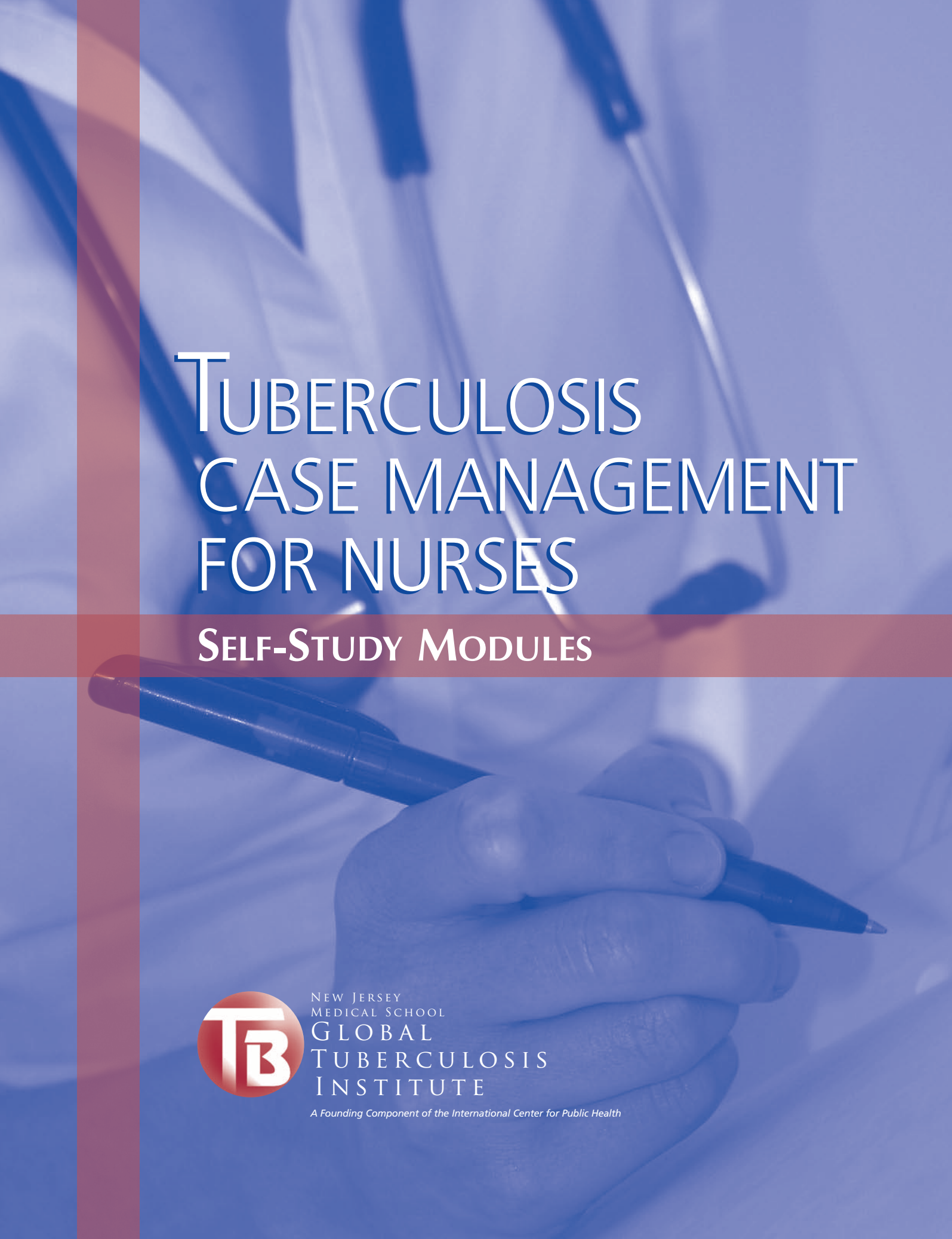

Tuberculosis Case Management for Nurses

Self-Study Modules

New Jersey Medical School
Global Tuberculosis Institute
A Founding Component of the International Center for Public Health

TUBERCULOSIS CASE MANAGEMENT FOR NURSES

Self-Study Modules

Module 1:
Overview of Public Health and Public Health Nursing

Module 2:
Fundamentals of Tuberculosis Case Management

Module 3:
Leadership Skills of the Nurse Case Manager

Module 4:
The Pediatric Patient

Glossary of Terms & Additional Resources

NEW JERSEY MEDICAL SCHOOL
GLOBAL TUBERCULOSIS INSTITUTE
A Founding Component of the International Center for Public Health

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PREFACE

"Tuberculosis is a unique disease. For most other disorders, achieving cure is primarily the patient's concern. With TB, the responsibility for cure rests with the health care professional, and ultimately with society."[1] Lee B. Reichman, MD

In the early 1990s with the resurgence of tuberculosis in the United States, Newark, NJ had the third highest number of TB cases in cities its size. Even more alarming was the very low treatment completion rate. This was thought to be due in part to Newark's unique patient population many of whom were unemployed, medically underserved, homeless, and living in substandard housing. In addition, serious medical problems resulting from HIV/AIDS and substance abuse, made these patients hard to reach and difficult to treat.

In response, the New Jersey Medical School Global Tuberculosis Institute located in Newark developoped a unique model for the outpatient treatment of TB. The overall goals were to decrease the number of TB cases and increase the treatment completion rate by using nurse case managers to oversee all aspects of patient care. It has been remarkably successful. Since 1995 there has been a 58% decrease in TB cases (2001) and the treatment completion rate was 93% in less than 12 months (2000). This success can be attributed to the nurse case management model and the entire staff who demonstrate commitment, teamwork, and dedication in providing excellence in TB case management.

A course was developed to provide education to other nurses in the TB field and requests for this course were received from many regions of the country. While the course is still offered at the TB Center, these self-study modules were developed in an effort to reach a larger number of TB nurses.

Nurse case management is not a simple process and it cannot be achieved without strong leadership, administrative support, and encouragement. Dr. Lee B. Reichman, Executive Director of the TB Center, believes that nurse case managers can and do make a difference.

Karen Galanowsky, RN, MPH

[1] Reichman, L. "Defending the Public's Health Against Tuberculosis", JAMA, September 10, 1997 (10) 278,865-867

INTRODUCTION

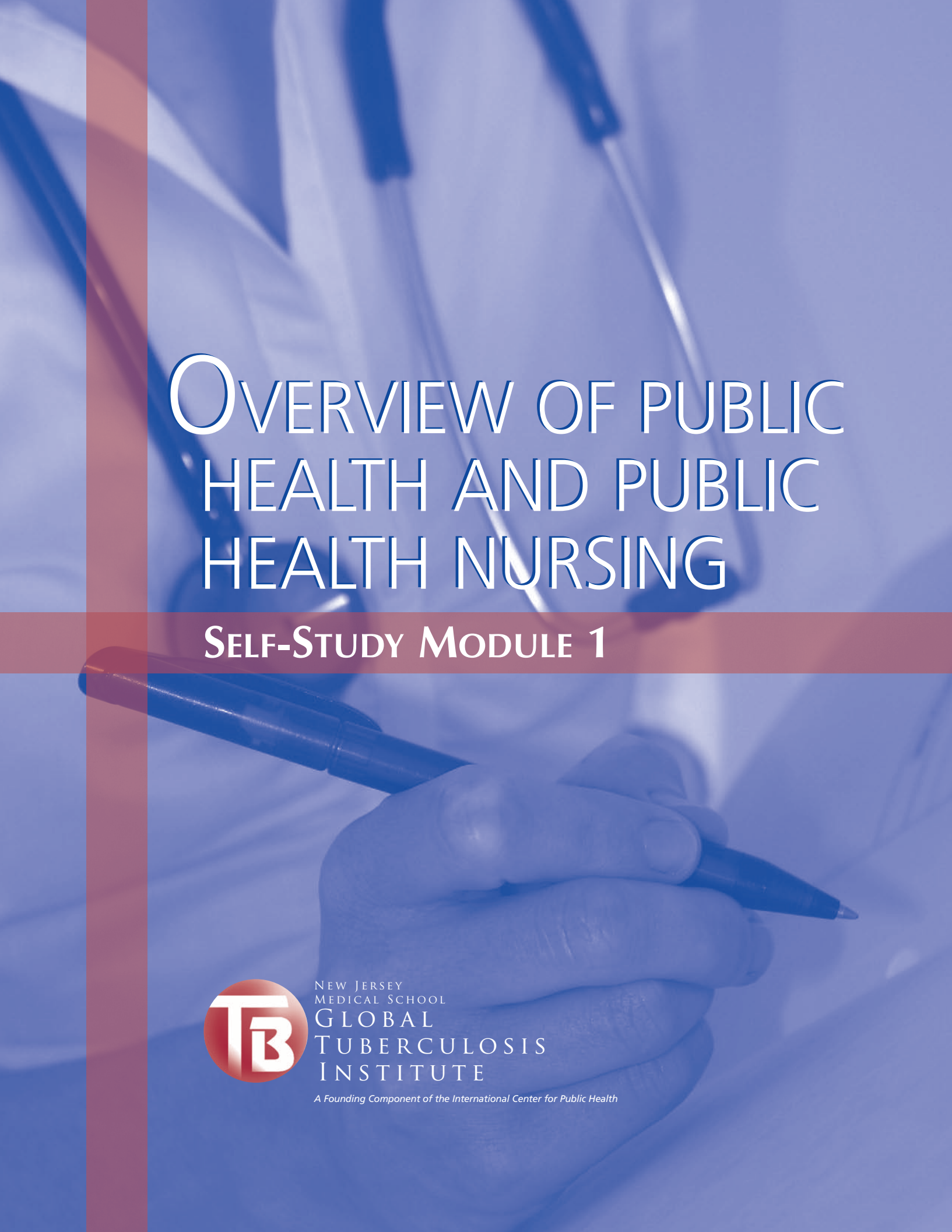
The Tuberculosis Case Management for Nurses Self-Study Modules are designed to provide the reader with a foundation of the case management process and its application to the patient with tuberculosis. These modules were developed by the New Jersey Medical School National Tuberculosis Center in an attempt to guide those who wish to implement a TB nurse case management system at their agency or facility. We recognize that in many clinics and health departments the role of TB Nurse and TB Case Manager may overlap and that resources will vary greatly. We have made every attempt to make the module content as universal as possible.

The self-study package includes four modules and a glossary.

- Module 1: Overview of Public Health and Public Health Nursing
- Module 2: Fundamentals of Tuberculosis Case Management
- Module 3: Leadership Skills of the Nurse Case Manager
- Module 4: The Pediatric Patient

Each module includes learning objectives, review questions, reference lists, and resources for additional reading.

In preparation for working through these modules we recommend that the reader have a thorough understanding of the tuberculosis disease process, etiology, pathogenesis, and treatment. The Core Curriculum on Tuberculosis and Self-Study Modules on Tuberculosis, published by the Centers for Disease Control and Prevention, provide this essential background information. These and other materials can be ordered by visiting the CDC Web site at http://www.cdc.gov/tb/education/provider_edmaterials.htm



Overview of Public Health and Public Health Nursing

Self-Study Module 1

New Jersey Medical School
Global Tuberculosis Institute
A Founding Component of the International Center for Public Health

Module 1

Tuberculosis Case Management for Nurses

Overview of Public Health and Public Health Nursing

INTRODUCTION

The purpose of this module is to provide an overview of public health, focusing on:

- Key concepts of public health, such as the definition, objectives, and core functions
- A review of nursing knowledge that is critical to the understanding of public health practice such as the definition of nursing, the nursing process, and standards of practice
- A discussion of public health nursing, including a brief history of the specialty and
  – Its role in the management of tuberculosis (TB) cases and
  – Factors that differentiate public health nursing from other nursing specialties

The public health nursing section ends with a discussion of nursing within the framework of the *Core Functions of Public Health* and *Scope and Standards of Public Health Nursing*, as presented in the American Nurses Association (ANA) publication prepared by the Quad Council of Public Health Nursing Organizations.

Learning Objectives

After completion of this learning module, you will be able to:

1) Define the science of public health

2) Describe the core functions of public health

3) Explain how public health objectives are accomplished through core functions of public health

4) Explain how core functions of public health are manifest in tuberculosis control

5) Define professional nursing practice

6) Differentiate between internal and external standards for practice

7) Describe the key components of public health nursing practice

8) Describe the nursing process as it is used in public health nursing practice

9) List the standards for public health nursing practice

Overview of Public Health

According to the **World Health Organization (WHO)**, health is "a state of complete physical, mental, and social well-being and not merely the absence of disease (1958). This encompassing definition is implicit in the discipline of public health, which is the science and art of preventing disease, prolonging life, and promoting health. Looking at the definition from a holistic perspective, the Institute of Medicine defined public health as "what we, as a society do, collectively, to assure the conditions in which people can be healthy" (1988).

The mandate for public health activities comes from public health laws that consist of legislation, regulations, and court decisions enacted by federal, state, and local governments to protect the community's well being. Public health laws identify the policies and procedures that guide the process of preventing disease and protecting and promoting health. On the basis of public health laws, efforts to control TB have been undertaken. The practice of public health requires that the rights of individuals be balanced with the need to protect society.

The **objectives of public health** are to generate organized efforts that address the public's health, by applying scientific and technical knowledge to prevent disease and promote health (Institute of Medicine, 1988). Public health objectives may be accomplished by individuals or by public and private groups. However, government has a special role in public health, ensuring the placement of essential components to adequately address the objectives of public health. Public health activities may include sanitation, control of communicable infections, such as tuberculosis, and the education of populations on how to protect their health. Government achieves public health objectives through the implementation of the core functions of public health.

The Core Functions of Public Health

The following are examples of how the core functions of public health are applied to tuberculosis.

Assessment refers to systematic data collection, monitoring and providing information on the health of a community. As it relates to TB control, data are collected regarding the number of TB cases in a community and analyzed to measure the success of efforts to treat and control the occurrence of new cases.

Policy development refers to the provision of leadership in the advancement of rules and regulations that support the health of populations and utilizes scientific knowledge in decision-making regarding policy. TB control policies are related to the identification and reporting of people who have TB infection and disease, their treatment, and follow-up.

Assurance refers to the role of public health in making sure that essential health services are available community-wide, including a competent healthcare workforce in both the public and private sectors. In the treatment of tuberculosis, assurance addresses the issue of availability of appropriate TB services provided by personnel who are knowledgeable about TB, as well as ensuring that private healthcare providers are informed about the proper management of TB.

Selected Concepts in Nursing Practice

The 1996 revision of the ANA's Social Policy Statement suggests that **definitions of nursing** should "illustrate the consistent orientation of nurses to the provision of care that promotes well-being in the people served." In addition, the document acknowledges the influence that the science of caring has had on nurses' diagnoses and treatment of human responses to health and illness (ANA, 1996). Therefore, the Social Policy Statement states that definitions of nursing must acknowledge the four essential features of contemporary nursing practice that follow.

- Attention to the full range of human experiences and responses to health and illness without restriction to a problem-focused orientation
- Integration of objective data with knowledge gained from an understanding of the patient or group's subjective experience
- Application of scientific knowledge to the processes of diagnosis and treatment
- Provision of a caring relationship that facilitates health and healing (ANA, 1996)

The definition of nursing has evolved as the knowledge base and practice of the discipline has advanced. The ability of nursing to progress, as knowledge and human health experiences change, makes it a dynamic and multifaceted profession. In summary, nursing may be defined as a profession that addresses human responses to the full range of health experiences by:

- Integrating objective and subjective information about humans
- Applying scientific knowledge to diagnosis and treatment
- Developing a caring relationship that fosters health and healing

The nursing process is the problem-solving method used in nursing practice. Its holistic perspective serves as a tool for evaluating and improving care. In addition, it helps avoid duplications and omissions while contributing to comprehensive and consistent care.

Elements of the nursing process

- Assessment and diagnosis
- Planning
- Implementation
- Evaluation

Assessment is the systematic collection and analysis of data culminating in a nursing diagnosis. Assessment is the initial phase of the nursing process and is identified by the American Nurses Association as the first standard for professional nursing practice (1996). It is a continuous aspect of the nursing process and involves collaboration with patients, caregivers, and healthcare providers who contribute to the patients' care. After information about a patient's health situation is obtained, analyzed, and documented, the nurse makes a nursing diagnosis. The nursing diagnosis is a statement of clinical judgment that conveys the nursing assessment. It provides the basis for the selection of nursing strategies to achieve patient care outcomes for which the nurse is accountable.

During the diagnostic phase, data are analyzed and interpreted. Conclusions are drawn regarding patients' needs, problems, concerns, or human responses. Nursing diagnostic statements are identified and documented and provide direction for the remainder of the nursing process. They serve as the basis for planning, implementing, and evaluating care.

The most widely accepted structure for the nursing diagnostic statement is that advocated by the North Atlantic Nursing Diagnosis Association (NANDA). Regardless of the selected structure, the **diagnostic statement** should include the following components:

- Statement of human response
- Statement of nursing judgment
- Conclusion based on nursing assessment
- Reference to a health experience
- Two-part statement that includes etiology

The first part of the statement communicates the functional behaviors that can be improved through nursing actions. These behaviors may promote, protect, maintain, or restore health. Modifiers for the first part of the diagnostic statement may be "alteration in" or "potential alteration of". The second part of the diagnostic statement identifies the causes or factors that nurse works to improve or influence. This part of the statement describes factors that contribute to the current healthcare situation. The following are examples of nursing diagnostic statements that may be typical of those used in nurse case management of TB:

- Potential alteration in health maintenance related to a multiple drug regimen
- Alteration in health maintenance related to non-adherence to the TB treatment regimen

The first example acknowledges that TB medications, if not carefully monitored, may have deleterious effects. The second nursing diagnosis identifies a change in a patient's usual health pattern when the TB treatment regimen is not followed. Both diagnoses imply the nursing action to be taken, the desired patient behaviors, and the expected outcomes.

