2016). Depending on resources, community collaborations, and partnerships, the community health nurse may use a variety of possible interventions to eliminate home air pollution from solid fuel cooking indoors. These interventions include simple chimney stoves with adequate exhaust, stoves with fan-assisted combustion, and/or clean fuel (Pillarisetti et al., 2016).

The geographical locations of communities, and major waterways, highways, or mountains located within communities, act as barriers to access to health facilities. Inaccessibility of health care services also hinders health in at-risk groups. Knowledge of climatic conditions provides clues to susceptibility to illness resulting from temperature or humidity in certain populations.

Biological agents include living things—such as plants, animals and their waste products, disease agents, microbial pathogens, and toxic substances—that can be hazardous to health. For example, Lyme disease, viral hepatitis, pneumonia, influenza, and the large number of diseases associated with childhood continue to be threats to community health. Observation, focus groups, and interviews with key community members reveal information concerning elimination patterns. The Environmental Protection Agency (http://www.epa.gov/) and the Centers for Disease Control and Prevention (http://www.cdc.gov/) provide excellent resources for community health nurses.

Activity-Exercise Pattern

The activity-exercise pattern identifies physical activities and recreational options within communities. Science and technology have increasingly influenced productivity while simultaneously reducing or eliminating physical work. Consequently, physical activity no longer occurs during the work day for most community members, leaving leisure time as the only time for physical activity. Physiological evidence demonstrates that physical activity improves many biological measures associated with health and psychological functioning. Regular physical activity and musculoskeletal fitness are important for healthy, independent living as people grow older. Physical activity reduces the risk of many diseases, including obesity, heart disease, hypertension, cancer, osteoporosis, and diabetes mellitus.

Observation, focus groups, and interviews provide clues to a community's ability to provide cultural and recreational activities (Figure 8-3). Furthermore, noting whether the community has evidence of recreational facilities or is a "built community" with physical activity options (such as bike/walking trails), assessing transportation options, and observing community development that encourages walking should be included in the community assessment of the activity-exercise pattern.

Sleep-Rest Pattern

The sleep-rest pattern identifies a community's rhythm of sleeping, resting, and relaxing. Some towns never close, with stores, traffic flow, and recreational facilities operating during both day and

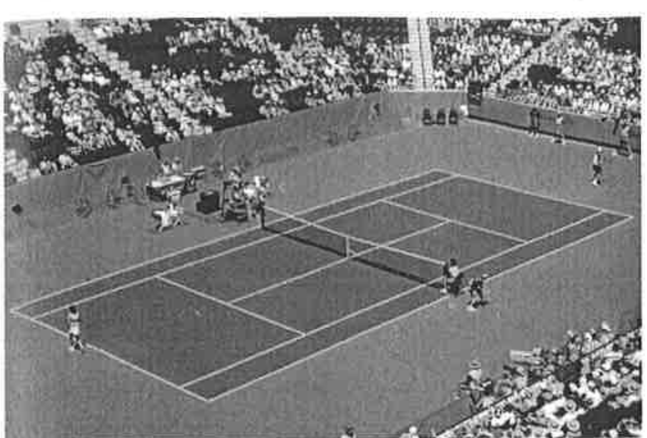


FIGURE 8-3 The activity-exercise pattern identifies a community's physical activities and recreational options.

night hours. This ongoing activity produces unpleasant disturbances, such as unwanted noise that may be harmful to community well-being. Excessive noise from highways or airplanes produces physiological or psychological problems eliciting responses ranging from mild irritation to pain or permanent hearing loss. Although noise cannot be eliminated, efforts to minimize and control it are possible. Observation, focus groups, and interviews provide clues to this pattern.

Cognitive-Perceptual Pattern

The cognitive-perceptual pattern identifies information about problem-solving and decision-making within communities. Systems depend on decision-making and resource allocation processes for survival. Communities require functional decision-making bodies to ensure adherence to rules and attainment of goals. Individual patterns and environmental patterns connect with important implications for community health. Community assessment includes appraisal of interaction with the environment, as in the participatory processes of community-based system dynamics. The effectiveness of the strategies used depends on a collaborative evolution and long-term commitment of the nurse in the community (Frerichs et al., 2016).

One strategy, bargaining, offers communities a plan to exchange resources for health service. For example, a community that owns a mammography machine but has no primary care facility might negotiate with another community to provide mammography for primary care services in return. Strategies using outside authority (legal bureaucratic methods) ensure compliance through rules and structures. In this case, states may mandate that communities maintain certain health standards. For example, a law may require all schoolchildren to be immunized against specific diseases before they enter public school. Cooperative strategies promote health when members share common goals (Andrews et al., 2012a). For example, community residents may unite to oppose a chemical landfill that is a health hazard.

Convincing people to comply because they hold some loyalty in the situation or relationship is another method that mobilizes communities. For example, community residents might expend a great deal of effort and money to retain a particular health clinic because of loyalty to the agency. Identifying decision-making patterns used by communities provides clues about health priorities and values, as well as matches and mismatches between existing circumstances, health goals, and planning strategies. Data can best be obtained by observation, focus groups, and interviews.

Self-Perception–Self-Concept Pattern

The self-perception–self-concept pattern identifies self-worth and personal identity of communities. Characteristics such as image, status, and perceived competency with problem-solving indicate community self-concept. Housing conditions, buildings, and cleanliness reflect community image. School systems, crime rates, accidents, and opinions about whether the community is considered a good place to live suggest community perception of self-worth. Competency with social and political issues as well as community spirit creates positive self-evaluation. Community pride facilitates development of innovative health programs. Emotional tone (fear, depression, or positive emotional outlook) relates to findings in other pattern areas. For example, tensions in the cognitive-perceptual pattern (conflict between groups concerning health issues) may explain a general feeling of fear among the residents. Data are obtained through observation, focus groups, and interviews.

Roles-Relationships Pattern

The roles-relationships pattern identifies communication styles along with formal and informal relationships. Of particular concern are roles and relationships affecting community ability to realize health potential. Patterns of crime, racial incidents, and social networks form indices of human relationships in communities. Publicizing health promotion becomes more effective when patterns of official communication are used. Health program success depends on support from prominent community members. Community members involved in health programs help identify other key community leaders. Use of media and other mass information programs improves communication, the flow of health information, and the number of community members reached. Interviews, television, the Internet, and newspapers are examples of ways to obtain and convey information.

Sexuality-Reproductive Pattern

The sexuality-reproductive pattern identifies reproductive data of communities, which is reflected in live birth statistics, mothers' ages, ethnicity, and marital status. This information provides clues to the health-promotion needs of a particular community group. Premature infant rates, low-birth-weight infants, and abortion rates, as well as neonatal, infant, and maternal death rates reflect reproductive patterns of communities. Such information identifies at-risk groups on the basis of particular characteristics associated with these rates. Mismatches between existing health services, health education, and community health statistics also indicate health concerns. Availability of sex education in

schools, the levels of spousal and child abuse, and the number of sex-related crimes also indicate health-promotion issues. Minutes of meetings, health records, statistical data, and public documents provide sources for these data.

Coping–Stress Tolerance Pattern

The coping–stress tolerance pattern identifies the community's ability to cope or adapt. Communities respond to stress in different ways, some of which might threaten their integrity. Community responses reveal the group coping patterns. Communities develop abilities to exchange goods, services, goals, values, and ideals to survive and to promote community health. Community efforts to obtain goods from the environment, contain goods within the environment, retain goods within the community, and dispose of goods play significant roles in influencing health. Examples of resources that communities obtain from the environment to promote health include local, state, or federal funding; health services; health-related workforce personnel; new knowledge; and technological advances. Some communities obtain abundant health care services; however, primary services often remain inadequate or nonexistent. Lack of available health services, or lack of ability to obtain them, characterizes community health need. Examples of problems communities may attempt to control include sex-related crimes, diseases, substance abuse, industry, hazardous waste in the water supply, and noxious chemicals in the air.

Community coping patterns aim to retain certain health-protection services, such as immunization services for children and adequate health facilities. Coping efforts may also include strict zoning laws and housing codes or certain values such as sex education within the home. Expendable goods of communities include industrial and human wastes. Data can be obtained through minutes of meetings, public documents, health surveys, statistical data, and health records.

Values-Beliefs Pattern

The values-beliefs pattern identifies the community values and beliefs. Such information provides clues for health-promotion and health-protection efforts valued by the community. Values underlie decisions about community health education and tax support for schools, hypertension screening for the public, disease-prevention programs, or well-child clinics. Traditions, norms, and cultural and ethnic groups share values and beliefs in communities. Data can be obtained through focus groups and through interviews with key community members and health-related personnel.

ANALYSIS AND DIAGNOSIS WITH THE COMMUNITY

Analysis refers to data categorization and pattern determination. Data synthesis and organization occur to ascertain patterns of health activities and trends. An example of a clinical scenario about a particular community is presented in the case study and care plan at the end of this chapter. Decision-making and judgment inherent in the nursing process become most important during the analysis and diagnostic phases. Table 8-2 presents an example of one way to organize community data using Prochaska's stages of change (Pender et al., 2014).

TABLE 8-2 Stages of Change

Stages	Interventions
Precontemplation	Provide information (identify risk factors) Raise doubts about current behaviors and future outcomes
Contemplation	Discuss risks of not changing Discuss benefits of changing
Planning or preparation	Help plan phases of change Help implement phases of change
Action	Help develop strategies to prevent relapse, emphasizing self-efficacy Offer encouragement
Maintenance	Highlight past successes and future benefits

Modified from Pender, N. J., Murdaugh, C. L., & Parsons, M. A. (2014). *Health promotion in nursing practice* (6th ed.). Upper Saddle River, NJ: Pearson.

Organization of Data

Charts, figures, and tables graphically display population distributions, morbidity and mortality data, or vital statistics to pinpoint significant community concerns with actual or potential health problems along with health-related responses to these concerns. Another valuable organizational technique—mapping—facilitates data analysis. For example, a series of maps gathered with use of technology such as GIS displays data that change over time. Analysis of several variables occurs simultaneously. Overlap of the locations of environmental hazards, densely populated areas, health-promotion services, and major highways becomes apparent. Poor environmental conditions; the distribution of illness, disease, and death rates; and accessibility of health-protection and health-promotion activities for the population appear at a glance with dotted scatter maps. Use of maps requires knowledge about the community's population base. Less-populated rural areas with fewer health facilities or fewer neonatal deaths in a community with fewer women of childbearing age are examples of how population statistics influence interpretation of mapping techniques. Use of theoretical frameworks for community health and Gordon's (2016) 11 pattern areas facilitates analysis of community data. Several guidelines, presented next, help community nurses analyze population data. Analysis often supports the need for further data collection.

Guidelines for Data Analysis

Check for Missing Data

The complexity, size, and number of community characteristics prohibit all possible facts about the health-related pattern areas being gathered; however, missing or insufficient data that indicate areas for further assessment should be identified. Additional assessment may determine specific approaches or a particular

community diagnosis. Examples of missing data in community assessment include pollution indices, links between health resources and population groups, accessibility to resources, and morbidity statistics. Dates for census data used should be noted.

The nurse examines community data for incongruities and conflicting information. For example, a key community official might deny the existence of pollutants in the water supply, whereas newspaper reports of health department water analysis findings indicate otherwise. The nurse evaluates such inconsistencies before identifying existing or potential health concerns.

Identify Patterns

Clues about a community pattern emerge from subjective and objective data gathered. During this stage, community nurses make decisions, begin to formulate diagnostic hypotheses (ideas and tentative judgments about possible health concerns), identify community groups that might be at risk, and establish probable causes or relationships. Ideas generated from this activity direct the search for additional clues in the data to confirm, reject, or revise hypotheses. Judgments about hypotheses continue to support patterns in the data.

To narrow the huge list of possible community health-promotion and health-protection concerns, community nurses formulate broad problem statements based on the health-related pattern areas (Gordon, 2016). For example, the community nurse differentiates among elimination problems (e.g., noxious chemicals), coping and stress-tolerance problems, and health perception–health management problems (e.g., high teenage mortality rate from motor vehicle accidents). Developing these general categories facilitates analysis.

Apply Theories, Models, Norms, and Standards

Analysis of community data requires extensive knowledge of developmental, age-related risks, as well as theories and concepts of nursing, public health, and epidemiology. Such a broad foundation enables nurses to identify additional clues in health-related patterns that contribute to community nursing diagnoses and intervention. Developmental approaches form a basis to identify groups with potential health concerns. Age groups differ in susceptibility; therefore nurses examine community resources directed toward highly susceptible groups. For example, community data that show increases in the number of live births among older women indicate a need for health-promotion services for this group. If community data show increasing numbers of aging citizens, nurses explore the availability and accessibility of existing health services for this older group.

Analysis of data for common personal or environmental characteristics also occurs. For example, select groups may be at risk on the basis of a shared health concern, such as substance abuse, lack of immunizations, unsafe housing conditions, high exposure to asbestos or noxious chemicals, or inadequate health services. Shared characteristics, such as race or ethnicity, provide clues to susceptibility and the need for screening activities. For example, black populations warrant screening for hypertension. Additionally, if a fluoridated water supply is unavailable, additional intervention to prevent dental caries in children is justified. In addition, community literacy contributes to health-promotion activity development methods used by nurses to establish educational programs. A low literacy level limits the ability to use all available resources.

Environmental information is readily available on the Internet. Databases and search engines provide useful information about environmental hazards and other environmental problems in communities. Prevention of disease worldwide depends on the dissemination of global environmental health information (US Department of Health and Human Services, 2015). Analysis of data relies on standards developed nationally or globally. For example, community data regarding air quality can be compared with state or national ambient air quality standards to determine health. In this context, the term ambient refers to outside air in a town, city, or other defined region. In the United States, air-monitoring stations are generally located in urban and rural areas within each state. One source for air quality information is the CHARTing Health Information for Texas, which is maintained by the University of Texas Health Science Center at Houston School of Public Health. The goal of this center is to serve as a resource in Texas for publicly available data to use for analysis and research. Data and links to other sites are continually monitored and updated (University of Texas Health Science Center at Houston, 2012). Current information about community resources enables more effective strategies to prevent risk factors and avoid health problems. Internet access facilitates identification of gaps in health-promotion and health-protection services.

