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Medical Error Prevention and Root Cause Analysis

This course fulfills the Florida requirement for 2 hours of education on the Prevention of Medical Errors.

Audience
This course is designed for all licensed healthcare professionals.

Course Objective
The purpose of this course is to satisfy the requirement of the Florida law and provide all licensed healthcare professionals with information regarding the root cause process, error reduction and prevention, and patient safety.

Learning Objectives
Upon completion of this course, you should be able to:

1. Describe how the Institute of Medicine defines "medical error."
2. Describe the types of sentinel events the Joint Commission has identified.
3. Discuss what factors must be included in a root cause analysis in order for the Joint Commission to consider it "thorough" and "credible."
4. Identify what types of adverse incidents must be reported to the Florida Agency for Healthcare Administration.
5. Identify the most common sentinel events reported to the Joint Commission.
6. Evaluate the most common misdiagnoses, as recognized by the Florida Board of Medicine, and outline the safety needs of special populations, including non-English-proficient patients.

Faculty
Marjorie Conner Allen, BSN, JD, received her Bachelor of Science in Nursing degree from the University of Florida, Gainesville, in 1984. She began her nursing career at Shands Teaching Hospital and Clinics at the University of Florida, Gainesville. While practicing nursing at Shands, she gave continuing education seminars regarding the nursing implications for dealing with adolescents with terminal illness. In 1988, Ms. Allen moved to Atlanta, Georgia where she worked at Egleston Children's Hospital at Emory University in the bone marrow transplant unit. In the fall of 1989, she began law school at Florida State University. After graduating from law school in 1992, Ms. Allen took a two-year job as law clerk to the Honorable William Terrell Hodges, United States District Judge for the Middle District of Florida. After completing her clerkship, Ms. Allen began her employment with the law firm of Smith, Hulsey & Busey in Jacksonville, Florida where she has worked in the litigation department defending hospitals and nurses in medical malpractice actions. Ms. Allen resides in Jacksonville and is currently in-house counsel to the Mayo Clinic Jacksonville.

Faculty Disclosure
Contributing faculty, Marjorie Conner Allen, BSN, JD, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

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Special Approvals
This course fulfills the Florida requirement for 2 hours of education on the Prevention of Medical Errors.

About the Sponsor
The purpose of NetCE is to provide challenging curricula to assist healthcare professionals to raise their levels of expertise while fulfilling their continuing education requirements, thereby improving the quality of healthcare.

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INTRODUCTION

The Institute of Medicine's (IOM) 1999 publication *To Err is Human: Building a Safer Health System*, illuminated the unfortunate reality of medical errors in the healthcare industry. The report reviewed the prevalence of medical errors in the United States and highlighted measures that should be taken to prevent them. Specifically, the authors of the report noted that at least 44,000 and perhaps as many as 98,000 Americans were dying in hospitals each year as a result of medical errors and many more were being seriously injured [1]. They further noted that, even when using the lower estimate of 44,000, deaths in hospitals due to medical errors exceeded the annual deaths attributable to motor vehicle accidents (43,458), breast cancer (42,297), or AIDS (16,516) [1]. A 2016 report stated that the average number of annual in-hospital deaths attributable to medical error might actually be much higher, at around 400,000 [2]. This report places medical errors as the third leading cause of death in the United States. Certainly, these numbers must be balanced against the millions of admissions to hospitals in the United States, which is in excess of 33 million annually [1; 3].

It does appear that some progress has been made in the past decade. The Agency for Healthcare Research and Quality found a 17% decline in hospital-acquired conditions between 2014 and 2017, or 910,000 fewer conditions and 20,500 fewer deaths than if the 2014 rate had remained steady [4]. Though the precise mechanism(s) responsible for this decline is not clear, it occurred following a concerted effort by federal agencies, organizations, and individual providers to curtail medical errors. However, the statistics indicate that medical errors continue to be an issue. Healthcare professionals should commit to continuing to pay greater attention to evaluating approaches for reducing errors and to building new systems to reduce the incidence of medical errors.

Spurred by a commitment to reducing medical error incidents, the Florida Legislature mandates that all healthcare professionals in Florida complete a two-hour course on the topic of prevention of medical errors [5]. This continuing education course is designed to satisfy the requirements of the Florida law and provide all licensed healthcare professionals with information regarding the root cause analysis process, error reduction and prevention, and patient safety, as well as information regarding the five most misdiagnosed conditions as determined by the Florida Board of Medicine.

DEFINING "MEDICAL ERROR"

The IOM Committee on Quality of Healthcare in America defines error as "the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim" [1]. It is important to note that medical errors are not defined as intentional acts of wrongdoing and that not all medical errors rise to the level of medical malpractice or negligence. Errors depend on two kinds of failures: either the correct action does not proceed as intended, which is described as an "error of execution," or the original intended action is not correct, which is described as an "error of planning" [1]. A medical error can occur at any stage in the process of providing patient care, from diagnosis to treatment, and even while providing preventative care. Not all errors will result in harm to the patient. Medical errors that do result in injury are sometimes called preventable adverse events or sentinel events—sentinel because they signal the need for immediate investigation and response [6].

Preventable adverse events or sentinel events are defined as those events that cause an injury to a patient as a result of medical intervention or inaction on the part of the healthcare provider whereby the injury cannot reasonably be said to be related to the patient's underlying medical condition. Thus, for example, if a patient has a surgical procedure and dies postoperatively from pneumonia, the patient has suffered an adverse event. But was that adverse event preventable; was it caused by medical intervention or inaction? The specific facts of this case must be analyzed to determine whether the patient acquired the pneumonia as a result of poor handwashing techniques of the medical staff (i.e., an error of execution), which would indicate a preventable adverse event, or whether the patient acquired the pneumonia because of age and comorbidities, which would indicate a nonpreventable adverse event.

Healthcare professionals can learn much by closely scrutinizing and evaluating adverse events that lead to serious injury or death. The evaluation of such events would also enable healthcare professionals to improve the delivery of health care and reduce future mistakes. In addition, healthcare professionals should have a process in place to evaluate those instances in which a medical error occurred and did not cause harm to the patient. By reviewing these processes, healthcare professionals are afforded the unique opportunity to identify system improvements that have the potential to prevent future adverse events. The Joint Commission, recognizing the importance of analyzing both preventable adverse events and near-misses, has established guidelines for recognizing these events and requires healthcare facilities to conduct a root cause analysis to determine the underlying cause of the event [7].

ROOT CAUSE ANALYSIS PROCESS

The Joint Commission is a national organization with a mission to improve the quality of care provided at healthcare institutions in the United States. It accomplishes this mission by providing accredited status to healthcare facilities. Accreditors play an important role in encouraging and supporting actions within healthcare organizations by holding them accountable for ensuring a safe environment for patients. Healthcare organizations should actively engage in a cooperative relationship with the Joint Commission through this accreditation process and participate in the process to reduce risk and facilitate desired outcomes of care.

Root cause analysis, as defined by the Joint Commission, is "a process for identifying the basic or causal factors that underlie variation in performance, including the occurrence or possible occurrence of a sentinel event" [6]. In the 2022 update, the Joint Commission defines a sentinel event as a "patient safety event (not primarily related to the natural course of the illness or underlying condition) that reaches a patient and results in death, severe harm (regardless of duration of harm), or permanent harm (regardless of severity of harm)" [6; 10]. Furthermore, the Joint Commission revision clarified the terms "severe" and "permanent" harm with regard to sentinel events. "Severe harm" is an event or condition that reaches the individual, resulting in life-threatening bodily injury (including pain or disfigurement) that interferes with or results in loss of functional ability or quality of life that requires continuous physiologic monitoring or a surgery, invasive procedure, or treatment to resolve the condition [6; 10]."Permanent harm" is an event or condition that reaches the individual, resulting in any level of harm that permanently alters and/or affects an individual's baseline [6; 10].