The **planning** component of the nursing process involves the establishment of intervention strategies. In the planning process, it is necessary that all interventions include:

- Stated outcomes (criteria for evaluation) with a time frame for achievement
- Indication of how achievement of the expected outcome will be measured

Steps in the planning phase include:

- Prioritizing the nursing diagnoses
- Identifying expected outcomes and discussing them with the patient when possible
- Writing the nursing orders, i.e., nursing behaviors that will help the patient achieve the identified outcomes
- Recording the diagnoses, nursing strategies, and expected outcomes in an organized nursing care plan

The third phase of the nursing process is **implementation**, the execution and completion of nursing strategies identified in the planning phase. Implementation requires communication of the plan to all participants involved in the patient's care, including the patient and family. The plan of care may be carried out by members of the health team, the patient, the patient's family, and/or other caregivers. During this phase, the nurse continues to assess the patient and record progress. Documentation verifies that the plan has been implemented and can be used to identify the standard of care and evaluate the plan's effectiveness.

Evaluation is the final, ongoing phase of the nursing process that documents both the patient responses and the extent to which the expected outcomes have been achieved. The nurse assesses the patient's progress using expected outcomes as criteria for evaluation. Corrective measures and revisions to the care plan are employed, if needed.

The importance of documentation at each stage of the nursing process has been discussed. From the initial assessment through the final evaluation, the nurse must record relevant observations and interactions. Not only does accurate and detailed documentation influence patient care, but it serves to legitimize the contributions made by nursing. Cohen & Cesta (2001) suggest the use of standardized nursing language and classification systems to describe the elements of nursing care. Examples are found in Table 1.

Table 1 Nursing Classification Systems

CLASSIFICATION SYSTEM	ELEMENT OF NURSING PROCESS WHERE UTILIZED
NANDA	Nursing diagnoses in all settings
NIC	Nursing interventions in all settings
NOC	Nursing outcomes in all settings
Omaha System	Diagnoses, interventions, outcomes in community setting

The sources for these classification systems can be found in the Bibliography at the end of this unit and used by individual practitioners to enhance patient care at all levels.

The use of standardized language in the nursing care plan will result in documentation that is more efficiently retrieved and more easily analyzed. In addition, other disciplines can use the same language to document their care, facilitating communication among professionals.

Regardless of the area of specialization, nurses are expected to demonstrate competence in their practice. Competency is the integration of knowledge, skills, attitudes and behaviors, and the delivery of care according to expectations or standards. Standards are authoritative statements intended to foster quality patient care and excellence in practice, and they provide the means for measuring the professional performance of nurses and the quality of care they provide. Standards, both internal and external, also define the legal and professional responsibilities of the nurse and serve as a measure of appropriate professional nursing practice.

Internal standards are criteria for practice that are established by or within an institution or agency, including:

- Policies and procedures
- Job descriptions
- Agency rules
- Nursing care plans

Nursing care plans are the most direct evidence of nursing judgment and serve as documentation of a nurse's knowledge of the standard of care for a given healthcare situation. If a nurse establishes a plan of care and then deviates from that plan, s/he may be deviating from a "reasonable" standard of care.

External standards are those set by an authority outside an institution or agency, including:

- Guidelines submitted by accrediting agencies
- Nursing theories
- Nursing authorities (e.g., American Nurses Association or nursing experts)

External standards always supersede internal standards. For example, if a job description required a nurse to work outside the legal scope of nursing practice, regulations identified in a state's Nurse Practice Act would take precedence over the job description. Knowledge of internal and external standards is a vital component of a nurse's professional competence.

The nursing profession distinguishes among standards of care, standards of professional performance, and standards of nursing practice.

- *Standards of care* are patient-centered and represent a competent level of care as demonstrated by the nursing process
- *Standards of professional performance* are provider-centered and represent a competent level of behavior in the professional role
- *Standards of nursing practice* are patient-centered and provider-centered and represent a level of care or performance that is common among professional nurses and may be used to judge the quality of nursing practice (Kelly & Joel, 1999; Quad Council of Public Health Nursing Organizations, 1999).

The professional standards for public health nursing practice can be found in Appendix 1.

Public Health Nursing

Public health nursing in the United States evolved primarily from programs that were developed in Western Europe, particularly Great Britain. In the early 1860s, trained nursing school graduates were assigned as visiting nurses to provide care for the poor in their homes. They were called "District Nurses," and although they provided nursing care for the sick poor, they did not provide direct care to persons with communicable diseases. To avoid disease transmission from one household to another, these nurses provided care indirectly by teaching family members how to perform tasks and providing the family with the necessary equipment (Kalisch & Kalisch, 1995).

Visiting nursing began in the United States in 1877 when the New York City Mission instituted what was called "district" or "block" nursing. The major focus was religious, although nurses also emphasized health care. Later, the Ethical Society took a more nonsectarian approach and visiting nurses taught cleanliness, proper feeding of infants and children, as well as aspects of preventive care.

In 1893, Lillian Wald and Mary Brewster, both trained nurses, established the Henry Street Settlement House in a tenement on the Lower East Side of New York City. There, they recruited other nurses and combined visiting and district nursing within the broader scope of what Lillian Wald called, "public health nursing" (Dieckmann, 2000).

The nurses at the Henry Street Settlement House provided care to many patients with TB. Through the 19th century, statistics showed tuberculosis to be the leading cause of death due to infectious diseases. City tenement dwellers, such as those living on Manhattan's Lower East Side, were often too poor to be hospitalized. Wald and Brewster and their staff provided health services in the home to all in need, regardless of ability to pay or religious affiliation. They emphasized that fresh air, a healthy diet, and sanitary living conditions were keys to recovery from disease. Lillian Wald, as the first public health nurse, employed epidemiology and statistics to explain environmental and social causes of TB morbidity and mortality (Dieckmann, 2000).

From 1895-1899, patients with TB were cared for by visiting nurses, whose practice was considered general. In 1899, a physician at Johns Hopkins University founded the Laennec Society of Baltimore, to investigate the social conditions of people with TB. The society believed that the answers to treatment and containment of TB could be found in the home (Kalisch & Kalisch, 1995). In the first organized study of its kind, several common factors among people with TB were discovered: overcrowded living conditions, nonexistent ventilation, poor diet, and sharing of beds and utensils. In 1903, nurses were assigned to the full-time care of TB patients in their homes. Nurses located persons with TB, brought them to the dispensary and taught them the importance of fresh air, good food, and rest. The nurses not only reported substandard living conditions, but attempted to improve them with the help of relief agencies. They also provided bedside care to the sick and established precautionary measures to avoid infection of others. Nurses managed the complete care of patients with TB, including direct care, case finding, contact tracing, coordination of relief services, and patient and community education for prevention. Today, these nurses would be called "case managers" for patients with TB. Finally, in 1904, through contributions from Baltimore citizens, additional nurses were hired to work exclusively with TB cases under the supervision of the Visiting Nurse Association of Baltimore. The Visiting Nurse Association of Baltimore was the first in the United States to offer specialized nursing care for those infected with TB (Kalisch & Kalisch, 1995).

Williams (2000) defines current public health nursing practice as the synthesis of nursing theory and public health theory applied to promoting and preserving the health of populations. The focus of public health nursing practice is the community as a whole and the effect of the community's health status (resources) on the health of individuals, families, and groups. Care is provided within the context of preventing disease and disability and promoting and protecting the health of the community as a whole.

The practice is population focused and community oriented. The goal is prevention of disease and disability "through the creation of conditions in which people can be healthy" (Quad Council of Public Health Nursing Organizations, 1999). Public health nursing practice is a specialized field within the broad arena of community health nursing practice.

The public health nurse generalist holds a bachelor of science degree and applies basic concepts of public health and comprehensive healthcare planning in collaboration with communities. The nurse is knowledgeable about social, economic, ecologic, and political issues related to the needs of populations at risk. The public health nurse specialist has completed a masters or doctoral program and enhances services to populations through application of advanced knowledge in areas such as public health sciences, humanities, management theory, health policy, program planning and evaluation, and research (Williams, 2000). Both the generalist and specialist work at the aggregate level, incorporating concepts and theories from public health, social, behavioral, and nursing sciences.

The goal of the public health nurse is to combine public health core functions with nursing practice to achieve health goals for a population. On the next page are some examples of TB case management activities performed by the public health nurse within the framework of the core functions of public health.

Application of Core Functions in TB Nursing

Assessment

- Conduct community assessment to identify available resources
- Collect and interpret data on TB in the community
- Participate in TB case finding
- Monitor trends in TB
- Evaluate outcomes of direct patient care, educational programs, and research

Policy Development

- Recommend tuberculin skin test training for nurses in school or office settings
- Inform local government officials of need for support services
- Encourage community involvement in TB elimination

Assurance

- Develop standards for providing directly observed therapy (DOT) in schools
- Provide health promotion activities for families and individuals
- Provide physicians in the private sector with current TB treatment guidelines

The Association of State and Territorial Directors of Nursing (ASTDN) has developed a model of public health nursing practice that demonstrates the interaction. This model can be found in Appendix 2.

SUMMARY

This learning module presented key information related to public health, such as the definition of public health, its objectives, and the core functions of assessment, policy development and assurance. The selected topics in nursing practice reviewed in this module provide notable concepts from nursing, including the definition of nursing, the nursing process, and standards of practice. A greater comprehension of public health nursing established through its definition, a brief history of the inception of public health nursing, and its role in TB management serve to increase awareness of the role of the public health nurse. To further expand the topic, the Quad Council of Public Health Nursing Organization' tenets of Public Health Nursing, Standards of Public Health Nursing Practice, and Standards of Professional Performance can be found as Appendix 1, and the ASTDN model for public health nursing is presented in Appendix 2.

Appendix 1

The following standards were created by the Quad Council of Public Health Nursing Organizations as a means to prepare public health nurses for the coming changes in public health services.

The Quad Council of Public Health Nursing Organizations

- ANA Council for Community, Primary, and Long-Term Care Nursing Practice
- APHA Public Health Nursing Section
- Association of Community Health Nurse Educators
- Association of State and Territorial Directors of Nursing

In the publication, *Scope and Standards of Public Health Nursing*, the Quad Council indicates that future public health services "will be driven by local community needs, resources, and preferences of the people" (1999). The council suggests that all public health nurses will need "a broad range of population-focused skills to be strong public health team partners" (1999).

The following tables provide an overview of the *Scope and Standards of Public Health Nursing Practice* and categorize the information contained within the publication. It is recommended that all public health nurses read the complete document to gain a full understanding. Scope and Standards of Public Health Nursing Practice may be obtained from the American Nurses Association. The following information is reproduced with permission of the American Nurses Association.

The Quad Council emphasizes that adherence to the tenets of public health nursing with the overall goal of promoting and protecting population health is what distinguishes public health nursing from other nursing specialties. Although other nursing specialties may address some of these tenets, they do not incorporate all eight tenets into their practice. In addition, the council stresses that the focus of care, rather than the location of care, is what separates public health nurses from those in other nursing specialties.

Scope of Public Health Nursing Practice

Tenets of Public Health Nursing

- Population-based assessment, policy development, and assurance processes are systematic and comprehensive
- All processes must include partnering with representatives of the people
- Primary prevention is given priority
- Intervention strategies are selected to create healthy environmental, social, and economic conditions in which people can thrive
- Public health nursing practice includes an obligation to actively reach out to all who might benefit from an intervention or service
- The dominant concern and obligation is for the greater good of all the people or the population
- Stewardship and allocation of available resources support the maximum population health benefit gain
- The health of the people is most effectively promoted and protected through collaboration with members of other professions and organizations

(Quad Council of Public Health Nursing Organizations, 1999).

Standards of Care for Public Health Nursing Practice

Standard I. Assessment
The public health nurse assesses the health status of populations using data, community resources identification, input from the population, and professional judgment.

Standard II. Diagnosis
The public health nurse analyzes collected assessment data and partners with the people to attach meaning to those data and determine opportunities and needs.

Standard III. Outcomes Identification
The public health nurse participates with other community partners to identify expected outcomes in the populations and their health status.

Standard IV. Planning
The public health nurse promotes and supports the development of programs, policies, and services that provide interventions and improve the health status of populations.

Standard V. Assurance: Action Component of the Nursing Process for Public Health Nursing
The public health nurse assures access and availability of programs, policies, resources, and services to the population.

Standard VI. Evaluation
The public health nurse evaluates the health status of the population.

(Quad Council of Public Health Nursing Organizations, 1999).

Standards of Professional Performance

Standard I. Quality of Care
The public health nurse systematically evaluates the availability, accessibility, acceptability, quality, and effectiveness of nursing practice for the population.

Standard II. Performance Appraisal
The public health nurse evaluates his or her nursing practice in relation to professional practice standards and relevant statutes and regulations.

Standard III. Education
The public health nurse acquires and maintains current knowledge and competency in public health nursing practice.

Standard IV. Collegiality
The public health nurse establishes collegial partnerships while interacting with healthcare practitioners and others, and contributes to the professional development of peers, colleagues, and others.

Standard V. Ethics
The public health nurse applies ethical standards in advocating for health and social policy and delivery of public health programs to promote and preserve the health of the population.

Standard VI. Collaboration
The public health nurse collaborates with the representatives of the population and other health and human service professionals and organizations in providing for and promoting the health of the population.

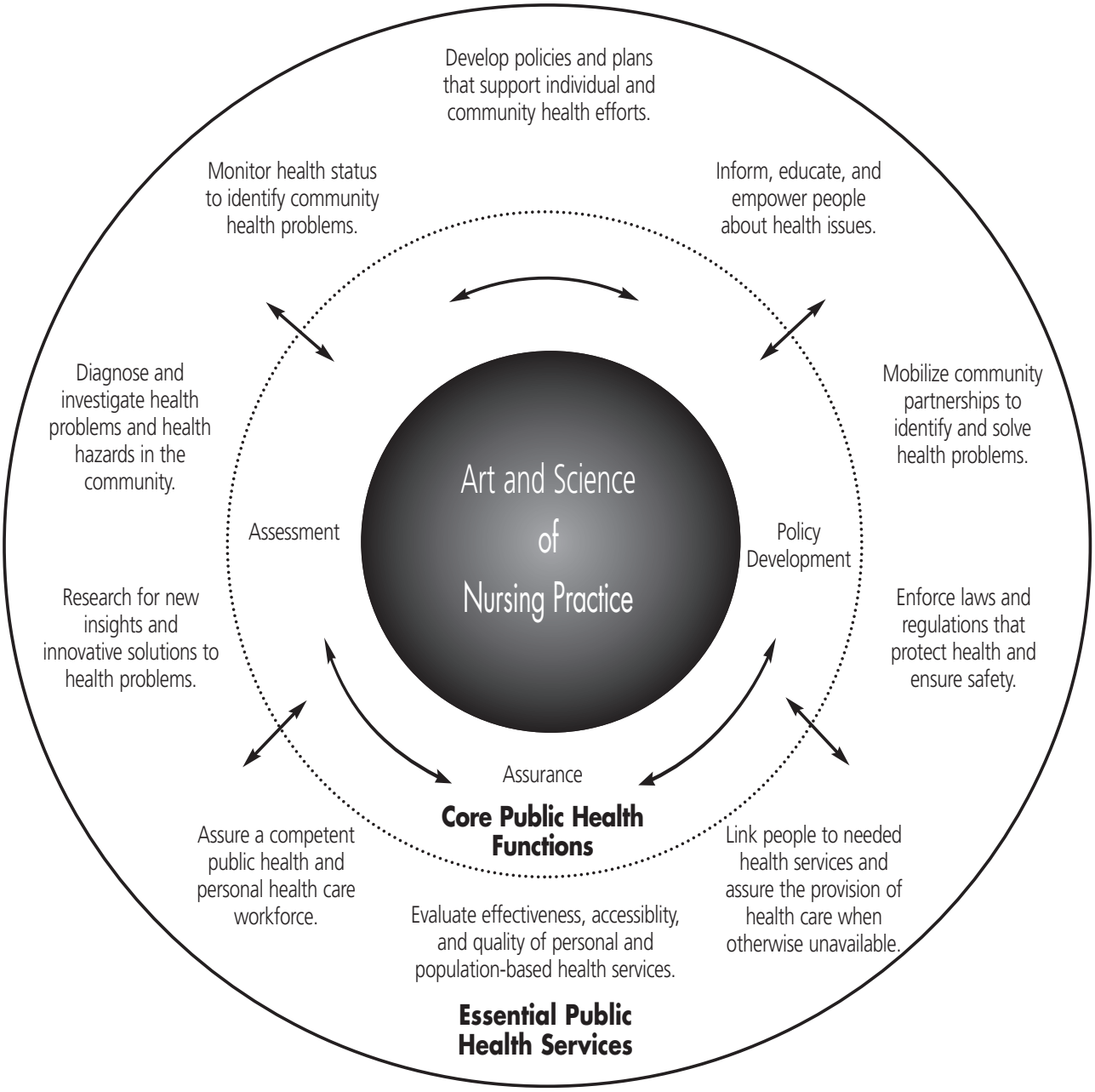
Standard VII. Research
The public health nurse uses research findings in practice.

Standard VIII. Resource Utilization
The public health nurse considers safety, effectiveness, and cost in the planning and delivery of public health services when using available resources to ensure the maximum possible health benefit to the population.

(Quad Council of Public Health Nursing Organizations, 1999).

Appendix 2

ASTDN Public Health Nursing Practice Model



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Review Questions

Section Review-Overview of Public Health

1) Define public health.
2) What is the source of authority for public health practice?
3) What is the role of government in public health?

Section Review-Core Functions of Public Health

1) List the core functions of public health.
2) Describe how public health objectives are accomplished through each core function of public health.

Section Review-Selected Concepts in Nursing Practice

1) List the parts of the nursing process.
2) Describe the assessment component of the nursing process.
3) What activities constitute the planning component of the nursing process?
4) What do outcome statements represent?
5) How are statements of expected outcomes used in the evaluation phase of the nursing process?
6) Describe the implementation phase of the nursing process?
7) Describe the evaluation phase of the nursing process.
8) Differentiate between standards of care and standards of professional performance.
9) Differentiate between internal and external standards and give two examples of each.

Section Review - Public Health Nursing

1) Define public health nursing.

2) What is the focus of practice for public health nurses?

3) What is the goal of public health nursing?

4) Differentiate between the public health nurse generalist and public health nurse specialist in terms of:

a. Educational preparation

b. Scope of practice

Section Review-Appendices

1) List the eight tenets of public health nursing.

2) List the six standards of care for public health nurses.