Identify Strengths and Health Concerns

Interpretation of community data occurs with regard to community concerns, community strengths, and feasibility studies. Community nurses make judgments and inferences about community health, community responses to health situations, and population needs. One approach assumes health concerns exist unless assessment data indicate otherwise (Gordon, 2016). Other systems of assessment base decisions on community strengths. With the problem-focused assessment of health concerns, nurses make diagnoses based on summarized data using the nursing process, which results in one or more of the following determinations:

- No problem exists, but providing health-promotion or health-protection services may address a potential health concern. For example, providing health education in a high school could offset a potential for increased sexually transmitted disease in the high school population.
- A problem exists but is recognized by community members or health-related professionals with effective strategies for problem-solving; for example, flu immunizations.
- A problem exists that the community recognizes, but resources are inadequate or the community has not responded. Assistance is needed; for example, highway traffic noise.
- A problem exists that the community recognizes but cannot cope with at this time, such as a lack of fluoridated water systems. Dentists, nurses, and nutritionists could be assigned to assist the community in resolving actual problems of dental caries.
- A problem or potential health concern exists that needs further study; for example, lack of sidewalks.

Use of strength-based approaches to assessment emphasizes strengths and integrates health-promotion and health-protection activities into a person's plans. For example, a community may have nutritional feeding programs for older adults, women, and children that are underutilized. Community members may not use them because communication is inadequate. Examples of community strengths and concerns are shown in Table 8-3.

Identify Causes and Risk Factors

Data are examined for factors or characteristics that contribute to identified potential and existing health-related concerns. Nurses make inferences about population groups and identify risk factors. Identification of risk factors guides community nursing actions. Some risk factors signify immediate health concerns, such as a polluted water supply, whereas other risk factors indicate potential problems, such as lack of knowledge of childhood disease prevention. Nurses consider whether community risk factors can be altered, eliminated, or regulated through nursing actions. Nurses modify risk factors when possible by using strategies such as health education (Box 8-4: Diversity Awareness).

Community Diagnosis

Community assessment, as previously described, culminates in nursing diagnoses. The following components are included in the community diagnosis process: community situations or states within a population or population group; data collection using some combination of observation, focus groups, interview, and measurement; a framework; existing or potential health concerns; risk factors related to health concerns; and potential solutions through nursing actions. Diagnoses form the basis for planning, implementing, and evaluating solutions to health concerns (Gordon, 2016). Box 8-5: Quality and Safety Scenario and Box 8-6: Innovative Practice provide an overview of how workplace violence contributes to quality and safety and how leaders might intervene to prevent or diffuse violence.

Community diagnoses and problem structuring facilitate communication among community health professionals, team members, and community members through the use of clear and concise nomenclature with development of diagnostic categories using both inductive and deductive reasoning specific to community nursing (Frerichs et al., 2016). Diagnoses may be written or stated according to the structural and functional aspects of a community.

Structural aspects include those related to the population, such as the demographic characteristics of groups with similar characteristics (preschool children, adolescents, or a high school population). Functional aspects include those related to the psychosocial, physiological, or spiritual health patterns, such as decision-making (cognitive-perceptual pattern) or communication links among health care resources (roles-relationships pattern). Functional health patterns guide data collection about health concerns and risk factors. Structural and functional aspects of the community provide a framework for diagnostic statements (see Chapter 6).

TABLE 8-3 Examples of Community Strengths and Concerns

Strengths	Concerns
Well-child clinic available	Unavailable
Feeding program accessible to older adults	Inaccessible
Sex education in schools acceptable	Unacceptable
Family planning services accessible	Inaccessible
Fluoridated water system	Nonfluoridated water system
Open communication	Dysfunctional communication
Interagency cooperation	Dysfunctional transactions
Adequate kitchen and plumbing facilities	Inadequate
High interest of key leaders in health promotion	Lack of interest

BOX 8-4 DIVERSITY AWARENESS

Comparing Poverty Rates by Racial and Ethnic Categories

The United States uses the Current Population Survey to assess the labor force, but this survey also provides a broad-based database that includes demographic data facilitating comparison among groups (US Census Bureau, n.d.). According to the 2007–11 American Community Survey, the poverty rate (14.3%) increased by 2.3% from the level in 2007 (US Census Bureau, n.d.). Racial and ethnic disparities in poverty rates persist, with the highest rates for American Indians and Alaska Natives (27%). The next highest rates of poverty, listed in order from highest poverty rate to lowest, are for blacks or African Americans (25.8%), Native Hawaiians and other Pacific Islanders (17.6%), and the Asian population (Korean [15%], Vietnamese [14.7%], and Filipino [5.8%]). Among Hispanic subpopulations, the poverty rates ranged from a low of 16.2% for Cubans to a high of 26.3% for Dominicans. Non-Hispanic whites continue to maintain the lowest poverty rate among the racial ethnic data collected (9.9%).

Poverty experiences place these populations at risk for many health problems, such as developmental delay, asthma, and heart disease. Identifying harmful social determinants of health during community assessment facilitates health promotion for communities experiencing poverty (Chung et al., 2016). Assessment of the community should explore whether organizations exist to assist with food access, child health insurance options, employment opportunities, restraining orders, and securing safe housing. Access to health services, particularly mental health services, should also be included in assessment of impoverished communities. Furthermore, community members who remain informed about the unique resources available locally offer important information for planning care and referral to community-based programs.

Local health agencies, nonprofit groups, and community resource lists may provide additional information about resources available within the community. The community assessment gathers information about the issue encountered most frequently. Other issues may be less common, but because of their severity should be assessed, such as the incidence of child maltreatment.

From Chung, E. K., Siegel, B. S., Garg, A., Conroy, K., Gross, R. S., Long, D. A., et al. (2016). Screening for social determinants of health among children and families living in poverty: A guide for clinicians. *Current Problems in Pediatric and Adolescent Health Care, 45*(5), 135–153; US Census Bureau. (n.d.). Current population survey. http://www.census.gov/programs-surveys/cps.html.

BOX 8-5 QUALITY AND SAFETY SCENARIO

Workplace Violence

Targets for violent acts may be places where people work to support their families. Workplace violence was once considered isolated, unplanned incidents that fell under the jurisdiction of the federal Occupational Safety and Health Administration (OSHA). Currently, workplace violence prevention and preparation often also include external threats of terrorism. The following are some recommendations to minimize workplace violence:

- Encourage public awareness campaigns.
- Develop workplace policies and plans.
- Adopt a zero-tolerance workplace violence policy.
- Apply preventive law enforcement policies.
- Perform background checks on employees.
- Study government agencies that make workplace violence a priority.
- Provide proper training for employees, supervisors, and managers about warning signs of violent behavior.
- Encourage a workplace culture that facilitates health relationships, creative problem-solving, and voicing concerns while discouraging a hostile environment.
- Expect nonautocratic leadership styles.
- Prevent/minimize negative coworker behavior.
- Encourage social support (listening, recognition) for employees to succeed at their work.
- Implement strategies to minimize absenteeism, turnover, and low performance.
- Implement strategies to encourage participatory management.
- Ensure protection of the abused person when domestic violence or stalking occurs in the workplace.
- Develop and distribute clear and comprehensive legal and legislative guidelines.
- Evaluate programs and strategies after they have been implemented.

Suggestions for approaches included the following strategies:

- Educational efforts should reflect cooperative efforts by government agencies, major corporations, unions, and advocacy groups, with OSHA acting as a facilitator and coordinator.
- Enact multidisciplinary no-threats/no-violence policies and prevention plans.
- Violence prevention training should occur regularly and include practicing the plan.
- The work space and policies should provide a physically secure work environment.
- Preventive measures should be established, including documenting incidents, planning antiviolence strategies, and conducting threat assessments.
- Systems should be developed for the monitoring of incidents of workplace violence.
- Resource lists should be maintained and include social service, mental health, legal, and other agencies that provide assistance.
- Training programs should extend community policing concepts to workplace violence. Government or private organizations should develop training materials for small employers. Employers should keep the abuser out of the workplace (e.g., screening telephone calls, making the victim's work space physically more secure, instructing security guards or receptionists).
- Employers should provide resources for emotional, financial, and legal counseling. Clear, comprehensive, and uniform legal guidelines should be distributed widely.
- Incentives for employers should be identified and instituted.

Modified from Cowie, A. K. (2016). Some predictors of workplace violence. *From Science to Practice: Organizational Psychology Bulletin, 2*(1), 13-14.

BOX 8-6 INNOVATIVE PRACTICE

Intervention Techniques to Prevent and Diffuse Workplace Violence

Lanza and colleagues (2016) reported their findings from a research study exploring the benefits of an innovative community intervention to prevent and diffuse workplace violence. The community meetings used a format (the violence-prevention community meeting) designed to minimize violence and promote nonviolent problem-solving and acting with civility. Their study included patients and staff on seven locked psychiatric units in the US Veterans Health Administration. During 21 weeks, each site had violence-prevention community meetings (VPCM) during the middle 7 weeks, with 7 weeks before the VPCM and 7 weeks after the VPCM. After the VPCM, aggression rates dropped. In addition to innovative strategies such as the VPCM, the following techniques may also be useful:

- Recognize warning signs, which include changes in mood, personal hardships, mental health issues (e.g., depression, anxiety), negative behavior (e.g., untrustworthy, lying, bad attitude), verbal threats, and history of violence.
- Do not limit at-risk behavior to a standard profile.
- Environments should be designed to detect signs of impending violence and to prevent violence with security cameras, key card access, administrative controls, and behavioral strategies.
- Reporting systems should be confidential and seamless.
- Stay calm; create a relaxed environment and speak calmly.
- Separate the individual from the group, if possible.
- Use nonthreatening body language; build trust and strengthen the relationship.
- Keep your verbal communication simple, clear, and direct; be open and honest.
- Reflect on the person's message to allow time for clarification, allow the person to verbalize, listen attentively, and stop what you are doing and give full attention.
- Ask for examples to help illustrate the points that are being made. Carefully define the problem, exploring it with open-ended questions.
- Silence allows the individual time to clarify thoughts.
- Monitor the tone, volume, rate, and rhythm of your speech.
- Seek opportunities for agreement.
- Be creative and open to new ideas.

From Lanza, M., Ridenour, M., Hendricks, S., Rierdan, J., Zeiss, R., Schmidt, S., et al. (2016). The violence prevention community meeting: A multi-site study. *Archives of Psychiatric Nursing, 30*(3), 382–386.

PLANNING WITH THE COMMUNITY

Community health planning begins with nursing diagnoses. Nurses design goals to resolve existing or potential health concerns. For example, high rates of childhood diseases in the community require goals aimed at decreasing rates. Identification of specific or potential health concerns with planned actions to achieve desired community outcomes provides the framework and data for community evaluation.

Purposes

The following are major purposes of the planning phase:

- Prioritization of problems and identification of diagnoses through assessment
- Differentiation of problems resolved through nursing actions from those best resolved by others
- Identification of immediate, intermediate, and long-term goals, as well as behavioral objectives oriented to the community derived from the goals and specific actions to achieve objectives
- Formalization of a community nursing care plan (see the care plan at the end of this chapter) that includes written problems, actions, and expected behavioral outcomes

The planning phase culminates in a nursing plan that provides the framework for evaluation. Once developed, the plan is implemented. The costs associated with the delivery of health services and personnel, as well as the financial resources available, influence the priorities for implementation. Community values and the nurse's philosophy about people, health, the community, and nursing also influence implementation. High-priority issues often include infectious agents, sexually transmitted disease, alcohol and drug use, smoking, inadequate nutrition, inadequate infant and child care, high death rate from motor vehicle accidents, texting while driving, heroine overdose, and unwanted teenage pregnancies.

Community participation in health planning facilitates effective assignment of priorities. As health service recipients, community members strive for reasonably priced, high-quality services. Residents aim to acquire appropriate benefits for the needs and concerns of the population. Communication and the rationale for designating priorities help to resolve differences in opinion.

During the planning phase, nurses determine those problems most amenable to community nursing intervention, behavior implemented by the nurse to fulfill a health goal of the community. Community nurses differentiate problems nursing can resolve from those health concerns that could best be managed by community members, referred to health-related professionals, or handled with community support. Nurses refer problems related to the presence of rodents, poor sanitation conditions, or the absence of community recreational facilities to appropriate community leaders or agencies.

Community nurses focus on determining goals, developing measurable behavioral objectives, and designating actions to achieve expected outcomes. Nurses describe specific behaviors intended to reach projected outcomes. Evaluation includes appraisal of the effectiveness of nursing actions. Health planning emphasizes promoting and protecting population health; therefore problems, solutions, and actions are defined at the group level. Community nurses plan and implement health plans for groups, such as school-age children, and facilitate development of health-promotion services for all residents. Nurses frequently act as change agents by taking responsibility for influencing health patterns and behavior. Decisions about health interventions stem from community nurses' appreciation of human behavior and principles of planned change.

Planned Change

Planned change results from efforts by individuals or groups, and involves fundamental shifts in behavior (Pender et al., 2014). Individuals act as agents of their own health conditions. Community health objectives often depend on active decisions by individuals to change their lifestyles (reducing alcohol consumption or quitting smoking). Efforts to influence and reinforce changes in community health behavior become the central focus of effective risk reduction programs (Brown et al., 2016).

Studies attempt to explain why some groups of people effectively participate in certain health programs or make lifestyle changes, whereas others do not. Early work by Rosenstock, who developed the health belief model, has evolved to models such as those by Pender and Prochaska used to explain and change health-promotion behaviors (Pender et al., 2014). These models identify critical concepts for understanding how individuals change their health behavior. Rosenstock's model includes the following four steps:

- Perceiving behavior as a health threat in terms of susceptibility and seriousness
- Believing the behavior is a threat to their personal health
- Taking action to adopt preventive health behaviors
- Reinforcing the new behavior

In Rosenstock's model, community members take a passive role at first, and then transition from passive to active between the second and third steps (belief to action). Ultimately, to improve community health through risk reduction programs, community members assume more responsibility for their own health, become more active in adopting healthy lifestyles, and monitor resources in the community to achieve healthy behaviors. In planning health-promotion activities, nurses consider effective strategies to motivate and support community transition from a passive to an active state.

