The Occupational and Environmental Health Nurse as Case Manager in the Occupational Health Setting: Development and Evaluation of the Process and Program

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ABSTRACT

Since the late 1800s case management has been utilized by public health nurses to coordinate health care services. While assisting the ill or injured individual to reach an optimal level of wellness and functional ability, case management is a collaborative process designed to promote quality cost-effective outcomes.

A literature review about case management was conducted and will be discussed in this paper. Major points include the history and purpose of case management, pertinent laws and regulations applicable in the occupational health setting, the case management process, the role of the occupational and environmental health nurse, and the reasons for increased emphasis on case management in the occupational health setting.

The hallmark article which describes Honeywell Corporation's successful case management program will be discussed as a benchmark in developing a case management program. Case managers employed in occupational health settings in industries were interviewed about the details of several components of the case management programs. These interviews will also be presented.
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CHAPTER I

INTRODUCTION

The purpose of this paper is to assist occupational and environmental health nurse (OEHN) case managers (CMs) in developing, implementing, and evaluating a case management program. Many OEHNs provide case management to workers. Many do not have correct, accurate, or proper training in the field of case management. Many learn how to do case management through on-the-job training. Case management has increased in the past few years in the occupational health (OH) setting due to the increasing numbers and cost of disability claims, increased absenteeism from work, and decreased productivity of workers (AAOHN, 2008).

Case management is a collaborative process utilized to promote an underlying goal of quality, cost-effective outcomes while assisting the ill or injured worker to reach an optimal level of wellness and functional ability (Case Management Society of America [CMSA], n.d.). Case management has been utilized to coordinate health care services since the late 1800s and was initiated by public health nurses.

The purpose of providing case management in the occupational health (OH) setting is to provide the best plan of care and treatment for the ill or injured worker resulting in the best outcome for both the worker and the organization (AAOHN, 2008). According to the American Association of Occupational Health Nurses (AAOHN), businesses today look to the
OEHN to maximize worker productivity while reducing costs through reduced disability claims, reduced on-the-job injuries, and decreased absentee rates. This can be achieved by providing case management (AAOHN, 2008).

Through case management, the OEHN can positively impact worker health and safety, and as a result contribute to a healthier bottom line. In the past two centuries, the responsibilities of the OEHN have expanded to include case management, counseling and crisis intervention, health promotion, legal and regulatory compliance, and worker and workplace hazard identification (AAOHN, 2008).

Various standards, laws, and regulations that apply to CMs will be discussed. These standards and laws include CMSA Standards of Practice, Health Insurance Portability and Accountability Act (HIPAA), Americans with Disabilities Act (ADA), Family Medical Leave Act (FMLA), and Workers' Compensation (WC).

Case management is achieved through a series of steps which parallels the nursing process. In the development of a case management program, the essential steps of the case management process need to be put into place (Rogers, 2003b). Each step in the case management process will be described.

The case management process starts with case selection. After a worker is identified as needing case management services, the worker is followed by the case manager (CM) from assessment and problem
identification through the development, coordination, and implementation steps. Identification of appropriate resources is used to develop, coordinate, and implement the plan of care. The case management process continues through monitoring and follow-up, continued reassessment, and evaluation of the plan of care. For the case management program to be viable and valued, it needs to be evaluated as well.

Components of an effective case management program will be reviewed. Plans should be individualized and may need to be modified as the plan of care progresses.

The hallmark article which describes the development of Honeywell Corporation's successful case management program will be discussed. Six case managers (CMs) were interviewed in order to determine how case management is conducted in area industries and hospitals. The questions included CMs certifications, types of illnesses and injuries case managed, standards, state and federal laws, and regulations in place, initiation criteria, the case management process from initiation to closure of the file, transitional duty programs offered, program evaluation conducted, identification of the essential element of the case management program, and how the OEHN CM is involved in primary, secondary, and tertiary prevention within the industry. The responses, importance of the questions, and recommendations for improvement will be discussed. Primary, secondary, and tertiary prevention strategies are crucial
components that need to be in place for an OH comprehensive case
management program to be successful. These strategies, roles,
functions, and best practices that the OEHN CM should incorporate into
practice will also be discussed.
CHAPTER II
REVIEW OF THE LITERATURE

Definitions

The American Association of Occupational Health Nursing (AAOHN) defines Occupational and Environmental Health Nursing as:

The specialty practice that provides for and delivers health and safety programs and services to workers, worker populations, and community groups. The practice focuses on promotion and restoration of health, prevention of illness and injury, and protection from work related and environmental hazards. (2008, ¶ 1)

Also according to AAOHN:

Case management is a process of coordinating an individual client’s total health care services to achieve optimal, quality care delivered in a cost effective manner. The process integrates assessment, planning, implementation, and evaluation components. Occupational health nurses as case mangers provide all or a portion of these services in addition to the coordination effort. (1996, ¶ 2)

Case management is defined by the CMSA as, “a collaborative process of assessment, planning, facilitation, and advocacy for options and services to meet an individual’s health needs through communication and available resources to promote quality cost-effective outcomes” (n.d., ¶ 1). Case management is further noted by the CMSA as an area of
practice within a profession. The underlying goal of case management is for the client to reach an optimal level of wellness and functional ability (2008).

Case management serves as a means for achieving the optimal level of wellness for the client through advocacy, communication, education, resource identification, and facilitation through the appropriate resources. In addition, the CM ensures that the available resources are being utilized in a timely and cost-effective manner (CMSA, n.d).

History

Case management is a concept that originally arose in the United States in the late 1800s. Public health nurses coordinated health care services through various visiting nurses associations and by the formation of settlement houses. These visiting nurses associations and settlement houses became the core of health care and social welfare programs. The Henry Street Settlement House, which later became the Visiting Nurses Service of New York City, was founded by Lillian Wald and Mary Brewster, and was the most renowned of these programs (Rogers, 2003b).

The first documentation in the United States of the profession of occupational and environmental health nursing dates back to 1888 when Betty Moulder cared for coal miners and the miners families in Pennsylvania. In 1909, Lillian Wald worked with the Metropolitan Life Insurance Company to provide coordinated health care services in a cost-effective manner to its policy holders. In the 1900s, the profession
flourished throughout the United States (Rogers, 2003b). Nurses were employed by factories to aid in the prevention of the spread of infectious disease, to address health-related problems that resulted from labor shortages during World War I, and to assist with reducing rising costs from the new workers’ compensation (WC) legislation (AAOHN, 2008). During the twentieth century, insurance companies created the concept of in-house case management programs utilizing nurses and social workers to coordinate health care from a multidisciplinary perspective focusing on cost containment (Rogers, 2003b).

**Purpose of Providing Case Management**

According to Rogers:

*Early intervention is the key component of case management services because it provides for immediate problem identification, engages the worker in care planning from the beginning of the illness/injury to recovery, and helps prevent fragmented and delayed care through early coordinated health care at the beginning of care (rather than later after complications may have developed).*

(2003b, p. 66)

Case management is typically utilized to coordinate care in high cost and catastrophic cases. However, a severe illness or injury, a chronic physical or mental health condition likely to result in lost time, or a permanent change in a worker’s employment status, or absence from work needs to be case managed. It can be beneficial to apply case
management to every case and monitor individual outcomes (Rogers, 2003b).

Case management programs exist to:

- Identify appropriate cases that need to be case managed;
- Provide access to health care services and resources that are both cost and outcome-effective;
- Prevent fragmentation of care and a delayed recovery; and
- Return the worker to work at the highest level of work performance as early as possible (Rogers, 2003b).

The purpose of providing case management in the OH setting is to provide the best care to the ill or injured worker which will result in the best outcome for both the worker and organization. This service should be offered to workers with chronic illnesses and injuries, short and/or long-term disabilities, and occupational injuries (Rogers, 2003b).

**Application in the Occupational Health Setting**

In the past few years, OH case management programs have increased due to a rise in health care expenditures. These expenditures are related to an increase in disability claims and cost, an increase in worker absences from work, and a decrease in worker productivity. Costs associated with worker absences due to illnesses and injuries arise from the payments of worker sick leave, weekly indemnity, short-term disability, health care benefits, long-term disability, salary for recruitment and replacement of workers, and decreased productivity (Rogers, 2003b).
According to AAOHN, "Poor employee health, costs business about $1 trillion annually, so business executives look to occupational and environmental health nurses to maximize employee productivity and reduce costs through lowered disability claims, fewer on-the-job injuries, and improved absentee rates" (AAOHN, 2008, ¶ 3).

According to the Institute of Medicine, currently an estimated 54 million people, which is about 20% of the population, live with a disability. The number of people living with disabilities is increasing and this indicates that there is a need for public health programs to serve those affected. Annual direct medical costs associated with disabilities are more than $160 billion, and indirect costs related to a loss in productivity are about $155 billion for a grand total of about $300 billion (Rogers, 2003b).