3) List the eight standards of professional performance for public health nurses.

4) Describe how the ASTDN Model illustrates the interaction between public health nursing practice and the core functions of public health.

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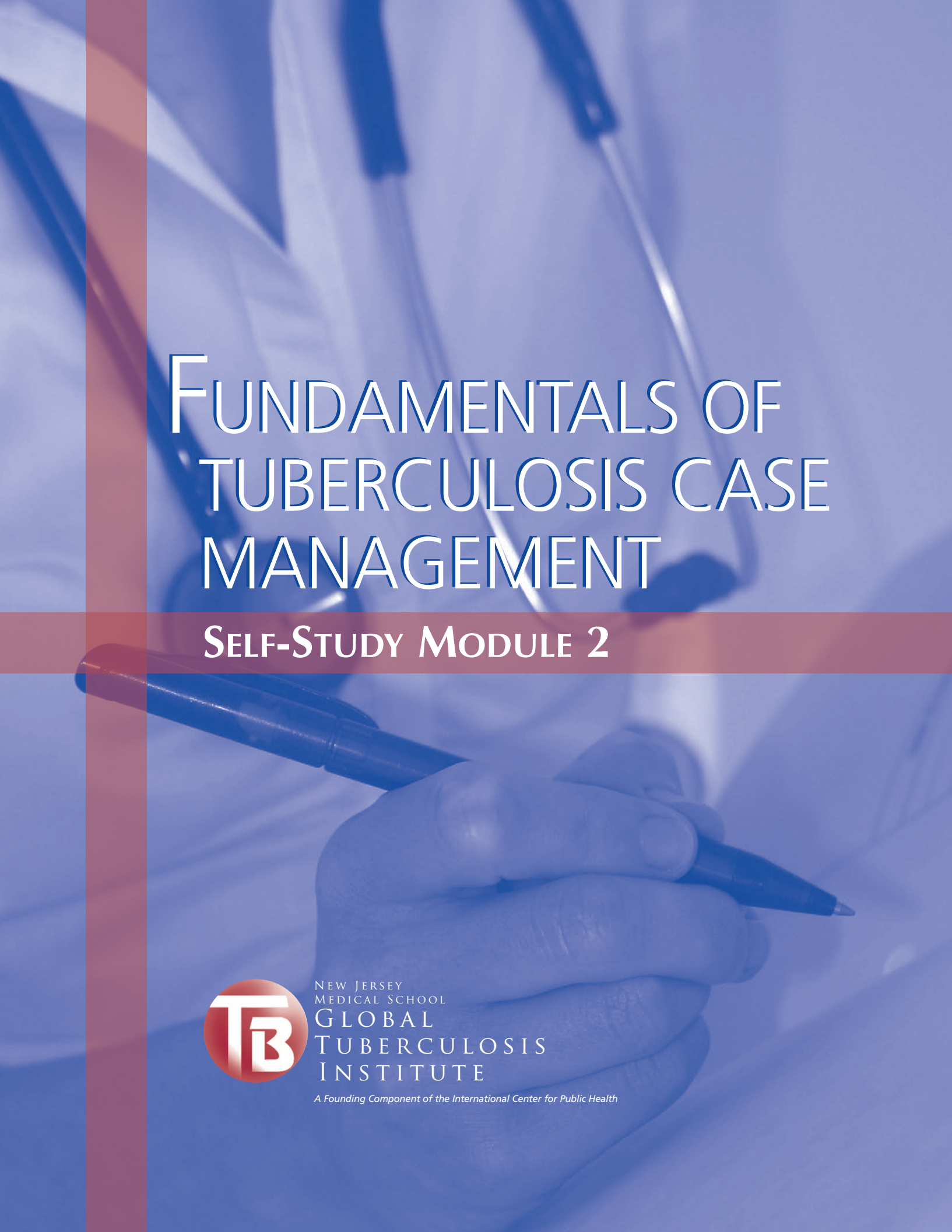

Fundamentals of Tuberculosis Case Management

Self-Study Module 2

New Jersey Medical School
Global Tuberculosis Institute
A Founding Component of the International Center for Public Health

Module 2

Tuberculosis Case Management for Nurses

Fundamentals of Tuberculosis Case Management

(continued)

INTRODUCTION

This module provides an overview of case management, including historical background and definitions. The principles and goals of the case management process are described, as well as a comparison of the roles and responsibilities of case management to the nursing process.

The concepts and principles of case management are applied to ambulatory care treatment of persons diagnosed or suspected of having clinically active tuberculosis (TB). Since tuberculosis is transmitted by droplet nuclei from an infectious person with active TB, the risk to the public's health cannot be ignored. Therefore, tuberculosis case management not only involves managing the services required for patient care and treatment, but also includes an array of public health activities to help prevent and control the spread of the disease in the community.

The role of the nurse in TB case management is described along with specific goals that provide direction for the case management process. The process including eight elements and activities necessary to achieve effective, efficient outcomes, is discussed in detail. Although Module 4 will address special issues related to the child with TB, there are instances when the case management activities for children are modified or affected in some way. In this module, issues particular to children will be italicized and found at the end of the paragraph.

Before reading this module, it is important for the nurse to demonstrate knowledge of TB pathogenesis, transmission, diagnosis, treatment, infection control practices, contact investigation principles and standards, and delinquency control procedures. The *CDC Self-Study Modules on Tuberculosis, 1-9* are a useful resource for providing this essential foundation (Centers for Disease Control and Prevention [CDC], 1995, 1999, and 2008.

Learning Objectives

After completion of this learning module, you will be able to:

1) Describe the history of case management

2) Define case management

3) Compare the case management process to the nursing process

4) Describe the role of the TB nurse case manager

5) Specify three goals of TB nurse case management

6) List the eight elements of the case management process

7) Identify components of the initial assessment and continual assessment

8) Explain how the assessment of a child differs from that of an adult patient with TB

9) State the two components of a nursing diagnosis

10) List three expected outcomes that should be included in the planning process

11) Identify activities for implementing TB case management

12) Explain how variance analysis is used in the TB nurse case management process

Overview of Case Management

Background

Case management may seem like a relatively new concept, but its roots can be traced back as far as 1863 when Massachusetts founded a board of charities to coordinate services for the sick and poor (Weil & Karls, 1985). Since that time, case management has been utilized by a variety of disciplines to coordinate health and human services and to help contain the costs of these services. However, the emphasis of this self-study module is the manner in which the nursing profession has employed the process.

Initially, case management services were primarily community-based (Kalisch & Kalisch, 1996). A shift to the acute care setting did not occur until the early 1980s with the establishment of Diagnostic Related Groups (DRGs) and reimbursement incentives for shorter hospital stays. Hospitals employed nurse case managers to coordinate care and to facilitate patients' transition back into the community after discharge. The insurance industry and health maintenance organizations (HMOs) soon followed, recognizing the benefits of the case management process in coordinating services.

Presently, nurse case managers can be found in all areas of the nursing profession. Although the specific implementation of the process may vary from setting to setting, the goals remain the same; to provide quality health care and contain costs for the care provided.

Definition

During the last decade, case management has been defined in a variety of ways. The Commission for Case Manager Certification (CCMC) defines case management as "a collaborative process that assesses, plans, implements, coordinates, monitors, and evaluates the options and services required to meet an individual's health needs, using communication and available resources to promote quality, cost-effective outcomes" (Kenyon et al, 1990). The American Nurses Association (1998) defines case management as a system of healthcare delivery designed to facilitate achievement of expected outcomes within an appropriate length of stay. *In Clinical Pathways for Collaborative Practice*, the authors define case management as, "a practice model that uses a systematic approach to identify specific patients and manage patient care to ensure optimal outcomes" (Ignatavicius & Hausman, 1995).

Case management is a system of healthcare delivery in which an individualized treatment plan for the patient is developed by a multidisciplinary team to achieve established patient care outcomes. It is a recognized competency with established practice standards. As a competency, it is "the ability to establish an appropriate plan of care based on assessment of the client/family and to coordinate the necessary resources and services for the client's benefit" (Conti, 1998). In the broadest sense, case management can be described as a strategy that tailors a complex, fragmented healthcare system for both the patient and provider's benefits. In summary, case management is efficient coordination of healthcare services to achieve specific and measurable outcomes. It has the potential to influence the quality of patient care in a positive way, while containing healthcare costs.

Goals and Principles of Case Management

- Provision of quality health care along a continuum
- Reduction of fragmented services across multidisciplinary settings
- Enhancement of the patient's quality of life
- Achievement of anticipated outcomes
- Effective utilization of patient care resources
- Provision of cost effective health care

The case management process and the nursing process are similar and, in many situations, may be used interchangeably. Nurses are ideal case managers because of their familiarity with the nursing process. Furthermore, patient care always takes place in a system of health care in which nurses play an essential role.

In both the nursing process and case management process, conclusions about the patient are based on assessment data, and the identification of patient problems and plans for interventions are the priority. In case management, strategies are developed and assessments are validated with the interdisciplinary team. Although the case manager may not be involved in the provision of direct care, assurance that the plan of care is implemented is a major responsibility. In the nursing process, evaluation includes analysis of conflicts or discrepancies in the plan of care that may require adjustment. Documentation is an essential activity in every component of both processes, and it establishes the care plan as an internal standard by which the nurse and the interdisciplinary team are evaluated.

Tuberculosis Nurse Case Management

Role of the Nurse Case Manager

The role of the TB nurse case manager includes managing services for the individual diagnosed or suspected of having TB, from initiation to completion of treatment, a change in the diagnosis, or death. Some TB programs/clinics may choose to include the management of individuals with latent TB infection, or old, healed TB.

The role of the TB nurse case manager requires a proactive approach in which potential or anticipated problems are identified and appropriate measures are used to address these problems before they develop. For example, the day before a scheduled clinic visit, the outreach staff should remind the patient of the appointment. If the patient is unable to keep the appointment, the nurse case manager should immediately schedule another date, to avoid the patient being labeled "delinquent". Problems experienced by TB patients are frequently confounded by multiple variables and it may be difficult to sort out and identify cause and effect of complex problems. A reactive approach usually requires more time and energy on the part of the case manager and others involved in patient care.

The role of the nurse case manager may vary, depending on resources available in ambulatory clinics or health departments. In addition to case management responsibilities, the nurse may also be the provider of care and be required to perform some or all of the TB control activities. In these situations, it is recommended that administrative oversight of the case management process be established to help ensure that all activities are completed, and intermediate and expected outcomes are achieved.

Goals of Case Management in Tuberculosis

TB case management is directed towards accomplishing the following goals:

- All hospitalized patients diagnosed or suspected of TB disease receive continuity of care during transition from hospital to the outpatient setting without interruption in treatment or essential services
- Disease progression and drug resistance are prevented
- Each patient receives TB care and treatment according to published standards of care (American Thoracic Society/Centers for Disease Control and Prevention [ATS/CDC], 1994)
- An integrated, coordinated system of health care allows patients to experience TB care along a continuum rather than in fragments
- Patients complete TB treatment within appropriate time frames and with minimal interruption in lifestyle or work
- Transmission of tuberculosis within the community is prevented through effective contact investigations and delinquency control activities
- The patient/family/community is educated about TB infection, disease, and treatment
- Individuals diagnosed with clinically active or suspected TB are reported according to regulations, and TB control activities are implemented according to standards of CDC and state, regional, or municipal TB control programs
- Case managers participate in policy development within the healthcare system (at community or state level) that positively affect clinical and TB control outcomes
- Case managers participate in studies to improve case management services and documentation, enhancement of adherence, and TB nursing

Elements and Activities of the Case Management Process

Eight elements of the case management process have been identified: case finding, assessment, problem identification, development of a plan, implementation, variance analysis, evaluation, and documentation. The following section provides a discussion of each element and specific case management activities that lead to the desired outcomes for the patient with tuberculosis. (Cesta, Tahan & Fink 1998).

Case finding

Case finding is the early identification of the patient with TB to ensure that public health reporting regulations are upheld, and TB control activities can be initiated as soon as possible. The nurse case manager should be familiar with facilities or organizations that provide services to clients at high risk of TB infection and disease. Liaisons with these facilities/organizations should be developed and sustained.

Activities of case finding include:

- **Communicate with healthcare providers**. Communication, education, and networking with hospital infection-control practitioners and physicians are important because these activities help ensure early notification of those suspected or diagnosed with TB. The nurse case manager often acts as a resource for nurses and physicians as they identify TB suspects and active cases of TB.
- **Develop a system to track patients with TB who are hospitalized during outpatient treatment.** Their status should be monitored to prevent interruption in services after discharge.
- **Ensure that all public health reporting regulations have been met and that essential TB control activities are initiated**. Essential TB control activities include the TB interview and contact investigation. If the TB case is not reported in a timely manner, there may be missed opportunities for prevention of transmission and treatment of infection or disease.
- **Ensure that a contact investigation is completed in accordance with state and local policy**. Every attempt is made to identify the source case in cases of infectious or potentially infectious TB.

  There must be a sense of urgency when very young children (less than 4 years of age) are household or close contacts of an infectious case, because these children are at particular risk of developing TB disease once exposed and infected.
- **Provide education about TB infection and disease** to healthcare providers in the community to increase the awareness of TB, especially in areas of high prevalence. A high level of suspicion on the part of healthcare providers will prevent delayed diagnosis and treatment as well as misdiagnosis.

  This is especially important in diagnosing children who do not present with the usual symptoms of TB, such as cough and night sweats. (See Module 4 for more information regarding the diagnosis of TB in children).

Assessment

Assessment is the gathering of data that will form the basis for TB treatment and care. In the TB case management system, many professionals are involved in patients' care and contribute to the data from which the initial assessments are formed. The nurse case manager will draw assessment data from many sources, including community agencies, primary care providers, schools, and other healthcare facilities. Each situation must be assessed objectively to determine the appropriateness of the planned intervention.

When the patient with TB is a child, it is important for the case manager to involve both the child and his/her family in the assessment process.

The **initial assessment** should occur during the patient's hospitalization. Patients who are diagnosed during a hospitalization will require discharge planning. The case manager should ensure appropriate discharge planning occurs for all patients with TB to prevent transmission in the community and interruption in treatment.

Prior to the patient's first visit to the physician/clinic after hospital discharge, the nurse case manager should ensure that a copy of the patient's hospital record and chest x-ray is available to the treating physician. Without the hospital record, the physician may not be able to make the correct judgments in medical management. If the patient is not hospitalized, the initial assessment should take place at the first clinic visit or during a home visit. At some time during the patient's TB treatment, a home visit is helpful. Information gathered at the patient's home is often more revealing than assessments performed in the clinical or health department settings and can lead to a more accurate understanding of the patient's lifestyle.

Activities included in the initial assessment:

- **Obtain or review demographic information**, including the name, address, telephone number(s), birth date, social security number, and name, address, and identifying information of health insurance.
- **Ascertain the extent of TB illness**, including acuity and length of symptoms, bacteriology and radiographic findings, laboratory analyses, tuberculin skin test results, nutritional status, vital signs, and baseline weight (without shoes and excess clothing). It is important to record weight in kilograms. Temperature, pulse, and respiration should be assessed if the patient appears ill or the history suggests illness. Blood pressure evaluations are valuable, especially if the patient has no primary care provider.

  In cases of pulmonary TB in children who are 6 years of age and under, anterior/posterior and lateral chest x-rays are important in the initial diagnosis. This is unlike adults who are suspected of TB or who are active cases. These adults usually need only an initial posterior/anterior chest x-ray.

- **Obtain and review the patient's previous health history** to determine concurrent medical problems including HIV disease or risk factors, allergies, or medications that may interfere with TB drugs. It will be necessary for the case manager to obtain the names, addresses, and telephone numbers of the patient's primary care provider and any specialists involved in his/her medical care, previous hospitalizations, allergies, and current medications. It is important to know the patient's history of treatment for TB infection and/or disease, especially those who are treatment failures or have relapse of TB disease as they are at a higher risk for developing multi-drug resistant TB (MDR-TB).

  It is also important to determine what the patient perceives as his/her most important medical/health problem. The date of the last menstrual period and contraceptive use should be obtained from female patients.

- **Determine infectiousness or potential infectiousness.** This assessment should include the duration and frequency of symptoms, especially cough, and a review of the radiographic findings. If the patient is infectious or potentially infectious, the case manager should have an understanding of the period of infectiousness. The parameters of a contact investigation, including the need for repeating the tuberculin skin test for contacts who were initially negative, can then be determined.

  In the case of a child with TB who is 4 years of age or under, the contact investigation should focus on determining the source case of TB, since young children cannot transmit TB. Dates of exposure and most recent information concerning the infectiousness of the source case should be documented.

- **Evaluate the patients' knowledge and beliefs about TB**, including a history of TB in family and/or friends and the response to treatment. The nurse case manager can assess TB knowledge by interviewing the patient regarding TB transmission, pathogenesis, and symptoms. Patient education should be based on current knowledge and ability to comprehend written, visual, and/or verbal information.

  It is important to interview both the child and parent or guardian when assessing TB knowledge; however, adolescents should be given the opportunity to speak to a healthcare provider alone. Keep in mind that parents who have misinformation or cultural bias about TB may affect their children's understanding of the disease.

  Patient education can be documented on a form such as the one in Appendix 1.

- **Monitor the TB medication regimen.** The nurse case manager should ensure that medications and dosages are prescribed according to ATS/CDC *Treatment of Tuberculosis and Tuberculosis Infection in Adults and Children* (1994). If the initial assessment occurs during the patient's hospitalization, the case manager should ensure that the medications are given at the same time every day, and that the ingestion of the medication is observed by a nurse. The patient's tolerance to TB medications should be noted, and interactions with other medications should be determined prior to the patient starting TB medications.

  If TB medications are going to be given to a child in a school or day-care setting, parental authorization must be obtained.

- **Identify barriers or obstacles to adherence** in taking TB medications and keeping physician or clinic appointments. This includes such issues as availability of transportation, the patient's preferences for place and time of directly observed therapy (DOT), and the ability to swallow pills. Many adolescents and adults who have difficulty swallowing pills are embarrassed to report this to the healthcare provider. It may be necessary to crush the pills and put them in food such as pudding or applesauce. In addition, the nurse case manager should determine the need for enablers and identify incentives that will be most valuable to the patient.