Plans guide nursing actions. Nurses make additions and changes on the basis of community problems, resources, and problem resolution to maintain a viable plan. Table 8-1 provides one example of a community-oriented, health-promotion plan based on the goals recommended by the Surgeon General's report about health promotion and disease prevention. The report's general goal generates several specific objectives. Nursing diagnoses guide the direction of the objectives, including the risk factors to be addressed. Examples of various rationales in Table 8-1 show how nurses incorporate important concepts of planned change into community-based health-promotion plans.

Communicating plans to other health professionals, community members, and key officials remains an essential aspect of planning. Unification of care systems and linkages through shared data entry, computerized documentation, and electronic

medical records contribute to more streamlined and transparent communication and collaboration. Local newspapers, local bulletins, and school correspondence to parents provide avenues to communicate with the community about health-promotion plans. Other community-based actions, such as those for nursing involvement in prevention of alcohol abuse in the community, can be used. The various plans have been categorized according to the health patterns to show that a community problem can be approached from multiple directions. Feasible plans that are well formulated facilitate implementation (US Department of Health and Human Services, 2015).

IMPLEMENTATION WITH THE COMMUNITY

Implementation of the nursing process begins on the basis of the health-promotion and health-protection plans. In collaboration with community members or other health team members, the nurse tests feasibility and implements the plan. Involving key community members, in the assessment and planning process, is crucial for success. To ensure involvement, activities must be accessible. For example, schedule meetings in accessible areas, offer child care services, and provide light refreshments. Identify clearly what the community perceives as health-promotion needs. Maintain open communication—clear and correct information at regular intervals.

Intellectual, interpersonal, and technical skills of the community members facilitate the collaborative contribution. Community nurses often prepare community members with development of technical skills of community engagement and empowerment. Success also depends on the overcoming of expected resistance to change. Resistance to new health-promotion and health-protection activities, however, provides useful feedback to improve planning. People generally resist change to defend values that appear to be threatened by the change. Collaborating with communities initially facilitates change during the implementation phase. Table 8-4 lists factors that deter community participation. Informed nurses collaborate with community members throughout the process.

TABLE 8-4 Potential Sources of Resistance to Health-Promotion Programs, With Agent Responses

Source of Resistance	Response
Lack of communication about implementation of program	Communicate through community newsletter, newspapers, high school radio station, and posters
Misinformation regarding time and place of healthy activity	Disseminate valid information
Fear of unknown	Inform and encourage
Need for security	Clarify intentions and methods
No desired need to change behaviors	Demonstrate opportunity for change
Cultural or religious beliefs or vested interests threatened	Enlist key community leaders in planning change
Inaccessibility	Focus activities near the largest target population and in an area accessible by public transportation

Community nurses implement health-promotion and health-protection plans in multiple community settings (schools, industry, public and private health agencies, and ambulatory care settings) where population groups experience relatively good health. Nursing centers provide nursing faculty, staff, and students with unique opportunities to assess health and plan, implement, and evaluate care (including holistic health promotion and primary health care) for individuals, families, and communities with unmet health care needs (Harvey et al., 2012). Community assessment includes observation of reciprocal interaction between the individual and his or her environment, which is similar to those techniques used for individual and family health promotion assessment (see Chapters 6 and 7 respectively). Community assessment also commonly uses factors related to self-efficacy and Bandura's social learning theory to explain relationships between human behavior and the environment. The complexity of health actions differs from one community to another. Community advisory boards play a critical role in community planning. As plans evolve, nurses learn more about the community and their own responses, strengths, limitations, and abilities to cope or adapt (Subica et al., 2016). Although implementation takes an action focus, it also includes assessment, planning, and evaluation activities to monitor actions taken to resolve, reduce, eliminate, or control the health concern.

EVALUATION WITH THE COMMUNITY

During the evaluation phase of the process, community nurses learn whether planned actions achieved desired outcomes. Communities and nurses determine progression toward goal achievement through methods that expand collaborations (Frerichs et al., 2016). Nurses take overall responsibility for the process; however, collaborating with community members and health team members in the process produces the most valid results. For example, if implemented plans intend to reduce the incidence of fatal motor vehicle accidents, nurses guide the process to obtain community indicators and outcomes data, requisite community actions, and expected outcomes achieved from joint collaboration with community stakeholders.

Nursing plans, which include nursing diagnoses, expected outcomes, and interventions, provide the evaluation framework. With a community focus, goals and objectives define the evaluation, considering how the community responded to planned actions. For example, if childhood disease rate reduction is expected to result from certain nursing actions, community responses before the actions are compared with those after the actions. Comparison determines the level of effectiveness (complete, partially effective, or ineffective) of the nursing actions to achieve the goal.

Community nurses approach the dynamic process of evaluation in a purposeful, goal-directed manner (Stanhope & Lancaster, 2015; US Department of Health and Human Services 2015). Determining the effectiveness of nursing actions evaluates the degree to which goals are achieved. The frequency of evaluation depends on the situations, changes expected, and objectives

For example, an individual who is bleeding may need evaluation at frequent intervals, whereas behavioral changes in community groups occur slowly and require long-term evaluation methods. Evaluation intervals differ depending on immediate, intermediate, and long-range goals. The evaluation process continues until community goals are realized.

Evaluation results indicate the need for reassessment, revision, or modification of plans. Community nurses reassess situations, plan new approaches, and implement and evaluate revised plans, creating the continual cycle of the nursing process. Self-evaluation determines strengths and weaknesses as well as ways the nursing plan could have been more effective or efficient. The quality of community health-promotion and health-protection efforts depends on the professional qualities of those providing the services along with effective use of the nursing process.

Workable, cost-effective programs of community health promotion are needed. Nurses play an important role in providing evidence to support effective community health plans. Historically, documentation of effective health-promotion activities has been limited (Maurer & Smith, 2014; Pender et al., 2014). Effectiveness is determined through research studies that include analyses and outcomes evaluation of home-based and community-centered nursing interventions designed to meet the needs of high-risk families, geographical communities, and vulnerable populations. For example, in a study of 679 women eligible for the Special Supplemental Nutrition Program for Women, Infants and Children, health-promotion strategies of nutrition, physical activity, and social support were used to reduce the incidence of depressive symptoms (Surkan et al., 2012). Surkan and colleagues (2012) demonstrated that health-promotion interventions delivered through home visits and telephone calls reduced the incidence of depressive symptoms at 15 months postpartum among low-income, ethnically diverse women. Such evidence-based practice and research helps to garner support for community health-promotion programs. The *Healthy People 2020* objectives include examples of national and state partnerships establishing health objectives and sustaining the initiatives (US Department of Health and Human Services, 2015).

CASE STUDY

Community Efforts to Decrease Adolescent Pregnancy Rates

The community health nurse is facilitating a grassroots community group that is determined to decrease the adolescent pregnancy rate in the city. The community population hovers around 100,000. It is a community that lies on the Mexican border of the United States. The population is predominantly Mexican American, and there is a high poverty rate.

The schools offer health courses twice between seventh grade and twelfth grade. The only formal sex education provided occurs within the context of these two health courses. There is community opposition to increasing the amount of sex education in the curriculum. A community group that has researched the problem has decided to use a social marketing approach because of this community resistance.

Most of the materials reviewed do not address the cultural needs of the region. Many of the Spanish language materials use Spanish from countries other than Mexico. The situations posed in the audiovisual materials show people who the adolescents will perceive as different from themselves.

Reflective Questions

- How could the community group approach its goal to decrease the adolescent pregnancy rate in a manner that will be culturally competent?
- How might the community group approach this issue without the support of the school district?

CARE PLAN

Community Efforts to Decrease Adolescent Pregnancy Rates

***Nursing Diagnosis: Risk of ineffective community coping related to increased levels of teen pregnancy**

Defining Characteristics

- Absence of education or support for sexually active teenagers
- Absence of programs for pregnancy testing, counseling, or teaching young women to care for infants
- Absence of sex education in the home, school, and community
- Community conflicts over what to teach adolescent and preadolescent children about sex
- Failure of teenagers to perceive the long-term effects of having babies
- High incidence of infants who are born prematurely or with health problems
- High rate of teen pregnancy
- Lack of access to birth control pills or devices for teenagers
- Lack of community support for preventive sex education

Related Factors

- Community members' lack of knowledge about the causes of and contributing factors in teen pregnancy
- Inadequate community resources for preventing teen pregnancy
- Lack of adequate communication patterns and community cohesiveness regarding strategies to prevent teen pregnancy

Interventions

- Assess teenagers' knowledge of sex and sexuality to determine their educational needs.
- Work with schools to develop pregnancy-prevention programs that provide adolescents with information about the risks, problems, and complications of early pregnancy.
- Work closely with individual adolescents who are pregnant to assess their needs and provide care.
- Implement an outreach and health-promotion program to raise community members' awareness of the need to approach teen pregnancy as a community problem. Consider taking the following five steps:
  - Work with teachers, school psychologists, counselors, school nurses, students, and the parent-teacher association to determine the extent of the teen pregnancy problem.
  - Encourage local youth groups, churches, and social service organizations to feature presentations on pregnancy prevention at their meetings.
  - Contact representatives of local corporations to ask for funding for educational programs.

CARE PLAN

Community Efforts to Decrease Adolescent Pregnancy Rates—cont'd

- Help community members (school nurses, counselors, and teachers) recognize adolescent girls who need counseling regarding such issues as peer pressure to be sexually active and the long-term consequences of pregnancy. Remind community members of the importance of listening attentively and remaining nonjudgmental.
- Provide education on birth control measures (including abstinence from sex) and make this information available at school.
- Establish clubs for adolescent girls in the community. The goal of these clubs is to foster self-esteem. During club meetings, members should have the opportunity to openly discuss difficult questions, such as why girls consider a baby a status symbol and how to respond to peer pressure to be sexually active. Increasing self-esteem has been found to be the most effective way to reduce teen pregnancy rates.
- Encourage adolescents to participate in peer support networks where they can openly discuss social and dating pressure and other issues related to teen pregnancy, to allow them an opportunity to express their feelings openly and obtain support from peers.
- Encourage community members to establish school-based clinics in which teens can have access to reproductive system models, pregnancy tests, and nonprescription birth control measures to support the teenagers who make the decision to protect themselves from unwanted pregnancies.
- Develop a list of referrals for teenagers, such as hospitals with human sexuality courses, charities that provide prenatal care and childbirth services, women's clinics, and Planned Parenthood, to compensate for restricted access to information in the adolescent's home or school.
- Encourage community members to implement an information campaign to educate adolescents, parents, and community members about the problems associated with teen pregnancy.
- Work with community members to evaluate the effectiveness of the teen pregnancy prevention program and assist in modifying it as needed to ensure its effectiveness and promote the program as a model for preventive health.
- Collect statistical data from the schools to analyze the teen pregnancy rates, to help evaluate the effectiveness of the prevention program.

Expected Outcomes

- Community members express awareness of the seriousness of the high adolescent pregnancy rate in their community.
- Community members express the need for a plan to reduce the prevalence of teen pregnancies.
- Community members develop and implement plans to prevent teen pregnancy.
- Community members evaluate the success of the plan in meeting goals and objectives.
- Community members continue to revise the plan to prevent teen pregnancy as necessary.

*NANDA Nursing Diagnoses—Herdman, T. H. & Kamitsuru, S. (Eds.). Nursing Diagnoses–Definitions and Classification 2015–2017. Copyright © 2014, 1994–2014 NANDA International. Used by arrangement with John Wiley & Sons Limited. In order to make safe and effective judgments using the NANDA-I nursing diagnoses it is essential that nurses refer to the definitions and defining characteristics of the diagnoses listed in this work.

SUMMARY

Risk factors, injury, and disease are not inevitable events experienced equally among a community's members. Effective community nurses understand the dynamic and complex nature of communities (Figure 8-4). Nurses use various theoretical frameworks to assess health-related patterns, health concerns, and health action potential and to implement the nursing process within communities. Collection and analysis of community data identify susceptible subpopulations. Planning contributes to the development of effective and efficient health-promotion and health-protection services. The nursing process enhances the efficacy of planning activities.

Many communities experience obvious deficiencies in health services that warrant health planning action. Community nurses play a significant role in health planning directed toward reducing the risks associated with disease, premature death, and injury as well as health promotion among community members. Nurses use principles of planned change to increase community awareness of health, promote healthy behaviors, and encourage participation in preventive health services. The complexity differs from one community or geographical area to another. Community nurses connect health-promotion actions to specific community phenomena, providing scientific evidence to support nursing actions in the community.

FIGURE 8-4 Communities come together for the enjoyment of one of their traditional holidays. (From iStockphoto/Thinkstock.)

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- Study Questions

9

Screening

Elizabeth Connelly Kudzma

OBJECTIVES

After completing this chapter, the reader will be able to:

- Discuss screening and its role in secondary prevention and health promotion.
- Analyze criteria to determine if a disease has evidence-based guidelines for screening.
- Identify health care, economic, and ethical implications related to the screening process.
- Discuss how collaborative community and national partnerships and policies assist in the development and implementation of a screening program.
- Describe elements of the nursing role in the screening process.