With increasing direct and indirect costs associated with occupational and non-occupational illnesses and injuries, case management is one of the many roles that the OEHN can fill (AAOHN, 2008). "Occupational health nurse case managers are the ideal professional to coordinate the employee’s health care services from the onset of illness and injury to safe return-to-work or an optimal alternative" (AAOHN, 1996, ¶ 1). "Today’s occupational health nurses manage the overall care plan and help return these employees to a quality state of living, not just working" (Rogers, 2003a). In the OH setting, the OEHN in the role of CM coordinates the health care services of the worker from the onset of illness or injury through maximum medical improvement (MMI).
Maximum medical improvement is defined as reaching maximum improvement in the recovery process (AAOHN, 2008).

As previously mentioned, the purpose of providing case management in the OH setting is to provide the best care resulting in the best outcome for both the worker and organization. The CM provides the ill/injured worker early access to quality health care services that are both outcome and cost effective focused in order to prevent fragmented health care and delayed recovery, thus allowing the worker to remain at work or to return to work as early as possible (Rogers, 2003b).

Non-fatal occupational illnesses and injuries appear to be increasing in recent years. “NIOSH estimates that at least 10 million injuries, about 3 million of which are severe, occur on the job each year. Every workday more that 10,000 people suffer injuries that result in lost work time” (Rogers, 2003b, p. 150). “As work-related injuries continue to remain high, prevention of accidents and injuries at the worksite continues to be a major priority in occupational health” (Rogers, 2003b, p. 150). The number of hazards which may expose workers to occupational illnesses and injuries are endless (Rogers, 2003b).

The ill/injured worker benefits from case management services. The OEHN integrates advanced nursing skills, business administration, and health care expertise to assist the employer in providing a safe and healthy work environment. In this role, the OEHN understands and follows current regulations, reviews health histories, conducts biological
and environmental monitoring of workers and the work areas, and intervenes early to prevent illness, injury, and disability (AAOHN, 2002).

The OEHN participates in safety inspections, performs post-accident evaluations, teaches safety awareness and measures to workers, and is involved in the safety committee of the organization. The OEHN acts as a liaison with regulatory agencies in an effort to decrease occupational illnesses and injuries thus preventing worker illness and injury and improving the bottom line (AAOHN, 2002).

### Standards, Laws, and Regulations Pertinent to a Case Management Program

According to Cesta and Tahan (2003), the CM should practice in a manner that is consistent with the scope of practice, skills, knowledge, competence, job description, standards of care, and the policies and procedures established by the OH nursing unit. The OEHN working as a CM will need to practice within the scope of the state Nurse Practice Act. For the OEHN working as a CM within the OH setting, several additional standards, laws, and regulations need to be considered and followed. These include but are not be limited to Case Management Society of America (CMSA) Standards of Practice, Health Insurance Portability and Accountability Act (HIPAA), Americans with Disabilities Act (ADA), Family Medical Leave Act (FMLA), and Workers’ Compensation (WC) (Cesta & Tahan, 2003).
Case Management Society of America Standards of Practice

The Case Management Society of America (CMSA) has published Standards of Practice for case management practice and define case management, the functions of the CM, the settings for case management services, the relationships with clients, the purposes and goals of case management, the standards of care, and the standards of performance (Mullahy & Jensen, 2004).

Case managers should familiarize themselves with these standards of practice. Legal precedent holding CMs accountable exist. Even though standards of practice are not a mandate, the standards should be adhered to. The CM should document in detail the actions taken in the case, and clearly document the reason for the action. The CM provides an additional shield of protection against potential claims of negligence by demonstrating that national case management standards of practice have been followed (Mullahy & Jensen, 2004).

Informed Consent and the Health Insurance Portability and Accountability Act

The Health Insurance Portability and Accountability Act (HIPAA) of 1996 was established under federal legislation to protect the privacy of each individual's personal medical information. This regulation protects medical records and other personal health information maintained by health care providers, hospitals, health plans, health insurers, and health
disabilities. This law prohibits private employers, state and local
governments, employment agencies, and labor unions from discriminating
against qualified individuals with disabilities applying for jobs, hiring, firing,
advancement, compensation, job training, and other terms, conditions,
and/or privileges of employment (The U. S. Equal Employment

The ADA applies to persons who have impairments that
substantially limit major life activities such as hearing, seeing, speaking,
breathing, walking, performing manual tasks, caring for oneself, working,
and learning; examples include persons affected with HIV, mental
retardation, paralysis, blindness, or epilepsy. Individuals with minor or
acute conditions of short duration, such as a sprain or fracture, generally
are not covered. Persons with a record of a disability are also covered
including those who have recovered from cancer or a mental illness, and a
history of alcoholism. Individuals that are regarded as having a disability
or impairment, even though an impairment does not exist, are covered
under the ADA as well, such as a person with a facial disfigurement (Job

A qualified applicant or worker with a disability is an individual who
meets legitimate skill, experience, education, or other requirements of a
job, with or without reasonable accommodation and can perform the
essential functions of the job. Workers with disabilities are to be held to
the same standards as other workers without disabilities. Requiring the
care clearinghouses. HIPAA limits the non-consensual use and release of private health information; gives patients new rights to access personal medical records and to know who else has accessed them; restricts disclosure of health information to the minimum that is needed for the intended purpose; establishes new criminal and civil sanctions for improper use or disclosure; and establishes new requirements for access to records by researchers and others (The Department of Health and Human Services, 2000).

HIPAA provides protection for paper, oral, and electronic information creating a privacy system that covers all personal health information created or held by covered entities. HIPAA also requires that providers get patients' consent for routine use and disclosure of health records, in addition to requiring authorization for non-routine disclosures. Advance written consent for routine purposes are similar to the practice most patients have been accustomed to when they visit a doctor or hospital in the past. However, the regulation will provide additional protection by requiring that patients must also be given detailed written information on privacy rights and how the information will be used (Health Insurance Portability and Accountability Act, 1996).

**Americans with Disabilities Act**

Title I of the Americans with Disabilities Act of 1990 (ADA) took effect on July 26, 1992. This Act is a wide-ranging legislation to make American society and employment more accessible to people with
ability to perform the essential function of the job assures that the individual with a disability will not be considered unqualified simply because of the inability to perform marginal job functions (Job Accommodation Network, 1992).

Employers are required to make a reasonable accommodation to the known disability of a qualified applicant or a worker if it does not impose an “undue hardship” on the operation and safety of the employer’s production, quality, or business. Undue hardship is defined as an action requiring significant difficulty or expense when considered in light of factors such as an employer’s size, financial resources, and the nature and structure of its operations. Employers are not obligated to provide personal use items such as glasses or hearing aids (Job Accommodation Network, 1992). Reasonable accommodation includes, but is not limited to:

- Making facilities used by workers readily accessible to and usable by individuals with disabilities;
- Job restructuring, work schedule modifications, or reassignment to a vacant position;
- Obtaining or modifying equipment; and
- Modifying examinations, training materials, or policies, and/or providing readers or interpreters (The U. S. Equal Employment Opportunity Commission, 2007).
Job offers may be conditioned on the result of a pre-employment medical examination only if the examination is required to all entering workers in similar jobs. Medical examinations cannot be required prior to a job offer. Post offer medical examinations must be job related and consistent with the employer's needs of conducting business. Employers may not ask job applicants about the existence, nature, or severity of a disability; but, the applicant can be questioned about his/her ability to perform specific job functions. Medical examinations of current workers can be conducted if there is evidence of a job performance issue or a safety issue so that fitness to perform the job functions can be determined (Job Accommodation Network, 1992; The U. S. Equal Employment Opportunity Commission, 2007).

**Family and Medical Leave Act**

The Family and Medical Leave Act (FMLA) of 1993 is intended to allow workers to balance the demands of family life and work. The enactment of FMLA was founded on two basic principles, the needs of the American workforce and the development of highly functional organizations. Children and the elderly are dependent on family members, and FMLA is a reassurance that workers will not have to choose between continuing employment and meeting personal needs and family obligations. A direct correlation exists between a stable family and productivity in the work place (United States Department of Labor, 1995).
FMLA allows eligible workers to take up to 12 weeks of job protected unpaid leave in a 12 month period. Qualifying events include: 1) the worker's own serious medical condition and inability to perform the functions of the job, 2) a need to care for a child, spouse, or parent with a serious medical condition, 3) the birth of a child and the bonding period, and 4) the placement of a foster or adopted child. Leave can be taken on a continuous or intermittent basis for illness/injuries (United States Department of Labor, 1995).

There are several criteria that a worker has to meet to be eligible for FMLA. The worker must have been employed by the employer for at least 12 months. The 12 months do not have to be consecutive and can include periods of paid or unpaid leave. The worker must have worked at least 1250 hours in the 12-month period directly preceding the requested leave. Workers are eligible if employed by a company with more than 50 workers within a 75 mile radius (United States Department of Labor, 1995).