The following subsets of sentinel events are subject to review by the Joint Commission [6; 11]:

- The event has resulted in an unanticipated death or major permanent loss of function, not related to the natural course of the patient's illness or underlying condition

or

- The event is one of the following (even if the outcome was not death or major permanent loss of function unrelated to the natural course of the patient's illness or underlying condition):
  - Suicide of any patient receiving care, treatment, and services in a staffed around-the-clock care setting or within 72 hours of discharge
  - Unanticipated death of a full-term infant
  - Abduction of any patient receiving care, treatment, and services
  - Any elopement (i.e., unauthorized departure) of a patient from a staffed around the-clock care setting (including the emergency department), leading to death, permanent harm, or severe temporary harm to the patient
  - Discharge of an infant to the wrong family
  - Rape, assault (leading to death or permanent loss of function), or homicide of any patient receiving care, treatment, and services
  - Rape, assault (leading to death or permanent loss of function), or homicide of a staff member, licensed independent practitioner, visitor, or vendor while on site at the healthcare organization
  - Hemolytic transfusion reaction involving administration of blood or blood products having major blood group incompatibilities (e.g., ABO, Rh, other blood groups)
  - Invasive procedure, including surgery, on the wrong patient or wrong site
  - Unintended retention of a foreign object in a patient after surgery or other invasive procedures
  - Severe neonatal hyperbilirubinemia (bilirubin >30 mg/dL)
  - Prolonged fluoroscopy with cumulative dose >1,500 rads to a single field or any delivery of radiotherapy to the wrong body region or >25% above the planned radiotherapy dose
  - Fire, flame, or unanticipated smoke, heat, or flashes occurring during an episode of patient care
  - Any intrapartum (related to the birth process) maternal death
  - Severe maternal morbidity
  - Fall resulting in: any fracture; surgery, casting, or traction; required consult/management or comfort care for a neurological or internal injury; a patient with coagulopathy who receives blood products as a result of the fall; or death or permanent harm as a result of injuries sustained from the fall (not from physiologic events causing the fall)

Alternatively, the following examples are events that are NOT considered reviewable under the Joint Commission's sentinel event policy [6]:

- Any close call ("near miss")
- Full or expected return of limb or bodily function to the same level as prior to the adverse event by discharge or within two weeks of the initial loss of said function, whichever is the longer period

- Any sentinel event that has not affected a recipient of care (e.g., patient, individual, resident)
- Medication errors that do not result in death or major permanent loss of function
- Suicide other than in an around-the-clock care setting or following elopement from such a setting
- A death or loss of function following a discharge against medical advice
- Unsuccessful suicide attempts unless resulting in major permanent loss of function
- Minor degrees of hemolysis not caused by a major blood group incompatibility and with no clinical sequelae

For further definition of terms, please refer to the Joint Commission's Sentinel Event Policy and Procedures at https://www.jointcommission.org/resources/patient-safety-topics/sentinel-event/sentinel-event-policy-and-procedures.

As part of the accreditation requirement, the Joint Commission requires that healthcare organizations have a process in place to recognize these sentinel events, conduct thorough and credible root cause analyses that focus on process and system factors, and document a risk-reduction strategy and internal corrective action plan that includes measurement of the effectiveness of process and system improvements to reduce risk [6]. This process must be completed within 45 business days of the organization having become aware of the sentinel event.

The Joint Commission will consider a root cause analysis acceptable for accreditation purposes if it focuses primarily on systems and processes, not individual performance [6]. In other words, the healthcare organization should minimize the individual blame or retribution for involvement in a medical error. In addition, the root cause analysis should progress from special causes in clinical processes to common causes in organizational processes, and the analysis should repeatedly dig deeper by asking why, then, when answered, why again, and so on. The analysis should also identify changes that can be made in systems and processes, either through redesign or development of new systems or processes, which would reduce the risk of such events occurring in the future. The Joint Commission requires that the analysis be thorough and credible. To be considered thorough, the root cause analysis must include [6]:

- A determination of the human and other factors most directly associated with the sentinel event and the process(es) and systems related to its occurrence
- Analysis of the underlying systems and processes through a series of "why" questions to determine where redesign might reduce risk
- Inquiry into all areas appropriate to the specific type of event
- Identification of risk points and their potential contributions to this type of event
- A determination of potential improvement in processes or systems that would tend to decrease the likelihood of such events in the future, or a determination, after analysis, that no such improvement opportunities exist

To be considered credible, the root cause analysis must meet the following standards [6]:

- The organization's leadership and the individuals most closely involved in the process and systems under review must participate in the analysis.
- The analysis must be internally consistent; that is, it must not contradict itself or leave obvious questions unanswered.
- The analysis must provide an explanation for all findings of "not applicable" or "no problem."
- The analysis must include consideration of any relevant literature.

Finally, as previously discussed, after conducting this root cause analysis, the organization must prepare an internal corrective action plan. The Joint Commission will accept this action plan if it identifies changes that can be implemented to reduce risk or formulate a rationale for not undertaking such changes, and if, where improvement actions are planned, it identifies who is responsible for implementation, when the action will be implemented, and how the effectiveness of the actions will be evaluated [6].

FLORIDA LAW

Healthcare professionals have an obligation to report adverse events to leadership and ensure that organizations have processes in place to satisfy the Joint Commission requirement. In Florida, certain serious adverse incidents must also be reported to Florida's Agency for Health Care Administration (AHCA). Florida law requires that licensed facilities, such as hospitals, establish an internal risk management program. As part of that program, licensed facilities must develop and implement an incident reporting system, which requires the development of appropriate measures to minimize the risk of adverse incidents to patients, as well as imposes an affirmative duty on all healthcare providers and employees of the facility to report adverse incidents to the risk manager or to his or her designee. The risk manager must receive these incident reports within 3 business days of the incident, and depending on the type of incident, the risk manager may have to report the incident to AHCA within 15 days of receipt of the report.

Florida Statute 395.0197 specifically defines an adverse incident as [8]:

For purposes of reporting to the agency pursuant to this section, the term "adverse incident" means an event over which health care personnel could exercise control and which is associated in whole or in part with medical intervention, rather than the condition for which such intervention occurred, and which:

a) Results in one of the following injuries:
   1. Death;
   2. Brain or spinal damage;
   3. Permanent disfigurement;
   4. Fracture or dislocation of bones or joints;
   5. A resulting limitation of neurological, physical, or sensory function which continues after discharge from the facility;
   6. Any condition that required specialized medical attention or surgical interven-tion resulting from nonemergency medical intervention, other than an emergency medical condition, to which the patient has not given his or her informed consent; or
   7. Any condition that required the transfer of the patient, within or outside the facility, to a unit providing a more acute level of care due to the adverse incident, rather than the patient's condition prior to the adverse incident
b) Was the performance of a surgical procedure on the wrong patient, a wrong surgical procedure, a wrong-site surgical procedure, or a surgical procedure otherwise unrelated to the patient's diagnosis or medical condition;
c) Required the surgical repair of damage resulting to a patient from a planned surgical procedure, where the damage was not a recognized specific risk, as disclosed to the patient and documented through informed-consent process; or
d) Was a procedure to remove unplanned foreign objects remaining from a surgical procedure.

In 2021, the Florida AHCA reported that a total of 184 deaths occurred as a result of hospital error, 21.4% of 859 adverse incidents reported for the year. The next most common incidents during this period were transfer of the patient to a unit providing a more acute level of care due to the adverse incident (18.7%), fracture or dislocation of bones or joints (17.0%), surgical procedures unrelated to the patient's diagnosis or medical needs (10.4%), surgical procedure to remove foreign object from a previous surgical procedure (10.2%), brain or spinal damage (5.0%), and surgical procedure performed on wrong site (4.3%) [9]. The following adverse incidents must be reported to the AHCA within 15 calendar days after their occurrence [8]:

- The death of a patient
- Brain or spinal damage to a patient
- The performance of a surgical procedure on the wrong patient
- The performance of a wrong-site surgical procedure
- The performance of a wrong surgical procedure
- The performance of a surgical procedure that is medically unnecessary or otherwise unrelated to the patient's diagnosis or medical condition
- The surgical repair of damage resulting to a patient from a planned surgical procedure, where the damage is not a recognized specific risk, as disclosed to the patient and documented through the informed-consent process
- The performance of procedures to remove unplanned foreign objects remaining from a surgical procedure

Each incident will be reviewed by the AHCA, who will then determine the penalty to be imposed upon the responsible party [8]. All Florida healthcare professionals who practice in licensed facilities should familiarize themselves with these requirements and ensure that the facility in which they practice has processes in place to ensure compliance.