KEY TERMS

Affordable Care Act
Agency for Healthcare Research and Quality
Asymptomatic pathogenesis
Community assessment
Community resources
Cost-benefit ratio analysis
Cost-effectiveness analysis
Cost-efficiency analysis
Disability-adjusted life year
Efficacy
Efficiency
Epidemiology
False negative test results
False positive test results
Group or mass screening
Iatrogenic
Incidence
Individual screening
Interobserver reliability
Interprofessional education
Intraobserver reliability
Key community individuals
Lead agency
Morbidity
Mortality
Multiple test screening
National Prevention Strategy
One-test disease-specific screening
Prevalence
Quality-adjusted life year
Quality of life
Quantity of life
Racial and Ethnic Approaches to Community Health
Reliability
Secondary prevention
Sensitivity
Significance
Specificity
Stakeholders
Target community
US Preventive Services Task Force
Validity

THINK ABOUT IT

Screening Then and Today

In the 1920s, educators started to investigate the concepts of intelligence quotient, lower intelligence, and mental handicaps. Intelligence categories were separated numerically, and "cretin" became a medical term used to describe a lower level of intelligence. Neonatal hypothyroidism (cretinism) was more common in mountainous inland areas away from sea salt sources of iodine. It is very rare in the modern world because of the required screening of all infants at birth (blood tests measure levels of thyroid-stimulating hormone and thyroxine). Screening testing of mothers during pregnancy and of infants shortly after birth with dried blood spot (DBS) technology allows treatment and lifetime monitoring before the serious signs of thyroxine deficiency occur. This disorder and others (e.g., phenylketonuria [PKU]) are health screenings' modern success stories. Neonatal hypothyroidism has virtually disappeared in the developed world as a result of the screening of babies (target population) followed by appropriate treatment for affected individuals. However, the storage and research use of DBS technology raises significant controversy over lack of parental knowledge and consent for research activities; in some states privacy laws may inhibit retention of DBS samples without explicit parental knowledge (Botkin et al., 2013).

Very recently biotechnology companies have developed tests that aim to screen an individual's DNA for genes associated with diseases or population subgroups (Nickolich et al., 2016). DNA testing examines a person's genetic code to provide information about genealogy or ancestry that may be helpful in assessing a person's risk of disease. Personalized DNA testing kits are available to help consumers discover their risks of developing disorders (such as Alzheimer disease, diabetes, and breast cancer). An over-the-counter home test for human immunodeficiency virus (HIV) was approved by the Food and Drug Administration and was marketed to consumers in 2012. The availability of screening options that may be novel, but unproven, raises new questions about media information provided to the public, the politics involved (Lin & Gostin, 2016), and the reliability and validity of screening methods and associated necessary counseling.

- Why has the newborn period been identified as an important time to require screening tests?
- Each government regulates a list of mandated screening for newborns. Do you know what your government/state/ministry of health requires?
- The availability and feasibility of screening tests is constantly changing. How are new screening tests evaluated and added to the mandated requirements?
- What characteristics of screening tests have to be considered for neonates? What characteristics of screening tests have to be considered for individuals of any age?
- How is the margin of error further defined for screening tests/instruments?
- What aspects of screening program development should nurses participate in? Assessment, data analysis, implementation, evaluation of health outcomes?

> *Evidence-based preventive services are effective in reducing death and disability, and are cost-effective or even cost-saving. Preventive services consist of screening tests, counseling, immunizations or medications used to prevent disease, detect health problems early, or provide people with the information they need to make good decisions about their health. While preventive services are traditionally delivered in clinical settings, some can be delivered within communities, work sites, schools, residential treatment centers, or homes (National Prevention Council, 2011, p. 18).*

Clinical and community preventive services are vital to health promotion and disease prevention. Identified as such, they have become one of the four strategic directions of the National Prevention Strategy (safe community environments, elimination of health disparities, clinical and preventive services, empowered people). Most adults are not up-to-date on the core set of clinical preventive services recommended at various ages, and the proportion of older adults who are current with their screening or are unwilling to be screened diminishes as more screening strategies are added (Bynum et al., 2012; Davis et al., 2012). Screening is an important component of clinical preventive services because it is a valuable tool for health care professionals to identify chronic conditions and risk factors before the condition becomes costly both in financial terms and for quality of life. This is particularly important as the health care paradigm shifts from medical and volume-based to a health-promotion and value-based model of care. Although health education about screening is categorized as part of the rubric of primary prevention, the actual process of screening is part of secondary prevention.

The primary goal of screening is to detect risk factors and a condition early, to prevent or treat it, and to deter its progression.

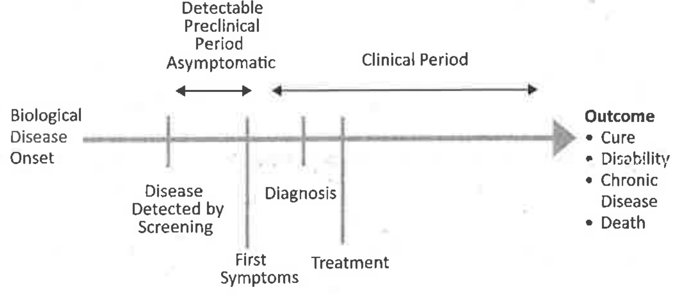

FIGURE 9-1 Screening periods.

An important assumption underlying the use of screening is that detection early in the asymptomatic period allows treatment at a time when the eventual course of the disease can be altered significantly. Similarly, identifying risk factors assists in identifying the populations needing screening and focuses attention on needed behavior change before disease develops. Screening strategies are based on the principle that the selected disease is preceded by a period of asymptomatic pathogenesis or latency (disease development before symptoms first appear) when risk factors predisposing a person to the disease are building toward full manifestation of the disease (Figure 9-1). Screening takes advantage of the prepathogenic state and the early pathogenic state—identifying risks relating to disease in the earliest and most treatable stages.

Screening strategies are essential to the core of the health-promotion metaphor—the upstream/downstream narrative. When health care providers are so preoccupied with managing the acute care (ill/dying) of the drowning downstream, they have little time to focus on why individuals become ill and fall

into the river upstream. Screening tests focus attention on going upstream to the source to better identify valid determinants of health status. Identification of valid health status measures involves accurate screening tests.

Administration of screening tests, some of which might be fairly simple and relatively inexpensive when compared with the burden of disease, provides value in improved quality of care and decreased health care costs. Screening is not generally a diagnostic measure, nor is it curative. It is a preliminary step to identify (upstream) individuals who need more diagnostic workup to prevent further development of the condition or disease and to ameliorate adverse disease outcomes. More importantly, it is a step toward empowering individuals to make more informed choices about their health and health behaviors. A second, but equally important, objective of screening is to reduce the costs of managing the disease by avoiding more intensive interventions required in later disease stages. A cost-conscious approach to health care mandates that health care professionals, at all levels, acquire a basic understanding of the screening process and its application. Unfortunately, upstream screening and the application of screening processes involves complicated decision-making, and is entangled with social policy, communication and media information, and personal choice.

ADVANTAGES AND DISADVANTAGES OF SCREENING

Advantages

Some screenings are very simple and performed at home (blood pressure, heart rate, weight, even currently oxygen saturation), and nurses are involved in promoting their use and educating people about their use. This chapter, however, will focus more on the efficacy and efficiency of clinical, procedural, and laboratory-based tests. Screening tests offer several advantages. Although some screening procedures are simple and relatively inexpensive, others are expensive and may not be cost-effective. The simplicity of some screening procedures decreases the time and cost of the health care personnel involved, especially when compared with the cost of treating the disease after symptoms appear, and enables less skilled technicians to administer the test.

A second advantage is the ability to apply the screening process to both individuals and larger populations. In an **individual screening** program, one person is tested by a health professional who has selected the individual as high risk (such as prior hypertension). The practitioner can make this decision independently; the health care agency can define a specific policy; or legislative bodies can require the screening by law as in the case of newborn hypothyroidism and PKU, or lead-screening programs in children.

PKU is a rare genetic disorder that causes the level of an amino acid, phenylalanine, to build up because of a metabolizing enzyme defect. Children who are identified as having PKU can be placed on a phenylalanine-restricted diet and medication to avoid the worst complications of PKU-related disease (neurological problems, delayed development, and intellectual disability/mental retardation). Lead screening for children is an essential component of the well-child visit. Children younger than 6 years are at greatest risk, and once exposure has occurred, it is difficult to reverse toxic effects (Ness, 2013). A pediatrician in Flint, Michigan, who was reviewing positive lead screening test results in children alerted public health authorities and the state to the existence of high lead levels in the city water. As electronic health records become more digital, an electronic flag during well care visits ideally alerts the provider when the care recipient needs recommended screening.

Group or mass screening occurs when a target population is selected on the basis of an increased incidence of a condition or a recognized element of high risk within an identified group. For example, the target population may be invited to a central location on a designated day to be tested for the selected disorders (elevated levels of lipids and cholesterol, hypertension, osteoporosis, elevated blood glucose level).

A third advantage is the ability to provide one-test disease-specific screening or multiple test screenings. A **one-test disease-specific screening** is the administration of a single test that searches for a characteristic that indicates a high risk of developing a disorder. An example of this would be blood pressure screening to evaluate hypertension (Yoon et al., 2015). **Multiple test screening** is the administration of two or more tests to detect more than one disease. In some cases, one sample can be used to evaluate an individual for several conditions, saving time and money and making the process efficient and economical. For example, a blood sample can be assessed for a number of components, including glucose and cholesterol levels. The combination of the relatively low-cost screening test and flexibility makes screenings adaptable to all levels within the health care delivery system. Other multiple test screenings of importance are for substance abuse, mental health disorders and depression, and sexually transmitted infections (STIs).

A final advantage of screening is that it creates an opportunity for providing health education (see Chapter 10) to a group of individuals who may not otherwise receive it. In some situations, it is possible to establish a clinical relationship during the screening process that leads to preventive visits and includes educating people about healthy lifestyles, risk reduction, developmental needs, activities of daily living, and preventive self-care. Many of today's chronic illnesses are a result of individual health behaviors. Awareness is the first step in prevention. If better awareness is combined with health-education and health-promotion tools, individuals have a better opportunity to manage their own risks. Taking advantage of a potential health-promotion teachable moment should never be overlooked.

The commonly recommended 6-month dental screening is an example. Although the individual is at the dentist's office to be screened for cavities and to have teeth cleaned to avoid gum disease, the hygienist provides education and reminders on the correct way and the necessity to brush and floss teeth correctly, and a check is provided for oral cancer. Another example is the in the recommended counseling for tobacco cessation—ask, advise, assess, assist, arrange (Agency for Healthcare Research and Quality, 2014b). It is not enough to simply screen an individual with the question, "Do you use tobacco?" Readiness to quit should also be determined and combined with cessation

treatment assistance (Centers for Disease Control and Prevention [CDC], 2014). Nurses who are familiar with community resources can then refer individuals to smoking cessation programs that fit with the person's preferences and values (Broder, 2013).

Disadvantages

The primary disadvantages of screening stem largely from uncertainties in scientific evidence, which sets normal testing ranges and therefore also ranges of error for screening tests. When effectiveness depends on the screening program's ability to distinguish those who probably have the disease from those who do not, any margin of error can result in serious consequences. Some individuals who do not have the condition will be referred for further tests, and some who do have the disease will not get needed referrals. Those incorrectly referred (false positive) suffer needless anxiety and unnecessary medical interventions, some of which can be harmful, while awaiting more definitive diagnosis (e.g., high levels of prostate-specific antigen [PSA]). False positive osteoporosis screening results can lead to unnecessary bone building medication treatment that may have adverse effects. Some noninvasive prenatal strategies test for very rare disorders, so the predictive value may be questioned (Nickolich et al., 2016; Vora & O'Brien, 2014). Mammography screening for breast microcalcifications identifies a significant number of women (who may be false positives) who later undergo medically invasive breast biopsies. Women with false positive results bear the burden of the follow-up visits, lost time, inconvenience, and the cost for follow-up interventions to determine whether the disease is actually present.

The effects on those whose diseases have been overlooked (false negative) are even more important. For example, in maternal serum sampling for fetal DNA (cell-free DNA testing), false negative reports have occurred with twin pregnancies and cell mosaicism (possession of normal and abnormal cells) in either the baby or the placenta (Nickolich et al., 2016). These individuals have a false assurance of health that will be shattered eventually when the illness becomes obvious; they lose the opportunity to receive earlier treatment that could prevent irreversible damage. The difficulty of balancing the benefits to some against the burdens to others may be an ethical issue underlying many screening programs. The significance of this disadvantage can vary; therefore, it should be assessed for each screening program, disease, and population.

SELECTION OF A SCREENED DISEASE

The selection of a screened disease goes beyond examination of any disease alone. The selection process must also encompass less tangible factors, such as the emotional impact (HIV infection) and the financial impact (osteoporosis) (Nayak et al., 2011) of the disease's detection on the screened population. Even after data have been gathered and the critical issues have been reviewed, the final decision of whether to screen individuals must often be reached with incomplete evidence or with answers that raise ethical issues, on an epidemiological and a personal level.

The potential uncertainties confounding the decision to screen individuals emphasize the need to conduct an analysis of available material to obtain a decision that is as objective and scientific as possible. Answers to the following questions may provide a basis for designating a disease as screenable or not screenable:

- Does the significance of the disorder warrant its consideration as a community problem?
- Can the disease be detected by screening?
- Should screening for the disease be done?
- What are the health benefits? For example, can it be treated?
- What are the tangible and intangible costs?

As simplistic as these questions may appear, the answers or lack of answers, in addition to individual preferences, may expose complex issues that determine whether a well-informed decision can be made on screening.

Significance of the Disease for Screening

According to the CDC, epidemiology is the "method used to find the causes of health outcomes and diseases in populations. In epidemiology, the patient is the community and individuals are viewed collectively. By definition, epidemiology is the study (scientific, systematic, and data driven) of the distribution (frequency, pattern) and determinants (causes, risk factors) of health-related states and events (not just diseases) in specified populations (neighborhood, school, city, state, country, global)" (CDC, 2015).

Health information on both morbidity and mortality may be used to identify the most important diseases affecting populations. The term morbidity refers to a diseased state or disability from any cause; however, the view of morbidity can be broader, including a range or degree of the illness that affects the person. Mortality statistics (deaths) in a given population can be easier to use as end outcome indices as long as statistical collection measures are accurate.

The significance of a disease refers to the level of priority assigned to the disease as a public health concern. Although the opinions of political and public interest groups may influence this evaluation, significance is generally determined by incidence and prevalence, and by the quantity (severity) and quality of life affected by the disorder (CDC, 2012). The media may also have a role in defining a public health problem which should be screened for, or addressed, as the media provides a place for compelling storytelling about the impact of disease and potential screening (Dorfman & Krasnow, 2014). The ability of the Zika virus to infect the fetus and cause neurological problems and microcephaly is a graphic example of the media telling the story of mothers and babies infected and the spread of this virus worldwide.