A serious medical condition is an illness, injury, impairment, physical, or mental condition that involves one or more of the following:

- Inpatient care in a hospital, hospice, or residential medical care facility at least overnight involving any period of incapacity or inability to work, attend school, or perform regular activities of daily living;
- Continuing treatment by a health care provider with a period of
incapacity of three or more calendar days with any subsequent treatment or periods of incapacity relating to the same condition;

- Treatment two or more times by a health care provider, treatment by a health care provider which results in a continuation of the treatment of the illness, or for periodic visits for treatment of the condition; and

- Any period of incapacity due to pregnancy or prenatal care or for any chronic condition with episodes of incapacity for three or more calendar days in the absence of medical treatment (United States Department of Labor, 1995).

**Workers' Compensation**

Workers' compensation (WC) guidelines vary from state to state (Cesta & Tahan, 2003). The North Carolina Industrial Commission (NCIC) administers the Workers' Compensation Act in North Carolina. Each state has rules set forth by the Workers' Compensation Act and the CM must follow them when developing and coordinating the plan of care. In order to effectively meet this obligation, applicable components of the statues for WC must be identified and followed (Rogers, 2003b). For example, in the state of North Carolina, the employer has the right to choose the provider for medical treatment of the injured worker. In some other states, the injured worker can choose the provider. In North Carolina, the CM needs to assure that a preferred/approved provider is consulted for medical treatment (North Carolina Industrial Commission, 2008).
The NCIC outlines the rules that a CM needs to follow when dealing with an injured worker in "Rules for Utilization of Rehab Professional in Workers’ Compensation Claims," (North Carolina Industrial Commission, 2000). According to the NCIC the definition of a Rehabilitation Professional (RP) is:

Rehabilitation professionals are case managers and coordinators of medical rehabilitation services and/or vocational rehabilitation services, including but not limited to, state, private, or carrier-based, whether on-site, telephonic, or in or out of state. The WC medical case manager working for the employer should follow the same rules that apply for all other rehabilitation professionals. Rehabilitation professionals do not include direct care providers, e.g., physical therapists, occupational therapists, or speech therapists. (North Carolina Industrial Commission, 2008, p. 3)

With WC, the CM needs to be aware that there is a “two pronged effort”. The insurance carrier is interested in timely maximum medical improvement of the injured worker and also reduced indemnity. Hence, getting the worker back to work as soon as medically possible, either through a transitional work assignment or with a modified schedule, is important if the worker can return to work without danger to full recovery. At times this may be difficult for the CM to balance in regards to recovery and return to work (Cesta & Tahan, 2003).
CHAPTER III

CASE MANAGEMENT PROGRAM DEVELOPMENT AND EVALUATION

The Case Management Process

In the case management process, the OEHN CM assesses, plans, implements, coordinates, monitors, and evaluates the worker's medical care. Throughout the process, the OEHN CM must have excellent communication skills, critical thinking skills, and the ability to make independent decisions (Rogers, 2003b).

The nursing process is basic to the nursing profession, and the case management process parallels this process (Table 3.1) (Powell, 2000; Rogers, 2003b). The nursing process was first introduced in 1955 by Lydia Hall, and in the early 1970s evolved into the five-step process. According to Taylor, Lillis, and LeMone (2001), the nursing process is defined as, "A systematic method that directs the nurse and patient as they together accomplish the following: (1) assess the patient to determine the need for nursing care, (2) determine nursing diagnosis, (3) plan care, (4) implement the care, and (5) evaluate the results" (p. 217). Each of these five steps is patient-centered, goal-oriented, part of the organized process, and depends on the precision of the preceding step. The nursing process provides a framework that enables the nurse and the patient to accomplish each step and work towards goal attainment (Taylor et al., 2001).
TABLE 3.1
COMPARISON OF THE NURSING PROCESS AND
THE CASE MANAGEMENT PROCESS

<table>
<thead>
<tr>
<th>Steps Involved in the Nursing Process</th>
<th>Steps Involved in the Case Management Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Assessment</td>
<td>• Case Selection</td>
</tr>
<tr>
<td>• Nursing Diagnosis</td>
<td>• Assessment and Problem Identification</td>
</tr>
<tr>
<td>• Planning</td>
<td>• Development, Coordination, and Implementation through Resource Identification</td>
</tr>
<tr>
<td>• Implementation</td>
<td>• Monitoring and Follow-up</td>
</tr>
<tr>
<td>• Evaluation</td>
<td>• Continued Reassessment and Evaluation</td>
</tr>
</tbody>
</table>

Source: Rogers, 2003b, p. 87.
The case management process involves the following steps:

- Case selection;
- Assessment and problem identification;
- Development, coordination, and implementation of the plan of care through resource identification;
- Monitoring and follow-up; and
- Continued reassessment and evaluation of the plan of care (Powell, 2000; Rogers, 2003b).

**Case Selection**

Case selection is the first step in the case management process, and it is used to evaluate an individual's need for case management based on established criteria. The established criteria are used to identify cases that need early intervention, identify gaps in the rehabilitation process, and eliminate interruption in recovery. For case management to be effective, early identification and intervention are essential and may in fact reduce the length of stay and reduce health care costs (Powell, 2000; Rogers, 2003b).

Case management can be provided by the OEHN for both non-occupational and occupational illnesses and injuries. Typically, identifying criteria for case selection would be cases that have potential for high claim expenditures, extended length of hospital stay, multiple admissions to hospitals, potential for disability, catastrophic events such as amputation...
or mutilation of a limb, or complex medical problems including chronic diseases and high risk conditions such as diabetes or mental health problems (Rogers, 2003b). Examples of these types of cases would include: amputations, multiple fractures, disc herniations, spinal cord injuries, traumatic brain injuries, AIDS, diabetes, and/or cancer (Powell, 2000).

Case selection determination can be established by reviewing data and trends on past insurance claims and WC cases of high volume and high cost (Powell, 2000). Table 3.2 shows a list of “red flags” that can help identify the need for case management services.

**Assessment and Problem Identification**

The second step in the case management process is assessment and problem identification. Problem identification through continual assessment and reassessment are critical to good case management. After a worker has been identified as needing case management services, a thorough and objective assessment should be conducted to determine the worker’s current physical and functional status and physical, psychosocial, and financial needs. Inadequate assessment of a worker can result in an unstable and incomplete plan of care (Powell, 2000; Rogers, 2003b).

The ill or injured worker involved is the primary supplier of information obtained in the assessment. If the worker is incapable of providing information, other sources, preferably family members,
<table>
<thead>
<tr>
<th>Case Management Services</th>
<th>Case Management Services</th>
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<tbody>
<tr>
<td>Attorney involvement</td>
<td>Poor work performance</td>
</tr>
<tr>
<td>Repeated complications and/or surgeries</td>
<td>History of emotional or psychiatric problems</td>
</tr>
<tr>
<td>Poor compliance with treatment</td>
<td>Age greater than 65</td>
</tr>
<tr>
<td>Disfigurement or amputation</td>
<td>Injured worker near retirement</td>
</tr>
<tr>
<td>Fraud</td>
<td>Multiple or severe trauma</td>
</tr>
<tr>
<td>Multiple diagnosis</td>
<td>Prior claims history</td>
</tr>
<tr>
<td>Multiple hospital admissions</td>
<td>Psychiatric diagnosis</td>
</tr>
<tr>
<td>Recent and significant life changing events (ie. Marital separation, death of family member)</td>
<td>Continuous symptoms and need for medication</td>
</tr>
<tr>
<td>&quot;Doctor shopping&quot;</td>
<td>Severe genetic abnormalities</td>
</tr>
<tr>
<td>Debilitating or terminal illness</td>
<td>Financial difficulties</td>
</tr>
<tr>
<td>Potential secondary gains from illness/injury</td>
<td>Hospital readmission within 15 days after discharge</td>
</tr>
<tr>
<td>Lives alone or with someone with a disability</td>
<td>Need for transitional care in an extended care facility</td>
</tr>
<tr>
<td>Victim or perpetrator of violence or abuse</td>
<td>Treatment by more than one health care provider</td>
</tr>
<tr>
<td>Unknown social or family support system</td>
<td>Dependent in activities of daily living</td>
</tr>
<tr>
<td>Eating disorder</td>
<td>Alteration in body image</td>
</tr>
</tbody>
</table>

Source: Rogers, 2003b, p. 360.
need to provide the necessary information (Rogers, 2003b).

There are a variety of assessment tools already developed and available for the OEHN CM to use. These tools can be adapted to target specific needs that the individual worker may have (Rogers, 2003b).

General assessment of the injured worker should include:

- Health history
- Demographics
- Nutritional and elimination status
- Functional ability
- Psychosocial status
- Cultural and religious diversity
- Community resources
- Worker's job duties and responsibilities (Rogers, 2003b).

Current medical information must be reviewed to determine medical and medication status. Health care records are provided by the treating physician(s) and previous health care providers; including home health agencies, hospitals, and dentists. The worker’s supervisor(s) should be able to provide information on the worker’s ability to perform the job prior to illness/injury (Rogers, 2003b).