Unlike Florida's mandatory reporting of serious adverse incidents, the Joint Commission recommends that healthcare organizations voluntarily report sentinel events, and it encourages the facilities to communicate the results of their root cause analyses and their corrective action plans. As a result of the sentinel events that have been reported, the Joint Commission has compiled Sentinel Event Alerts. These alerts are intended to provide healthcare organizations with important information regarding reported trends and, by doing so, highlight areas of potential concern so an organization may review its own internal processes to maximize error reduction and prevention with regard to a particular issue [7].

ERROR REDUCTION AND PREVENTION

Between 2005 and 2021, the Joint Commission reviewed 14,731 sentinel events [11]. Some events, such as fire, impacted multiple patients. Sentinel event reviews during this time period were frequently conducted for patient fall; delay in treatment; unintended retention of a foreign body; wrong-patient, wrong-site, wrong-procedure surgery; patient suicide; operative and postoperative complications; and medication error [11].

PATIENT FALLS

In 2021, the Joint Commission introduced a separate sentinel event line item for patient falls, making it the most frequently reported sentinel event that year. Patients who are at highest risk include the elderly, those who have an altered mental status due to chronic mental illness or acute intoxication, and those who have a history of prior falls. Additionally, the Joint Commission calls for an increased awareness to an under-recognized population at risk for falls. Newborns and infants are at risk for falls and/or drops, often due to maternal risk factors such as cesarean birth, use of pain medication within four hours, second or third postpartum night (specifically around midnight to early morning hours), and drowsiness associated with breastfeeding. It is obvious from these factors that a thorough and complete patient history may be the key to identifying those at risk.

The root causes of patient falls that healthcare facilities identified as sentinel events and reported to the Joint Commission included inadequate assessment; communication failures; lack of adherence to protocols and safety practices; inadequate staff orientation, supervision, staffing levels, or skill mix; deficiencies in the physical environment; and lack of leadership [19]. Risk reduction strategies to these root causes are fairly straightforward, although in practice, preventing falls is difficult. The most important are the use of a standardized assessment tool to identify fall and injury risk factors, assessing an individual patient's risks that may not have been captured through the tool, and interventions tailored to an individual patient's identified risks [19].

Because patient falls often result in morbidity, mortality, immobility, and early nursing home placement for patients, it is imperative that healthcare facilities initiate adequate fall prevention programs, which will ultimately reduce injuries. Failure to do so will result in a spiraling increase in the number of falls in healthcare facilities, particularly among the elderly who are at highest risk. As more Americans live beyond 65 years of age, the need to develop mobility protocols and programs to reduce the risk of falls and injuries for the older adult grows more urgent.

DELAYS IN TREATMENT

According to the Joint Commission, more than half of all reported delay in treatment sentinel events in 2010–2014 resulted in patient death [16]. It is important to keep in mind that delays in treatment can occur in any healthcare setting. The most common reason for a delay in treatment is misdiagnosis; however, delays can also result from delayed test results, lack of physician availability, delayed administration of ordered care, incomplete treatment, and even inability to get an initial appointment or follow-up appointment in a timely manner [16]. The main root causes contributing to delays in treatment are inadequate assessments, poor planning, communication failures, and human factors. Additionally, 48% of patients self-reported a delay in accessing healthcare during the COVID-19 pandemic. One study suggests that delays in treatment are likely due to widespread public health messages to avoid unnecessary visits, triage uncertainty, lack of providers, and lack of resources [36]. Recommendations from the Joint Commission include avoiding cognitive shortcuts, improving health information technology, incorporating diagnostic checklists into the electronic record, promoting provider-to-provider communication, engaging leadership in developing solutions, focusing organization attention on the scheduling process and on ordering tests and reporting test results, improving access to care, implementing a standardized communications method, maintaining adequate staffing levels, and increasing patient and family engagement/activation [16].

UNINTENDED RETENTION OF A FOREIGN BODY

In 2021, unintended retained foreign objects were the third most frequently reported sentinel event reported to the Joint Commission [11]. The prevalence of these events has remained relatively stable since 2009, indicating that preventing these errors remains difficult for practitioners and facilities. The most commonly retained items are sponges, followed by catheter guidewires and other (a broad category encompassing a wide variety of items) [11].

In addition to harming patients and contributing to distrust in the medical system, the unintended retention of foreign objects significantly contributes to patient care costs [13]. The average total cost of care related to unintended retained foreign objects is $166,000 to $200,000 [13].

According to the sentinel event data, the most common root causes of unintended retained foreign objects reported to the Joint Commission are [13]:

- The absence of policies and procedures
- Failure to comply with existing policies and procedures
- Problems with hierarchy and intimidation
- Failure in communication with physicians
- Failure of staff to communicate relevant patient information
- Inadequate or incomplete education of staff

WRONG-SITE SURGERY

Operating on the wrong part of a patient's body is an obvious sign that there is a problem in the operating room system. Interestingly, wrong-site surgery occurred more commonly in orthopedic procedures than in all other surgical specialties combined. The American Academy of Orthopaedic Surgeons takes this issue seriously, and it has taken special steps to eliminate the problem. For example, it recommends that a surgeon sign their initials at the correct site of surgery with

an indelible pen. Unless the initials are visible, the surgeon should not make an incision [12]. Writing "NO" in large black letters on the side not to be operated on was suggested in the past, but this is discouraged due to possible confusion with the surgeon's initials. In spinal surgery, the Academy recommends that an intraoperative radiograph and radiopaque marker be used to determine the exact vertebral level of spinal surgery [12]. Whatever the mechanism used to prevent and reduce the incidence of this error, it is clear that this is not just the surgeon's problem. All operating room personnel, including physicians, nurses, technicians, anesthesiologists, and other preoperative allied health personnel, should monitor procedures to ensure verification procedures are followed, especially for high-risk procedures.

Due to the prevalence of wrong-site, wrong-procedure, and wrong-person surgeries, the Joint Commission, along with more than 50 professional healthcare organizations, convened two summits to help reduce the occurrence of these errors. The first summit, convened in 2003, developed a Universal Protocol that consisted of the following: a preprocedure verification process; marking the operative/procedure site with an indelible marker; taking a "time-out" with all team members immediately before starting the procedure; and adaptation of the requirements to all procedure settings, including bedside procedures. However, the incidence of wrong-site surgeries continued to increase, and in 2007 and 2010, additional summits were organized to pinpoint barriers in compliance and discover new strategies to eliminate these errors [14]. As of 2019, the Universal Protocol has been incorporated into the National Patient Safety Goal chapter of the Joint Commission accreditation manual [15].

PATIENT SUICIDE

It is estimated that between 48 and 65 hospital inpatient suicides occur per year in the United States. Most of these cases (31 to 52) occur in psychiatric units or involve psychiatric inpatients. The most common method is hanging [50]. Times of care transition are particularly risky, with a 200% increase in risk in the week after discharge from a psychiatric facility; the elevated risk continues for four years [18]. Other risk factors include previous suicide attempt or self-injury, mental or emotional disorders, history of trauma or loss, serious illness or chronic pain, substance use disorder, social isolation, and access to lethal means.

The most common root cause documented for patient suicide reported between 2010 and 2014 was shortcomings in assessment, most commonly psychiatric assessment [18]. In addition, nearly 25% of behavioral health facilities accredited by the Joint Commission were found noncompliant with the requirement to conduct an adequate suicide risk assessment in 2014.

The Joint Commission has recommended a number of suicide risk reduction strategies, including [18]:

- Review each patient's personal and family medical history for suicide risk factors.
- Screen all patients for suicide ideation, using a brief, standardized, evidence-based screening tool.
- Review screening questionnaires before the patient leaves the appointment or is discharged.
- Establish a collaborative, ongoing, and systematic assessment and treatment process with the patient involving the patient's other providers, family, and friends, as appropriate.
- To improve outcomes for at-risk patients, develop treatment and discharge plans that directly target suicidality.
- Educate all staff in patient care settings about how to identify and respond to patients with suicide ideation.
- Document decisions regarding the care and referral of patients with suicide risk.