Key factors in assessing the need for screening criteria are quantifying measures of disease frequency. The two measures most used in epidemiology are incidence and prevalence (CDC, 2012; Lundy & Janes, 2014). Incidence indicates the rate of a new population problem and estimates the risk of an individual developing a disease or condition during a specific period or over a lifetime. Prevalence is the proportion of a given population with the disease or condition at any one point in time. It provides the best estimate of whether a person is likely to become ill during a specific period. In short, incidence is new cases, and prevalence is all cases within a set period. Chronic conditions

are usually measured by their prevalence (generally existing), whereas acute conditions are assessed by their incidence (rate of new occurrences). Both are used in assessing the need for community services and screenings, and help develop the criteria for evidence-based practice screening guidelines that include the age at which screening should be performed, the frequency and manner of screening, and the person who should perform the screening. The greater the physical and psychological harm experienced by the population, the greater is the urgency to designate the condition/disease as a priority health problem. A first step in assessing screening feasibility is evaluation of disease significance to decide if the disorder warrants the time, effort, and financial resources that must be allocated. For example, there has been a significant decline in the incidence of late-stage colorectal cancer in the United States since 1987, and this is attributed to increased rates of screening (Yang et al., 2014).

Estimating the **quality of life** affected by a disease presents problems but is also a necessary step. The perception of quality of life is subjective, and individual evaluations may differ. For example, not all people equally perceive the disability resulting from a disease; some may make adjustments and cope, whereas others do not. Those who do not may be more likely to say that the quality of their lives is significantly lower than that of other people.

Two epidemiological measures are used to estimate quality of life. A **quality-adjusted life year** (QALY) is a measurement of quality of life. It is defined as perfect health minus the disability-adjusted life year (DALY). The QALY assumes that 1 year of excellent health is 1 QALY (1 year of life times 1 utility value equals 1 QALY). It also assumes that 1 year spent in a less perfect state of health or with disease (or comorbidities) is worth less. A determination of the QALY value involves multiplication of the utility value associated with a state of health by the number of years lived in that state of health. Following this thinking, half a year lived in excellent health is 0.5 QALY (0.5 year of life times 1 utility value), which is the same as one full year of life lived in a disease state (immobile, fractured hip assuming half utility value) (1 year times 0.5 utility value).

A second measure, the **disability-adjusted life year** (DALY), refers to a year spent in less than healthy life. It is a measure of the burden of disease, and measures the gap between the current health status and excellent health status. It also accounts for life lost and life quality diminished through disability. The QALY and DALY measures may both be used depending on whether the outcome of the screening measure is intended to maximize health or minimize disability (Costello, 2014; Airoldi & Morton, 2009).

There is currently greater focus on quantifying measurements of health outcomes so as to weigh the costs of screening, treatment, and effects on populations. The QALY incorporates morbidity and mortality in a single arithmetic measure. It allows computation, estimation, and comparisons of screening decisions. However, the estimation of formulas association with utility and disability is difficult. QALYs assist in analyzing the gap between strict treatment decisions and their economic costs, informing public health decision-making (Costello, 2014).

By contrast, measures of the **quantity of life** affected by the disease are more readily obtainable. In addition to prevalence and incidence rates, disease-specific mortality rates present different aspects of the disease for analysis. Disease-specific mortality may be linked to the severity of an incident occurring or the longtime health burden cost associated with management of the disease. There is some evidence that mandatory screening of athletes reduces the incidence of sudden cardiac death in athletes who are supposedly young and fit; the cost of comprehensive cardiac screening is high and controversial (Anderson et al., 2014; Shephard, 2011); a death in a young athletically fit person is a very untoward, severe event. With other diseases, the prevalence of the disorder may not be high, but the problem requires disproportionate amounts spent on maintenance or management after the condition is fully expressed. For PKU, a case undetected at birth means a lifetime of suboptimal development and neurological disease management.

Detection

With the relative significance of the disease established, the next step is to determine if health professionals can screen individuals for the disease. Are there well-documented diagnostic criteria for the disorder? Is there a valid and reliable screening instrument? Are sufficient community resources and treatment modalities available to support a screening program?

Diagnostic Criteria

Detection of a disease requires knowledge of the characteristics that indicate its presence or, as in screening, its early pathogenic, asymptomatic state, and is often based on risk factors such as heredity, age, sex, and family history. For example, screening tests may be recommended for men or women (US Department of Health and Human Services, Office on Women's Health, 2012, 2013; Womenshealth.gov, 2013). Selected disease diagnostic criteria should be well documented and defined and not merely accepted as commonly used indicators. The impact of uncertainty in detecting disease is amplified when the application of the screening design is considered. Some diseases, such as sickle cell anemia or PKU, are defined by the presence or absence of a single, isolated gene or enzyme. Other conditions, such as high blood glucose levels (diabetes), are measured according to numerical values for which a normal range has been set. Although there may be some disagreements over normal parameters, diabetes is a serious disease, and early treatment has been shown to decrease the incidence of morbidity and death attributable to vascular diseases and stroke.

Screening Measures

The next step is to determine if methods exist to detect the disease during an early stage. If screening measures are available, an analysis should determine if any of them fulfill the requirements for the screening process: available, easy to administer, safe with minimal discomfort, cost-effective, and accurate. Ultimately the decision to use a screening test will depend on how well the measure can distinguish those individuals who probably do not have and will not develop the condition from those who are likely to develop the condition. The variables that aid in a

screening instrument's evaluation include reliability, validity, and reproducibility, which are a measure of the accuracy of the instrument.

Reliability is an assessment of the reproducibility of the test's results when different individuals with the same level of skill perform the test during different periods and under different conditions. The instrument or measure should yield consistent or stable results over time. If the same result emerges when two individuals perform the test, **interobserver reliability** is shown. If the same individual is able to reproduce the results several times, **intraobserver reliability** is demonstrated.

From this information, health professionals can determine the amount of training required for health care professionals, technicians, or personnel who administer the test. For example, if interobserver reliability is low, additional training might be required to work toward a more consistent method of screening test delivery. This is frequently necessary in blood pressure cuff hypertension screening (Ringrose et al., 2015) or in weight measurements, where the scale may not function properly. If intraobserver reliability is low, the health professional might surmise that the instrument, and not the individual, is at fault. Some screening measures are of necessity more qualitative, and intraobserver reliability may be very important in the case of substance abuse or mental health/depression screening. Finally, for a screening test to be valid, which is the next requirement, it must first be reliable, but reliability is only a necessary condition and is not entirely sufficient for validity.

Validity reflects the accuracy or truthfulness of the test or instrument itself. In a controlled setting, one evaluates validity by testing the instrument on a group of individuals who have positive or negative results. A valid test correctly distinguishes individuals who have preclinical disease from those without preclinical disease. The ideal result is to have the instrument identify 100% of the diseased individuals (positive reactions) and 100% of the nondiseased individuals (negative reactions).

There are also ranges of measurement for disease reliability and validity. Perfectly accurate categorization of validity rarely occurs in practice; therefore the measure of validity has been divided into two components that quantify the margin of error in screening instruments. **Sensitivity** measures the first component. This refers to the proportion of people with a condition who correctly test positive when screened. If a test has good sensitivity, the number of individuals with the disease who are missed through inaccurate categorization as false negatives will decrease. Conversely, a test with poor sensitivity will overlook individuals with the condition, and there will be a large number of **false negative test results**: individuals actually have the condition but were told they are disease-free or tested negative for the disease.

Specificity is the second component. Specificity measures the test's ability to recognize negative reactions or individuals in which disease is absent. A test with excellent specificity will rarely produce a positive result if the disease is not present. A test with poor specificity could result in **false positive test results**. Individuals with false positive test results are told that they have a disease or condition when in actuality they do not. Specific epidemiological formulas are used to measure both sensitivity and specificity.

In a perfect world, tests would be highly sensitive and highly specific; however, that is usually not the case, and some balance is reached between the two concepts. For some tests, there may also be an indeterminate zone in which the individual does not test strictly negative or positive. In these tests, the numerical cutoff may be subject to interpretation or a more arbitrary decision. A cutoff decision may be made so that the screening instrument is less likely to miss actual cases of disease at the cost of erroneously identifying cases of disease (false positives) that will need more diagnostic work, which may be expensive and invasive.

Consider the issues that a public health nurse faces when using a newly developed screening test with low specificity and moderate sensitivity. Low specificity means few true negative test results and more false positive test results. This is the current situation with mammography screening. The nurse and other health professionals (also health advocacy groups, such as those involved in breast cancer awareness) must then consider the cost, inconvenience, and psychological stress experienced by the people with false positive results during the period after their incorrect screening test, the unnecessary additional referrals, and the ability of the existing follow-up services to meet these needs. With only moderate sensitivity, a number of false negative results could occur, which may ignore individuals who could benefit from treatment. Medical, economic, political, and ethical issues are involved; that is, should a screening program be implemented when it is known that the tests may involve avoidable harms such as additional biopsies and excessive treatment. The use of mammography screening became a special case for inclusion under Affordable Care Act coverage as this legislation requires coverage for preventive services having a certainty of moderate or substantial benefit, and mammography science testing to date cannot meet that level of accuracy (Lin & Gostin, 2016).

A broader issue concerns large health fair screening programs; for example, where a targeted population such as older adults is sought for a mass screening. The **efficiency** and **efficacy** of such programs must be analyzed. The following are examples of questions that address efficiency and efficacy: Is the targeted population prepared in an appropriate way before engaging in the screening tests? Are the health care practitioners who are administering the test educated (and certified) according to the standard protocols of test administration? Are follow-up measures and appropriate referral access instituted in the program? There are times when an older adult lacks the cognitive ability or finances to follow-up on positive screening results. Patients and health care providers may overestimate the benefits and underestimate the harm of screening and associated treatment (Hoffmann & Del Mar, 2015). Answers to these questions challenge health care providers in the development, implementation, and follow-up processes identified so that screening efficiency and efficacy is enhanced.

Very recently, a number of for-profit genomic and biotechnology companies have marketed genetic tests (Box 9-1: Genomics) to identify genes and ancestry associated with risk factors and diseases. A number are available on the Internet. One of the most widely known, *23andme* (http://www.23andme.com), reports that its DNA analysis can provide information on about 100

BOX 9-1 GENOMICS

Detection of Maternal Malignancies via Prenatal Testing for Fetal Chromosome Abnormalities

Prenatal screening on blood samples is becoming the norm and is reducing amniocentesis testing. This less invasive blood test determines whether the fetus has a chromosomal abnormality (Down syndrome—chromosome 21, or other chromosomes—13, 18, X, and Y) by testing free DNA. If the finding is abnormal, amniocentesis is used to confirm the original result. In this study (Bianchi et al., 2015) of 125,426 blood samples, 3% were found to be abnormal.

What is interesting about this study is that this prenatal screening may identify not only problems in the fetus but also problems in the mother's cells' arrangement indicative of cancer. From the set of 3757 abnormal fetal results, 10 cases of maternal cancer were found.

The uses of genomic testing are just beginning to be realized and may lead in directions unexpected from the original purpose of the screening.

From Bianchi, D. W., Chudova, D., Sehnert, A. J., Bhatt, S., Murray, K., Prosen, T. L., et al. (2015). Noninvasive prenatal testing and incidental detection of occult maternal malignancies. *JAMA, 314*(2), 162–169.

health disorders and traits, including carrier risk, drug response, and disease risk (e.g., Parkinson disease, cholesterol levels, presence of diabetes). Noninvasive prenatal tests are currently marketed to identify neonatal chromosomal abnormalities, including Down syndrome, very early in gestation with a simple blood test (Nickolich et al., 2016); these tests are less invasive than amniocentesis, but positive test results require confirmation by amniocentesis. These tests are becoming common and dramatically less expensive.

Green and Farahany (2014) reported that the Food and Drug Administration (FDA) may be overcautious in its oversight of consumer genetic testing/genomics as the FDA is requiring stricter disclosure of information to consumers. Consumer-available tests can involve issues of standardization, cost, and privacy, and failure to make reports fully explainable or understandable. Comprehensive research on screening tests significantly influences the efficacy of the entire process. Data on the reliability and validity of individual tests and screening programs in general provides valuable information to evaluate, anticipate, and ideally control these influences, enabling the program to work effectively toward its established goal and positive health care outcomes.

Primary Care and Community Screening Resources

Screening is often done in an outpatient primary care setting. As funding for traditional public health nursing roles is declining, the responsibility for screening often falls to nurses in other basic and advanced practice roles. Implementing a screening program depends on availability of appropriate community resources, such as funds, health care workers, and follow-up services, including access, referrals, treatment sources, and administrative personnel. Nurses can provide structure and design for screening programs as seamless organization of a program is essential to success. Knowledge of a disease's characteristics and an effective screening instrument are useless without financial and organized human support to use them. Many screening programs are of necessity complex, requiring intense efforts in the area of partner development.

A lead agency or group may be identified to oversee the development of the community health program. The origins of the lead agency range from a community service organization to local public health departments responding to regulations or a mandate at the state or federal level. Regardless of its origin, the agency must perform a self-evaluation to compare its level of expertise with what is required to supervise the process of the screening effort. Early identification of the lead agency, along with potential partnerships, allows the effective use of talents and the division of labor.

Some screening programs may involve intricate legal issues; for example, states have policies about HIV testing and privacy and identification of individuals. HIV screening and testing is highly recommended in high-risk individuals—those who have injected steroids or drugs, those who have unprotected sex (especially men who have sex with men), and those who have other STIs or comorbidities (e.g., hepatitis C). Consumer-controlled home screening kits may protect individual identities (CDC, 2011). In 2012, the FDA (2012) approved the first over-the-counter HIV test. This test, OraQuick (http://www.oraquick.com), requires a fluid specimen from the mouth at the upper and lower gums and gives preliminary results in 20 minutes.