  When establishing school-based DOT, it is important to determine a time of day that is most convenient and least disruptive to the school schedule.

- **Review psychosocial status** to identify unmet needs, the use of alcohol and/or illegal drugs, and any pre-existing psychiatric diagnoses. A good history of the patient's social network is important to identify and document in the event that the patient does not return for follow-up. The nurse case manager needs to verify the patient/family's address, evaluate residential stability, and assess potential for homelessness. The patient's residence(s) during the past year should be determined, particularly any congregate living situations, such as prison, jail, homeless shelter, nursing home, boarding home, or foster care. Occupation and/or student status must be established, and the name and address of business or school should be documented. Recent research involving DNA fingerprinting suggests that the usual criteria used to determine close contacts of persons with infectious, active TB may not be sufficient. "Casual contacts" may actually have had many hours of exposure to the source case of TB, and in some cases, transmission may have occurred with limited contact. In order to identify those who have shared common air space with the infectious, untreated patients withTB, it is necessary to have an understanding of the patient's social and recreational activities and how he/she spends leisure time. This also includes time spent at faith-based functions.

  The name and location of a child's babysitter, daycare center or school should be noted.

An **ongoing assessment** takes place monthly either in an ambulatory clinic setting, health department, or private physician's office. Additional assessments may need to be made throughout the month for patients experiencing problems in their TB treatment, or for those patients who are nonadherent to DOT or follow-up appointments.

Activities of the ongoing assessment include:

- **Monitor the clinical response to treatment** by reviewing vital signs, weight, bacteriology reports, radiographic results, including drug sensitivities and TB symptoms and comparing them to previous documented findings. This review is an important measurement of clinical improvement, worsening, or stabilization of the patient's condition. If a variation is noted, the patient should be interviewed to determine the potential cause(s) of the deviations(s). All bacteriological reports should be listed in chronological order and correlated with the patient's current symptom history and chest x-ray report to assure accuracy. Inconsistencies should trigger additional questions, such as the possibility of laboratory contamination, and should be brought to the physician's attention immediately.

- **Determine HIV status and the risk factors for HIV disease, and refer the patient for treatment, if indicated**. It is important for patients to understand the correlation between TB and HIV disease. The nurse case manager should ensure that HIV counseling and testing are done at the beginning of TB treatment, if the HIV status is not previously known. If the patient refuses HIV testing, an assessment of the risk factors for HIV should be completed.

  If the parents of a young child with TB refuse to permit the child to be HIV tested, the parents should be interviewed regarding the child's risk of HIV disease, including neonatal transmission.

- **Review the treatment regimen** to verify that the physician's orders are clear and concise. One of the nurse case manager's primary responsibilities is to ensure that the patient completes treatment according to the physician's plan. It is also important to ensure that the plan is specific for the individual patient and follows the principles of TB treatment. Monitor side or adverse effects of medication. Review laboratory findings and contact the treating physician if abnormal results are obtained.

  If the child is taking TB medications at school, regular communication with the school nurse is indicated to determine whether the child is experiencing medication side effects.

- **Identify positive and negative motivational factors influencing adherence.** Policies and procedures must be in place to establish the expected monthly rate of DOT adherence. An assessment of adherence needs to occur daily. If the nurse case manager is not involved in providing the care, a notification system should alert him/her if the patient misses more than 2 consecutive days of DOT, or there is suspicion of nonadherence in the case of self-administered therapy. A preventable interruption in treatment can be avoided if the nurse case manager is notified immediately, rather than when the monthly DOT rate is calculated. The nurse case manager should review the monthly adherence rate to ensure that all patients in the cohort achieve the expected adherence rate. If the patient is self-administering TB medication, a weekly visit should be made to the patient's residence to assess adherence and observe for side effects or adverse reactions. The effectiveness of enhancement methods (i.e., incentives, enablers, behavioral contracting, or behavior modification) should also be regularly monitored.

- **Determine the unmet educational needs of the patient** regarding transmission, diagnosis, and treatment of TB. Identify the concerns and anxieties regarding diagnosis, and need for further education. The educational needs of the patient/family may vary throughout the course of treatment. Patient education will vary depending on beliefs about TB treatment, acceptance of the diagnosis, coping mechanisms, cultural values, and the accuracy of the information they have already received. The nurse case manager should explore the effect the diagnosis has on the patient's relationships with other family members, co-workers, and social contacts so that appropriate, culturally sensitive information can be provided.

- **Review the status of the contact investigation**, if one was conducted. It has been found that patients may not initially reveal the names of all close contacts. Over time, many more individuals are often identified. The following is an example that illustrates this clearly:

> A 59-year-old male diagnosed with infectious, pulmonary TB receives his TB medications via DOT at 9:30 AM Monday through Friday. After a contact investigation was performed, all identified contacts were tuberculin skin tested and medically evaluated. The clinic and TB control personnel considered the contact investigation complete. However, approximately 4 months after the start of treatment a different staff member visited the patient for DOT, covering for the regular outreach worker who was ill. The staff member arrived at the patient's home at 6:30 AM because it was on her way to work. Because she did not have the patient's phone number, she was unable to call ahead to explain the change in schedule. When she arrived, the patient was not there. His wife stated that he was at work, babysitting for three young children from 6:30 AM to 8:30 AM every weekday for the past 2 years. However, he had neglected to identify these children during the contact investigation in fear of alarming their parents.

There are countless stories from nurses and outreach workers reinforcing the fact that not all information is obtained from the patient/family at one time. Therefore, the nurse case manager must ensure that the list of contacts is updated from time-to-time and determine the need for further testing. It is also important to review the status of the contact investigation to ensure that timelines and standards are followed. Checking for the accuracy of previous variables should occur throughout the patient's TB treatment.

Problem identification

Identification of existing or potential problems is derived from the assessment. The problems may be stated in the form of a nursing diagnosis or as a problem statement. The purpose of making a nursing diagnosis is to identify patient problems for development of a treatment plan. The nursing diagnosis must be within the scope of professional nursing practice; however, it may be comprised of problems identified by various members of the multi-disciplinary team. For example:

Assessment data*: Patient verbalizes very little understanding of TB disease, transmission, pathogenesis, and treatment.*

Nursing diagnosis*: Knowledge deficit related to lack of understanding of disease process and treatment of TB.*

In the above example, an outreach worker, during the TB interview process, obtained the data. Regardless of who collects data, the nurse case manager's responsibility is to review and interpret the data and document the assessment or identified problem (nursing diagnosis) in the medical record.

Problem identification is not always easy. Confounding and conflicting variables presented by patients often result in misleading conclusions. For example, the nurse case manager might conclude that nonadherence was a problem because of the patient's past history of leaving the hospital against medical advice and failure to keep clinic appointments. However, the reasons for the patient's previous behavior were never determined. Therefore, nonadherence may actually be the result of a "real problem" that is yet to be identified. Until the actual reasons for the behavior are determined, the nursing diagnosis for the previous nonadherence problem would be stated as, "the potential for continued infection and relapse related to patterns of nonadherence to TB treatment". The plan of care would then be directed toward the nursing diagnosis rather than the nonadherent behavior.

Activities to identify problems include:

- **Assess existing and/or potential health problems** and document them using the nursing diagnosis. A clear statement of the problems and possible etiologies is extremely important to the case management process.

  When the patient with TB is a child, the nurse case manager should remember to include the family system in identification of problems.

- **Coordinate team meetings** to discuss the patient assessment, antecedent variables, and identified problems. It is important for the case manager to discuss the patient assessment and the nursing diagnoses with team members. The team should agree on the conclusions drawn from the assessment and provide the nurse case manager with feedback. Both the patient and the case manager benefit when the nursing diagnosis or problem is correctly identified and clarified for all members of the team. Errors in problem identification will lead to unsuccessful interventions and outcomes. Additional information that will be useful in planning patient care can be obtained at team meetings. Team meetings are a good forum for discussing feelings or attitudes team members may have about patients or required tasks. The nurse case manager should use team meeting time to identify problems healthcare workers are experiencing, especially those that may affect expected outcomes.

- **Monitor the nursing diagnoses** for appropriateness over time. This activity allows for changes to be made as intermediate or expected outcomes are achieved, or as the patient's status changes. New problems or changes will require the addition of new nursing diagnoses or a change in the existing ones.

Plan development

Planning begins when sufficient information has been gathered. Development of a plan is based on assessment data and problems identified by members of the healthcare team. The plan combines both medical management of the patient and nursing interventions. Planning for continued care of the patient with TB requires critical thinking and decision making and should always include participation and commitment from all team members and the patient. Due to the length of TB treatment (from 6 to 24 months), the plan must include intermediate and expected outcomes. The nurse case manager is responsible for the overall plan including documentation, monitoring the patient response, interventions, intermediate and expected outcomes, and initiating changes in the plan to reflect changes in circumstances (variances). The nurse case manager also determines how the plan of care fits with the roles and responsibilities of the team members depending on their specific job descriptions.

In working with the pediatric population, the nurse case manager must ensure that the family and child are involved in the planning process. Gaining the cooperation of the parents and family is essential.

Plan development activities include:

- **Establish the plan of care** ensuring that all the components are included: assessments, nursing diagnoses, required procedures such as x-rays, blood, sputum, auditory, visual acuity tests, medication orders, expected patient behaviors, TB control activities, and intermediate and expected outcomes. The nurse case manager should ensure that the plan of care is useful and meaningful. It becomes the internal standard of care for the patient as well as the performance standard for the nurse case manager. Good planning will allow the patient to experience TB care and treatment along the healthcare continuum and prevent duplication and fragmentation of services. The plan should be discussed and validated with all team members and the patient.
- **Monitor the plan of care and patient response** according to established time frames. It is important to pay attention to relevance of the information and the plan in view of the overall assessments. Each component of the plan should be reviewed to ensure that it is an accurate accounting of the patient's problems, required tests, and interventions. The achievement of intermediate and expected outcomes should be documented. Examples of intermediate and expected outcomes can be found in Appendix 2 and Appendix 3. This documentation will serve as the basis of the evaluation of services and analysis of variances.
- **Negotiate and adjust the plan of care**, as needed, to meet new realities. Since patient circumstances are usually fluid and personnel resources often change over time, it is essential that the plan be negotiated with the patient and changed to adjust to new situations. The plan should allow for flexibility and negotiation. The adjusted plan should be discussed with the team members, as well as the patient.

Implementation

Implementation includes all the interventions required to move the TB patient along a coordinated, sequenced healthcare continuum from diagnosis to treatment completion and cure. The nurse case manager must ensure that all the Elements of a Treatment Plan for TB Patients (CDC, 1995) have been addressed in this implementation phase (see Appendix 4). Effective communication with all staff members is an essential component in successfully implementing a patient's plan of care. Implementing the plan requires educating, coordinating, monitoring, locating, referring, negotiating, documenting, decision-making, and advocating for the patient.

Implementation activities include:

- **Monitor the patient's response to TB treatment, interventions, and adherence**. The nurse case manager should ensure that the treatment is progressing according to the physician's plan, and that the patient continues to show signs of clinical improvement. Policies and procedures regarding DOT and nonadherence will allow the nurse case manager to identify events that require additional assessment interventions. The nurse case manager should ensure that the patient is informed about the consequences of nonadherence, including legal interventions. Changes in the patient's attitude towards the clinic and/or clinic staff should be noted and verified with the patient. Occasionally, a patient with TB may require hospitalization during the course of his/her treatment. This may or may not be TB-related. Regardless, it is important for the nurse case manager to monitor patient progress at frequent intervals to assure that TB treatment is provided according to standards of care and is not interrupted. For specific guidelines see Appendix 5.

  Children's clinical response to treatment may not be as significant as that of an adult. Therefore, it is important to reinforce what the expected response to treatment should be for the individual child during the course of treatment.

- **Refer the patient to other healthcare providers, social service or community agencies as needed**. The nurse case manager should have a good understanding of the community resources, including strengths and weaknesses. The referral process requires the case manager to locate and coordinate accessible, available, and affordable resources for the patient. After the referral is made, the case manager should monitor the patient's adherence to the referral and obtain the consultation or follow-up report in writing. Immediate intervention may be necessary if the patient or the referring agency experiences difficulty.

- **Broker and locate needed services relating to the TB treatment**. This may include laboratory, auditory, or visual acuity testing, additional radiographs, or other tests required specific for the patient. It is important to schedule or assist the patient in scheduling appointments, monitor the patient's adherence to the appointment, and the results. An understanding of the patient's financial resources and health insurance coverage is important. Lack of financial resources or health insurance will affect the patient's willingness to keep appointments, which may be critical to his/her health. The nurse case manager may need to discuss essential services with insurance companies or other healthcare providers to obtain the most cost effective, quality service.

- **Negotiate a plan for DOT or self-administration evaluation**. The nurse case manager should ensure the plan is suitable for the patient's needs and achievable by the healthcare provider(s). Due to the length of TB treatment, the patient's circumstances may change. The nurse case manager needs to verify that the time and place for DOT administration originally agreed upon is still agreeable to the patient/provider. It also may be necessary to coordinate the arrangements for DOT with outside organizations, such as school nurses, drug treatment center nurses, etc.

- **Coordinate strategies to improve adherence**. Coordination helps to achieve the case management goal of treatment completion and cure. The nurse case manager must have knowledge of and proficiency in strategies to improve patient adherence. An understanding of the importance of developing and maintaining a therapeutic relationship with the patient throughout the course of the TB treatment is critical. It is also important for the nurse case manager to be familiar with the principles and practices of behavioral contracting and behavioral modification, two useful methods to improve adherence. Collaboration with team members is essential to obtain as much information as possible about strategies to improve adherence of individual patients and elicit opinions, attitudes, and feelings expressed by the patient that may be counter productive to the goals. To be effective, incentives and enablers should be meaningful and specific for a particular patient population.

  To facilitate DOT adherence of children with TB, the nurse case manager needs to be familiar with the childhood developmental stages, including important events, and utilize strategies in consideration of these stages (see Module 4, Table 5).

- **Educate patient and caregivers about the TB disease process** during the course of TB treatment. Instruction should be relevant for the patient's level of education or ability to learn. The nurse case manager should ensure that education is provided in the patient's primary language and is culturally appropriate. In addition, healthcare beliefs that are in conflict with educational information should be identified and addressed.

  Age-appropriate educational materials and methods should be utilized, especially in working with children. When dealing with a school-aged child, it is important to explain that TB is treatable, and with the adolescent, it may be necessary to constantly reaffirm confidentiality.

- **Advocate for the patient** with team members and other service providers when necessary. The nurse case manager should demonstrate respect and understanding of the patient's cultural beliefs and values and prevent team members from imposing their own values or belief systems on the patient. The nurse case manager should be able to communicate the patient's fear/anxieties, likes/dislikes, and needs/wants to the team members in a non-judgmental manner. It is the nurse case manager's responsibility to be a compassionate, caring, role model for the team so that the services and interventions can be planned and carried out for the patient's benefit. The case manager must also have an understanding of the team members, and mediate, negotiate, and resolve differences of opinion regarding the patient and interventions. Team building and conflict resolutions are important competencies required for a successful nurse case manager.

- **Monitor delinquency control activities** to ensure that the patient and required activities are assigned to an outreach worker and completed according to established standards (e.g., an outreach worker has 3 days to bring infectious TB patient to clinic). The nurse case manager needs to have a good understanding of public health workforce skills and competencies in locating and returning delinquent patients to TB treatment. It is also important to understand policies and procedures relating to delinquency control and to intervene at the administrative level if they are not in accordance with statewide standards.

Variance analysis

Variance analysis looks at the discrepancy between the anticipated and actual patient care outcomes. Variances should not be considered failures but rather opportunities to improve the quality of care. They may arise from changes in the patient's personal situation, medical condition, or healthcare resources. A flexible plan can easily be adjusted to accommodate variances. Because TB treatment takes 6 months or more, it is likely that the patient's situation will change and variances occur. If successful treatment outcomes are to be achieved in these new circumstances, changes in the care plan are necessary.

The nurse case manager should review all variances, make changes as necessary, and identify the frequency of clinical, operational, or system problems. If variances are not addressed, the result may be feelings of frustration on the part of the patient and/or the healthcare team.

Variance analysis activities include:

- **Identify variances in the plan of care at specified intervals** to determine if intermediate and expected outcomes were achieved. The nurse case manager should review all assessments and information to determine if the outcomes are realistic.
- **Describe the reason(s) for the variance**. If reason(s) is unknown, conclusions regarding the variance should be drawn based on assessments and critical thinking.
- **Document the individual variances** to identify changes that need to be made in the patient's plan of care. Often there are changes in the TB patient's circumstances during the lengthy course of treatment. The following is an example of a variance:

The plan called for the patient to receive DOT in the clinic, Monday through Friday mornings. The patient routinely rode his bicycle to the clinic, and during inclement weather he used bus tokens to get to the clinic for DOT. His adherence had been 100% for the last 3 months. During the last week, the patient was nonadherent. After 2 missed days of DOT, the case manager assigned an outreach worker to find the patient and determine the reason for the nonadherence. The outreach worker could not find the patient for 3 days. On the fourth day, the patient's father was at home and informed the outreach worker that the patient found a job at a construction site in another county. A van picked the patient and his co-workers up every day at 7:30 AM and transported them to and from work. He returned home from work at approximately 7:30 PM. The outreach worker reported this to the case manager. The case was discussed during a team meeting. It was decided that a possible solution would be to place the patient on twice weekly treatment, since he was now sputum smear and culture negative and had completed 12 weeks of DOT with excellent adherence. The outreach worker would visit the patient's home either before 7:30 AM or after 7:30 PM. The patient would be consulted regarding this plan prior to its implementation. The change to intermittent therapy was a benefit for the outreach worker, clinic staff, and the patient as well.

Evaluation

Evaluation is an important component of the case management process. Throughout the evaluation process, the nurse case manager must demonstrate skills such as problem solving, critical thinking, leadership, effective communication, negotiation, and networking. Evaluation is the outcome of the case management process and should be continuous and ongoing. Patient care is never complete without the evaluation component. In TB case management, the achievement of desired outcomes must be evaluated so that services and activities can be improved, and TB treatment goals achieved.