A simple review of these measures demonstrates that healthcare providers can avoid the devastating impact of an inpatient suicide by implementing routine preventative strategies, such as removing harmful items and careful screening through the admission and discharge processes.

OPERATIVE AND POSTOPERATIVE COMPLICATIONS

Many of the sentinel events reported to the Joint Commission regarding operative and postoperative complications occurred in relation to nonemergent procedures, such as interventional imaging and/or endoscopy, tube or catheter insertion, open abdominal surgery, head and neck surgery, orthopedic surgery, and thoracic surgery [17]. The majority of the reporting healthcare facilities cited miscommunication as the primary root cause. Other identified causes include failure to follow established procedures, incomplete preoperative assessment, inconsistent postoperative monitoring procedures, and failure to question inappropriate orders. In order to reduce the risk, reporting facilities have identified a number of strategies, including improving staff orientation and training, increasing educational opportunities for physicians, clearly defining expected channels of communication, and monitoring consistency of compliance with procedures. Healthcare facilities should review postoperative patient monitoring procedures to ensure an adequate level appropriate to the needs of the patient, regardless of the setting (e.g., operating room, endoscopy suite, radiology department) [17]. Based upon these findings, it is clear that direct communication among healthcare providers is key to preventing operative and postoperative complications.

Healthcare facilities should provide more staff education regarding preventative measures, and healthcare providers can do their part by engaging in a healthy and mutual respect for all of the members of the healthcare team [17].

MEDICATION ERRORS

Unquestionably, medication errors are one of the most common causes of avoidable harm to patients. These errors may occur at any of these critical points: when ordered or prescribed by a physician; during documentation; while transcribing; when dispensed by a pharmacist; when administered by a nurse; or during monitoring.

The National Coordinating Council for Medication Error Reporting and Prevention defines a medication error as [20]:

> Any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the healthcare professional, patient or consumer. Such events may be related to professional practice, healthcare products, procedures, and systems, including prescribing: order communication; product labeling; packaging, and nomenclature; compounding; dispensing; distribution; administration; education; monitoring; and use.

It has been estimated that up to 50% of medication errors are caused by a provider writing the wrong medication, the wrong route or dose, or the wrong frequency, and nearly 75% of medication errors have been attributed to distraction of the care provider [24]. In addition, a number of medication errors can be linked to the prescriber who continually uses potentially dangerous abbreviations and dose expressions. Despite repeated warnings by the Institute for Safe Medication Practices about the dangers associated with using certain abbreviations when prescribing medications, this practice continues. To eliminate this factor, there are fairly simple steps that can eliminate much confusion. Prescribers should [21]:

- Avoid the use of the symbol "U" or "u" but rather spell "units" when ordering drugs, such as insulin.
- Spell out medication names completely rather than using abbreviations and acronyms.
- Avoid using abbreviations for "daily" (QD), "every other day" (QOD), or "four times daily" (QID), which are easily confused.
- Use leading zeros before a decimal point (e.g., 0.2 mg instead of .2 mg), and do not use trailing zeros (e.g., 2 mg instead of 2.0 mg).
- Write out "morphine sulfate" and "magnesium sulfate" instead of using the abbreviations (MS, MSO_4, $MgSO_4$).

The Institute for Safe Medication Practices publishes a list of error-prone abbreviations, symbols, and dose designations online at https://www.ismp.org/recommendations/error-prone-abbreviations-list.

Other factors contributing to prescriber errors are illegible or confusing handwriting and, a frequently cited cause of many adverse and sentinel events, the failure of healthcare providers to assess risk and prevent errors. Addressing illegibility may include developing appropriate policies and procedures, tracking and trending patterns, and evaluating results through peer review committees. Improving communication might include developing protocols for the use of verbal orders to assure that those from an onsite practitioner would be limited to an emergency situation only. No verbal orders should be taken for certain medications, such as for chemotherapy, and all verbal orders should be repeated for clarification and, whenever possible, reiterated to a third person. Another method of improving communication might involve reviewing the hospital formulary in collaboration with the Pharmacy and Therapeutics Committee of the medical staff to limit, where appropriate, the number of therapeutically and generically equivalent products [22].

It has been estimated that between 0.2% and 10% of prescriptions are dispensed incorrectly [23]. The three most common dispensing errors are: dispensing an incorrect medication, dosage strength, or dosage form; miscalculating a dose; and failing to identify drug interactions or contraindications [24]. Safe medication dispensing practices may include a number of risk reduction strategies to reduce the incidence of errors that may cause harm to patients [22; 25; 54; 61]:

- Ensure that appropriate and current drug reference texts and/or online resources are immediately available to pharmacy personnel.
- Ensure that essential patient information, such as allergies, age, weight, current diagnoses, pertinent lab values, and current medication regimen, is available to the pharmacist prior to the dispensing of a new medication order.
- Require clarification of any order that is incomplete, illegible, or otherwise questionable using an established process for resolving questions.
- Whenever possible, dispense dosage units in a ready-to-administer form.
- Dispense single-dose vials and ampoules rather than multidose vials.
- Select oral rather than injectable routes, when possible.
- Require that a pharmacist double-check all mathematical calculations for neonatal and pediatric dilutions, parenteral nutrition solutions, and other compounded pharmaceutical products.

- Create an environment for the dispensing area that minimizes distractions and interruptions, provides appropriate lighting, air conditioning, and air flow, safe noise levels, and includes ergonomic consideration of equipment, fixtures, and technology.
- Require that a second pharmacist double-check the accuracy of order entry and dose calculations for all orders involving antineoplastic agents and other high-risk drugs dispensed by the pharmacy.
- Enhance the awareness of look-alike and sound-alike medications, and use warning signs to help differentiate medications from one another, especially when confusion exists between or among strengths, similar looking labels, or similar sounding names.
- Separate look-alike and sound-alike medications in pharmacy dispensing areas or consider repackaging or using different vendors.
- Follow-up and periodically evaluate the need for continued drug therapy for individual patients.

Once again, communication is likely the key to avoiding dispensing errors. Pharmacists should work closely with their staff to ensure that proper protocols are followed, and most importantly, when questions arise regarding a prescription, the pharmacist should take the time to contact the prescriber directly to obtain clarification.

The healthcare provider who has the responsibility to administer a medication has the final opportunity to avoid a mistake. In most cases, particularly in inpatient settings, this responsibility falls to the nurse. Nurses are often taught in nursing school to review the five "rights" prior to administering any medication: the right patient is given the right drug in the right dose by the right route at the right time [26]. Medication errors generally fall into four categories, which mimic these five "rights." The first is the failure to follow procedural safeguards, such as ensuring that essential patient information, including allergies, age, weight, and current medication regimen, is available. The second is unfamiliarity with a drug. In one case, a jury determined that a nurse was negligent for giving a drug without having reviewed the literature, which stated that the necessary precautions for the administration of the drug required the specialized skill of an anesthesiologist. The third category of drug administration is failure to use the correct mode of administration. A nurse in Delaware was held liable for administering a medication by injection after an order had been written to change the route to oral. The final category involves failure to obtain clarification if an order is incomplete, illegible, or otherwise questionable. In a case tried in Louisiana, a nurse was held liable for administering a medication that a physician ordered, notwithstanding that the dose was excessive. The nurse's administration of the drug led to the patient's death [27].