For the lead agency to develop and oversee the development of any community health program, such as the delivery of a screening program, partnerships and coalitions are essential. The agency must contact and organize necessary stakeholders. Stakeholders are individuals or groups who have a legitimate interest in the topic. Examples of stakeholders include key community individuals; hospitals; health and social service agencies, such as primary health care centers; and community organizations, including houses of worship, community centers, schools, transportation agencies, and volunteer organizations. Key community individuals are those people who are considered leaders within the community. The primary rule is to never assume that what is appropriate and effective for one community will be appropriate and effective for another.

Stakeholders and partners along with nurses perform the community assessment together. A community assessment is a systematic method of data collection that provides a detailed account, first identifying need and subsequently determining the type, quantity, and quality of resources. Review of demographic, vital statistics, and morbidity and mortality data may identify the assessed need. Resources might come from an eclectic variety of support sources, including government entities such as public health departments, social services, and even safety and transportation in the case of car seat safety screenings. Schools, private businesses, churches, and places of social gatherings might provide resource support, either in screening support or in the actual administration of the screening.

After the assessment has been completed, the data analysis will reveal the target community or high-risk population, the available health care resources, and the health needs of the high-risk population. The identified partners collaborate, review, and analyze the data, leading to the development of

Community assessment
Data analysis
Intervention development (screening)
Implementation
Evaluation outcomes and partnership
Stakeholders
Lead agency
Collaborative process
Key community individuals

FIGURE 9-2 Collaborative partnership: community health program development.

health-improvement strategies (in this case a screening program), with methods of implementation to move the target population smoothly through the screening process. Finally, monitoring and evaluating outcomes is essential to determine the effectiveness of the program and the achievement of stated goals. Evaluation includes monitoring of the entire process, including the successful workings of the partnership. Figure 9-2 presents a model of collaborative partnership: community health program development. Population health nursing is an important component of the partnership.

The constraints affecting the operation of a screening program include financial concerns, political issues, cultural constraints, follow-up and referral services, and accessible treatment facilities. All partners are aware that responses from the target community are affected partly by their experience with other screening programs, such as the means used to inform them, the accessibility of the location, the availability of transportation, the convenience of the program's hours, and the cultural sensitivity of the delivery and design of the program. A public health nursing approach identifies the necessary community resources and defines how these resources interact and may be mobilized to achieve maximal benefits and positive outcomes. Financial support of a screening program is a constraint that can influence all points in the system. Although some programs are delivered entirely on a voluntary basis, organizers of others must submit grant proposals to local, state, or federal departments when consideration of medical and economic ethics is involved. Planners must look beyond the screening day and investigate financial resources for follow-up care and treatment.

In addition to financial accessibility, follow-up services need to be accessible in terms of convenient locations and open hours. For example, an evening clinic may reach those who are reluctant or financially unable to miss work. Nurse practitioner clinics facilitate access to preventive health services at convenient times for various population groups. An efficient referral system links the follow-up resources to the screening program, providing continuity of care. A method must be devised to encourage the participant to take positive action on the referral. Public health nurses will facilitate this process with a variety of communication techniques, such as e-mails, telephone or in-person counseling, mailings, and home visits.

Another example is that a college of health sciences organizes a health fair which includes screening. This also creates opportunities for interprofessional education and practice (Uden-Holman et al., 2015). Nursing students and medical students manage physical assessments and laboratory screenings. Pharmacists screen individuals for medical use of inappropriate or contra-indicated medications. Social workers may assess individuals for mental health issues. There is a plan for continuation of care if disease issues and risks are identified; for example, individuals needing immediate referrals for hypertension control. In this instance the college may agree to assist in referrals to providers who will donate time to assist in this effort.

Should Screening for the Disease Be Done?

After it has been determined that the disease is significant and can be screened for, establishing whether health professionals should do so is the final step. Screening for a particular disorder and ultimately treating those with the early-identified disorder improve the chances of a favorable outcome in comparison with those whose disorder is not found until signs and symptoms become evident. Therefore several questions must be considered. If a test accurately identifies a condition in the early stages, is there any benefit to the individual? Are there effective treatment modalities for the condition? The US Preventive Services Task Force (USPSTF) may recommend against routine screening (USPSTF, 2016a). In 2012, the USPSTF recommended against PSA screening for prostate cancer. PSA screening was rated as grade D (not recommended) because the balance of harms from early treatment (urinary incontinence, bowel control, erectile dysfunction) outweighed the benefits of early diagnosis. As noted before, recommendations for mammography screening have changed several times within the last decade because of high rates of false positive test results, overdiagnosis, too many normal/benign biopsy specimens, and overtreatment (Kidd & Colbert, 2015; Lin & Gostin, 2016; Thompson et al., 2015). A woman with microcalcifications found on mammography may have to undergo an open or core biopsy to determine if cancer cells are truly present; this may involve several days' absence from work or child care.

It is necessary for the health care provider to remain aware of changes in screening guidelines. Screening is based on the disease's asymptomatic period; therefore adequate information must exist concerning the optimal time for screening, specific intervention during this time, and knowledge regarding the effect of early detection and treatment on the prognosis. Without this knowledge, health care professionals are unable to explain how the outcomes of those with early detected disease differ from those with undetected disease, and they cannot support the health benefits derived from the screening program.

Follow-up is critical to determine if the intervention strategies prescribed are in fact happening. Should screening be done if there is no follow-up in terms of medical or social services? A prescribed follow-up regimen may be very broad and include a wide variety of intervention strategies, such as diet, exercise, and drug therapy. Follow-up services may include an evaluation and review of the literature that discusses evidence-based practice pertaining to a particular drug, as well as the identification of intervention characteristics that impair follow-up, such as cost, inconvenience, or side effects. Consideration must also be given to those factors that enhance follow-up. For example, nurses can provide ongoing counseling and education about a medication and assist individuals in lifestyle transformations that include health-promoting behaviors.

The safety of a potential intervention is a concern when the widespread application of further medical interventions or invasive diagnostic tests after a screening program is considered. Risks or harmful side effects can be costly in terms of human health and the increased medical care required to correct iatrogenic or interventional effects (e.g., additional surgical procedures or emotional distress). As an example, Jordana, who is aged 54 years and has a low risk of breast cancer, attends a community clinic and wants more information about the optimal interval between breast cancer screenings. She heard that there are disagreements between US government studies (USPSTF), the American Cancer Society, and other sources of reasonable medical advice. The nurse, using an evidence-based practice model, helps Jordana to find or review the most recent and best sources of information that would answer her question (Mandelblatt et al., 2016). In addition to the scientific literature, the nurse locates consumer information for Jordana. In this case the nurse would assist women to make informed health choices about screening tests.

The bottom line is that to be effective, a high-quality, cost-effective, research/evidence-based screening tool or technique is needed that identifies a real or potential "problem." Screening must provide real and workable "solutions," in which the tangible and intangible costs of the screening are less than the risk of the disease and result in measurable health benefits.

ETHICAL CONSIDERATIONS

Improving health is considered a just and moral act integral to values endorsed throughout the care delivery system. Screening activities are separate from interventions offered for established disease (e.g., myocardial infarction). Rather than treating those who have established disease, a screening program invites seemingly well individuals to be tested to determine their disease risk and the need for follow-up. This request for voluntary participation implies an expectation of a health benefit, although at this stage nothing is said about what it will be, the cost, or what the participant must do to obtain it. Screening programs need to clarify expectations and inform participants as contingent issues occur. Screening participants need to know whether the ultimate benefit is preventive, ameliorative, or curative and what responsibility they assume to secure this outcome.

Borderline Cases and Cutoff Points

A screening program measurement is often based on a numerical value, so a question often arises about the use of cutoff points for the screening instrument and borderline cases. The goal of a screening program, identifying an individual as having high risk or not having high risk, depends on this numerical value. When the clinical parameters are not clear, a cutoff point is used. Above this point, the person is considered to be disease positive; below this point, the individual is disease negative. Consequently, readjusting the cutoff point can become a highly controversial issue, as the cutoff point controls the percentage of positive and negative results. If the disease were potentially life threatening, an increase in false positive results (lower cutoff point) would be preferred to missing individuals who may have the disease. In addition, if a disease is relatively benign in terms of potential stigmatization, anxiety, and problems with treatment, lowering the cutoff point could again be safe and ethical.

Examples of problems related to identifying cutoff points and borderline cases are common in community nursing practice. Hypertension is a common disease in which a variance of 5 to 10 mmHg can make the difference in identifying a person as having high risk of hypertension. Lipid and cholesterol level cutoffs and ratios are always subject to further examination. Osteoporosis standards for men are debated (USPSTF, 2015). Recommendations change as new evidence emerges. Sophisticated approaches may discriminate between borderline cases that should be referred and ones that should not. Nurses can assist in identifying other risk factors associated with hypertension or lipid level evaluation, such as family history, diet, and smoking, as criteria for deciding whether to refer an individual. An updated literature review is imperative before these issues are reviewed in relation to a particular screenable disease.

Economic Costs and Ethics

In the past, the tendency was to disregard the cost of promoting a healthy, disease-free, or disease-controlled status; this results in a philosophical stand that all care should be given to all people at all costs. There is now a fuller recognition of the enormous costs that could be involved with many screening programs. Allocating community funds to a large screening event may result in a lack of funds for other projects. Populations benefiting from a screening test will be balanced by those suffering in terms of decreases in service for other medical or social needs.

The initial operational costs must be considered, including buying or renting screening equipment, floor space, and engaging professionals or technicians to administer the tests and interpret the results. These costs are encountered a second time when individuals are referred for further evaluation. Consumer costs include follow-up visits, treatment, and time and income that are lost. Given the combined operational and consumer costs, several questions are raised. Do the costs result in improved health outcomes? Are the benefits worth the expenditures required? These answers are influenced partly by the values (other than monetary ones) attributed to the benefit. Saving

lives in a young population may be judged more valuable than screening older populations with more chronic illnesses. A strictly economic approach, however, may eliminate the intangible variables and require the use of more objective data for decision-making.

When program designs are reviewed, three main approaches may be used to evaluate the economic resources affected: cost-benefit ratio, cost-effectiveness, and cost-efficiency analyses. The current relevance and use of such concepts require a basic understanding of their role in the selection of a condition for screening. They tend to be separate methods and most frequently are used independently of one another.

Cost-Benefit Ratio

Cost-benefit ratio analysis is performed first, because it allows the comparison of various outcomes in monetary terms. This comparison is necessary in health planning when the initial consideration is dependent on whether the expected health outcome (such as reduction in the incidences of cardiovascular disease, decrease in infant mortality, or reduction of the detection of a visual problem) will be most beneficial to the community at the most reasonable cost. The cost of the screening versus the cost of long-term care management may be weighed. For example, what is the cost-benefit ratio of blood pressure screenings, compared with the medical and financial cost of a stroke caused by undiagnosed hypertension, to the individual, the community, and the health care system? The cost of screening is weighed against other factors, such as the cost and feasibility of vaccination programs, as in the case of screening individuals for human papilloma virus for cervical cancer (Maine et al., 2011). Resources available through the use of electronic data gathering tools, such as the CDC's Chronic Disease Cost Calculator version 2 (CDC, 2013), which estimates state Medicare expenditures for certain diseases, may assist in this analysis.

Cost-Effectiveness

If the reduction of cardiovascular disease is chosen as the desired outcome, the next step is a cost-effectiveness analysis, which determines the optimal use of resources to reach a predetermined, constant end-point or the desired health outcome. The screening benefit remains the same; the best method of getting to the target outcome is the focus of the investigation. For example, for reduction of cardiovascular disease, various methods might be used. These methods include screening individuals for hypertension and cholesterol, performing electrocardiograms on all individuals aged 25 years or older who are admitted to the hospital, screening young athletes for cardiovascular disease, sponsoring an antismoking campaign, or providing nutrition counseling. Implementation of all these options would be ideal, but with limited resources some choices are made.

Cost-Efficiency

The last approach to help bring the economic resources into perspective is cost-efficiency analysis. The purpose is to be efficient and budget a limited amount of money toward achieving as much of the desired outcome as possible. The funds are the focus, not the health benefit.

SELECTION OF SCREENABLE POPULATIONS

The selection of a screenable population is as important as the selection of a screenable disease and is often based on incidence and prevalence data. The objective is to identify a high-risk group that, when tested, will yield a significant number of diseased individuals. With a well-planned selection approach, the efforts and cost of screening the population are minimized and the health benefit is maximized. The main criterion used to define an appropriate population is the definitive presence of risk factors related to the disorder. Within community settings, nurses can ensure a thorough examination of possible risk factors, including both person-dependent and environment-dependent factors (Box 9-2: Research for Evidence-Based Practice).

Person-Dependent Factors

The person's age is important because of age-dependent changes in the levels of risk factors throughout the population. For example, the risk of many cancers increases as a person grows older (Weir et al., 2015). A high priority is placed on screening vulnerable populations, especially women, infants, and children, as the outcomes obtained affect long-range growth and development patterns. As the average life span increases, however, the effects of risk factors in young adults and middle-aged adults are becoming more apparent, making certain prevalent and costly chronic conditions equally important to control. The middle-aged adult population may be screened for hypertension, diabetes, breast cancer, glaucoma, and heart disease; this population is requiring earlier screening as some of these disease conditions are becoming apparent in early adulthood and even teenage years. Older adults may be screened for cognitive decline, although screening for the asymptomatic elderly is controversial because of lack of effective dementia treatment. Routine genetic screening for various biomarkers, such as amyloid amyloid β_2-microglobulin

BOX 9-2 RESEARCH FOR EVIDENCE-BASED PRACTICE

Population-Based Research Optimizing Screening

The National Cancer Institute has developed Population-Based Research Optimizing Screening Through Personalized Regimens (PROSPR) to support research on the community-based screening processes to include experiences and outcomes for breast, colon, and cervical cancer. The overall aim is to develop coordination between the research practices conducted at multiple sites. It reviews recruitment, screening, diagnosis, referral, and treatment rates. It focuses on research translation and implementation, addressing issues such as the controversy regarding breast cancer screening and mammography by studying the comparative effectiveness and outcomes of existing and emerging research. In September 2011 the National Cancer Institute funded seven research centers and one statistical site as part of this integrated research screening program. Be on the lookout for similar new programs because the Prevention Fund supported by the Affordable Care Act supports the development of other such opportunities to discover and support evidence-based health-promotion and disease-prevention activities.