The CM must also be aware of cultural diversity and how this may affect the client’s recovery. Various religions and cultures have different beliefs and systems of support. The CM needs to be aware of, sensitive
to, and respectful of each client's religious and cultural beliefs. For example, Jehovah's Witnesses do not accept blood products as a medical treatment, and in many Asian cultures, the husband makes a majority of the decisions, including those about medical treatment options. The Hispanic population discusses issues such as medical care as a family in making decisions (Ingram, 2006).

The CM should also observe the client's ability to make decisions and utilize resources independently. Each worker does not function on the same level; some need more guidance and assistance with decisions regarding treatment options than do others. The CM will need to assist some injured workers with the complete treatment regimen while others can make decisions independently. Communication between all parties involved including the worker, the employer, the treating physician, the insurance carrier, and the CM is essential (Mullahy & Jensen, 2004; Rogers, 2003b).

The CM assesses and documents a broad spectrum of the client's physical and psychosocial needs/problems using critical thinking skills and incorporates all of the information available including, but not limited to, information obtained from the health care provider(s), the worker, family members, supervisors, and medical records. After the assessment is completed, and the current level of functioning is determined, the needs/problem list is formulated. From the problem list the
services/resources needed are determined, identified, facilitated, coordinated, and monitored by the CM (Rogers, 2003b).

Development, Coordination, and Implementation of the Plan of Care, Through Resource Identification

The third step in the case management process is development, coordination, and implementation of the plan of care, through resource identification. With the complete assessment, the CM has reviewed and analyzed the data and information available in order to identify the needs of the worker. From these needs, the CM develops and coordinates a plan of care. In coordinating and implementing the plan of care, the OEHN CM must have an understanding of the worker's benefits, employer resources available, and external public and private resources that are available for utilization in the case management process (Rogers, 2003b). In developing and implementing the plan of care, the CM links the client to the necessary resources, such as an interpreter or support group. For the plan to be realistic and effective, it must be developed through a collaborative effort that involves the worker, the worker's family, health care providers, and members of a multidisciplinary team which may include, but is not limited to physical therapists, and rehabilitation specialists (Rogers, 2003b).

Attention to detail is essential. The CM has the responsibility of making recommendations and coordinating services. The CM is responsible to all parties involved to ensure that the services provided are
of the highest quality, necessary, and cost effective. The CM needs to assure that the best outcome for the worker is not compromised (Mullahy & Jensen, 2004).

The CM must have a complete understanding of the worker’s current medical condition, care plan objectives, treatment plan, and expected outcomes. In developing and coordinating the plan of care, the CM must address the following questions: What needs to be done?; Who, when, where, and how will the services be provided?; What is the target date for both short-term and long-term goal achievement (Rogers, 2003b)?

Next, goals and objectives need to be prioritized in terms of what is the most important issue. At times, conflict may arise in declaring the priority of the most important issues based on the worker and the CM’s perceptions. Conflicts may include returning to work, financial and resource allocation and limitations, and insurance benefits. These conflicts can be resolved with negotiation and education (Rogers, 2003b).

In developing, coordinating, and implementing the plan of care through resource identification, the OEHN identifies gaps in health care services and links the worker with appropriate private and community resources in an effort to meet the needs of the worker. The OEHN acts as a liaison and coordinates the health care services the worker needs. Coordination of services for the worker can include monitoring medical status, educating about treatment plan compliance, arranging home health
care services and equipment, providing a list and contact information of community resources available, reviewing benefit coverage, monitoring satisfaction with the treatment plan and services being provided, facilitating rehabilitation, implementing the return to work program, job accommodations, and communicating accurate information to all parties involved. The CM determines the services needed, develops a plan of care, and identifies the resources necessary in implementing a successful plan of care (Rogers, 2003b).

For example, a hospital emergency department registered nurse sustains a compound fracture to the left femur during a fall at work and needs immediate emergency medical attention, followed by surgical intervention which includes the application of an external fixator to the right fibula and tibula followed by a short hospital stay. Physical therapy and adaptation to activities of daily living should be addressed early on. Assistive devices used for adaptation to activities of daily living need to be acquired for use in the hospital and prior to the worker being discharged from the hospital. Assistive devices may include crutches, a wheelchair, and a shower chair.

Returning the worker to work is a priority and needs to be addressed and implemented early in the plan of care. This can be accomplished through a transitional work assignment. In order to identify the transitional work assignment, the essential functions and physical demands of the worker's job should be evaluated. A copy of the worker's
job description should be presented to the physician. Although it is ideal to present it to the physician, at times the job description does not entail the physical components of the work, and a video may be helpful. When the worker is able to return to work, it is essential that the worker can perform the work and that the restrictions prescribed by the physician be followed so that the worker is able to work without danger of re-injury (Mullahy & Jensen, 2004).

**Monitoring and Follow-up**

In the fourth step of the case management process, the CM monitors the services that are being coordinated and provided to ensure that the worker’s needs are being met in order to yield the best outcome. Records are kept to document the appropriateness, effectiveness, and efficiency of the services that are being provided (Rogers, 2003b).

The CM should assess and document the health status and case management needs of the client and periodically reassess these needs. The frequency of reassessment will be determined by company protocol and/or on an individual basis. The needs of the client will vary depending on the phase of recovery (Mullahy & Jensen, 2004; Rogers, 2003b).

The monitoring process will vary from case to case. Some workers will require follow-up by telephone and others will require home visits. The frequency for follow-up will vary from worker to worker, from weekly follow-up to monthly, semi-monthly, etc. If the worker is not progressing, or is doing poorly, or acknowledges that a problem exists, the CM will need to
assess the situation thoroughly and bring this to the attention of the treating physician, and the plan of care will need to be re-evaluated (Mullahy & Jensen, 2004).

Workers will have follow-up appointments with health care providers. The CM may accompany the worker to these appointments, or choose to do telephonic case management. The mode of follow-up will depend on the needs of the client, the employer, and the severity of the case (Mullahy & Jensen, 2004).

In the example of the emergency department nurse who sustained compound fractures and required surgery and a hospital stay, follow-up/reassessment of the nurse’s condition will need to continue until the nurse reaches maximum medical improvement (Mullahy & Jensen, 2004; Rogers, 2003b). Due to the risk of infection, the employer and the physician will not allow the nurse to return to transitional work in a patient care area while the external fixator is in place. Work restrictions will need to be addressed and clearly defined by the assigned physician; a suitable transitional work assignment will need to be identified by the CM and the employer and approved by the treating physician (Mullahy & Jensen, 2004). Follow-up appointments with the physician and physical therapist, including travel arrangements to all appointments (the worker’s car has a manual transmission), will need to be set-up prior to discharge from the hospital. Consideration must be given to whether or not the worker is able to drive to these appointments or does transportation need to be arranged.
Would a family member be able to take the nurse to therapy; can he have physical therapy in the home for a brief period of time; and is there an approved, identified physical therapist near the worker's home?

Continuing follow-up of the worker and distribution of reports are vital as they help maintain the CM's link to the worker and support the role of the CM throughout the process and the case. The CM contributes more than just setting up services; the CM is perceived as someone that contributes to the progression and resolution of the case throughout the entire treatment plan (Mullahy & Jensen, 2004).

Continued Reassessment and Evaluation of the Plan of Care

The last step in the process is evaluation of the plan of care. Continuous monitoring and ongoing analysis of the worker's needs, the services being provided to the worker, the entire treatment plan, and the effectiveness of the individual plan of care are evaluated. At various stages, different or recurring problems can arise. When problems are identified, changes need to be made to the plan of care. Along with the monitoring of the entire plan, the CM needs to evaluate and re-evaluate the case management plan over the entire course of the intervention. Fluctuation in activity of the case can be expected (Mullahy & Jensen, 2004; Rogers, 2003b).

Periodically, the CM will need to review the worker's progress and the treatment plan. This should occur at least every 30 days for acute, short-term assignments. Long-term assignments can be evaluated every
3 to 6 months. The case management plan of care should always be reviewed when the worker is discharged (Mullahy & Jensen, 2004).

**Evaluation of the Case Management Program**

In addition to evaluating individual cases, evaluation of the case management program as a whole is essential in confirming program effectiveness. In the evaluation of a case management program, the effectiveness of the program, achievement of goals and outcomes, cost effectiveness, and worker satisfaction are all critical points that should be examined (Rogers, 2003b). The method of evaluation and what component is being evaluated is identified prior to implementation. Case management programs can be evaluated from four perspectives: consumer satisfaction, process evaluation, outcomes, and cost-effectiveness (Rossi, 1999).

A consumer satisfaction survey is a tool most often used in the form of a questionnaire to evaluate effectiveness. This tool can be administered to workers, health care providers, supervisors, and claims adjusters. Both quantitative (scaled responses) and qualitative data (comments) should be provided (Rossi, 1999).