In addition, healthcare facilities should implement appropriate guidelines, policies, and procedures to ensure safe medication administration practice. These policies should require that staff members who administer medications [24; 25; 54; 61]:

- Are knowledgeable about the drug's uses, precautions, contraindications, potential adverse reactions, interactions, and proper method of administration
- Resolve questions prior to medication administration
- Only administer medications that have been properly labeled with medication name, dose to be administered, dosage form, route, and expiration date
- Utilize a standard medication administration time schedule and receive education on how and when to incorporate newly started medication orders safely into the standardized schedule
- Have a second person verify a dosage calculation if a mathematical calculation of a dose is necessary
- Receive adequate education on the operation and use of devices and equipment used for medication administration (for example, patient-controlled anesthesia pumps and other types of infusion pumps)
- Have another person double-check infusion pump settings when critical, high-risk drugs are infused
- Document all medications immediately after administration

Finally, healthcare facilities should have proper quality assurance measures in place to monitor medication administration practices. Included among these would be protocols and guidelines for use with critical and problem-prone medications to help optimize therapies and minimize the possibility of adverse events and to integrate "triggers" to indicate the need for additional clinical monitoring [25].

It is important to note that the pediatric population is especially vulnerable to medication errors. When children are prescribed adult medications, care must be taken to adjust dosage according to weight, requiring the physician to use pediatric-specific calculations. Also, many healthcare settings are not trained to care for the pediatric patient. Intolerance due to physiologic immaturity is also a factor in adverse response to medications, and in many cases, this population cannot communicate their discomfort due to adverse reactions. Risk reduction strategies include standardizing and effectively identifying medications and processes for drug administration, ensuring pharmacy oversight, and using technology, such as medication dispensing programs, infusion pumps, and bar-coding, judiciously [28].

COMMON MISDIAGNOSES

As Florida healthcare professionals, it is important to be aware that in addition to wrong-site/wrong-procedure surgery, several medical conditions also continue to be misdiagnosed. As of 2022, the Florida Board of Medicine has determined the five most misdiagnosed conditions to be [29]:

- Cancer-related conditions
- Gastroenterology-related issues
- Cardiology-related issues
- Neurologic conditions
- Missed spinal cord compression

It is important to be aware of the possibility of misdiagnosis and incorporate this knowledge into practice.

Cancer

The early detection and diagnosis of cancers is crucial for selecting the appropriate treatment approach and to ensure an optimum outcome. However, an estimated 12% of cancer patients are initially misdiagnosed, and the missed or delayed diagnosis of cancers remains a significant cause of medical malpractice claims [30; 31]. The causes of missed diagnoses vary widely among cancers in different parts of the body. In many cases, patients who do not fit the typical profile for a specific cancer (e.g., young age) may be underdiagnosed, and it is important that cancer is considered as part of the differential diagnosis in ambiguous cases [31; 32; 33]. In order to prevent missed or delayed cancer diagnosis, practitioners may take steps to ensure adherence to clinical guidelines for screening and diagnosis, use tools to facilitate communication, and engage strategies to ensure appropriate follow-up [55].

Gastroenterology-Related Conditions

Gasteroenterologic conditions may present with nonspecific complaints (e.g., abdominal pain, nausea) common to a variety of illnesses, complicating and delaying diagnosis. In one study of patients with pancreatic cancer, more than 30% were initially misdiagnosed, most commonly with gall bladder disease [58]. Diagnosis and screening for gastrointestinal disorders may be complicated by a lack of definitive test (e.g., irritable bowel syndrome) or by limits on screening recommendations (e.g., colorectal cancer). However, delayed diagnosis can lead to worsening conditions and poorer prognosis.

In general, gastrointestinal syndromes/symptoms may be classified into three general diagnostic categories: organic, motility, or functional disorders [59; 60]. Functional GI disorders are idiopathic disorders of gut-brain interaction and, unlike organic and motility disorders, diagnosis involves identification of symptom clusters. As such, misdiagnosis is more common.

Another important consideration is GI symptom-specific anxiety, an important perpetuating factor that describes threatening interpretation and out-of-proportion behavioral response to GI sensations. This anxiety to real GI symptoms and the frequency of psychiatric comorbidity can lead to functional GI syndromes being dismissed as psychological or psychosomatic in nature.

Cardiology-Related Issues

The clinical presentation of chest pain has many possible etiologies, ranging from benign (e.g., panic/anxiety, pneumonia, peptic ulcer, gastroesophageal reflux disease, and pericarditis) to life-threatening (e.g., pulmonary embolism, acute coronary syndrome [ACS], aortic dissection, and pneumothorax). In many cases, it is best to rule out the more urgently threatening possibilities before testing for other causes.

Of the potentially life-threatening causes of chest pain, ACS is the most prevalent. Although a large percentage of individuals with suspected ACS will be seen initially in emergency departments, patients in any healthcare setting, regardless of other diagnoses, may abruptly develop chest pain suspicious for ACS. When a patient presents with clinical signs suspicious for myocardial infarction, immediate medical intervention is directed at confirming a diagnosis and stratifying the person's risk for adverse events such as cardiac arrest and severe/significant damage to the myocardium [41]. It is important to note that while some patients will present with classic ACS-related chest pain (tightness, sensation of pressure, heaviness, crushing, vise-like, aching pain in the substernal or upper left chest), many patients, particularly women and older patients, will present with "atypical" ACS-related chest pain [45; 46]. Words commonly used to describe "atypical" chest pain associated with ACS include numbness, tingling, burning, stabbing, or pricking. Atypical chest pain location includes any area other than substernal or left sided, such as the back, area between shoulder blades, upper abdomen, shoulders, elbows, axillae, and ears [43; 44; 45; 46]. Aside from atypical clinical presentation, other possible causes of missed ACS diagnosis include failure of interpretation of the history, failure to correctly interpret the electrocardiogram, failure to perform an electrocardiogram when necessary, and lack of proper use of cardiac enzyme test [47].

Neurologic/Spinal Cord-Related Conditions

Delayed or missed diagnoses of neurologic conditions may result in serious morbidity and mortality. Headaches are a common presenting condition in acute and primary care, and an estimated 5% of all patients admitted to emergency departments have neurologic symptoms [34]. Acute headache with neurologic symptoms may be misdiagnosed as stroke [35; 64]. In addition, missed spinal fracture diagnoses are one of the leading causes of malpractice claims against radiologists [48].

One of the most common neurologic conditions is headache; however, it has been estimated that 50% of migraine patients remain undiagnosed or misdiagnosed, and only a small number (8% to 10%) of individuals with migraine take migraine-specific medications such as triptans or ergotamines [65; 66]. Patients suffering from daily migraines may be misdiagnosed with chronic sinusitis or rhinitis and repeatedly and unsuccessfully treated with broad-spectrum antibiotics [62; 63]. The diagnosis of migraine is based solely on a constellation of signs and symptoms, and a comprehensive medical and neurological examination is required to exclude secondary headache [56]. Useful evidence-based clinical guidelines for migraine screening have been developed and are summarized in the mnemonic POUND: pulsatile headache; one-day duration (4 to 72 hours); unilateral location; nausea or vomiting; and disabling intensity [57]. Competence of the clinician and effective communication with the patient play a crucial role in the diagnosis of migraine.

Missed Spinal Cord Compression

Epidural compression syndrome is an umbrella term that encompasses spinal cord compression, cauda equina syndrome, and conus medullaris syndrome. While these conditions differ in the level of neurologic deficit at presentation, they are otherwise similar in symptoms, evaluation, and management. Massive herniation of a midline disk, typically at the L4 to L5 disk level, is the most common cause of epidural compression syndrome. Tumor, epidural abscess, spinal canal hematoma, or lumbar spine spondylosis represent other causes [37].

Spinal cord compression is often secondary to herniated disk, vertebral fracture, or space-occupying lesion. Missing this diagnosis, typically by attributing the associated pain to muscle or nerve causes, will miss potentially catastrophic conditions [38; 39; 40; 41]. In a study of 3,786 individuals, the estimated prevalence of asymptomatic spinal cord compression in a healthy population was 24.2%, with a significantly higher prevalence in older populations compared with younger populations and American/European populations compared with Asian populations [42].

In patients with spinal cord compression, neurologic status at diagnosis is the greatest predictor of ultimate neurologic outcome and underscores the importance of early accurate diagnosis. The dominant symptom is back pain with accelerating pain severity. Pain from epidural spinal cord compression is made worse with recumbent positioning, and unilateral or bilateral radiculopathy may develop over time. For many patients, leg pain or neurologic symptoms are more dominant than back pain. Also common at diagnosis is symmetrical lower extremity weakness that may have progressed to gait disturbance or paralysis. Decreased lower extremity reflexes are associated with cauda equina syndrome [37].