From National Cancer Institute. (2015). *PROSPR: Population-Based Research Optimizing Screening Through Personalized Regimens.* https://healthcaredelivery.cancer.gov/prospr/.

FIGURE 9-3 Mammography screening. (Courtesy of John Foxx; from Stockbyte/Thinkstock.)

and tau proteins, amyloid plaques, and *APOE-e4* is under investigation (Alzheimer's Association, 2015; Sutphen et al., 2015).

Gender has obvious implications for screening programs. For example, women are tested frequently for two reproductive-related conditions: breast cancer and cervical cancer (Figure 9-3). Screening a population from a particular ethnic or racial group is appropriate as some disorders occur more frequently in certain racial or ethnic groups. For example, black American women are more than 35% more likely than white women to die of breast cancer, but breast cancer is diagnosed in them 10% less frequently (CDC, 2010; Kidd & Colbert, 2015). Vietnamese American women have the highest rate of cervical cancer among any racial or ethnic group in the United States, and the rate is five times higher than the rates among non-Hispanic white women (CDC, 2010). Nurses can lobby and advocate for specific groups to have more targeted screenings, particularly in communities that have large numbers of ethnic or racial minority women (Box 9-3: Diversity Awareness).

Income level has been associated repeatedly with many health disparities. According to a 2010 Gallup poll, chronic conditions are more likely to be diagnosed in low-income Americans than in high-income Americans. The physical health illness disparities were the greatest for depression, high blood pressure, and diabetes, and higher levels of obesity also place lower-income populations at greater risk (Mendez, 2010). In addition to a greater likelihood of not having adequate health insurance, low-income Americans can least afford necessary preventive care, effective treatment, and health education (Mendez, 2010).

BOX 9-3 DIVERSITY AWARENESS

Eliminating Health Disparities Among Ethnic Groups

The United States has been referred to frequently as a population melting pot. Diversity is acknowledged as a strength of the United States, but it is apparent that disparities exist among the various racial and ethnic groups in the attainment and maintenance of health. The minority populations of the United States include black Americans, Hispanics, Asian/Pacific Islanders, American Indians, and Alaskan Natives. These categories oversimplify the reality of the multicultural nature of assessing health status, screening, and making plans to improve health. These particular racial groupings are not absolute because there are subgroups within each.

These disparities and factors such as access to care need to be taken into consideration when screening programs are being planned. To plan, implement, and evaluate a screening program that targets a specific population, the provider must have an awareness of the target population that includes components such as lifestyle, socioeconomic characteristics, education, heredity, environmental factors, values, religious and cultural beliefs, communication style, and language. Partnering with key individuals and organizations in the community through the entire process is important for any screening program to be successful, as the following scenario illustrates.

Hospital administrators in a town located outside a city in the Northeast are concerned about the health status of a new immigrant population. Recent census data indicate that the number of immigrants from Guatemala has grown. The census data also reveal that this population is primarily young adults, male and female. The officials of the town and the hospital are aware that most of the men are day laborers, many of whom gather each morning in the town square to be transported to their jobs. The young women are mothers who work in small, privately owned businesses or are hired by local house-cleaning services.

On the basis of these data, the hospital officials decide to plan a health and screening day for this population. The hospital distributes flyers in the community in the primary native language of the target population. The day of the screening arrives, and the number of participants is very low. The hospital officials are very concerned. They had good intentions. They do not know what to do next.

- What critical actions did the hospital officials perform that might be considered positive in the planning of the health and screening day?
- What critical actions did the hospital officials not perform that might have contributed to the poor turnout at the health and screening function?
- What might the hospital officials consider in their planning for the next health and screening day?
- How might they engage the community and the target population in planning the health and screening day?
- What local community agencies and groups might be invited to participate as partners when the health and screening day is being planned and implemented?
- Can you identify any creative ways to bring the health and screening day to the targeted population, making the program more accessible?

Personal behavioral characteristics related to lifestyle may suggest the need to screen a particular individual or group. When health care practitioners review lifestyle, they are looking at daily habits that affect health and wellness, such as nutrition, fitness level, tobacco use, alcohol and drug use, sexual practices (HIV), stress management, adequate rest, immunizations, periodic examinations, use of seat belts, and other safety factors. Engaging in some of these behaviors while avoiding others is essential for living a healthy life. Therefore screening for personal behavioral

characteristics that are considered risky assesses the likelihood of a longer, disease-free life. Once screening recommends elimination of risky behaviors, the development of healthy behaviors via programming and transformation of lifestyles is crucial. Health care providers have a responsibility to educate and empower individuals about the next step in the evaluation of their potential condition once screening has been completed. Those being screened have a responsibility to seek treatment and follow-up services, and ultimately engage in behavioral change toward a healthy lifestyle if the screening is to serve a purpose.

Regional disparities exist and include many of the previously mentioned disparities. These disparities are of great concern, but identifying the cause is complex. Research is being done on interrelationships between the determinants of health, to include biology and genetics, individual behaviors, the social environment, the physical environment, and health services (access and quality). The Centers for Disease Control and Prevention (CDC) Racial and Ethnic Approaches to Community Health (REACH) program (http://www.cdc.gov/reach/) addresses the factors and is demonstrating success by empowering residents to "seek better health; help change local health care practices; and mobilize communities to implement evidence-based public health programs that address their unique social, historical, economic, and cultural circumstances" (CDC, 2010). Appropriate screening is integrated into the REACH program.

Environment-Dependent Factors

The area of environmental health and protection has expanded over the years and is becoming more complex. Environmental health and protection has been defined as the science that is concerned with elements of the environment that influence people's health and well-being. These factors include conditions of the workplace, home, and communities, including chemical, physical, and psychological forces (Allender et al., 2014). Environment-related risk factors relevant to screening designs are associated with an individual's surroundings. Areas that may be considered include overpopulation; indoor and outdoor air pollution; water pollution; safe drinking water; noise pollution; radiation exposure; biological pollutants; hazardous waste management and disposal of garbage; vector and pesticide control; deforestation, wetlands destruction, and desertification; energy depletion; inadequate housing; contaminated food and foods with toxic additives; safety in the home, at the work site, and in the community; and psychological hazards (Allender et al., 2014; Roelofs et al., 2010).

In occupational health, a legitimate population for screening includes those in high-risk work areas, where harmful chemicals, airborne particles, or high-decibel machinery puts the workers at risk of cancer, respiratory conditions, or auditory problems. At the other extreme is the sedentary executive work life, where the lack of exercise is prevalent, placing the worker at risk of obesity and obesity-related conditions such as diabetes. The use of an occupational health nurse to provide individual and mass screening for such problems, in addition to routinely recommended screening, is recognized as integral in promoting better business practices.

National Guidance and Health Care Reform

Healthy People 2020

Many national organizations are guiding and promoting evidence-based care and screening. *Healthy People 2020* has been establishing benchmarks and monitoring progress on goals and objectives to promote health care delivery partnerships, guide individuals toward making empowered health decisions, and assess the efficacy of preventive programs (HealthyPeople.gov, 2015). This newest version of *Healthy People 2020* also includes resources for implementing community programs that support its goals and objectives, including screening. For more specific objectives related to screening, see Box 9-4: *Healthy People 2020.*

Recommended Screenings of the US Preventive Services Task Force

More specifically, the USPSTF, part of the Agency for Healthcare Research and Quality of the Department of Health and Human

BOX 9-4 HEALTHY PEOPLE 2020

Objectives Related to Screening

- (Developmental) Increase the proportion of persons with a diagnosis of hemoglobinopathies who receive early and continuous screening for complications.
- Increase the proportion of women who receive a cervical cancer screening based on the most recent guidelines.
- Increase the proportion of adults who receive a colorectal cancer screening based on the most recent guidelines.
- Increase the proportion of women who receive a breast cancer screening based on the most recent guidelines.
- Increase the proportion of adults who were counseled about cancer screening consistent with current guidelines.
- Increase the proportion of elementary, middle, and senior high schools that provide school health education to promote personal health and wellness in the following areas: handwashing or hand hygiene; oral health; growth and development; sun safety and skin cancer prevention; benefits of rest and sleep; ways to prevent vision and hearing loss; and the importance of health screenings and checkups.
- Reduce the proportion of children who experience developmental delay requiring special education services.
- Increase appropriate newborn blood-spot screening and follow-up testing.
- Increase the number of states including the District of Columbia that verify through linkage with vital records that all newborns are screened shortly after birth for conditions mandated by their state-sponsored screening program.
- (Developmental) Increase the proportion of children with a diagnosed condition identified through newborn screening who have an annual assessment of services needed and received.
- Increase depression screening by primary care providers.
- Increase tobacco screening in office-based ambulatory care settings.
- Increase tobacco screening in hospital ambulatory care settings.
- (Developmental) Increase tobacco screening in substance abuse care settings.
- Increase the proportion of preschool children aged 5 years or younger who receive vision screening.

From HealthyPeople.gov. (2015). *Healthy People 2020*. Washington, DC: US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. http://www.healthypeople.gov.

Services, identifies recommendations in its *Guide to Clinical Preventive Services* (Agency for Healthcare Research and Quality, 2014a). There are recommendations for adults, children, and adolescents (USPSTF, 2016b). The recommendations evolve as new scientific evidence becomes available, so this chapter will not provide specific details on the recommended screenings. Boxes 9-5 and 9-6 list the USPSTF recommended screening services for adults (USPSTF, 2016b), children, and adolescents.

The Affordable Care Act and Prevention Incentives

The passing of the Affordable Care Act (ACA) in 2010 catalyzed a public health movement toward prevention and health promotion, with incentives and policies, including the development of the National Prevention Strategy. One result is that preventive services are required to be covered by new health insurance plans or policies, as an incentivized quality program for Medicare recipients. Medicare now also covers annual wellness visits that incorporate a personalized prevention plan according to the recommendations of the USPSTF, based on an individual's age and health status; these visits can be conducted by a variety of practitioners, including nurse practitioners, clinical nurse specialists, and certified nurse midwives (Center for Medicare Advocacy, 2015).

Among other incentives, Medicare has developed a rating guide for Medicare Advantage programs, incentivizing high-quality health plans with up to a 10% bonus. Many of the criteria that determine the highest ratings are screening and preventive services. This helps seniors identify quality insurance plans that cover preventive services and provide the necessary follow-up.

BOX 9-5 Preventive Services for Adults (Examples)

- Abdominal aortic aneurysm screening
- Alcohol misuse screening
- Aspirin for prevention of cardiovascular disease
- BRCA-related cancer in women
- Breast cancer screening
- Colorectal cancer screening
- Depression screening for adults
- Diabetes mellitus screening
- HIV infection screening
- Obesity screening and counseling
- Osteoporosis screening
- Sexually transmitted infection (STI) prevention counseling
- Syphilis infection screening for pregnant women
- Tobacco use Screening

From Agency for Healthcare Research and Quality. (2014a). *Guide to clinical preventive services. Clinical summaries, recommendations for adults, children and adolescents.* http://www.ahrq.gov/professionals/clinicians-providers/guidelines-recommendations/guide/.

BOX 9-6 Preventive Services for Children and Adolescents (Examples)

- Alcohol misuse
- Blood lead levels
- Cervical cancer screening
- Child maltreatment
- Developmental dysplasia of hip
- Gonorrhea screening
- Hearing loss
- Height, weight, and body mass index screening
- Hematocrit or hemoglobin screening for children
- HIV infection screening
- High blood pressure screening in children
- Hyperbilirubinemia screening in infants
- Iron-deficiency anemia
- Major depressive disorder screening
- Obesity screening and counseling
- PKU screening
- Sexually transmitted infection (STI) prevention counseling and screening
- Speech and language delay screening
- Vision impairment screening

From Agency for Healthcare Research and Quality. (2014a). *Guide to clinical preventive services. Clinical summaries, recommendations for adults, children and adolescents.* http://www.ahrq.gov/professionals/clinicians-providers/guidelines-recommendations/guide/.

National Prevention Strategy

In addition to increasing the funded coverage of preventive services and screenings, the ACA also created the National Prevention Council (NPC), comprising "17 heads of departments, agencies, and offices across the Federal government who are committed to promoting prevention and wellness. The Council provides the leadership necessary to engage not only the federal government but a diverse array of stakeholders, from state and local policymakers, to business leaders, to individuals, their families and communities, to champion the policies and programs needed to ensure the health of Americans prospers" (National Prevention Council, 2011, p. 3) (Box 9-7: Innovative Practice).

The resulting *National Prevention Strategy* (NPS) was released in June 2011 and "recognizes that good health comes not just from receiving quality medical care, but also from clean air and water, safe outdoor spaces for physical activity, safe work sites, healthy foods, violence-free environments and healthy homes. Prevention should be woven into all aspects of our lives, including where and how we live, learn, work and play. Everyone—businesses, educators, health care institutions, government, communities

BOX 9-7 INNOVATIVE PRACTICE

Informatics, Technology, and Newborn Screening

Health information technology will allow health care to better assess and manage quality health care with the streamlining of efficient and effective information. A number of US governmental sites list information about newborn screening and long-term follow-up. The results of newborn screening may include normal values and out-of-range values. Access to digital medical records allows the sharing of results and follow-up findings between clinicians, testing laboratories, and health delivery providers.

- How does access to newborn electronic screening results benefit the clinician? How does it benefit the person seeking care? How does it benefit public health?
- Where else do you think health care could benefit from similar abilities?
- What do you think is necessary for this to happen (think about differences in data collection requirements)?

From US National Library of Medicine. (2014). *Newborn screening coding and terminology guide.* http://newbornscreeningcodes.nlm.nih.gov/nb/sc/updates.