A process evaluation explores the procedural steps retrospectively through chart reviews. Questions are related to the initial triggers for implementing case management, identification of critical events, measurement of appropriateness of interventions, and attention to "red
flags." Also, during the process evaluation, attention is directed to failures in communication (Rossi, 1999).

The process evaluation is an evaluation of the program implementation. Process evaluation addresses the basic policy question and attempts to explain why programs do or do not achieve the objectives by examining how they were implemented. Implementation evaluations typically are designed to answer the following questions:

- Was the program implemented as intended?
- Did the program reach its intended target group?
- What services did people in the program receive?
- Were people satisfied with the program’s services?
- What is the average cost for each worker claim that received case management services (Grembowski, 2001)?

The process evaluation contains both quantitative (surveys and claims data) and qualitative (interviews, observations, and focus groups) methods to gather information. "The general framework of the process evaluation contains three core functions: assessment, policy development, and assurances, where evaluation is a component of the assurance function" (Grembowski, 2001, p. 23).

Outcome measures are found through both individual and general indicators, and the major outcome of concern is a timely return to work. Expected range of time for full and partial disability days and expected length of hospitalization for specific injuries and illnesses are published by
several different insurance companies. The individual and general dates for specific cases can be compared to the published industry standards. Target dates can be established for workers individually based on the specific characteristics of the case. Insurance companies provide guidelines to assist with determining an expected return to work date. If returning to work is not a realistic goal for the worker, outcome measures can be expressed in terms of the worker’s ability to function and to be productive (Rossi, 1999).

Cost-effectiveness is a straightforward “bottom-line” type of evaluation. In performing a cost-effectiveness evaluation, there is an attempt to show that the expense involved with utilization of case management is less than the expense of the case without the utilization of case management. Three sources are generally used to express the estimated savings; actual dollar expenditures, gains in productivity, and the effect on insurance premiums. A percentage of the CM’s salary, the cost of the worker being out of work, and training other workers to do the work need to be considered in expenditures and productivity. A baseline for comparison can be created from previous expenditures, benchmarked, or from statistics from the insurance industry (Rossi, 1999).

Another type of tool compares encounters before and after case management implementation including number of office visits, number of readmissions to the hospital, number of emergency department visits, or length of stay for specific types of populations or diagnosis. These
evaluations include the collection and analysis of the data, and the final
distribution of statistical and subjective data collected. The use of data is
a way to communicate effectiveness and therefore gain the support of
management (Rossi, 1999).

According to Rossi, once a collaborative case management
program is instituted and to ensure that the program is maintained and
changes are made as issues are identified, the program must be
evaluated. The evaluation process ensures that the program will remain
viable. Evaluation can provide feedback to the CMs as a team, on an
individual basis, or for the program as a whole. Evaluation can assist in
identifying strengths and weaknesses of the program and can help to
identify any real or potential problems. Program evaluation can assist in
determining the effectiveness and impact of case management to the
industry. The evaluation can also justify the existence of the program and
the need for further growth of the program (Rossi, 1999).

For the evaluation to be completely effective, methods for the
evaluation should be identified prior to the implementation of the program.
The methods for evaluation should be designed to collect data that can be
investigated in order for decisions to be made concerning the program and
to justify the effectiveness of the program. The methods selected should
be able to do the following:

- Complement the components of the program to be evaluated;
- Plan methodology of evaluation prior to program implementation;
Consider a benchmark for which comparisons, restructure, and improvements can be made;

- Design tools for evaluation to capture and collect relevant data followed by the interventions to evaluate the effectiveness and the need for revisions and areas of improvement;

- Identify variables that affect the final results; and

- Identify the audience and the data presented (Rossi, 1999).

Using a combination of these methods of program evaluation will assist to generate a strong indication of the program's effectiveness and value, and will identify areas that need improvement (Rossi, 1999).

**Components of an Effective Case Management Program**

Successful case management programs cannot be implemented and sustained without the crucial components of management commitment, cooperation, and support. Management support of an early return to work program allows the worker to be productive while healing. The worker’s rehabilitation process and return to work must be supported for the recovery to be timely and without incident or delay (Rogers, 2003b).

Each case will evolve through modifications, redevelopment, and re-evaluation stages. The CM needs to be aware that changes in the initial diagnosis or the worker's status may require new and/or additional actions in the plan of care and possibly different providers (Mullahy & Jensen, 2004).
Benchmark for Developing a Case Management Program

The article "A Guide to Setting Up a Case Management Program" was reviewed and can be used as a benchmark for case management programs in the OH setting. According to Henderson, Bergman, and Burns (1989), the Honeywell Corporation in Minneapolis wanted to take a closer look at what was being spent for high cost medical claims (Henderson, Bergman, & Burns, 1989).

"For 1986-1987, 34% of health care claim costs were being generated by 1% of covered employees" (Henderson et al., 1989, p. 26). It was also discovered that about 50% of these workers with high-cost medical claims had been hospitalized more than once. And, of these high cost claims, about 25% had been hospitalized 3 or more times. Despite the diagnosis of cancer and other chronic illnesses, only about 20% of this group was managed at home with home health care. The analysis revealed that during these illnesses, the high-cost workers were being treated by an average of six physicians; making it clear that there was no coordination of care. This information lead the officials at Honeywell to expand the use of medical case management for its workers (Henderson et al., 1989).

Honeywell established that the first step was to identify the extent of the medical costs resulting from high-cost claims. Medical case management was targeted to the small number of large expenditure medical claims. This baseline information was essential and helped
estimate the potential savings, types of claims to target, and whether services could be improved at Honeywell (Henderson et al., 1989).

The second step identified for Honeywell was to define goals. What did Honeywell want to accomplish with case management? Was the main concern to provide comprehensive coordinated care, or was it to save money (Henderson et al., 1989)?

Case management can actually increase expenditures in some cases due to the actual expense of paying for the services of case management. “For example, a special pain control program for a terminally ill cancer patient can increase costs, but it can also improve the person’s quality of life” (Henderson et al., 1989, p. 26). Honeywell decided that cost containment was the primary goal of its medical case management program. A “safeguard” was incorporated so that decisions could be made as needed on an individual case basis (Henderson et al., 1989).

Case management services must be tailored to the company’s workers. The Honeywell study found that case management was most suitable for three types of workers. The first group of high-cost medical claims included workers with a major catastrophic illness or injury requiring a long and expensive hospitalization followed by intense medical monitoring over a long period of time; for example, premature babies, babies born with spina bifida, and workers suffering traumatic head injuries (Henderson et al., 1989). The second group of high-cost medical
claims were workers with chronic illnesses including cancer, AIDS, and cardiac disease. Workers in this group often have an exacerbation of illness and require periodic hospitalizations (Henderson et al., 1989). The third group of high-cost medical claims included those with substance abuse and psychological disorders requiring long-term hospitalization and episodic heavy use of various health care services (Henderson et al., 1989).

Honeywell discovered that its high-cost claims included workers with malignancies, mental disorders, and circulatory diseases, in that order. Patients with these illnesses made up about 50% of the high-cost group and accounted for just over 50% of the total expenditures. It was essential for the success of Honeywell’s medical case management program to target workers with these types of claims. It was also noted that all high-cost claims did not fall into these categories; so it was necessary for anyone that could benefit from case management services to be offered the services (Henderson et al., 1989). Not all case management programs are equipped to handle all types of medical claims. It is essential to know the type of high-cost claims most common among your workers in order to select the best case management program for your company (Henderson et al., 1989).

The Honeywell Corporation took three years to develop the case management program. The goal was to make sure that the workers
received the highest quality care at the most reasonable cost. The model went companywide (Henderson et al., 1989).

Honeywell utilized outside vendors to conduct the case management services. The activities of these vendors were monitored and managed by a Honeywell OH nurse, now called the health services advisor. In this role, the health services advisor did not perform case management directly, but supervised all of the vendor CMs that handled the claims (Henderson et al., 1989).

Honeywell identified four phases of the case management process. The first phase was identification and referral. Workers who could potentially benefit from case management were identified and services were recommended (Henderson et al., 1989). "A broad range of triggers help identify workers including: high-cost diagnoses, large annual claims expenses, multiple hospital admissions, extended length of stay, use of several physicians, and utilization of high-technology procedures" (Henderson et al., 1989, p. 28).

To assure workers who could benefit from case management services were identified early, the use of the same vendor for Honeywell’s case management services also provided Honeywell with utilization review services. Most of the referrals for case management were made by utilization review (Henderson et al., 1989).

For each worker that was referred for case management services, Honeywell required that the health services advisor be sent formal
notification of the referral. The required notification included information on diagnostics, the expected length of hospitalization, the worker's insurance information including the extent of Honeywell's liability, and the claims history for the worker for the previous 12 months (Henderson et al., 1989).

Honeywell identified the second phase as screening and assessment. In this phase, the vendor CM obtained further information about the worker's medical status and decided whether case management services were needed. At this point Honeywell required documentation including:

- Consent of the patient and the physician's willingness to participate;
- Detailed medical and clinical information;
- Original treatment plan documentation;
- Assessment of the original treatment plan's quality of services; and
- The vendor CM's billing information to date for these services (Henderson et al., 1989).