OTHER CONSIDERATIONS FOR PATIENT SAFETY

The most important issue to improving patient safety is being aware of the particular safety hazards that may exist for various patient populations and on particular specialty units. In addition, education of the patient and the family should be a priority.

Infants and young children are not developmentally or cognitively able to participate in care and decision making, thus putting them at higher risk, especially for medication errors. In addition, when a medication error occurs in this population, infants and young children are at higher risk because of their physical immaturity and increased sensitivity to the effects of drugs. The family or guardian of a pediatric patient should be encouraged to ask questions, especially if something seems wrong. In addition, a meta-analysis found that computerized provider order entry with clinical decision support reduced pediatric medication errors by 36% to 87% [51]. As such, the adoption of electronic support systems may help to reduce or eliminate these errors.

An estimated 30% of individuals 65 years of age or older who are living in the community fall each year [52]. Older patients may have poor vision, as a result of cataracts, glaucoma, and/or macular degeneration, and cardiovascular problems, which might result in syncope or postural hypotension. These conditions may affect patients' balance and stability. Bladder dysfunction, such as nocturia, may cause an elderly patient to have to ambulate more during the night in an unfamiliar environment, thereby increasing the risk of a fall. Lower extremity dysfunctions, such as arthritis, muscle weakness, or peripheral neuropathy, may make it more difficult to ambulate at any time. In addition to being at greater risk for falls, the elderly are also more prone to medication errors as their ability to understand instructions or to recognize an unfamiliar medication may be affected by dementia or other cognitive disorders. Interventions that can help prevent falls in the elderly include exercise programs, tai chi, vision improvement (e.g., first cataract surgery), and multifactorial assessment and intervention [52].

There are also unique factors that increase the risk of medical errors on specialty units. For instance, in critical care units, patients may be suffering from environmental psychosis, which could inhibit participation in their care. This is also true of lethargic and comatose patients. These patients are at particular risk because they cannot participate in the identification process. On psychiatric wards, patients may be suicidal or depressed, which may cause them to act out or attempt to harm themselves or others. Patients may also experience orthostatic side effects due to certain psychiatric medications, which may increase the incidence of falls.

Obstetric patients are at higher risk for falls because they may have decreased sensation and mobility due to administration of epidural anesthesia, and they may also suffer from excessive blood loss, which could lead to postural hypotension [49]. Again, the key is identifying the unique needs of the particular population.

With regard to education, a number of organizations have developed guidelines to facilitate the role of patients as their own safety advocates. These guidelines are not intended to shift the burden of monitoring medical error to patients. Rather, they encourage patients to share responsibility for their own safety. As healthcare professionals, we should ensure that all of our patients are familiar with these guidelines. The Agency for Healthcare Research and Quality has developed a "Patient Fact Sheet" that outlines 20 tips for patients to help prevent medical errors [53]. Although some of these suggestions may seem extreme, many patients now desire to have a more active role in their care. Some of these items have become routine or are currently required, such as consultations by pharmacists when a patient picks up a prescribed medication.

USE OF AN INTERPRETER

As a result of the evolving racial and immigration demographics in the United States, interaction with patients for whom English is not a native language is inevitable. Because patient education is such a vital aspect of preventing medical errors, it is each practitioner's responsibility to ensure that information and instructions are explained in such a way that allows for patient understanding. When there is an obvious disconnect in the communication process between the practitioner and patient due to the patient's lack of proficiency in the English language, an interpreter is required.

Interpreters are more than passive agents who translate and transmit information back and forth from party to party. They should be professionally trained in ethics, accuracy, completeness, and impartiality. Furthermore, it is the interpreter's role to negotiate cultural differences and promote culturally responsive communication and practice. When they are enlisted and treated as part of the interdisciplinary clinical team, they serve as cultural brokers, who ultimately enhance the clinical encounter. In any case in which information regarding diagnostic procedures, treatment options, or medication/treatment measures is being provided, the use of an interpreter should be considered.

CONCLUSION

Although the United States has one of the top healthcare systems in the world, it is apparent that the numbers of medical errors are at unacceptably high levels. The consequences of medical errors are often more severe than the consequences of mistakes in other industries. They may lead to death or to serious and long-term disability, which underscores the need for aggressive action in this area. As a starting point, we should become an active part of the solution. This will only happen if all healthcare professionals voice their concerns when they identify problems in a system or process. In addition, we should actively participate in the root cause analysis process, understanding that the goal is not to assign blame, but rather to identify how we can improve the process to provide the best quality care to our patients. Medical errors are costly, not only because patients may lose their lives or livelihoods, but also because patients lose trust in the system and colleagues lose faith in each other. To preserve the integrity of our system, we must correct this problem, and the solution begins with each of us.

Customer Information/Answer Sheet insert located between pages 96–97.

COURSE TEST - #91334 MEDICAL ERROR PREVENTION AND ROOT CAUSE ANALYSIS

This is an open book test. Please record your responses on the Answer Sheet.
A passing grade of at least 70% must be achieved in order to receive credit for this course.

This 2 contact hour activity must be completed by August 31, 2025.

1. **The Institute of Medicine's (IOM) Committee on Quality of Healthcare in America defines error as the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim.**
   A) *True*
   B) *False*

2. **Patient rape is an example of a sentinel event subject to review by the Joint Commission.**
   A) *True*
   B) *False*

3. **A "thorough" root cause analysis is one in which the participants identify risk points and their potential contributions to this type of event.**
   A) *True*
   B) *False*

4. **A credible root cause analysis must be based upon a survey of everyone employed at the healthcare institution.**
   A) *True*
   B) *False*

5. **A wrong-site surgical procedure that did not result in the death of the patient must be reported to the risk manager within three business days according to Florida law.**
   A) *True*
   B) *False*

6. **The Joint Commission prepares and distributes Sentinel Event Alerts in order to recommend ways in which the healthcare facility can terminate employees whose actions result in a sentinel event.**
   A) *True*
   B) *False*

7. **Infant abduction is among the most common sentinel events reported to the Joint Commission.**
   A) *True*
   B) *False*

8. **The most common root cause documented for patient suicide was shortcomings in assessment, most commonly psychiatric assessment.**
   A) *True*
   B) *False*

9. **A medication error may occur when ordered by a physician, administered by a nurse, or dispensed by a pharmacist.**
   A) *True*
   B) *False*

10. **Approximately 32% of patients with cancer are initially misdiagnosed.**
    A) *True*
    B) *False*

Be sure to transfer your answers to the Answer Sheet insert located between pages 96–97.
PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

Domestic Violence: The Florida Requirement

This course fulfills the Florida requirement for 2 hours of Domestic Violence education every third renewal period.

Have you already completed your Domestic Violence requirement? You can skip this course and still receive 26 hours of continuing education.

Audience
This course is designed for all Florida healthcare professionals required to complete domestic violence education.

Course Objective
The purpose of this course is to enable healthcare professionals in all practice settings to define domestic violence and identify those who are affected by domestic violence in the United States. This course describes how a victim can be accurately diagnosed and identifies the community resources available in the state of Florida for domestic violence victims.

Learning Objectives
Upon completion of this course, you should be able to:

1. Define domestic violence and its impact on health care.
2. Cite the general prevalence of domestic violence on a national and state level and identify state laws pertaining to the issue.
3. Describe how to screen and assess individuals who may be victims or perpetrators of domestic violence, including the importance of conducting a culturally sensitive assessment.
4. Identify community resources presently available for domestic violence victims and their perpetrators throughout Florida concerning legal aid, shelter, victim and batterer counseling, and child protection services.

Faculty
Marjorie Conner Allen, BSN, JD, received her Bachelor of Science in Nursing degree from the University of Florida, Gainesville, in 1984. She began her nursing career at Shands Teaching Hospital and Clinics at the University of Florida, Gainesville. While practicing nursing at Shands, she gave continuing education seminars regarding the nursing implications for dealing with adolescents with terminal illness. In 1988, Ms. Allen moved to Atlanta, Georgia where she worked at Egleston Children's Hospital at Emory University in the bone marrow transplant unit. (A complete biography appears at the end of this course.)