Evaluation activities include:

- **Answers to the following questions:**

  Were the TB treatment plan and control activities implemented in a timely manner?

  Were intermediate and expected outcomes achieved?

  Was the patient satisfied with the services or care?

  Were the nurse case manager and the team members satisfied with the plan and outcomes?

- **Monitor the multidisciplinary care plan at least monthly**, or more frequently depending on the complexity of treatment and patient variables. The appropriateness of interventions should be reviewed, as well as dates when intermediate and/or expected outcomes were achieved. Attention should be given as to how rapidly the care plan was changed when the need was identified. If the care plan has remained unchanged, the reason must be determine. An example of chart review is found in Appendix 6.
- **Identify strengths or weaknesses in the healthcare system** that negatively or positively affect the expected outcome. A good evaluation will lead to positive changes for the patient and others.
- **Conduct a cohort analysis at least** quarterly to identify variances or common elements among the group. The nurse case manager, armed with variances common to the cohort patients with TB, can make changes to prevent future variances from occurring with other patients.
- **Monitor the regulatory reporting mechanism and the contact investigation** to ensure the TB case reports are accurate and updated according to state standards, and the contact investigation is complete.

Documentation

Documentation is an integral part of all steps in the case management process. Documentation chronicles patient-care outcomes and can be used to facilitate positive changes for both patients and healthcare providers. The nurse case manager must ensure that documentation is completed regularly by all members of the multidisciplinary team. For example, if legal action is necessary to improve adherence of a difficult patient, the outreach staff must have all attempts to locate and communicate with the patient explicitly documented. All interventions should be documented in a clear and concise manner to ensure continuation of appropriate care.

The nurse case manager should remember the cardinal rule of documentation: "If it isn't documented, it wasn't done." Training regarding documentation may be required for clinical and TB control staff. The case manager must review the documentation to assure that it is consistent with both external and internal standards. Proper documentation will enhance the continuity of care for patients with TB, particularly if different providers are involved in the care over the course of treatment. See Module 1 for a discussion of documentation and the use of standardized nursing language.

Documentation activities include:

- **Monitor the patient's medical record** at each clinic/physician visit, monthly, or more frequently as indicated to ensure that all members of the multi-disciplinary team document information and interventions/services/care when provided in a timely manner. This includes education and factors to improve patient adherence. Review the medical record for completeness, compliance with external and internal standards of care, and clarity. Ensure that all necessary documentation from private physicians or referral agencies is included in the patient's record. Update the multidisciplinary care plan as required. Variances from the usual plan should be documented, including the reasons why the variances occurred and the rationale for the change in plan. Document the achievement of intermediate and expected outcomes as they occur.
- **Document case management activities and elements of the case management process** in the patient's medical record. To be useful, documentation must be clearly and succinctly written. The use of a checklist will assist the nurse case manager to document patient care in a timely, efficient manner. For example, TB education can be documented using a format similar to the patient education documentation form found in Appendix 1. Charting by exception is also another way to efficiently document assessments and interventions. Policies and procedures must be in place if charting by exception is used so that those standards of care are upheld.
- **Assure patient confidentiality.** The nurse case manager should inform the patient that the medical record is kept confidential. Written consent from the patient should be on file if it is necessary to obtain or provide any part of the patient's medical record with another provider, healthcare insurance agency, or community agency. It is also important to ensure that medical records are not easily accessible to others during the day and are filed in a locked cabinet at the end of the day.

Review Questions

Section Review – Overview of Case Management

1) What was the objective of early case management programs?
2) What prompted the rise of case management services in acute care settings?
3) Define case management.
4) List three goals of case management.
5) List three principles of case management.
6) Describe how the nursing process is similar to the case management process.

Section Review–Tuberculosis Nurse Case Management

1) Identify the goals of nurse case management in TB.

Section Review – Elements and Activities of the Case Management Process

1) Define case finding and explain the importance of identifying the source case.
2) Name eight activities involved in the initial assessment process.
3) Discuss ways to monitor the patient's clinical response to treatment.
4) Discuss the advantages of the team approach to problem identification.
5) Describe how the nurse case manager involves team members in plan development.
6) Name essential components of the implementation process and examples of each.
7) Define variance analysis and how it relates to treatment care plans.
8) Explain methods for evaluating patient care plans.
9) Discuss the importance of documentation and name three case management activities involved in the process.

APPENDIX 1

PATIENT EDUCATION DOCUMENTATION FORM

PATIENT FACTORS THAT MAY AFFECT LEARNING (CHECK IF APPLICABLE)

- ❒ Cognitive impairment
- ❒ Visual impairment
- ❒ Speech
- ❒ Primary language other than English
- ❒ Literacy
- ❒ Readiness/motivation/desire to learn
- ❒ Physical impairment
- ❒ Family dynamics
- ❒ Hearing impairment
- ❒ Cultural/religious factors
- ❒ Emotional state
- ❒ Other

EVALUATION SCORE KEY

1 = Unable to Teach
2 = Teaching Offered – Refused
3 = Requires Reinforcement of Content
4 = Demonstrates with Assistance
5 = Explains Independently
6 = Demonstrates Independently

EXPECTED OUTCOMES	TEACHING SESSIONS/LEARNER EVALUATION							
Patient/family is able to:	Initials Date	Evaluation Score	Initials Date	Evaluation Score	Initial Date	Evaluation Score	Initials Date	Evaluation Score
Verbalize an understanding that confidentiality will be maintained.								
Verbalize understanding of the difference between TB infection and TB disease.								
Verbalize understanding of TB transmission.								
Demonstrate techniques to prevent transmission,e.g., proper use of mask, covering mouth and nose when coughing, correct use and disposal of tissues. Verbalize an understanding that TB is curable.								
Verbalize an understanding of the consequences of not undergoing treatment for full length of time.								
Verbalize an understanding of causes and consequences of MDRTB.								
Agree to participate in DOT.								
Verbalize an understanding that non-adherence can result in involuntary confinement.								
Identify contacts.								
Verbalize an understanding of the importance of knowing HIV status and its effect on TB treatment.								

APPENDIX 2

EXAMPLES OF INTERMEDIATE OUTCOMES IN TB CASE MANAGEMENT

Activity: Initiate treatment with anti-TB medication
- Appropriate TB regimen prescribed and DOT planned at first visit

Activity: Directly observed therapy (DOT)
- DOT initiated within 1 working day
- Compare patient's monthly adherence rate to established objectives

Activity: Clinical monitoring of response to anti-TB treatment
- Sputum conversion (smear) occurs within 2 to 3 weeks and sputum remains negative
- Culture conversion within 8 to10 weeks, and culture remains negative
- Clinical improvement subjectively and objectively noted in 80% of patients

Activity: Monitoring and follow up for TB drug side effects and adverse events
- Side effects of medication will be minimized by adjusting method of ingestion
- Baseline CBC, hepatic enzymes and platelet count obtained in 100% of patients placed on four first-line drugs
- Blood test repeated in 100% of patients who have abnormal test results, are at high risk for side effects, or who present with signs or symptoms of adverse reactions to drugs
- Baseline visual acuity and color vision (Ishihara) test performed at first visit on 100% of patients taking ethambutol. Thereafter, repeated monthly
- Baseline auditory and renal function studies performed on 100% of patients taking capriomycin IM or IV
- Baseline uric acid and hepatic enzyme levels obtained in 100% of patients taking PZA. Repeated if abnormal or if symptoms of adverse reaction

Activity: Adherence monitoring
- Continuity of TB treatment ensured by patient keeping monthly appointments
- Barriers to adherence identified within 2 days of missed DOT and addressed within 3 working days

Activity: Insight into TB disease process
- Education provided to 100% of patients and caregivers regarding pathogenesis, transmission, and treatment of TB disease, the difference between latent infection and disease, and prevention of transmission in the community

Activity: Treatment plan documented

- Individualized, multidisciplinary care plan developed during the first month of treatment

Activity: Community health*

- TB interview conducted within 3 days after patient is reported as suspected of TB or diagnosed as an active case
- Identified contacts will be TB skin tested, if previously negative, within 15 days after patient is reported as suspected of TB or diagnosed as an active case
- Contacts who are TB skin test positive will be medically evaluated within 30 days after the case was reported

*Follow state guidelines

Appendix 3

Examples of Expected Outcomes in TB Case Management

Activity: Treatment with anti-TB medication
- Appropriate medication regimen completed in expected time frame (varies according to patient's condition)

Activity: Directly Observed Therapy (DOT)
- Treatment completed
- Patient maintains adherence rate that meets established objectives

Activity: Clinical monitoring of response to TB treatment
- Status of sputum smears and cultures remain negative
- Patient no longer demonstrates signs or symptoms of TB

Activity: Monitoring for adverse drug reactions
- Potential adverse drug reactions were identified in a timely manner and if present, adjustments were made to treatment plan

Activity: Adherence monitoring
- Patient kept appointments with physician, nurse, and other team members
- Patient did not miss DOT appointments
- Barriers identified and issues addressed

Activity: Insight into TB disease process
- Patient verbalizes an understanding of the TB disease process
- Patient understands importance of following TB treatment regimen as evidenced by adherence and completion of therapy
- Patient cooperates with nurse and TB staff in TB control issues to prevent transmission of disease

Activity: Treatment plan documented
- Individualized care plan, developed in the early stages of treatment, is reviewed at regular intervals and updated by team members as needed

Activity: Community health
- Contacts will be identified, skin tested, and evaluated for treatment according to established guidelines

Appendix 4

Elements of a Treatment Plan for Patients With TB (CDC, 1995)

I. Assignment of responsibility

A. Case manager (i.e., person assigned primary responsibility)

B. Clinical supervisor (e.g., nurse, physician, physician assistant)

C. Other caregivers (outreach worker, nurse, physician, physician assistant)

D. Person responsible for completing the contact investigation

II. Medical evaluation

A. Tests for initial evaluation (e.g., tuberculin skin test, chest radiograph, smear, culture, susceptibility tests, HIV test), including results of each test and date completed

B. Important medical history (e.g., previous treatment, other risk factors for drug resistance, known drug intolerance, and other medical problems)

C. Potential adverse reactions

1. Appropriate baseline laboratory tests to monitor toxicity (e.g., liver enzymes, visual acuity, color vision, complete blood count, audiogram, BUN, and creatinine), including results of each test and date completed

2. Potential drug interactions

D. Obstacles to adherence

III. TB treatment

A. Medications, including dosage, frequency, route, date started, and date to be completed for each medication

B. Administration

1. Method (directly observed therapy or self-administered)

2. Site(s) for directly observed therapy

IV. Monitoring

A. Tests for response to therapy (e.g., chest radiograph, smear, and culture), including planned frequency of tests and results

B. Tests for toxicity, including planned frequency of tests and results

V. Adherence plan

A. Proposed interventions for obstacles to adherence

B. Plan for monitoring adherence

C. Incentives and enablers

VI. TB education

A. Person assigned for culturally appropriate education

B. Steps of education process and date to be completed

VII. Social services

A. Needs identified

B. Referrals, including date initiated and results

VIII. Follow-up plan

A. Parts of treatment plan to be carried out at TB clinic

B. Parts of treatment plan to be carried out at other sites and person(s) conducting activities

Appendix 5

TB Case Management Guidelines for Patients Who Require Hospitalization During Outpatient TB Treatment

It is the nurse case manager's responsibility to monitor the patient's progress while he/she is in the hospital, whether or not the hospitalization is related to TB. The case manager should communicate regularly with the hospital case manager, physicians, floor nurses, and infection-control nurses. The frequency with which the patient's care and progress is monitored depends on the individual patient situation, diagnoses, and other complications. It may be necessary for the nurse case manager to go to the hospital floor to actually review the patient's medical record, see the patient, and discuss the case with nurses and physicians. Prior authorization, however, should be obtained from the hospital to allow the case manager access to hospital/patient records. Either a verbal understanding or written agreement identifying the case manager's role during the patient's hospitalization is important. Role clarification may need to occur with various disciplines within the hospital.

If management of the TB regimen becomes a problem during the patient's hospitalization, the case manager may need to discuss the situation with the physician who was treating the patient on an outpatient basis, or the clinic's medical director. Depending on the situation, physician-to-physician may be the most effective form of communication to resolve medical/treatment issues. An effective case manager utilizes the most capable existing resources in problem resolution.
If the local health department, TB control, or clinic has ancillary personnel who function as hospital liaison, the nurse case manager may elect to delegate the patient monitoring activities; however, it is important to give explicit instructions regarding delegated activities. Written or verbal reports should be given to the case manager on a timely basis so patient progress can be assessed.

Case management does not end when the TB patient is hospitalized, unless the patient has completed treatment or is no longer suspected of TB. Assessment, monitoring, and coordination must be continual. Working with the hospital staff to ensure the patient receives the appropriate TB regimen will assure uninterrupted TB treatment, allow appropriate discharge planning, thwart patient problems, and increase the treatment completion in a timely manner.

The nurse case manager should ensure the following:

- The hospital treating physician has the medical information necessary to continue the patient's TB treatment according to the outpatient plan
- The patient does not have an interruption of his/her TB treatment
- The TB drug regimen in the hospital is the same as prescribed by the clinic physician. Any changes in the treatment regimen must be discussed with the treating clinic physician
- The ingestion of all TB medication is observed by an RN and documented in the patient's medical record
- The doses of TB medication are not split during the day, but given all at once the same time. The exceptions to this would be patients who cannot tolerate taking all their medications at one time and medications which are difficult to tolerate, such as ethionamide and PAS. The clinic physician treating the patient should clear all exceptions
- The patient's TB drug regimen remains the same and is not changed by different doctors during the hospital stay
- Pulmonary TB cases have sputum collected, if infectious or thought to be infectious, at least once a week during the course of the hospitalization. The nurse case manager can give guidance about the bacteriologic findings and the necessity of sputum collection
- Appropriate discharge planning occurs
- There is a smooth transition from inpatient to outpatient care with no interruption in TB treatment
- The hospital medical record is available for the clinic physician at the first clinic visit following hospitalization

Appendix 6

Patient _____

Chart Review

Intermediate Outcomes	Time frame	Date(s) accomplished					
TB contact interview	3 days						
Contacts identified and tested	15 days						
Medical evaluation of TST + contacts	30 days						
Appropriate medication regimen	at 1st visit/monthly						
DOT arranged	24 hours						
Testing/Screening	Baseline and prn						
• Blood							
• Vision							
• Hearing							
• Sputum							
• x-rays							
• HIV							
Sputum smear conversion	2-3 weeks						
Sputum culture conversion	8-10 weeks						
Clinical improvement	monthly						
• Subjective							
• Objective							
Patient Education							
• Initiated	at 1st visit						
• Documented	monthly						
Appointments							
• Physician follow up	monthly						
• DOT adherence	monthly						
• Referrals	prn						
Nursing care plan							
• Initiated	at 1st visit						
• Documented	monthly						

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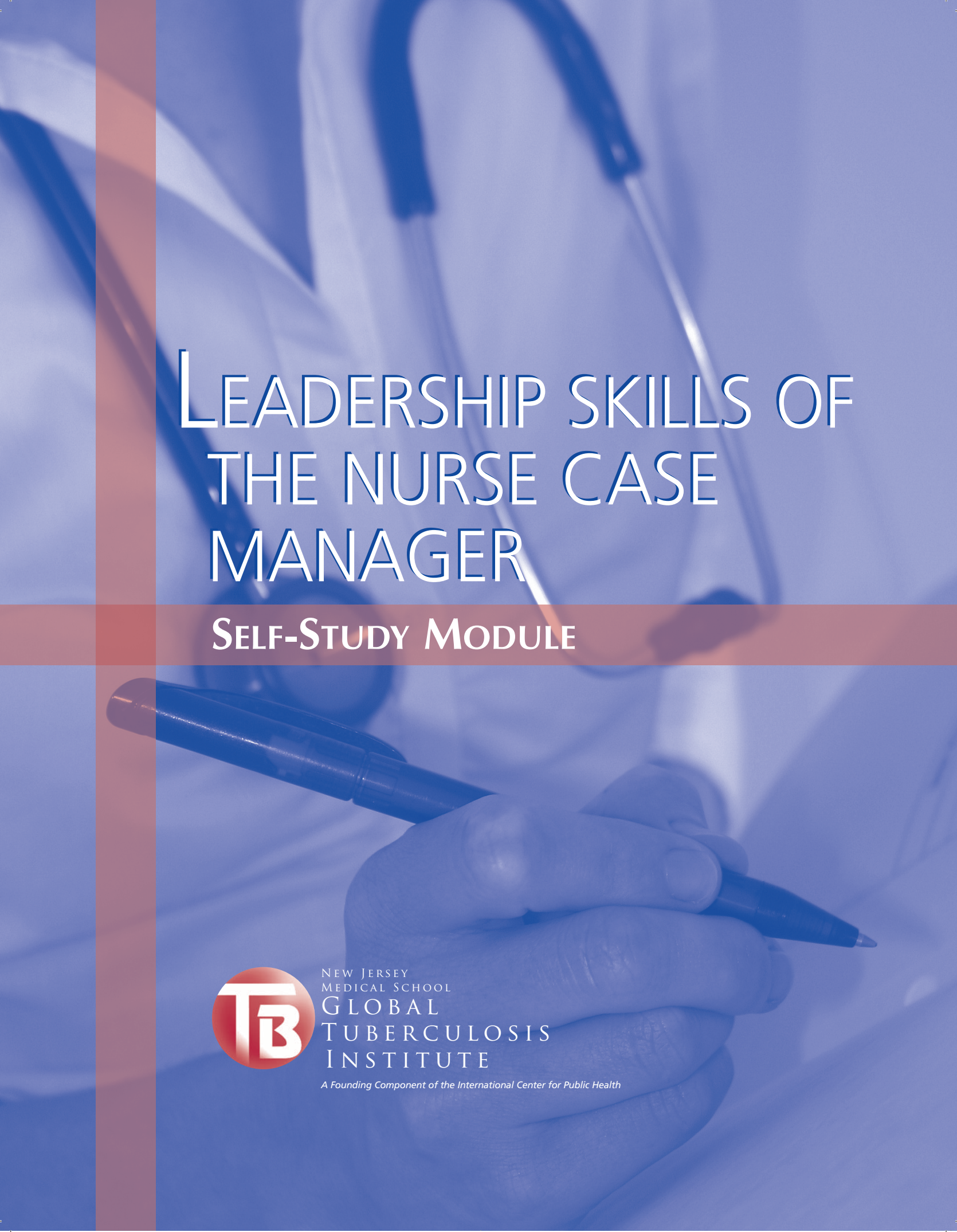

Leadership skills of the nurse case manager

Self-Study Module

New Jersey Medical School
Global Tuberculosis Institute
A Founding Component of the International Center for Public Health

Module 3

Tuberculosis Case Management for Nurses

Leadership Skills of the Nurse Case Manager

INTRODUCTION

Case management is a competency involving specific skills and knowledge. This module provides an overview of these skills. Because case management requires multidisciplinary collaboration and coordination of services for patients from diverse cultures, the nurse case manager must have an understanding of what constitutes culturally competent care and must possess effective team-building and conflict-resolution skills. In addition, this module addresses the importance of appropriately delegating responsibility to other team members and methods of assessing and improving adherence.