The third phase was identified by Honeywell as active case management. If case management services were appropriate, a treatment plan was devised. "Flexibility is essential" (Henderson et al., 1989, p. 29). Honeywell took into consideration the use of services not typically covered, and allowed the use of these services if the alternatives
yielded a higher quality and lower cost outcome (Henderson, et. al., 1989). "The active case management phase is a continuous process" (Henderson et al., 1989, p. 29).

The CM worked directly with the treating physician to revise the treatment plan as needed when changes in the worker's condition occurred. The CM was required to send written reports monthly to the health services advisor. These reports included:

- The worker's medical and functional status;
- Any modifications of the treatment plan;
- The claims to date, categorized by the type of service;
- The savings to date, categorized by the type of service;
- The case management fees to date, categorized by the type of services; and
- The date of expected case closure (Henderson, et. al., 1989, p. 30).

Honeywell identified the fourth and last phase in the case management process as closure. Closure occurred when the CM and the health services advisor decided that the worker no longer warranted the need for case management services. The worker and the physician were notified in advance of the pending closure of the case management file. A closure report was developed by the CM and sent to the health services advisor, and it contained the same information that was required during the active case management phase (Henderson et al., 1989).
The steps and the system that Honeywell developed in its model were aimed at "ensuring the company gets the best value from medical case management, while safeguarding the quality of medical care provided to employees" (Henderson et al., 1989, p. 30).

**Case Management Programs in Area Industries and Hospitals**

After the literature review was conducted, it was important to assess how OEHNs functioned in the CM role and how existing case management programs in the OH setting of area industries and hospitals were developed and evaluated. Several essential elements needed to be examined in establishing benchmarking criteria, such as who conducts the case management of the workers; what types of illnesses and injuries are case managed; what standards, laws, and regulations are followed; how the case management process is carried out including criteria for case management, the establishment and coordination of the plan of care, including communication to all parties involved; what the case management process entailed from the time of referral until the file is closed; whether or not a transitional duty program exists; how the case management program is evaluated; what makes the program successful; and how the OEHN CM is involved in primary, secondary, and tertiary prevention?

Ten interview questions were developed and based on a literature review, using common elements of a case management program. The same 10 questions were asked of each of the CMs.
Telephone interviews were conducted with six CMs employed by local industries including four area hospitals, a manufacturing facility, and a pharmaceutical company. From the interviews conducted, common themes were identified. The interview questions and CMs responses are listed below.

1. Are you a certified rehabilitation professional i.e., CCM, CRP, CRRN, COHN/CCM, COHN-S/CCM?

Three of the six professionals functioning in the role of CM were certified to perform case management in the OH setting.

2. What types of non-occupational or occupational injuries/illnesses do you case manage for the workers in your industry?

All of the CMs conduct case management of occupational injuries and illnesses. One of the CMs assists workers with FMLA and STD. However, other CMs employed by the same company do case management of occupational injuries and illnesses. Case management of non-occupational injuries and illness was not performed.

3. What state and federal regulations related to case management do you consider within your practice?

The CMs considered pertinent state and federal regulations, and all of the CMs reported being involved in court proceedings.
4. What are the criteria you use to initiate case management?

Criteria for case selection were not established in all of the programs. The CMs initiate case management at different times.

5. Does your industry offer a restricted duty program for workers with physical limitations due to injuries and illnesses?

Return-to-work programs were established and utilized in all of the industries.

6. How is the plan of care established, coordinated, and communicated to all parties involved?

All of the CMs performing case management for the occupationally injured/ill workers had similar processes for assessing the worker at the time the referral was received, establishing a treatment plan, implementing and coordinating the plan of care, and communicating the plan of care to all parties involved until the time the case is closed. However, the methods and processes involved in performing these varied from program to program. Some individualized counseling of workers with non-occupational acute and/or chronic medical conditions was conducted by all of the CMs.

7. Walk me through the case management process from the time the referral is received until the file is closed.

Each of the CMs that case managed occupationally ill/injured workers indicated that first and foremost, the worker was to receive appropriate medical care. Protocols existed for assessment and
treatment of the ill/injured worker that sought emergency medical
treatment or to provide first-aid. Four of the six CMs interviewed
had on-site medical providers. When necessary, referrals were
made to outside providers, and about one-half of these CMs
attended outside appointments with the workers. It does appear
that the steps for the case management process as identified by
Powell (2000) and Rogers (2003b) are included in these case
management programs.

8. Is an evaluation of the program performed? How is this done?

Do you use a tool? How are the results used?

Evaluation of the individual cases as well as evaluation of the case
management program appeared to be a deficit in the process.
Many cases and programs were not evaluated.

9. What is the essential element for the success of your case
management program?

Several of the components of an effective program existed within
the industries identified. Four of the CMs could not list only one
essential element. These CMs listed at least two or three elements
considered essential for the success of the case management
program. Management support of the occupationally ill/injured
worker was identified, as well as, the continued assessment,
reassessment, and modification to the plan of care.
10. How are you involved with offering primary, secondary, and tertiary prevention within your industry?

All of the CMs reported being involved with the various components of prevention within the industries. Three report being involved in the safety culture of the industry in preventing occupational illness and injuries. Three offer disease management and prevention with one-on-one counseling and bulletin board displays.

A compilation of these questions and responses are listed in Table 3.3.
### TABLE 3.3
**QUESTIONS AND RESPONSES FROM SIX TELEPHONE INTERVIEWS**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
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</table>
| 1. Are you a certified rehabilitation professional i.e., CCM, CRP, CRRN, COHN/CCM, COHN-S/CCM? | • 2 Certified Occupational Health Nurses (COHN-S)  
• 1 Certified CM (CCM)  
• 1 Family Nurse Practitioner (FNP)  
• 2 Registered Nurses (RN’s), but not certified |
| 2. What types of non-occupational or occupational injuries/illnesses do you case manage for the workers in your industry? | • 5 CM occupational injuries and illnesses  
• 1 determines FMLA or short-term disability (STD) if worker is absent greater than 1 week occupational or non-occupational  
• Most common CM cases  
  • Lacerations  
  • Contusions  
  • Muscle strains/sprains  
  • Fractures  
  • Bloodborne pathogen exposures |
| 3. What state and federal regulations related to case management do you consider within your practice? | • The North Carolina Industrial Commission Regulation on Rehab Professionals  
• The Nurse Practice Act  
• FMLA  
• ADA  
• Code of Ethics for  
  • CCMs  
  • Certified Disability Management Specialists  
  • Qualified Rehab Professionals |
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<th>Question</th>
<th>Response</th>
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| 4. What are the criteria you use to initiate case management?            | • The incident/accident report is received  
• Worker is referred to an outside physician  
• Adjuster recommends case management  
• Worker requests or needs short-term disability or FMLA  
• Criteria for utilizing an outside CM includes:  
  • Worker is out of work for greater than or equal to 3 weeks  
  • Problems arise returning to work  
  • Attorney involvement  
  • Worker is “doctor shopping”  
  • Red flags appear  
  • Surgical intervention is recommended by the treating physician |
| 5. Does your industry offer a restricted duty program for workers with physical limitations due to injuries and illnesses? | • 6 offer restricted duty for occupational illnesses and injuries  
• 2 offer restricted duty for workers with restrictions related to both non-occupational and occupational injuries and illnesses  
• 1 offers restricted duty through a restricted duty “pool” |
<table>
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<tr>
<th>Question</th>
<th>Response</th>
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</table>
| 6. How is the plan of care established, coordinated, and communicated to all parties involved? | • 6 report a method in place for communication  
• Written – distributed to the worker, the claims representative, and the worker’s supervisor by  
  • E-mail  
  • Fax  
  • Mail  
• Telephonic or verbal |
| 7. Walk me through the case management process from the time the referral is received until the file is closed. | • 6 had similar processes  
• Worker to receive appropriate medical care  
  • First-aid  
  • Emergency care  
• Assessment of the worker is performed at time of the referral  
• Process dependent upon whether the treating physician is on-site  
• On-site OEHN  
  • Follows established protocols (approved by medical director) to treat conservatively  
  • Refer to physician as needed  
• On-site physician  
  • 4 have on-site providers  
  • If worker continues to have problems after conservative measures followed  
  • Evaluate  
  • Treat |
### TABLE 3.3 (CONTINUED)