Alice Yick Flanagan, PhD, MSW, received her Master's in Social Work from Columbia University, School of Social Work. She has clinical experience in mental health in correctional settings, psychiatric hospitals, and community health centers. In 1997, she received her PhD from UCLA, School of Public Policy and Social Research. Dr. Yick Flanagan completed a year-long post-doctoral fellowship at Hunter College, School of Social Work in 1999. In that year she taught the course Research Methods and Violence Against Women to Masters degree students, as well as conducting qualitative research studies on death and dying in Chinese American families. (A complete biography appears at the end of this course.)

Faculty Disclosure
Contributing faculty, Marjorie Conner Allen, BSN, JD, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

Contributing faculty, Alice Yick Flanagan, PhD, MSW, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

Division Planner
Jane C. Norman, RN, MSN, CNE, PhD

Director of Development and Academic Affairs
Sarah Campbell

Division Planner/Director Disclosure
The division planner and director have disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

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NetCE designates this continuing education activity for 2 ANCC contact hours.

This activity was planned by and for the healthcare team, and learners will receive 2 Interprofessional Continuing Education (IPCE) credits for learning and change.

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Special Approvals

This course fulfills the Florida requirement for 2 hours of Domestic Violence education every third renewal period.

About the Sponsor

The purpose of NetCE is to provide challenging curricula to assist healthcare professionals to raise their levels of expertise while fulfilling their continuing education requirements, thereby improving the quality of healthcare.

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- Read the following course.
- Complete the test.
- Return your Customer Information/Answer Sheet and payment to NetCE by mail or fax, or complete online at **www.NetCE.com/FL23**.
- A full Works Cited list is available online at www.NetCE.com.

Sections marked with this symbol include evidence-based practice recommendations. The level of evidence and/or strength of recommendation, as provided by the evidence-based source, are also included so you may determine the validity or relevance of the information. These sections may be used in conjunction with the study questions and course material for better application to your daily practice.

INTRODUCTION

Domestic violence continues to be a prevalent problem in the United States today. Because of the number of individuals affected, it is likely that most healthcare professionals will encounter patients in their practice who are victims. Accordingly, it is essential that healthcare professionals are taught to recognize and accurately interpret behaviors associated with domestic violence. It is incumbent upon the healthcare professional to establish and implement protocols for early identification of domestic violence victims and their abusers. In order to prevent domestic violence and promote the well-being of their patients, healthcare professionals in all settings should take the initiative to properly assess all women for abuse during each visit and, for those women who are or may be victims, to offer education, counseling, and referral information.

Victims of domestic violence suffer emotional, psychologic, and physical abuse, all of which can result in both acute and chronic signs and symptoms of physical and mental disease, illness, and injury. Frequently, the injuries sustained require abused victims to seek care from healthcare professionals immediately after their victimization. Subsequently, physicians and nurses are often the first healthcare providers that victims encounter and are in a critical position to identify domestic violence victims in a variety of clinical practice settings where victims receive care. Accordingly, each healthcare professional should educate himself or herself to enhance awareness of the presence of abuse victims in his or her particular practice or clinical setting.

Specifically, healthcare professionals should be aware of the signs and symptoms associated with domestic violence. In addition, when family violence cases are identified, there should be a plan of action that includes providing information on, and referral to, local community resources related to legal aid, sheltering, victim counseling, batterer counseling, advocacy groups, and child protection.

DEFINING DOMESTIC VIOLENCE

Domestic violence, which is sometimes also referred to as spousal abuse, battering, or intimate partner violence (IPV), refers to the victimization of an individual with whom the abuser has or has had an intimate or romantic relationship. Researchers in the field of domestic violence have not agreed on a uniform definition of what constitutes violence or an abusive relationship. The Centers for Disease Control and Prevention (CDC) defines IPV as, "violence or aggression that occurs in a romantic relationship" [1]. According to the Florida Department of Children and Families, domestic violence is "a pattern of abusive behaviors that adults use to maintain power and control over their intimate partners or former partners. People who abuse their partners use a variety of tactics to coerce, intimidate, threaten, and frighten their victims" [2]. Domestic violence may include physical violence, sexual violence, emotional abuse, economic abuse, isolation, pet abuse, threats relating to children, and a variety of other behaviors meant to increase fear, intimidation, and power over the victim [2]. Florida law defines domestic violence as "any assault, aggravated assault, battery, aggravated battery, sexual assault, sexual battery, stalking, aggravated stalking, kidnapping, false imprisonment, or any criminal offense resulting in physical injury or death of one family or household member by another family or household member" [3]. Family or household members, according to Florida definition, must "be currently residing or have in the past resided together in the same single dwelling unit" [3]. Domestic violence knows no boundaries. It occurs in intimate relationships regardless of race, religion, culture, or socioeconomic status [2].

Whatever the definition, it is important for healthcare professionals to understand that domestic violence, in the form of emotional and psychologic abuse, sexual abuse, and physical violence, is prevalent in our society. Because of the similar nature of the definitions, this course will use the terms "domestic violence" and "IPV" interchangeably.

NATIONAL AND STATE STATISTICS AND LEGISLATION

Domestic violence is one of the most serious public health problems in the United States [4]. More than 36.4% of women and 33.6% of men have a lifetime history of IPV [4]. In Florida, the weighted lifetime prevalence of IPV (including rape, physical violence, and/or stalking) is 37.4% among women and 29.3% among men [5]. Although many of these incidents are relatively minor and consist of pushing, grabbing, shoving, slapping, and hitting, IPV resulted in approximately 1,500 deaths in the United States in 2019, with 214 of those deaths occurring in Florida in the same year. Statistics indicate a slightly higher rate in 2020, with 217 deaths in Florida in 2020 [7; 8]. One of the difficulties in addressing the problem is that abuse is prevalent in all demographics, regardless of age, ethnicity, race, religious denomination, education, or socioeconomic status [2].

Victims of abuse often suffer severe physical injuries and will likely seek care at a hospital or clinic. The health and economic consequences of domestic violence are significant. Statistics vary from report to report, and due to the lack of studies on the national cost of domestic violence, the U.S. Congress funded the CDC to conduct a study to determine the cost of domestic violence on the healthcare system [9]. The 2003 CDC report, which relied on data from the National Violence Against Women Survey conducted in 1995, estimated the costs of IPV by measuring how many female victims were nonfatally injured; how many women used medical and mental healthcare services; and how many women lost time from paid work and household chores. The estimated total annual cost of IPV against women in the 1995 survey was more than $5.8 billion [9]. When updated to 2017 dollars, the amount was more than $9.3 billion annually. The costs associated with IPV at this time would be considerably more, but no further studies have been conducted [10]. It should be noted that the costs of any one victimization may continue for years; therefore, these statistics most likely underestimate the actual cost of IPV [9].

The national rate of nonfatal domestic violence against women declined 72% between 1993 and 2011 [11]. The rate of overall violent crime fell by nearly 60% in this same time period [11]. Studies reveal that several factors may have contributed to the reduction in violence, including a decline in the marriage rate and decrease of domesticity, better access to federally funded domestic violence shelters, improvements in women's economic status, and demographic trends, such as the aging of the population [13; 14]. Of note, declines in the economy and stress associated with financial hardship and unemployment are significant contributors to IPV in the United States. Following the economic downturn in late 2008, there was a significant increase in the use of the National Domestic Violence Hotline in 2009, with more than half of victims reporting a change in household financial situation in the last year [15]. This trend continued with the COVID-19 pandemic, with stressors from lockdown orders, unemployment, financial insecurity, childcare and homeschool responsibilities, and poor coping strategies (e.g., substance abuse) increasing the rate of domestic violence. Reports showed a 9.7% increase in domestic violence calls for service in the first two months state-mandated lockdowns were imposed; furthermore, the National Commission on COVID-19 and Criminal Justice reported an increase of 8.1% in domestic violence incidents within the first months of mandated stay-at-home orders [6].