Learning Objectives

After the completion of this learning module, you will be able to:

1) Explain the importance of cultural awareness

2) List techniques for delivering culturally competent patient care

3) Identify the elements of team building

4) Define different types of conflict

5) Discuss conflict-resolution techniques

6) Describe the process of delegation

7) Explain the importance of assessing patient adherence

8) Name variables to be considered when assessing patient adherence

9) Identify strategies for improving patient adherence

Cultural Competency

Healthcare providers have the opportunity to interact with people from various ethnic and cultural backgrounds. Differences in personal appearance, behavior, communication patterns, values, and beliefs must not be viewed as obstacles to communication, but rather, as opportunities for the healthcare worker to learn and grow personally while providing healthcare that is culturally appropriate. National health statistics indicate that culturally inappropriate care and lack of understanding of cultural differences may negatively affect health outcomes (Lester, 1998). Therefore, it is imperative for the nurse case manager to become culturally competent and also guide other members of the healthcare team towards cultural competency.

What is cultural competency? It is "the ability of a system, agency, or individual to respond to the unique needs of populations whose cultures are different from that of the dominant or mainstream society" (Lester, 1998, p 31). A culturally competent system acknowledges cultural differences and incorporates appropriate care at the policy, provider, and consumer levels. Transcultural nursing utilizes the nursing process of assessment, planning, intervention, and evaluation to provide care and education that is based on cultural values, beliefs, symbols, references, and lifestyles of people from diverse backgrounds (Lester, 1998).

The first step towards cultural competency includes an exploration of personal feelings and reactions to individual or group differences. It is important to realize that an individual's values and beliefs reflect only a single point of reference. If not viewed in this way, differences may cause internal and/or interpersonal conflict such as prejudice, ethnocentrism, and stereotyping.

Taylor (1998) suggests that the biggest barrier to cross-cultural communication is prejudice, which manifests itself as an aversion or a hostile attitude towards an individual based solely on that person's membership in a particular group. Prejudicial thinking is neither rational nor logical and is often subconscious. The nurse case manager must first explore his/her attitudes to discern areas of prejudicial thinking. The goal is to increase awareness of prejudices, since an awareness of personal feelings of prejudice is a prerequisite for achieving cultural competency. Stereotyping closely parallels prejudice. It is an exaggerated belief associated with a particular group of people. Attitudes, assumptions, and judgments about individuals are made based on such factors as their ethnicity or cultural background. These generalizations are not based in fact but are frequently perpetuated despite contradictory evidence.

The comfort zone that envelops the familiar can influence the ability to communicate with people who are different. Culture influences the way people communicate including the use of facial expressions, gestures, and body language as well as through written and oral communication. One example is personal space, the area surrounding a person's body. This includes both space and objects. An awareness that personal space is important in various ways to different people helps establish appropriate physical distance during interactions.

Developing cultural competence is an educational process. It is important to have an understanding of different conceptions of illness and healing when providing health care to culturally and ethnically diverse populations. Culture defines what is appropriate behavior to exhibit during significant life events such as puberty, pregnancy, birth, disease, and death. These cultural models of acceptable behavior often persist throughout life and have far-reaching effects on the expected behaviors of individuals and delivery of health care. An example is the designation of "spokesperson" when a family member is ill. In some cultures adult males are the only persons who communicate with the healthcare provider.

Appendix 1 suggests interview questions that will help the nurse case manager gather essential cultural data. These questions address cultural and ethnic identity, beliefs about health and illness, approaches to caring for the sick, and specific practices used for treatment or cure of an illness.

Cultural competence requires behavioral flexibility on the part of the healthcare provider. It is important to effective leadership to make a thorough cultural assessment, using it to alter the plan of care if necessary, so that all patients are treated with dignity and respect for their culture.

Team Building

Another feature of leadership is the nurse case manager's skill at team building. Case management cannot be done in isolation. To be successful, the case management process should always include the team of individuals who are involved in various aspect of patient care. This group may include professionals, paraprofessionals, and others from the community. Regardless of the composition of the team, each person plays a role in the patient's plan of care and, therefore, has an effect on the treatment outcome.

The strength of case management lies with the team as a whole, not the case manager or any one team member. It is important that the team functions cohesively, always moving towards the overall goals or identified outcomes of patient care. Teamwork takes practice, smart coaching, and problem resolution. Nurse case managers must develop the skills necessary to build and lead the team. A discussion of the many aspects related to effective team building follows (Herman & Reichett, 1998, Cesta, Tahan & Fink, 1998, & Weinstein et al. 1998).

One person must head up the team. The team manager is responsible for the outcomes of the case management process. When programs establish a team with more than one leader, such as the nurse case manager and the physician as the head of the team, accountability becomes confusing and fragmented. This negatively affects anticipated outcomes and may cause conflict. The nurse case manager's role should be identified and clearly communicated to the team members, others in the healthcare system, and the patient.

Team goals must be established and clarified. Whenever possible, all team members should participate in establishing the goals of patient care. If this is not feasible, then once goals have been identified, they should be discussed with all team members. Although members of individual disciplines may have a specific focus in the plan of care, the nurse case manager must be skilled in identifying divergent goals and utilizing appropriate conflict-resolution strategies to bring unification to the team and avoid conflict. Goals should be identified at the onset of patient care and reviewed at specific intervals.

The role of each member must be clear and well defined. If team members do not understand or accept their roles, teamwork will be jeopardized and interpersonal conflicts can occur. Every role should have identified boundaries with lines of authority and job descriptions of each team member should be reviewed by the nurse case manager to confirm that team members work within the scope of the agency's internal standards. The nurse case manager should have knowledge of the licensure standards as well as any external factors, (e.g., union requirements and contracts, etc.) which may have an effect on an individual's job performance. As head of the team, the nurse case manager is responsible for ensuring that the role of each team member is:

- Clearly defined
- Understood
- Accepted by the team
- Within the scope of the individual's ability and authority

Team members must understand the application of policies and procedures. Inservice training to review policies and procedures can prevent problems. This training includes internal and external standards of practice, specific procedures, and personnel policies. Failure to adhere to policies, procedures and standards of practice will interfere in the team process and patient care outcomes. For example, problems occur when there are high rates of absenteeism among certain team members because other members of the team will have to carry the workload of the absent team member. If this happens frequently not only will teamwork suffer, but anger and conflict may result.

Building interpersonal relationships among team members is critical for an effective team. The nature of these relationships will either make the team a success or contribute to its failure. The nurse case manager must be skilled in interpersonal relationships, open communication, problem solving, and conflict resolution. Case management is successful when all parties are satisfied with the outcome. Building team spirit and fostering job satisfaction are important to the case management process. Successful teamwork affects not only patient care, but each team member as well.

Understanding and Resolving Conflict

The successful outcome of patient care depends not only on the medical treatment, but also on the nurse case manager's ability to handle conflict during the patient's course of treatment. Nurse case managers must address conflict involving patients, members of other disciplines, as well as others in the community who are involved in the patient's care. Conflict may be perceived, felt, or expressed. It can occur at four levels (Dove, 1998):

1) **Intrapersonal conflict** refers to internal struggles in an attempt to clarify values, wants, or needs.

2) **Interpersonal conflict** occurs when two or more individuals display contrasting values.

3) **Intragroup conflict** results when members of a group exhibit contrasting values, goals, ideas, or beliefs.

4) **Intergroup conflict** arises between two or more groups of people, departments or organizations having contradictory beliefs, goals, or needs.

These conflicts exist in all organizations, occurring when individuals or groups experience differences in beliefs, values, and goals that place them in opposition. Such differences may lead to misunderstanding, frustration, and anger. In addition, stress from outside the team (e.g., personal life), or from within (e.g., staffing shortage, difficult patients) may cause behaviors that lead to conflict. Conflict can suppress individual and team growth and negatively affect the quality of healthcare services. Although conflict is usually uncomfortable, it is not always detrimental. Conflict, when evaluated and resolved by the nurse case manager, can actually result in higher levels of achievement, professional and team growth, creativity, and satisfaction of all members.

What factors influence the patient outcome when conflict arises within the healthcare team? The answer to the question lies in the understanding and management of conflict. If the nurse case manager is able to identify destructive conflict, determine its underlying cause, and use problem-solving techniques to resolve issues, then satisfactory outcomes for all individuals can occur (Dove, 1998).

There are several strategies for conflict resolution and the success or failure of the outcome will be dependent upon the strategy chosen. Marquis & Huston (1996, p 338) discuss various ways in which conflict is managed by individuals and groups and state that "the optimal goal in resolving conflict is creating a win-win solution for all involved."

Compromising or negotiation requires that each team member gives up something in the process. To be successful, each member must commit to equal sacrifice. If the compromise lacks equality, one group or individual is likely to perceive he/she has given up more than the other.

Competition always results in a win-lose situation. If conflict is resolved in this manner, one individual/group competes for success at the expense of the other. The losing individual/group may feel frustrated and angry about the outcome. This approach is used when one team member has more knowledge or information about a situation or when the nurse case manager must make a quick or unpopular decision.

Cooperating is the opposite of competition. The use of this strategy requires than an individual or group allows the other to "win" in an effort to resolve the conflict. This sacrifice leaves one faction of the team with a "you owe me" attitude. Smoothing is the art of encouraging team members to focus on areas of agreement rather than opposition. This strategy is effective in removing or reducing the emotional component of the conflict. Both sides can feel that they have "won." However, smoothing never addresses the cause of the conflict or problem. It is effective in resolving minor problems, but can add additional layers on larger, complex issues.

Avoiding is a strategy in which all team members agree to ignore the problem, even though they recognize that conflict exists. This approach is often used to resolve minor problems, when the conflict is likely to resolve itself over time, or when the cost of resolution outweighs the benefits. Nurse case managers should encourage this strategy when the problem can be solved at a higher level or by structural or policy changes.

Collaboration requires team members to use assertive cooperation to resolve the conflict. With this approach, individual issues or goals are set aside and problem-solving techniques are used to establish new, common goals. While this may be a lengthy process, it is most useful in solving complex problems and where there is no superior/subordinate relationship.

The resolution strategy should be based upon the cause of the conflict. A clear understanding of the problem obtained from open communication with those involved, a review of all factors influencing the conflict, and an objective analysis of the entire situation will help determine the cause. Team members should be encouraged to discuss conflict with each other without repercussions, and a private place should be provided for this discussion. Individuals should be encouraged to work out their differences prior to outside intervention. When conflict or potential conflict has been identified, the nurse case manager should decide on the most appropriate resolution strategy or be able to guide team members in selecting a strategy. In summary, the nurse case manager should be aware of different conflict-resolution approaches and their likely consequences.

Delegation in Nursing Practice

In the course of a patient's treatment for TB, it may become necessary for the nurse case manager to delegate responsibility to others. Therefore, nurse case managers must develop the ability to delegate properly. Delegation is "transferring to a competent individual, the authority to perform a selected nursing task in a selected situation. The nurse retains accountability for delegation" (National Council of State Boards of Nursing, 1995). When a nurse delegates, he/she not only assigns a particular task, but also delegates some of the decision making regarding the execution of that task. In the delegation process, the nurse is responsible for assessing the patient's particular circumstances and ascertaining the competence of the person to whom a task is delegated.

Crucial components of delegation include:

- Supervision
- Monitoring
- Evaluation
- Follow-up by the delegating nurse

The professional nursing functions of assessment, evaluation, and nursing judgement are **never** delegated.

The person who accepts the delegation is accountable for his/her actions in carrying out the task, and the nurse case manager is accountable for appropriate delegation. For example, if an LPN/LVN administers the wrong medication or an improper dose, the LPN/LVN is accountable for the error, but the RN is accountable for delegating the task to a person who was not competent to perform the task.

The National Council of State Boards of Nursing (NCSBN) offers the following "*Five Rights of Delegation*" as rules for nurses to follow when delegating a task (1995):

- **Right Task** – The task is one that can be delegated as determined by the specific patient care situation
- **Right Circumstances** – The patient setting is appropriate, resources are available, and other relevant factors are considered
- **Right Person** – The right person is delegating the right task to the right person
- **Right direction/communication** – The task is clearly and concisely described, including its objectives, limits, and expectations
- **Right Supervision** – There is appropriate monitoring, evaluation, intervention (as necessary), and feedback

Assessing and Improving Adherence

Many variables affect a patient's adherence to treatment. The nurse case manager must assess the following variables regularly:

- **Patient variables** include a wide variety of factors, which may be individual or specific to a cohort of patients who have common lifestyles, similar cultural backgrounds, or shared interests
- **Treatment variables** related to medication and duration of treatment
- **Disease or disorder variables** such as coexisting medical conditions
- **Organizational variables**, often overlooked by healthcare providers, can influence patient adherence by the quality of services provided

Appendix 2 lists examples of these variables for the nurse case manager to consider. Assessment data may be obtained from team members and by interviewing, listening, and observing the patient's behavior during the course of TB treatment.

The assessment of adherence requires knowledge of these variables and a review of the following indicators:

- Standards of adherence (e.g., monthly adherence rate)
- Self-reporting by patient
- Behavioral measures
- Clinical outcome

Assessment of adherence should be conducted at regular monthly intervals or at clinic or physician visit. However, it may be necessary to evaluate a patient's treatment adherence more frequently to avoid gaps in treatment. Episodes of nonadherence should be identified as soon as possible and discussed with the patient and team members to establish the necessary interventions.

To assess DOT adherence, use the standards for adherence established by the state TB control program or set by individual health departments or healthcare facilities. The DOT adherence rate is calculated by dividing the number of documented days that the patient was observed taking medication by the number of available days in the month and multiplying by 100. Weekends and holidays should not be counted in the denominator as days available for DOT unless DOT is provided 7 days a week and on holidays.

$$\frac{\text{\# of documented observed days}}{\text{\# of available days for observation}} \times 100 = \text{adherence rate } \_\_\_\_\_\%$$

The denominator may vary depending on the month and circumstances that arise. There are possible exclusions from the denominator. For example, if a patient is hospitalized during the month, the numbers of days in the hospital are subtracted from the number of days DOT would have been available. DOT is not calculated during a patient's hospitalization because, in a hospital setting, all medications should be administered under observation. However, it is important for the nurse case manager to become familiar with hospital practices in his/her area to ensure that TB medications are not left with the patient to self-administer during the hospitalization. Other exclusions from the denominator are planned and agreed upon days when a patient may be unavailable for DOT, such as vacation or conflicting appointments, and days when medications are withheld for medical reasons. If the patient must miss DOT, the nurse case manager should ensure that the patient has enough medication for self-administration, and that he/she is knowledgeable about the medication actions, administration, dosages, and side effects.

Assessment of the patient who is self-administering TB medications can be done by asking the patient directly if the medications are being taken as directed. Self-monitoring forms may be used, but their accuracy has been challenged. However, the simple act of self-monitoring and recording may serve as a reminder for the patient and thus improve adherence. Unlike DOT, self-reporting cannot be considered a true indicator of adherence and is, therefore, a less reliable assessment tool.

Behavioral measures are frequently used to assess adherence. The most commonly used methods to assess adherence to TB treatment are:

- Pill counts
- Observation of patient behaviors
- Record keeping of clinical appointments

Clinical outcome may be measured by:

- Symptom improvement such as weight gain, lessening of cough, increased appetite, and/or increased energy
- Bacteriology change from smear and/or culture positive to negative
- Chest x-ray improvement

Patients often experience symptom improvement after several weeks of treatment and may stop taking TB medications once they start to feel better. The risk of nonadherence increases with the duration of treatment. If DOT is not provided, patients must be closely monitored throughout the course of treatment for changes in their clinical status.

Nurse case management is an extremely effective strategy to enhance adherence to TB treatment. The activities of the case manager, the individualized treatment plan, the multidisciplinary team approach, and the assignment of responsibility and accountability are all factors that positively affect patient outcomes. Other measures used to improve adherence are:

- DOT
- Flexible treatment strategies
- Good patient-provider relationships
- Behavior modification
- Incentives and enablers
- Behavioral contracting
- Patient education

The nurse case manager may utilize one or more of the above strategies to improve patient adherence.

Directly observed therapy (DOT) has proven to be a highly successful strategy that can improve completion rates for tuberculosis treatment. It allows the practitioner to count the exact number of medication doses the patient has taken during the course of treatment. Often however, DOT alone is not enough to achieve adherence. Certain patient behaviors such as failing to keep appointments, taking medication before the outreach worker or nurse arrives, behaving in a hostile or argumentative manner, or refusing to swallow medication can make the DOT process difficult. These behaviors require the use of various interventions aimed at enhancing adherence. During patient assessment, the nurse case manager will need to:

- Determine the attitudes of the patient/family about DOT and the healthcare provider
- Understand the feelings of the patient regarding the anti-TB medications
- Evaluate the patient's tolerance to the medications, such as: ability to swallow medications and ingest all medications at once rather than in divided doses
- Evaluate the presence or possibility of interactions with other medications
- Ensure that the time and place for DOT administration that was originally agreed on is still convenient

Ongoing assessment will identify factors that could jeopardize the plan and unnecessarily prolong treatment. The simultaneous use of other interventions, rather than relying on DOT alone, has been shown to promote adherence.