BOX 9-8 QUALITY AND SAFETY SCENARIO

Pender's Health-Promotion Model

A health care provider's responsibility is to assess, plan, implement, and evaluate a screening program. Part of this responsibility includes teaching individuals, families, and populations about the importance of participating in these programs and ultimately engaging in safe behaviors promoting health. The health-promotion model is a useful guide for practice (Pender et al., 2015). The model presents the interrelationship among behavior-specific cognitions and affective factors and individual characteristics and experiences that motivate individuals to engage in behaviors that promote health and decrease unsafe habits and practices. The health care provider may find that the application of this model in practice influences the relationship between the provider and the individual in a positive way. The model is a framework that assists the provider in assessing factors believed to influence health behavioral changes. Once the provider has an accurate assessment, obtained via questions, decisions may be made concerning factors that inhibit health-promoting behaviors and, ultimately, potential interventions to assist individuals in achieving positive health outcomes. This information will assist the provider to develop appropriate teaching methods.

Health-Promotion Assessment Questions

- How do you define health?
- What does health mean to you?
- How would you describe your health now?
- Do the choices you make and the actions you take affect your health?
- Can you give examples when choices and actions created a positive change in health for you?
- Can you give examples when choices and actions created a negative or unsafe change in health for you?
- What factors facilitated choices and actions that created a positive change in health?
- What factors created barriers to choices and actions that led to a negative or unsafe change in health?
- Are there any supportive personal influences in your life that would assist you in choices and actions that would create a positive change in your health (e.g., family, friends, and health care providers)?
- Are there any supportive situational influences, such as more than one plan of action, pertaining to the health change available to you?

Modified from Pender, N., Murdaugh, C., & Parsons, M. A. (2015). Health promotion in nursing practice (7th ed.). Upper Saddle River, NJ: Pearson.

and every single American—has a role in creating a healthier nation" (http://www.surgeongeneral.gov/priorities/prevention/strategy/#The Vision) (Hanna-Attisha et al., 2016) (Box 9-8: Quality and Safety Scenario).

The four strategic directions are:

- Healthy and safe community environments: Create, sustain, and recognize communities that promote health and wellness through prevention.
- Clinical and community preventive services: Ensure that prevention-focused health care and community prevention efforts are available, integrated, and mutually reinforcing.
- Empowered people: Support people in making healthy choices.
- Elimination of health disparities: Eliminate disparities, improving the quality of life for all Americans.

Under the second strategic direction, the strategy identifies six recommendations, including a focus on improving cardiovascular health, incorporating screenings, using payments and reimbursement to encourage clinical preventive services, and reducing access barriers to community preventive services (National Prevention Council, 2011) (Figure 9-4).

THE NURSE'S ROLE

As one of the important stakeholders (Institute of Medicine, 2011), nurses play a role in every aspect of the screening program development process, including assessment, data analysis, planning, implementation, evaluation of the health outcomes, and evaluation of the process (including the workings of the partnership; see Figure 9-2). One aspect of this health process is the development and implementation of screening programs for targeted groups. As nurses use higher decision-making skills based on advancing education and expertise (Institute of Medicine, 2011), they will face questions such as "Should this condition be screened for or not?" In the role of decision maker and planner, the nurse is responsible for reviewing all issues concerned with screening individuals for an appropriate disease, including the criteria specific to the disease, the medical and economic ethics, and the community resources that are affected. If the choice is to screen individuals, the participation of nurses and other partnering groups is essential in the development of a care plan. The last step integral to the nursing role is the planning and development of an efficient referral system to enhance continuity of care and to ensure follow-up.

Because many preventive care services are provided through insurance coverage, the nurse collaborates with other health providers to ensure that preventive services (see Boxes 9-5 and 9-6), along with the required education and counseling, are available through primary care or community services such as a primary care clinic, a person-centered medical home, or a community health center or even at the work site. These services may include:

- Blood pressure, diabetes, and cholesterol tests
- Cancer screenings, including mammograms and colonoscopies
- Counseling on topics such as quitting smoking, losing weight, eating healthily, treating depression, and reducing alcohol use
- Routine vaccinations against diseases
- Flu and pneumonia immunizations
- Counseling, screening, and vaccines to ensure healthy pregnancies
- Regular well-baby and well-child visits, from birth to age 21 years

Nurses have long been responsible for screening individuals and educating people about healthy lifestyles and decreased risks as part of the ordinary primary care assessment process. Questions concerning nutrition, coping, and self-care are all assessment or screening questions, leading to moments of opportunity or "teachable moments" for health promotion. These evaluation activities are invaluable for gauging risk and potential areas for screening. Teaching individuals the meaning and limitation of screening test results is an important element of this role, as is informing them of their part in obtaining implied benefits.

Nursing staff, at all levels, are important in applying preventive services to include screening and education. The concept of the

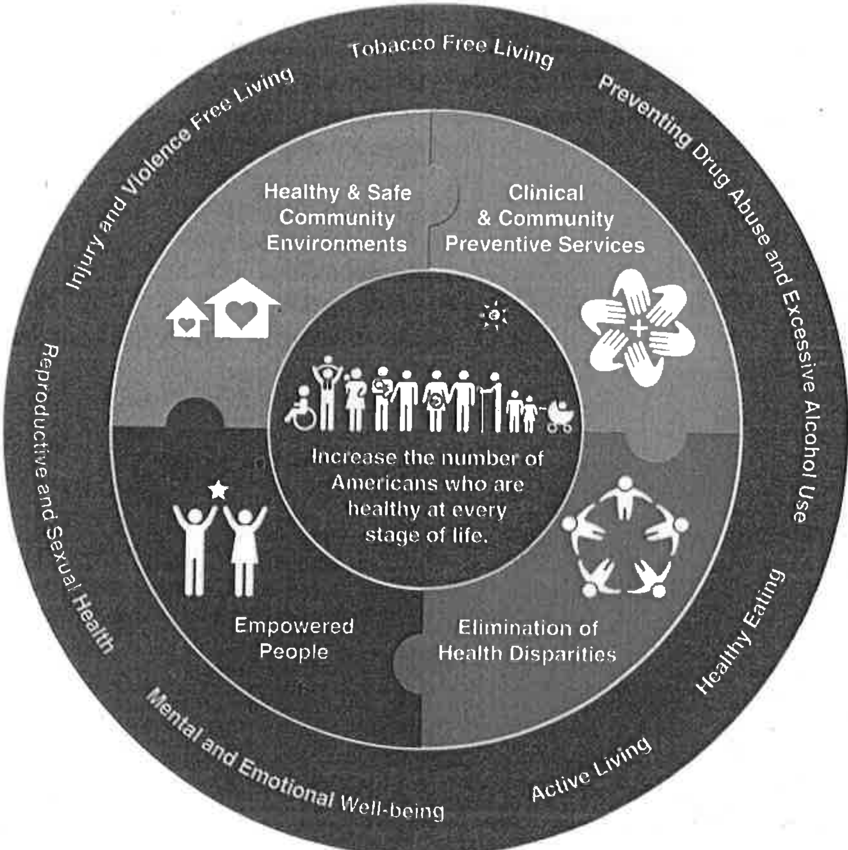

FIGURE 9-4 America's plan for better health and wellness. (From National Prevention Council. [2011]. *National Prevention Strategy*. http://www.surgeongeneral.gov/priorities/prevention/strategy.)

person-centered medical home encourages the use of each member of the primary health care team to the highest level of their professional and licensing abilities. The combined nursing roles of health educator and screener mean that the nurse continues to educate individuals about risk factors and teach them ways to alter and reduce risks generally through lifestyle changes, such as proper diet, exercise, and stress management, and by limiting the use of alcohol, drugs, and tobacco. The role as educator is essential in the screening process because nurses provide individuals with the information necessary for choices they will make regarding healthy behavioral change. The nurse is actually practicing primary prevention interventions, but this is done in coordination with a secondary preventive role.

RACIAL AND ETHNIC APPROACHES TO COMMUNITY HEALTH

An excellent resource is the CDC REACH website http://www.cdc.gov/nccdphp/dch/programs/reach/. This program supports effective community-level programs to reduce health disparities in minority communities across the United States. Data from the REACH Risk Factor Survey (2009), focusing on breast and cervical cancer prevention, cardiovascular health, and diabetes management, have shown that changing health behaviors in minority communities has improved health and reduced community disparities (Box 9-9).

SUMMARY

Screening is the administration of measures or tests to distinguish individuals who may have a condition from those who probably do not have it. It is an effective, efficient tool in preventive health care if used for conditions applicable to the screening model and specifically directed toward an at-risk population.

Implementing screening programs requires coordination and planning and provides numerous places for nursing intervention, especially within the currently evolving health care environment, which is emphasizing prevention activities. Nurses can provide individuals, communities, and populations with valuable preventive, health-promotion, and health-education support in the care of healthy individuals and populations.

EVOLVE CHAPTER FEATURES

http://evolve.elsevier.com/Edelman/

- Study Questions

BOX 9-9 Racial and Ethnic Approaches to Community Health US Keys to Success

Trust: Build a Culture of Collaboration With Communities That Is Based on Trust

- **Empowerment.** Give individuals and communities the knowledge and tools needed to create change by seeking and demanding better health and building on local resources.
- **Culture and history.** Design health initiatives that are grounded in the unique historical and cultural context of racial and ethnic minority communities in the United States.
- **Focus on causes.** Assess and focus on the underlying causes of poor community health and implement solutions that will stay embedded in the community infrastructure.
- **Community investment and expertise.** Recognize and invest in local community expertise and motivate communities to mobilize and organize existing resources.
- **Trusted organizations.** Enlist organizations within the community that are valued by community members, including groups with a primary mission unrelated to health.
- **Community leaders.** Help community leaders and key organizations forge unique partnerships and act as catalysts for change in the community.
- **Ownership.** Develop a collective outlook to promote shared interest in a healthy future through widespread community engagement and leadership.
- **Sustainability.** Make changes to organizations, community environments, and policies to help ensure that health improvements are long-lasting and community activities and programs are self-sustaining.
- **Hope.** Foster optimism, pride, and a promising vision for a healthier future.

From Centers for Disease Control and Prevention. (2016). *Racial and Ethnic Approaches to Community Health.* http://www.cdc.gov/reach.

CASE STUDY

Screening

Mrs. C. is an 82-year-old white widow. Six years ago, she moved from her house into a one-bedroom apartment. Her primary insurance is Medicare. She maintains her apartment and does all her errands without assistance, all of which she is very proud. She reports that occasionally she has fallen, probably because of some degree of decreasing vision, especially when moving from direct sunlight into shadows and when walking at night. The only medications she takes are an analgesic for pain management of osteoarthritis, an antihypertensive agent, and a daily vitamin and cranberry supplement. Her antihypertensive medication has recently been changed.

Today, she is going to her annual "check-up" with nurse practitioner (NP) Kelly, who is part of a new practice of "integrative medicine." The collaborative practice of registered nurses, NPs, and physicians emphasizes the role of prevention, including screenings. While Kelly is assessing Mrs. C.'s health status, she is also reflecting on how to better care for the practice's ever-enlarging older adult population. Kelly has access to a large referral group including medical specialists.

Reflective Questions

- What data will nurse practitioner Kelly collect to assess Mrs. C.'s health? Why?
- What risk factors will Kelly most likely evaluate? Why?
- What screening tests will Kelly suggest? Why?
- Propose several possible nursing diagnoses for Mrs. C. What possible etiological factors from Mrs. C., her family, and her community might be involved?
- What questions will Kelly ask to evaluate Mrs. C.'s health status?
- Compare and contrast these different (individual, family, and community) approaches to health promotion, emphasizing screening and cost-effectiveness.
- Discuss the advantages and disadvantages of screening older adults.

CARE PLAN

Health Promotion, Emphasizing Screenings of Older Adults: Mrs. C.

Caring for older adults is challenging and rewarding. New ways of caring need to be developed especially considering the increasing number of the older "baby boomer generation" in America.

***NURSING DIAGNOSIS: Effective community therapeutic regimen management**

Definition

The pattern in which an individual, family, and/or community experiences (or is at risk of experiencing) difficulty integrating screening programs for the promotion of health and reduction of risk factors

Defining Characteristics

Major

- The individual, family, and/or community verbalizes the desire to manage health promotion with the assistance of the family and community including a nurse practitioner.
- The individual and family verbalize inadequate knowledge of health-promotion strategies, especially risk factors identified through screening methods.

Minor

- What are Mrs. C.'s screening and health-promotion needs?
- What is Mrs. C's understanding of aging and of accelerated risk factors for illness?

Related Factors

- Complexity, including discomfort, of some screenings (e.g., mammograms, osteoporosis testing)
- New ways of thinking about and delivering health promotion, including periodic screening recommended for older adults
- Shifts of resources and costs from individual providers to the community and family (e.g., self-screenings, transportation)

Interventions

- Promote attitudes of openness to new health information.
- For elevated blood pressure readings, repeat blood pressure screening on three different visits.

Continued

CARE PLAN

Health Promotion, Emphasizing Screenings of Older Adults: Mrs. C.—cont'd

- Develop a more detailed activity/experience log with special attention to physical safety (falls) and vision problems.
- Explore nutritional and activity strategies that are more appealing to each individual.
- Begin the program slowly.
- Follow up on additional risk factors.
- Offer resources to support goals and interventions.

Expected Outcomes

- The person may experience anxiety.
- The person may experience despair.

Mrs. C., her family, and her community will:

- Verbalize a full understanding of health promotion, especially screenings.

Mrs. C. will:

- Identify and discuss her own risk factors and other data obtained from screenings.
- Establish appropriate goals to decrease the unhealthy findings of her screenings.
- Design and implement a modification program to fulfill these goals.
- Evaluate the efficacy of this care plan with nurse practitioner Kelly.

*NANDA Nursing Diagnoses—Herdman, T. H. & Kamitsuru, S. (Eds.). Nursing Diagnoses–Definitions and Classification 2015–2017. Copyright © 2014, 1994–2014 NANDA International. Used by arrangement with John Wiley & Sons Limited. In order to make safe and effective judgments using the NANDA-I nursing diagnoses it is essential that nurses refer to the definitions and defining characteristics of the diagnoses listed in this work.

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