**QUESTIONS AND RESPONSES FROM SIX TELEPHONE INTERVIEWS**

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
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</table>
| Continued | - Referral to outside physician  
  - Worker continues to report problems with the injury/illness  
  - If red flags appear  
  - Return to modified work  
  - Job duties reviewed  
  - Assigned with supervisor  
  - 3 attend scheduled appointments with workers to outside providers  
  - NCIC Rehabilitation Rules  
  - Discusses the plan of care with the worker and the physician  
  - Individualized rehabilitation plan is made by the CM with the worker and approved by the claims adjuster  
  - The plan is implemented  
  - The CM arranges all treatments, diagnostic studies, surgical procedures, appointments, transportation, and home health, as prescribed/needed  
  - The CM communicates the plan to all parties involved  
  - Worker  
  - Worker’s supervisor  
  - Claims representative  
  - The worker’s attorney  
  - 6 report being involved in court hearings at the NCIC  
  - CM evaluates and readjust the plan of care as needed until the worker reaches maximum medical improvement  
  - Maximum medical improvement is determined by the treating physician |
TABLE 3.3 (CONTINUED)

QUESTIONS AND RESPONSES FROM SIX TELEPHONE INTERVIEWS

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<th>Question</th>
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<tr>
<td>Continued</td>
<td>• If the worker is unable to return to previous work, work hardening, vocational rehabilitation, and/or job training may be prescribed • Closure report is completed and distributed to all parties</td>
</tr>
</tbody>
</table>

8. Is an evaluation of the program performed? How is this done? Do you use an evaluation tool? How are the results used?

• 1 CM no evaluation
• 2 report using a tool generated in-house
• 1 uses required OSHA forms as a Tool
  • OSHA 300 Log
  • OSHA 300
  • OSHA 300 A Summary
• 3 have a claims review with the claims carrier
• 1 reviews each case post-injury with a focusing on safety initiatives with the Safety Manager
  • At 72 hour mark
  • At 1 and 2 week marks
  • After all follow-up appointments
  • Also done on a case-by-case basis
  • Use of personal protective equipment
  • Equipment functioning and used properly
  • Appropriate safety procedure followed by worker
• Industry is measured by the incident rate of recordable injuries
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</thead>
</table>
| Continued | • Corporate office does a trends analysis  
  • Types of injuries  
  • Time of day most injuries occur  
  • Day of the week most injuries occur  
  • Monthly, quarterly, and yearly  
  • Number of WC claims  
  • Cost of each claim to date  
  • Number of CM hours  
  • 1 performs customer satisfaction surveys  
  • Team and the CM receive a score  
  • Plan is implemented for improvement projects  
  • 1 OH Manager conducts chart audits  
  • Utilizes consultant  
  • Tool is used  
  • To target process improvement efforts  
  • CM Score card generated  
  • CM performance  
  • Official disability guidelines for the primary diagnosis  
  • Returning to work the right time  
  • Compare to the standard within the organization  
  • Certain claims reviewed for “holes” and “holes” are fixed  
  • Returning to work  
  • Communication  
  • Concerns with certain Providers  
  • 1 CM reviews every case |
<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
</table>
| 9. What is the essential element for the success of your case management program? | • Obtaining the best care possible for the injured worker  
• Early intervention  
• Prompt and appropriate medical care  
• Communication  
• Clarity of communication and objectives  
• Good communication with all parties  
• Return to work continuum  
• Selection of preferred providers  
• Due diligence  
• Accessibility  
• Flexibility  
• Consistency                                                                                                                                                                                                                                                                   |
| 10. How are you involved with offering primary, secondary, and tertiary prevention within your industry? | • 1 Notices trends  
• Notifies the Department of Nursing and Staff  
Development of training needs on various safety issues  
• 1 CM reports she is also the Safety Supervisor  
• Involved in safety culture  
• Supervises safety meetings  
• Offers monthly training on health and safety issues  
• Bloodborne pathogens  
• Back safety  
• Mandatory safety training  
• Hazmat communication                                                                                                                                                                                                                                                            |
TABLE 3.3 (CONTINUED)

QUESTIONS AND RESPONSES FROM SIX TELEPHONE INTERVIEWS

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
</table>
| Continued  | • 3 offer disease management and prevention, health and safety topics  
|            | • One-on-one counseling  
|            | • Bulletin board displays  
|            | • 1 works with the Safety Department to prevent injuries and assist workers with ergonomic interventions and job demands  
|            | • 1 involved with Work Safety Management area of prevention  
|            | • Reviews and assesses all of the jobs  
|            | • Provides feedback to the teams and committees  
|            | • Identifies changes to be implemented for worker safety |
CHAPTER IV
THE CASE MANAGEMENT ROLE OF THE OCCUPATIONAL AND ENVIRONMENTAL HEALTH NURSE

Discussion and Recommendations

The role of CM may be one of the many job responsibilities or the primary job duty of the OEHN. The CM in the OH setting has continued to expand mainly due to rising health care costs. The OEHN CM has many functions, but the focus is on comprehensive health care, early investigation of occupational illnesses and injuries, and wellness strategies targeted at improving the health of workers and containing costs (Rogers, 2003b).

Several opportunities for improvement in providing case management were identified as a result of the interviews conducted. OEHNs in the role of CM should be certified in case management. Case management certification demonstrates expertise in the profession of case management (Rogers, 2003b).

Case management of non-occupational illnesses and injuries in addition to occupational illnesses and injuries should be offered by the OEHN CM. The overall goal of case management is to meet an individual's specific health care needs and assure quality health care services are offered in a timely, cost-effective manner. The OEHN CM can case manage both occupational and/or non-occupational illnesses and/or injuries. Case management should begin at the onset of illness or
injury and continue until the worker returns to work and/or reaches maximum medical improvement. It is essential for companies to keep workers healthy and at work in order to be a productive and profitable business (Rogers, 2003b).

Case selection identifiers need to be established in the case management program. Case selection is used to evaluate an individual's need for case management based on identified criteria. Typically, the identifying criteria for case selection are cases that have a potential for high claim expenditures, extended length of hospital stay, multiple hospital admissions, potential for disability, catastrophic events, or complex medical problems including chronic diseases and high risk conditions (Rogers, 2003b). The established criteria identify cases that need early intervention, identify gaps in the rehabilitation process, which helps eliminate interruption in recovery. For case management to be effective, early identification and intervention are essential and may in fact reduce the length of stay, expenditures, reduce health care costs, and promote an early recovery (Powell, 2000; Rogers, 2003b). Identifying criteria can be established by reviewing data and trends of previous high volume and high cost insurance claims and WC cases (Powell, 2000).

The return-to-work programs need to include occupational and non-occupational illnesses/injuries. A return-to-work program is essential for achieving case management goals in the OH setting. Accommodations
should be made to keep the worker at work during the recovery period in order to keep the worker productive and reduce disability (Rogers, 2003b).

A documented and consistent method of communication of the plan of care to all parties involved must be established by the CM. There should be no interruption or delay in the implementation of the plan of care or the treatment regimen due to lack of communication or miscommunication. Coordination and communication with the worker, treating physician, physical/occupational therapist, other identified resources, worker support system, worker supervisor, and all other parties involved are essential in planning, implementing, and evaluating the plan of care. Communication and distribution of the plan of care between all parties involved including the worker, the employer, the treating physician, the insurance carrier, and the CM is essential (Mullahy & Jensen, 2004; Rogers, 2003b).

An organized and documented method of the case management process needs to be established. This will help streamline communication and decrease gaps in the plan of care, therefore decreasing gaps in recovery. The CM coordinates the plan of care and services and ensures that the worker’s needs are being met while progressing toward maximum medical improvement. Documentation of the worker’s progress is extensive and includes effectiveness, appropriateness, and cost-effectiveness (Rogers, 2003b).

Methods of evaluation for both the individual cases and for the case management program need to be developed, as evaluation is essential in
confirming program effectiveness and value. Evaluation is also crucial in order for the case management program to grow and succeed. In the evaluation of a case management program, the effectiveness of the program, achievement of goals and outcomes, cost effectiveness, and worker satisfaction are all critical points that should be examined. The method of evaluation and the component being evaluated are typically identified prior to implementation of the program (Rogers, 2003b).

Different types of evaluations can be conducted depending on the goals of the program. A consumer satisfaction survey is a tool that can be administered to workers, health care providers, supervisors, and claims adjusters, providing feedback on both quantitative (scaled responses) and qualitative data (comments) (Rossi, 1999). The process evaluation is an evaluation of the program implementation, addresses the basic policy question, and attempts to explain why programs do or do not achieve the objectives by examining how the program was implemented (Grembowski, 2001). Outcome measures are found through both individual and general indicators with the major outcome of concern being a timely return to work. Insurance companies can provide guidelines to assist with determining expected return to work dates (Rossi, 1999). Cost-effectiveness evaluation is straight forward and looks at the "bottom-line" type. In performing a cost-effectiveness evaluation, expenses involved with utilization of case management are compared to the expenses of the case without the utilization of case management. Three sources are generally
used to express the estimated savings; actual dollar expenditures, gains in productivity, and the effect on insurance premiums. Evaluation also assists in identifying the strengths and weaknesses of the program and helps to identify real or potential problems. Evaluation can provide feedback on the CMs as a team, individual CMs, or on the program as a whole. Program evaluation can assist in demonstrating the effectiveness and impact of case management within the organization (Rossi, 1999).