One such adherence strategy is the use of **intermittent therapy** whereby medications are administered either 2 or 3 times a week rather than 5 to 7 times per week. This strategy is particularly useful when time is an issue for the patient, when healthcare personnel resources are limited, or if it is difficult for the healthcare provider to make daily visits.

Another treatment strategy is the use of **fixed-dose combination medication** such as Rifater® (rifampin, isoniazid, pyrazinamide/Aventis). This treatment option not only provides patients with a choice, but also guarantees ingestion of three first-line TB drugs, thereby reducing the development of multi-drug resistant TB (MDR-TB). This is particularly effective when patients feel a loss of control over their lives due to the diagnosis of TB. For some patients, receiving injections of TB medication has been shown to enhance TB treatment. However, this treatment must be used in conjunction with DOT. The nurse case manager must give careful consideration to any problems patients may encounter with injections over time. If problems occur, this strategy can easily become a deterrent to adherence.

Although the physician is responsible for developing the treatment plan and ordering the medication regimen, he/she should be able to rely on the nurse case manager to make suggestions regarding treatment strategies to improve adherence. This consultation should occur before nonadherence becomes a problem. However, the nurse case manager should have a team discussion that includes the physician, if nonadherence is identified as a problem. Other useful strategies include scheduling appointments as soon as possible after the initial diagnosis, quickly following up on missed appointments, and using of appointment reminders.

Patient-provider relationships are one of the most critical factors in improving patient satisfaction and adherence. All adherence-enhancement strategies discussed in this module will be most effective in the context of a concerned, compassionate relationship with the patient who is an active participant in his/her TB treatment. The nurse case manager should initiate open discussions with the patient about the treatment plan, including responsibilities of all participants. Communication, written or oral, must be clearly understood by the patient, and the nurse should obtain feedback regarding the clarity of the communication or information.

Compassion and understanding of patients' lifestyles as well as a non-judgmental attitude are important qualities for a nurse case manager and all team members to possess. It is important to avoid criticism of patients' behaviors, to be open-minded about their beliefs and lifestyles, and to avoid imposing personal values on patients. Patients are extremely perceptive about attitudes that the healthcare provider may have concerning their lifestyles, even when they are not verbally communicated. The nurse case manager should be aware of opinions held by healthcare providers on the team, and how those opinions affect the patient's willingness to adhere to treatment. Open discussions with team members about their feelings will help avoid conflict; however, if either the patient or healthcare worker cannot work through a problem, a change in provider should be considered.

The compassionate nurse case manager should also recognize and address the patient's feelings about the disease and the resulting illness. A diagnosis of TB disease may produce fear, anxiety, and hopelessness. Often the role of the nurse case manager is to support the patient and help him/her work through these feelings. If this does not occur in the early stages of the process, these fears may cause barriers to adherence that will interfere with the nurse/patient relationship and treatment.

Incentives and enablers are tools that the nurse case manager may use to encourage positive patient behavior. Incentives are small rewards given to patients to improve and maintain adherence and provide motivation to carry out the activities necessary for treatment. Incentives must be tailored to the individual's special interests or needs and be offered according to an established policy and plan that stipulates how they will be used. The following is an example of an incentive policy:

- All patients on DOT shall receive an incentive ($5 gift certificate to the grocery store or fast-food restaurant) every week if adherence rate is 100%.

The healthcare worker who works most closely to achieve a particular behavior should give the incentives. Incentives act as an immediate reward. If the reward is for keeping the clinic appointment, the nurse case manager may be the one to give the incentive to the patient. How the patient chooses to use the incentive should not be addressed in any way.

There should be no judgment attached to the incentive by the healthcare worker. Healthcare workers' negative attitudes about incentives may impact the effectiveness of this program. By listening and observing healthcare workers on the team, the nurse case manager will be able to determine if negative attitudes exist. The nurse case manager should encourage open dialogue and provide education regarding the use and effectiveness of incentives. If all efforts fail to change a team member's attitude about incentives, then the nurse case manager should change the manner in which the incentive is given to the patient.

Enablers differ from incentives in that they help patients to adhere to the treatment plan. An assessment, which identifies the barriers to care for individual patients and/or cohorts of patients, will determine the need and types of enablers. The nurse case manager, along with the multidisciplinary team and the patient, should determine which incentive and enabler will be most beneficial in modifying the patient's behavior. An example of an enabler is free transportation. There should be written policies and procedures as to how, when, and under what conditions the enabler is given, but these policies should be designed to allow flexibility.

Assessment of incentives and enablers and the expected behaviors of the patient should be documented in the patient's medical record. Evaluation of the expected behavior should occur regularly and may result in a change in the incentive and/or enabler during the course of TB treatment if the expected patient behavior deviates from the original plan.

Behavioral contracting is another strategy often used by healthcare providers in TB control. Contracts provide a useful means by which the patient's participation, responsibility, and accountability can be nurtured and managed. Contracts, whether written or oral, clarify treatment goals, patient and provider responsibilities, and minimize confusion. A critical feature of behavioral contracting is the benefit that accrues from the negotiation process. The patient's choice, control, and involvement are essential. The nurse case manager can utilize all these in negotiating a behavioral contract with patients. The contracting process involves concrete discussions about specific behaviors, expectations, and rewards.

During the course of TB treatment, the nurse case manager should continually assess whether the patient has met the terms of the contract. As part of this assessment, the nurse must determine if the patient has the necessary resources to meet the demands of the contract. It may be necessary to break down complex behavioral goals into small achievable components that progressively move the patient toward treatment objectives. Positive reinforcement should be given soon after the desired behavior is exhibited rather than at fixed intervals, and if the patient fails to live up to the terms of the contract, previously stated consequences should be employed within a specified time period. These consequences should not come as a surprise to the patient because they were part of the original contract. In addition, the patient should be made aware of any legal ramifications if nonadherence becomes an issue.

Patient education that is well planned and combined with other interventions is essential for assuring adherence. Information must be appropriate for the patient's stage of development, or level of education, literacy and current level of knowledge regarding TB. The specific needs of each patient should be taken into account during the education process. If the patient has immediate unmet needs that are a priority, the educational process will not be successful. The nurse case manager should try to deal with these needs before attempting to educate the patient about TB. If a change in behavior or lifestyle is required, the nurse case manager should assess the patient's readiness for change, cultural beliefs and values, and expectations about the disease and treatment. Patients are more likely to be adherent if they believe they have a treatable disease, understand the treatment plan, and realize the benefits of treatment.

Education is an interactive process between the patient and healthcare provider. Learning is diminished when the patient is a passive recipient of information. It is important to assess the patient's beliefs and knowledge about TB treatment before any education is provided. Based on the assessment of the patient, the nurse case manager will need to decide when, how, and who participates in the education process. Education should be provided throughout the duration of treatment in a planned, sequential manner, limiting the amount of information presented at any one visit.

Effective communication techniques and age-appropriate literature are important. Literature in the patient's primary language and at the appropriate educational level should be available so the patient can review the information at home and share it with the family members. It is not wise to assume that the patient understands all the information that has been provided. If the nurse case manager or healthcare provider cannot speak the patient's language, a medical interpreter should be used rather than a family member. Repetition or different teaching methods should be employed to reinforce concepts until the patient demonstrates understanding. Feedback and questions the patient asks indicate the need for further information. Patient education should be documented in the medical record as it occurs.

Organizational barriers often cause patients to become uncooperative with healthcare providers, making delivery of care difficult. Patient satisfaction with the healthcare system and with individual providers is important for improved adherence. Therefore, difficulties that patients encounter in the clinic or with providers should be identified and addressed by the nurse case manager. If the nurse case manager does not have authority to change the clinic system, it will be necessary to meet with the appropriate administrative staff to discuss the problems and assist in resolution. The organization of TB services will impact adherence. Some basic guidelines follow:

- The clinic should be physically safe and comfortable
- Clinic staff should be courteous, respectful, and culturally sensitive
- Interpreters must be made available
- All staff involved with patient care must hold patient information in strict confidence. A breach in confidentiality is both illegal and a great deterrent to adherence
- Documentation of patient's medical care, nursing interventions, and other services provided should be in accordance with external and internal standards
- Clinic services must be efficient and easily accessible to minimize waiting time

Professional issues cannot be overlooked when addressing adherence. Attitudes and beliefs of healthcare workers impact their ability to provide effective patient care, education, and promote adherence. The following negative attributes of healthcare workers have been associated with patient nonadherence:

- Pessimism or inertia
- Stimulus overload
- Too many obstacles
- Lack of time
- Low pay
- Low expectation of adherence

Healthcare workers' interactions with patients and the degree of motivation towards their work may be more important than the extent of technical expertise. Professional burnout, the exhaustion of strength, both physical and emotional, resulting from prolonged frustration, stress, and/or overwork, is a major problem in caring for difficult patients. Since the length of TB treatment may range from 6 months for pan-sensitive patients to between 18 to 24 months for patients with MDR-TB, the potential for professional burnout is great. For example, burnout can occur when a patient takes an unusually long time to ingest TB medication, when the worker is providing DOT in unsafe areas, or when patients are verbally hostile and abusive. In these situations, the nurse case manager should be alert for signs of burnout in team members. These signs are not always obvious but may include:

- Lack of motivation in performing necessary job-related activities
- Failure to complete tasks or assignments on time
- Frequent use of personal or sick time
- Tardiness
- Complaints of fatigue, restlessness, and apathy

Healthcare workers should be made aware of the signs of burnout and be encouraged to seek assistance. Supervisory staff must be willing to provide counseling or to refer the employee to an employee assistance program. Often, however, relieving the worker from a stressful situation, such as re-assigning a difficult patient to another nurse/outreach worker/physician, may resolve the problem. The nurse case manager who communicates regularly with the multidisciplinary team, observes closely for signs of stress and frustration, and who attempts to solve problems immediately, will be able to prevent burnout in team members.

In summary, successful patient outcomes are influenced by the nurse case manager's ability to build a cohesive team, resolve conflict and delegate appropriately. Equally important are the provision of culturally competent healthcare and an understanding of factors that contribute to patient adherence.

Review Questions

Section Review – Cultural Competency

1) Define cultural competency.
2) List interview questions used in a cultural assessment.
3) Identify ways that a nurse case manager can promote cultural competency among staff.

Section Review – Team Building

1) Name five elements of the team building process.

Section Review – Understanding and Resolving Conflict

1) List four levels within an organization where conflict can occur.
2) Identify five strategies for resolving conflict.

Section Review – Delegation in Nursing Practice

1) Define delegation.
2) Describe the professional nurse's responsibility in the delegation process.
3) What nursing functions should never be delegated?
4) List the critical components of the delegation process.
5) Describe the Five Rights of Delegation.

Section Review – Assessing and Improving Adherence

1) Describe ways that the nurse case manager can assess the patient's adherence to treatment.
2) List the variables that may affect adherence to TB treatment.
3) Name four indicators of adherence in TB treatment.
4) How is DOT adherence assessed?
5) List at least five strategies to enhance adherence to treatment.

Appendix 1

Components of Cultural Assessment

Cultural Identity

- Where were you born?
- Where were your parents born?
- What ethnic group do you belong to?

Health/Illness Beliefs

- What do you think caused your current illness?
- What types of things do you do to treat illness?
- What treatment(s) do you think you should receive for your illness?
- What problems will your illness cause you?
- Why do you think you got sick when you did?
- What worries you about the illness?
- How do family and/or close friends feel about your illness?

Caring Patterns

- Who cares for you when you are sick?
- Where do you go if you are sick?
- Who do you prefer to take care of you when you are sick, sad, or uncomfortable?

Rituals

- What types of food, remedies, and practices are you using to treat illness or to get well?

Appendix 2

Variables Affecting Adherence

Patient Variables

- Cultural beliefs about disease
- Apathy, pessimism, depression, denial
- Lack of a social support system
- Residential instability
- Lack of resources
- Dissatisfaction with healthcare provider
- Negative experiences with healthcare providers in past
- Previous history of nonadherence
- Impatience with level of progress/response to treatment
- Sensory disabilities
- Inability to follow treatment plan
- Embarrassment
- Lack of control over life

Treatment Variables

- Complexity and/or duration of treatment
- Expense of treatment
- Characteristics of medications (number of pills, side effects)
- Interaction of medication with food

Disease Variables

- Coexisting medical conditions
- Disease requiring multiple tests or complex treatment

Organizational Variables

- Inaccessibility of clinic
- Long waiting time at clinic or for clinic appointment
- Fragmented, uncoordinated services
- Inaccessible telephone system
- Lack of resources for transportation of patients

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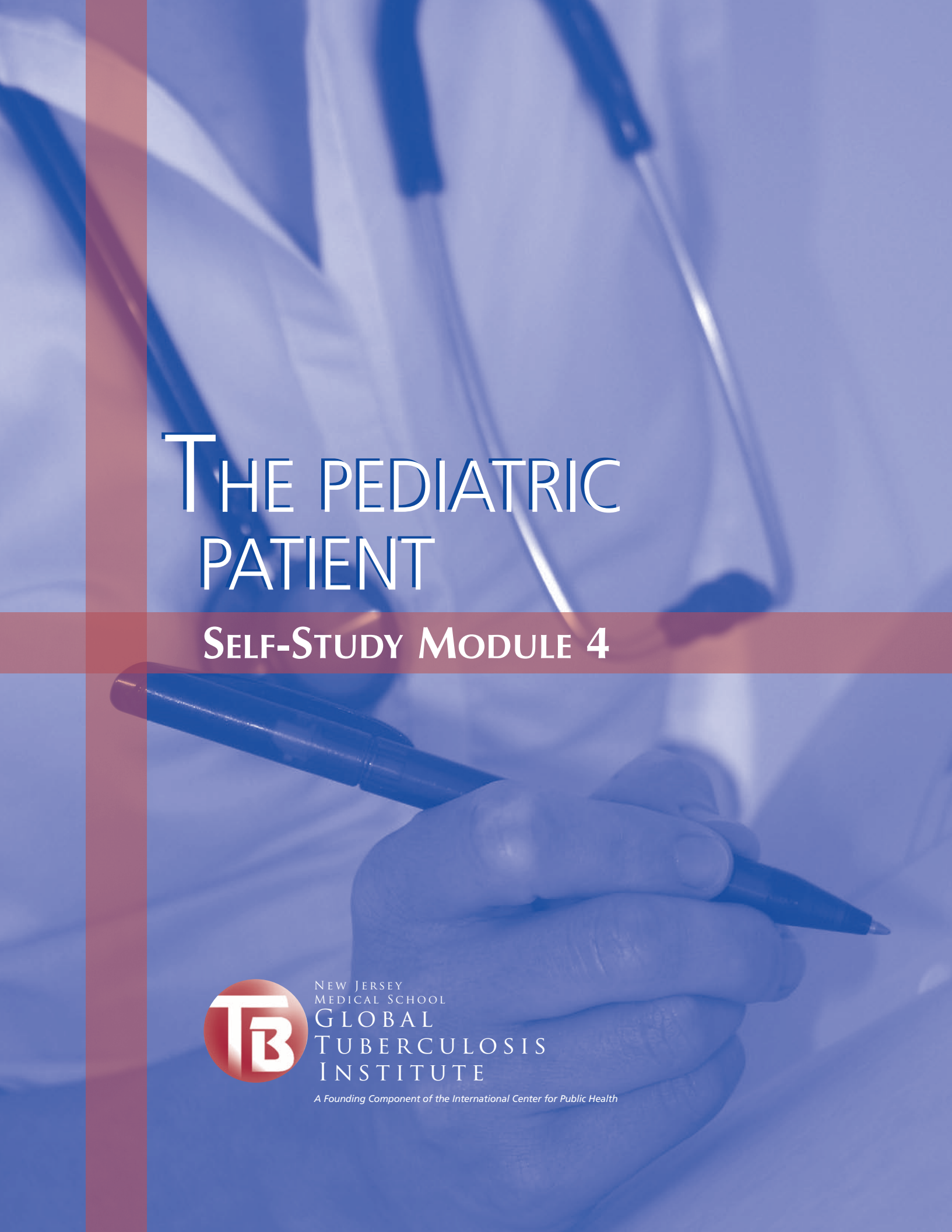

The Pediatric Patient

Self-Study Module 4

New Jersey Medical School
Global Tuberculosis Institute
A Founding Component of the International Center for Public Health

Module 4

Tuberculosis Case Management for Nurses

The Pediatric Patient

INTRODUCTION

This module discusses why children with latent TB infection (LTBI), especially young children under the age of 5, have a greater risk than adults for developing TB disease. Opportunities to prevent TB from occurring are typically present but are often missed as a result of fragmented healthcare services. The nurse case manager must take advantage of every opportunity to prevent the progression from latent infection to active disease.

Attempting to treat a child, especially a healthy one, for an extended time is a challenge to health-care providers. Certain aspects of the TB nurse case management process are altered when the patient is a child. Many of these issues were introduced in Module 2. This module addresses some of the issues in greater depth.

Learning Objectives

1) Describe why young children who are infected with tuberculosis are more likely than adults to develop TB disease.

2) Describe the ways in which symptom manifestation and early detection of TB disease are different in children than in adults.

3) Identify commonly missed opportunities for prevention of TB disease in children who have latent infection.

4) Identify common barriers to adherence in pediatric populations.

5) Provide examples of age-appropriate strategies to improve adherence in children.

Overview of Tuberculosis in the Pediatric Population

TB infection in children is most often the result of contact with an adult household member or other close person who has active, infectious tuberculosis. Therefore, infants and children at greatest risk for infection are those in contact with adults who have TB disease of the respiratory tract or those with latent TB infection who are at high risk for developing TB disease (CDC, 1995).

Tuberculosis is a disease that progresses rapidly in children, and because of their immature immune systems, infected children are more likely than infected adults to develop TB disease, and are likely to develop it more rapidly. In fact, the younger the child, the greater the risk this progression will occur. (See Table 1) (Stark, Jacobs, Jereb 1992)

Table 1 Progression from TB Infection to TB Disease

AGE	% THAT PROGRESS TO DISEASE
Infants <1 year	Up to 43%
1-5 years	24%
11-15 years	15%
Adults with normal immunity	10%

TB disease most often presents as pulmonary disease in both adults and children. In adults this disease usually manifests itself in a specific set of respiratory symptoms. In children, however, pulmonary TB disease is more difficult to detect because it is often asymptomatic. When symptoms are present, they are generally nonspecific, and can easily be mistaken for other conditions. The differences between adults and children with pulmonary TB disease are summarized in Table 2.

Table 2 Comparison of Pulmonary TB Disease in Adults and Children

	ADULTS	CHILDREN
Tuberculin skin test reaction	Usually positive	Usually positive
Sputum	Smear and culture positive	Under 12 years old, it is likely that child will be unable to produce sputum
Symptoms	**Respiratory:** coughing, pain in chest on inhalation or coughing, hemoptysis	**Respiratory:** Usually asymptomatic (cough is rare with little or no sputum) May have recent history of pneumonia
	General: fever, chills, night sweats, weight loss, malaise, fatigue	**General:** failure to gain weight
Infectiousness	Often infectious before treatment due to large numbers of tubercle bacilli and ability to forcefully expel them when coughing	Under 12 years old, rarely infectious due to fewer numbers of bacilli in pulmonary lesions and inability to forcefully expel them

The diagnosis of pulmonary tuberculosis in children is most commonly made during the contact investigation of an adult with active TB, or as a result of routine tuberculin skin testing. Although extra-pulmonary TB comprises only 15% of all adult cases of tuberculosis, in children 25% of TB cases are extra-pulmonary. One of the most common forms of extra-pulmonary TB in children is cervical lymphadenitis. Other common sites of TB disease include bone, joint, central nervous system (usually meningeal) and the abdomen (Waagner, 1993).

Many times the contact investigation fails to identify affected children promptly. Reasons for contact investigation failures include:

- Index case not reported promptly
- Index case interview not done in a timely manner
- Children not identified in the contact interview

Other reasons why opportunities to treat TB in children are missed include failure to:

- Recommend medication to a pediatric contact of a suspected infectious TB case
- Closely follow the infectious source case
- Obtain information about the source case regarding the period of infectiousness, site of TB disease, sputum, smear and culture results, including sensitivities, treatment plan, and adherence rates

Nurse Case Management of the Pediatric TB Patient

The nurse case management model involves intense interaction between the patient/family and the nurse. At each encounter, the nurse assesses the child and identifies existing or potential problems in the treatment plan, recommends changes, and provides the family with an explanation of any treatment modifications. If the child is a contact of a person with TB or is being evaluated to determine TB infection, the level of anxiety within the family may be very high. A brief explanation of the assessment process will help allay caregivers' fears.

The nurse case manager should be knowledgeable about the treatment protocols for TB disease and LTBI. The physician or nurse practitioner will prescribe medications and order laboratory tests and x-rays however, the nurse case manager should be able to answer questions about the length of treatment and medication side effects.

TB Education and Knowledge Review

The nurse case manager is responsible for providing the patient and family with information and knowledge about TB and its treatment. The overall goal of patient education is sufficient knowledge so the family can make wise choices and adhere to the regimen until treatment is completed. The following techniques can be employed by the TB nurse case manager:

- Question child and family regarding their knowledge of why medications are needed for treatment
- Provide written information about TB in language that child and parent can understand
- Keep explanations simple and focused
- Provide the nurse case manager's phone number and advise family to call if child experiences any problems. Establishing and maintaining communication is critical to the treatment process
- Instruct caregiver to seek medical evaluation if the child experiences adverse side effects from the medication, such as persistent vomiting, severe headache, or rash
- Discuss directly observed therapy (DOT) plan

Directly Observed Therapy vs Self-Administered Therapy

Once the diagnosis of TB disease or TB infection has been made and the child and family understand the need for anti-TB medication, the method by which the medication will be administered becomes of paramount importance.

As with the adult TB patient, the only way the nurse case manager can be assured that the child is taking the medication as prescribed is by using DOT. Unlike treatment for chronic illnesses such as seizure disorders, where serum drug levels are monitored regularly, there is no effective laboratory measurement that confirms adherence to the treatment regimen in TB. Therefore, DOT is the method of choice. When proposing this method to the parents or guardian, the nurse must assure the family that DOT is designed to ensure the most positive treatment outcomes while allowing as much control as possible. In the case of young children, DOT is generally provided in the home or at school/daycare center.

School is an ideal setting for treatment of tuberculosis disease and infection. The school nurse can observe, document, and assess the child for medication side effects. *Tuberculosis School Nurse Handbook* (NJMS National TB Center, 2001) and *Guidelines for Initiating a School-Based Directly Observed Therapy Program* (NJMS National TB Center, 1999) describe in detail the essential components of the DOT concept and methods of implementation.

When school DOT is not appropriate or is not an option, the child can receive DOT at home or at daycare. Generally, DOT is given at school on weekdays and the parent or guardian gives the medication on weekends. The nurse case manager should assess the parent or guardian's understanding of the treatment plan and instruct them to notify the nurse if there are any problems or concerns. When developing a plan, several factors must be considered:

- Age of the child (Table 3 lists age-specific strategies)
- Location (where does child spend most of the day)
- Frequency of administration (daily or intermittent therapy)
- Family's cultural beliefs
- Family's willingness to have healthcare personnel visit the home regularly
- Caregiver's understanding of the disease
- Family's concern about the need for long-term medication therapy and possible side effects

Although DOT is the ideal method of assuring the best medical outcome, not all clinics or schools can provide DOT, particularly for treatment of latent TB infection. In these cases a plan for self-administered medication must be devised to meet the needs of the child and family.

The nurse case manager should discuss with the child and family how to administer the medication, including a demonstration of how to crush pills and mix with food if necessary. Taking medication may be associated with daily rituals such as meals, brushing teeth, bedtime (medication at bedtime can decrease side effects). In addition, reminder notes taped on mirrors or the refrigerator are helpful, as are wrist watches that function as alarm clocks. Frequent monitoring is essential if medication is self-administered. If problems develop, the child should be placed on DOT.

Adherence Strategies

Optimal adherence to treatment is based on an effective collaborative alliance among the child, family, and healthcare team. A proactive approach and interventions that convey respect, realism, and hope are all critical components to adherence. Success in adherence requires consideration of the cognitive, psychological, cultural, political, and economic factors.

The following are activities to enhance adherence:

- Decorate the medication cup
- Use decorative/crazy straws
- Make a game of taking medication
- Make a poster, indicating treatment progress
- Give rewards for taking medications

Incentives for a child receiving treatment for TB can be obtained from local area merchants. Examples of incentives include tangible rewards, such as stickers, books, toys, movie passes, telephone calling cards, videos, or certificates to local shops or food merchants.

Assessing Adherence and Addressing Barriers

The evaluation of adherence requires the nurse case manager to consider:

- Adherence standards such as monthly adherence rate
- Child or family self-reporting
- Behavioral measures, such as keeping clinic appointments
- Measurable clinical outcomes, including improvement of symptoms or radiologic findings

In pediatrics, it is important to monitor adherence rates regularly. Early identification and resolution of problems is critical. Problem resolution requires identification of obstacles to adherence such as:

- Unpalatable medication
- Stigma associated with TB
- Family dynamics
- Lack of support system
- Denial of illness by child and family
- Parental attitude toward child's treatment
- Previous history of nonadherence
- Language barriers impeding understanding
- Cultural beliefs about interpretation of tuberculin skin tests when there is a history of BCG vaccine

To establish adherence to treatment, there must to be open communication between the child and family, achieved by listening actively, giving feedback, and resolving conflict. An assessment of family beliefs and values is important to increase the provider's cultural sensitivity to issues as they occur. The child and family should be educated regarding TB. The child's support person within the family should be identified. Keep in mind that this person may not always be the parent; a grandparent or older sibling may be the major source of support. If the family is involved with other community agencies, they may be good resources in establishing improved adherence.

The nurse case manager must develop individualized strategies to resolve problems with adherence. A child's reaction to treatment is affected by his/her developmental characteristics, such as physical and cognitive capabilities. Problems should be addressed based on the child's developmental stage, age group, and social behavior. Some solutions may be as simple as:

- Mixing the medication with a food the child likes
- Rearranging the time medication is administered
- Shifting personnel to align with the child's personality preference

The key predictor for successful treatment outcomes is education. The child and his/her family must understand both the need for treatment and the proper method of medication administration. While taking into account universally recognized sequences and activities that facilitate learning, it is also important to acknowledge different styles of learning. Table 3 gives examples of age-appropriate adherence strategies that may be used at various ages and developmental milestones.

Table 3 Adherence Strategies at Various Ages

AGE	MAJOR MILESTONE	IMPORTANT EVENT	ADHERENCE STRATEGY
Infant birth-1 year	Trust	Feeding, bonding	Mothers and caregivers must comprehend need for treatment. To promote compliance, offer medication when baby is hungry. Mix with approximately 10 cc of breast milk or formula. Pill can be crushed and dissolved in small amount of warm water, then mixed with milk. INH liquid contains sorbitol, which can cause diarrhea. Therefore, it is not recommended. INH can be mixed with baby food such as cereal or fruit and given by spoon.
Toddler 1-3 years	Autonomy	Develops own identity	Use distraction. Disguise taste with vehicle of child's choice—jelly, pudding, honey, chocolate syrup, applesauce, and ice cream. Expect difficulty but be persistent. Give simple explanations. Use incentives for each daily dose if needed.
Preschooler 3-5 years	Independence	Independent in toileting. Has fears of bodily damage; employs fantasy thinking, storytelling; makes friends; separates from parent	Give simple explanations. Allow some negotiation for time of medication administration or vehicle used. Offer rewards and verbal praise, but be consistent and assertive.
School age 5-12 years	Identification of social role with same sex parent, sibling conflict	School	Discuss treatment plan with child. Provide simple and accurate information. Child may be able to swallow pills whole. Child should receive DOT if possible. School DOT 2 or 3x/week may be an option. May be indicated to reduce dose-related side effects.
Adolescent 12- 18 years	Puberty. Sex role identification. Feelings of vulnerability and rebellion against authority	Peer relationships	Involve adolescent in decision making. Potential for poor adherence. School DOT is an excellent option.

Problem-Solving Techniques to Resolve Nonadherence

- Talk to the child and family concerning any problems. (e.g., inability to pick up monthly medication)
- Overcome barriers (e.g., in high school, medication may be given during morning homeroom to avoid tracking students during the day)
- Plan medication adherence to coincide with performance of daily habits or rituals
- Simplify treatments by recommending intermittent DOT
- Elicit the support of family and friends

Discharge Planning

At the completion of treatment for TB, the nurse case manager should review the child's diagnosis and treatment. The parent should be instructed regarding future skin testing and chest x-rays. Inform the family that the child's tuberculin skin test will remain positive and retesting is not necessary; nor is there an indication for regular follow-up chest x-rays, unless the child is being evaluated for a respiratory illness and the healthcare provider orders it as part of the evaluation.

A treatment completion letter or card should be provided, emphasizing the importance of keeping this document throughout the child's life. The nurse case manager should also verify that the child has a link with a primary care provider, and that information regarding the child's TB treatment has been communicated to the proper office. Verification of treatment may be needed for clearance and/or entrance into college, military service, or certain types of employment.

For the treatment of TB or LTBI to be most effective, it is essential that the child and family have a full understanding of the significance of treatment. The final visit is an opportunity for the nurse case manager to ask the child and/or parent if they have any questions regarding the TB treatment process and to correct any misconceptions by filling in any gaps in their knowledge. The nurse case manager can then be assured that the discharge plan has prepared the child and family for the impact of TB treatment on their lives both now and in the future.

Review Questions

Section Review – Overview of TB in the Pediatric Population

1) Describe the difference between tuberculosis in a child and an adult.
2) How are children with TB usually identified?
3) Discuss "missed opportunities" for treatment.

Section Review – Nurse Case Management of the Pediatric TB Patient

1) What elements of the patient's TB knowledge must the nurse review?
2) Describe the purpose of DOT in the treatment of TB.
3) How is adherence to TB medication measured?
4) Name three barriers to adherence.
5) Identify age-specific strategies for improving adherence rates.
6) Discuss the importance of discharge planning and the final office visit.

APPENDIX

TARGETED SKIN TESTING SCHEDULE

Only those children who are at increased risk of exposure to someone with tuberculosis need to be targeted for tuberculin skin testing. The American Academy of Pediatrics (AAP) guidelines for skin testing of children specify which categories of at-risk children should be tested and at what ages and intervals (AAP, 2000).

Recommended Tuberculosis Skin Testing of Children (AAP)

IMMEDIATE TESTING	ANNUAL TESTING	TEST EVERY 2-3 YEARS	TEST AT 4-6 YEARS OLD AND AGAIN BETWEEN 11-16 YEARS OLD
Contacts of persons confirmed or suspected of infectious TB	HIV infected	Exposed to people who are: HIV+, homeless, residents of nursing homes, users of illicit drugs, institutionalized adolescents or adults, migrant farm workers. Continued potential exposure by travel to endemic areas and/or household contact of persons from endemic areas with unknown TST status	Parents immigrated (with unknown TST status) from regions of the world with high-prevalence rates
Radiographic or clinical findings suggesting TB	Living in household with person(s) infected with HIV	Foster children with exposure to adults in the preceding high-risk groups	Have no specific risk factors but live in high-prevalence areas
Immigrating from endemic areas of the world in the last 5 years (e.g., Asia, Middle East, Latin America, Africa)	Incarcerated or institutionalized adolescents		
Travel history to endemic country			
Significant contact with indigenous people from endemic country			

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Glossary of Terms & Additional Resources

New Jersey
Medical School
Global
Tuberculosis
Institute

A Founding Component of the International Center for Public Health

GLOSSARY OF TERMS

Adherence – Following the recommended course of treatment by taking all the prescribed medications for the entire length of time, and keeping appointments for medical care

Case Management – Dynamic and systematic collaborative approach to providing and coordinating health care services to a defined population. It is a participative process to identify and facilitate options and services for meeting individuals' health needs, while decreasing fragmentation and duplication of services and enhancing quality, cost-effective clinical outcomes

Core functions of public health – Government fulfills the mission of public health using 1) assessment (data gathering) 2) policy development (providing leadership) 3) assurance (ensuring availability of services)

Cultural competency – The ability of a system, agency, or individual to respond to the unique needs of populations whose cultures are different from that of the dominant or 'mainstream society'

Delegation - Sharing responsibility for a task with another who is competent to perform the task. The person who delegates the task maintains responsibility and ultimate accountability for the effective completion of the task

DOT (Directly Observed Therapy) – A strategy devised to help patients adhere to treatment; means that a healthcare worker or another designated person watches the TB patient swallow each dose of the prescribed drugs

Elements of case management process
Assessment – Process of gathering data that will form the basis for TB treatment
Case finding – Early identification of the patient with TB
Documentation – Chronicles patient care findings, interventions, and outcomes
Evaluation – The intermediate and expected outcomes of the case management process, which are continuous and ongoing
Implementation – Interventions required to facilitate the patients' plan of care
Planning – Based on assessment data and problems identified by members of the healthcare team
Problem identification – Leads to a problem statement or nursing diagnosis
Variance analysis – Determining the reasons for discrepancies between anticipated and actual outcomes

Enablers – Those things that can make it possible for patients to receive treatment and adhere to the treatment plan

Incentives – Small rewards given to patients to encourage them to either take their own medicines or keep clinic or field DOT appointments

Infectious - Capable of spreading infection; a person who has infectious TB disease expels droplets containing M. tuberculosis into the air when he or she coughs or sneezes

Nursing diagnosis – A clinical judgement about individual, family, or community responses to actual or potential health problems/life processes

Public Health Nursing – The synthesis of nursing theory and public health theory applied to promoting and preserving the health of populations. The focus of practice is the community as a whole and the effect of the community's health status (resources) on the health of individuals, families, and groups. Care is provided within the context of preventing disease and disability and promoting and protecting the health of the community as a whole

Glossary adapted from the following sources:
CDC (1995, 1999), Cesta, Tahan, & Fink (1998), Cohen & Cesta (2001), Stanhope & Lancaster (1998)

ADDITIONAL RESOURCES

Centers for Disease Control and Prevention (CDC) Division of Tuberculosis Elimination
www.cdc.gov/tb
The CDC Division of Tuberculosis Elimination's website contains information on TB in the United States and provides TB education and training materials and resources.

Find TB Resources Website
www.findtbresources.org
This website includes a searchable database of materials from numerous national and international organizations. The site also includes information about other TB organizations, how to order materials, and funding opportunities.

TB Regional Training and Medical Consultation Centers (RTMCCs)
CDC funds four regionally-assigned RTMCCs to provide training, education and medical consultation services to TB health care workers. The RTMCC all products page provides RTMCC-produced TB educational materials http://sntc.medicine.ufl.edu/rtmccproducts.aspx

Curry International Tuberculosis Center (CITC)
CNTC serves: Alaska, California, Colorado, Hawaii, Idaho, Montana, Nevada, Oregon, Utah, Washington, Wyoming, Federated State of Micronesia, Northern Mariana Islands, Republic of Marshall Islands, American Samoa, Guam, and the Republic of Palau.

3180 18th Street, Suite 101
San Francisco, CA 94110
415-502-4600 (Phone) 415-502-4620 (Fax)
http://www.currytbcenter.ucsf.edu/

Heartland National Tuberculosis Center (HNTC)
HNTC serves: Arizona, Illinois, Iowa, Kansas, Minnesota, Missouri, New Mexico, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, and Wisconsin.

2303 SE Military Drive
San Antonio, TX 78223
800-839-5864 (Phone) 210-531-4500 (Fax)
www.heartlandntbc.org

New Jersey Medical School Global Tuberculosis Institute (GTBI)
GTBI serves: Connecticut, District of Columbia, Delaware, Indiana, Massachusetts, Maryland, Maine, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and West Virginia.

225 Warren Street
Newark, NJ 07101
973-972-3270 (Phone) 973-972-3268 (Fax)
www.umdnj.edu/globaltb

Southeastern National Tuberculosis Center
SNTC serves: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia, Puerto Rico, and the U.S. Virgin Islands.
Shipping Address: Emerging Pathogens Institute
2055 Mowry Rd. Suite 250
Gainesville, FL 32611

Mailing Address: PO Box 103600, Gainesville, FL 32610-3600
888-265-7682 (Phone) 352-265-7683 (Fax)
http://sntc.medicine.ufl.edu

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