Primary, secondary, and tertiary prevention strategies for occupational and non-occupational illnesses and injuries must be implemented for a case management program to be effective in reducing illnesses and/or injuries of the workers. It is essential for employers to keep workers healthy and at work in order to be a productive and profitable business. The OEHN can assist workers with prevention and management of acute and chronic illnesses and injuries, occupational or non-occupational. Occupational and environmental health nursing has a foundation of prevention. The OEHN performs in the framework of primary, secondary, and tertiary prevention. Table 4.1 shows examples of primary, secondary, and tertiary prevention in a comprehensive OH case management program. Services should be emphasized at the primary prevention level to prevent or reduce health risk factors and to decrease or eliminate the need for case management services at the secondary and/or tertiary levels (Rogers, 2003b).
### TABLE 4.1

**EXAMPLES OF PRIMARY, SECONDARY, AND TERTIARY PREVENTION IN A COMPREHENSIVE OCCUPATIONAL HEALTH CASE MANAGEMENT PROGRAM**

<table>
<thead>
<tr>
<th>PRIMARY PREVENTION</th>
<th>SECONDARY PREVENTION</th>
<th>TERTIARY PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH PROMOTION</td>
<td>DISEASE PREVENTION</td>
<td>Preplacement &amp; interval exams</td>
</tr>
<tr>
<td>Nutrition counseling</td>
<td>Injury prevention</td>
<td>Health surveillance</td>
</tr>
<tr>
<td>Fitness/exercise programs</td>
<td>Accident investigation</td>
<td>Triage</td>
</tr>
<tr>
<td>Coping skills</td>
<td>Disease prevention</td>
<td>Employee record system</td>
</tr>
<tr>
<td>Recreational activities</td>
<td>Health risk assessment</td>
<td>Accident reporting</td>
</tr>
<tr>
<td>Parenting skills</td>
<td>Smoking cessation</td>
<td>Injury diagnosis and treatment</td>
</tr>
<tr>
<td>Health education</td>
<td>Weight loss/control</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stress management</td>
<td></td>
</tr>
</tbody>
</table>

Source: Rogers, 2003b, p. 55.
Primary prevention is designed to promote general optimal health, to protect against disease, and to establish barriers against environmental influences. Delivery of primary preventative services is directed towards promoting health and preventing health problems from arising (Rogers, 2003b).

In the OH setting, the purpose of health promotion is to maintain or enhance the well-being of workers and the company in general. Activities are designed to bring about awareness, understanding, attitudes, and behaviors of workers and management regarding health and safety practices in the work place and on a larger scale, lifestyle patterns. This may include educational programs designed to enhance good nutrition, promotion of fitness and exercise, coping skill enhancement, and health hazard education both in and out of the workplace (Rogers, 2003b).

Various and specific protection programs and interventions often require active participation on the part of the worker. This includes participation in the immunization program, utilization of effective personal protective equipment, and the appropriate use of puncture resistant used needle containers. These various health and safety measures are designed to prevent, eradicate, or decrease the risk of disease or the development of an illness or injury. With the risk/development of disease, illness, and injury being prevented or eradicated, the need for case
management of these workers in the recovery phase can be eradicated as well (Rogers, 2003b).

Secondary prevention occurs when the disease process has already begun, and the aim is at early diagnosis, prompt appropriate treatment, and prevention of extended disease process. The CM can assist the worker in obtaining prompt appropriate treatment. When the disease process has advanced beyond the early stages, secondary prevention may also be achieved with appropriate treatment in order to decrease disability and disease sequelae (Rogers, 2003b).

Secondary prevention can be achieved with periodic health surveillance programs and periodic screenings. These efforts are aimed at early detection and to identify illnesses early in workers with potential or actual workplace exposures so that elimination of the hazard or modification of the workplace or work practice can take place. Other examples include: blood pressure screenings, timed breast screening and examinations, diabetes screenings, and cholesterol screenings, all of which can be performed by the OEHN CM. The information obtained in the screenings can determine if a potential problem exists, and the OEHN CM can direct the worker to the appropriate resource/provider (Rogers, 2003b).

When and if disease and disability have become permanent, tertiary prevention can be accomplished through rehabilitation, which can be facilitated by the OEHN CM. Tertiary prevention is aimed at restoring
health to as optimal a level as possible and to help an individual achieve the maximum level of functioning. Examples are return to work strategies such as transitional work and modified duty of an injured worker and chronic disease management (Rogers, 2003b).

The following are the primary goals of the OEHN practice:

- Prevention and reduction of the threat of disease and illness;
- Promotion, maintenance, and restoration of the physical and the psychosocial well-being of the worker to enhance an optimal level of functioning;
- Protection of the worker from workplace and occupational Hazards;
- Encouragement of and participation in a company culture that is supportive of health; and
- Collaboration efforts with workers, management, and other disciplines and health care professionals to ensure a safe work environment for all workers (Rogers, 2003b).

From the interviews conducted, the OEHN CMs typically manage cases in the tertiary prevention stage. Illnesses and injuries need to be case managed before occurring. This can be achieved with primary prevention or case management to promote better outcomes with secondary prevention (Rogers, 2003b).
The Occupational and Environmental Health Nurse Role and Functions as Case Manager

The OEHN must know and understand standards and laws pertinent to nursing, OH, and case management and practice within those standards and laws. The OEHN must have experience in coordinating health care services, make autonomous decisions, and have excellent communication skills (Rogers, 2003b). Table 4.2 presents a complete listing of the functions of the OEHN CM.

Garrett, Siefker, and VanGenderen (1998) contend that at the initial contact with the worker, the CM should disclose the nature of the case management role so there is an honest and open working relationship. The CM educates the worker on the process of case management (Garrett et al., 1998). Garrett, et. al., have also defined several basic issues of good case management practice involving legal issues that should be followed. The first is to act for worker safety. If the CM has a concern that the worker’s safety is being compromised, immediate action is required to secure the worker’s safety (Garrett, Siefker, & VanGenderen, 1998).

The second is to function in an advisory role as a CM. The role of the CM does not involve approving or denying medical treatment options; nor is it the role of the CM to dictate treatment options. The role of the CM is to operate in an advisory capacity, assisting the patient in the treatment
TABLE 4.2
FUNCTIONS OF THE OCCUPATIONAL AND ENVIRONMENTAL HEALTH NURSE CASE MANAGER

- Determine the need for case management
- Establish criteria for case selection
- Establish effective communication means with all parties
- Conduct complete assessment of the worker and identify needs
- Set goals, objectives, and interventions of a comprehensive case management plan of care
- Implement the interventions to achieve the set goals and objectives
- Collaborate with the worker and the health care provider(s) involving and educating the worker in the plan of care
- Monitor, document, and evaluate the worker outcomes and makes changes to the plan of care as needed
- Consult with the multidisciplinary team as needed
- Utilize identified resources and coordinate referrals as needed
- Implement return to work and transitional work programs
- Provide case management for workers' compensation claims within the state workers' compensation laws
- Assist in the claims process with insurance agencies and/or third party administrators
- Conduct a cost-benefit analysis and monitor the benefits of case management
- Maintain complete and accurate medical records
- Maintain confidentiality
- Maintain competency, ethical conduct, and professionalism
- Serve as preceptor and mentor for students and peers
planning process (Garrett et al., 1998). The OEHN CM can assist the worker in understanding choices that exist within the health care delivery system in order to aid the worker in facilitating some control in care and recovery (Rogers, 2003b).

The third good practice involves obtainment and release of medical records. The CM should obtain an authorization for release of medical information, in accordance with state and federal regulations, and have written consent to obtain the medical information requested. All relevant information should be obtained to assure quality of care (Garrett et al., 1998).

It is essential for the case manager to be familiar with orthopedic injuries because they are the most common type of reported injuries in WC cases. The case manager should also be knowledgeable about rehabilitative medicine in order to facilitate appropriate referrals (Cesta & Tahan, 2003). The CM acts as a catalyst for the plan of care and can present appropriate treatment options to the treating physician, to ensure the best treatment for the worker is being conducted for example, incorporating physical therapy into the plan of care (Garrett et al., 1998).

It is the goal of case management to return the injured worker to the previous state of well-being or to the injured worker's optimum level of improvement. The CM achieves this by making certain that the treatment plan is appropriate and effective and that the injured worker is
progressing. The CM should verify compliance with the treatment plan by the injured worker to ensure recovery (Cesta & Tahan, 2003). Treatments and procedures should be clearly defined by the treating physician and followed scrupulously by the CM to decrease legal difficulties and ambiguities. Legislation, insurance coverage, and mandates from referral sources change, and therefore, procedures should be reviewed and updated on a continuous basis (Garrett et al., 1998).

The CM should always look for ways in which to improve and streamline involvement in a case and to increase the timeliness and efficiency of the services offered. Time is a major factor in the medical delivery system and in case management. Delays can cause conditions to worsen, compromise quality of care, and in essence increase financial expenditures (Garrett et al., 1998).
REFERENCES