FLORIDA

In response to troubling domestic violence statistics, Governor Lawton Chiles appointed a Task Force on Domestic Violence on September 28, 1993, to investigate the problems associated with domestic violence in Florida and to compile recommendations as to how the problems should be approached and ultimately resolved. On January 31, 1994, the Task Force issued its first report on domestic violence. This report recommended standards to accurately measure the extent of domestic violence and strategies for increasing public awareness and education. It identified programs and resources that are available to victims in Florida, made legislative and budgetary suggestions for needed changes, provided a methodology for implementing these changes, and identified areas of domestic violence that require further study.

As a result of this report, Florida enacted legislation during the 1995 session implementing various suggestions of the Task Force. Specifically, the Legislature amended Section 455.222 of the Florida Statutes to require that all physicians, osteopaths, nurses, dentists, dental hygienists, midwives, psychologists, and psychotherapists obtain, as part of their biennial continuing education requirements, a one-hour continuing education course on domestic violence [17]. In June of 2006, Governor Jeb Bush signed into law House Bill 699. The bill, which went into effect July 1, 2006, changed the domestic violence continuing education requirement from one hour every renewal period to two hours every third renewal period.

In 1997, at the request of the Governor's Task Force, a workgroup was established by the Florida Department of Law Enforcement (FDLE) to evaluate the feasibility of tracking incidents of domestic violence in the state [18]. This resulted in the creation of the Domestic Violence Data Resource Center (DVDRC). The original mission of the DVDRC was to collect information related to domestic violence and to report and maintain the information in a statewide tracking system [19]. Domestic Violence Fatality Review Teams were established to examine those cases of domestic violence that resulted in a fatality and identify potential changes in policy or procedure that might prevent future deaths. The teams were comprised of representatives from law enforcement, the courts, social services, state attorneys, domestic violence centers, and others who may come into contact with domestic violence victims and perpetrators [20]. In 2000, the creation of Florida Statute 741.316 required the FDLE to annually publish a report based on the data gathered by the Fatality Review Teams [19]. Due to budgetary constraints, responsibility of compiling this data transferred to the Department of Children and Families in 2008 [21].

As part of Governor Jeb Bush's initiative, the "Family Protection Act" was signed into law in 2001. The act requires a 5-day mandatory jail term for any crime of domestic battery in which the perpetrator deliberately injures the victim. The law also makes a second battery crime a felony offense, treating offenders as serious criminals. Additional legislation, signed into law in 2002, includes Senate Bills 716 and 1974. Senate Bill 716 protects domestic violence victims by including dating relationships of six months in the definition of domestic violence laws. Senate Bill 1974

requires judges to inform victims of their rights, including the right to appear, be notified, seek restitution, and make a victim-impact statement. Governor Bush also created the Violence Free Florida campaign to increase public awareness of domestic violence issues [22].

In 2003, Governor Bush signed House Bill 1099, which transferred funding authority of the Florida Domestic Violence Trust Fund from the Department of Children and Families to the Florida Coalition Against Domestic Violence. According to the Domestic Violence in Florida 2010–2011 Annual Report to the Legislature, this has strengthened domestic violence services provided by streamlining the process of allocating funds [23].

In 2007, the Domestic Violence Leave Act was signed into law by Governor Charlie Crist [21]. This law requires employers with 50 or more employees to provide guaranteed leave for domestic violence issues.

In 2020, the FDLE reported 106,736 domestic violence offenses [8]. In general, domestic violence rates have been declining since 1998. An estimated 19.5% of domestic violence incidents involved spouses and 27.8% involved cohabitants; 11.6% of the victims were parents of the offenders. Domestic violence offenses resulted in the death of 217 victims in Florida in 2020, a number that has been decreasing since 2014 [8]. Domestic violence accounted for 16.9% of the state's murders in 2020 [8].

In their 2019 Annual Report, Fatality Review Teams summarized 31 cases of domestic violence fatalities and near fatalities [49]. The most significant findings included the following observations [49]:

- The perpetrators were predominantly male (94%) with female victims (90%) and had prior criminal histories, non-domestic-violence-related (67%) and for domestic violence specifically (69%).
- In 31% of fatalities, the perpetrators had a known "do not contact" order filed against them, and 13% of perpetrators had a known permanent injunction for protection against them filed by someone other than the victim.
- Substance abuse histories by the perpetrator was identified in 77% of the cases and diagnosed mental health disorders in 45%.
- In most cases, neither the decedent nor perpetrator sought help from the various intervention programs available to them.

To obtain a copy of the most current Florida Statewide Domestic Violence Fatality Review report, please visit https://www.myflfamilies.com/service-programs/domestic-violence/publications.shtml.

IDENTIFYING GROUPS AT RISK FOR DOMESTIC VIOLENCE

Healthcare professionals are in a critical position to identify domestic violence victims in a variety of clinical practice settings. Nurses are often the first healthcare provider a victim of domestic violence will encounter in a healthcare setting and should therefore be prepared to provide care and support for these victims. Although women are most often the victims, domestic violence extends to others in the household as well. For example, domestic violence includes abused men, children abused by their parents or parents abused by their children, elder abuse, and abuse among siblings [3].

Many victims of abuse sustain injuries that lead them to present to hospital emergency departments. Research has found that 49.6% of women seen in emergency departments reported a history of abuse and 44% of women who were ultimately killed by their abuser had sought help in an emergency department in the two years prior to their death [25; 50]. Another study of 993 police-identified female victims of IPV found that only 28% of the women were identified in the emergency department as being victims of IPV [26]. These alarming statistics demonstrate that healthcare professionals who work in acute care, such as hospital emergency rooms, should maintain a high index of suspicion for battering of the patients that they see. Healthcare professionals who work in these settings should work with hospital administrators to establish and institute assessment mechanisms to accurately detect these victims.

For every victim of abuse, there is also a perpetrator. Like their victims, perpetrators of domestic violence come from all socioeconomic backgrounds, races, religions, and walks of life [1; 4]. Accordingly, healthcare professionals should likewise be aware that seemingly supportive family members may, in fact, be abusers.

PREGNANT WOMEN

Because a gynecologist or obstetrician is frequently a woman's primary care physician, the American College of Obstetricians and Gynecologists (ACOG) recommends that all women be routinely assessed for signs of IPV (i.e., physical and psychologic abuse, reproductive coercion, and progressive isolation), including during prenatal visits, and providers should offer support and referral information for those being abused [25]. According to the ACOG, IPV affects as many as 324,000 pregnant women each year [25]. A meta-analysis of 92 independent studies found that the average reported prevalence of emotional abuse during pregnancy was 28.4%, physical abuse was 13.8%, and sexual abuse was 8% [51]. As with all domestic violence statistics, these estimates are presumed to be lower than the actual incidence as a result of under-reporting and lack of data on women whose preg-

nancies ended in fetal or maternal death. This makes IPV more prevalent among pregnant women than some of the health conditions included in prenatal screenings, including pre-eclampsia and gestational diabetes [25]. Because 96% of pregnant women receive prenatal care, this is an optimal time to assess for domestic violence and develop trusting relationships with the women. Possible factors that may predispose pregnant women to IPV include being unmarried, lower socioeconomic status, young maternal age, unintended pregnancy, delayed prenatal care, lack of social support, and use of tobacco, alcohol, or illegal drugs [25; 51].

The overarching problem of violence against pregnant women cannot be ignored, especially as both mother and fetus are at risk. At this particularly vulnerable time in a woman's life, an organized clinical construct leading to immediate diagnosis and medical intervention will ensure that therapeutic opportunities are available to the pregnant woman and will reduce the potential negative outcomes [29]. Healthcare professionals should also be aware of the possible psychologic consequences of abuse during pregnancy. There is a higher risk of stress, depression, and addiction to alcohol and drugs in abused women. These conditions may result in damage to the fetus from tobacco, drugs, and alcohol and a loss of interest on the part of the mother in her or her baby's health [16; 30]. Possible direct injuries to the fetus may result from maternal trauma [25].

Control of reproductive or sexual health is also a recognized trend in IPV. This type of abuse includes trying to impregnate or become pregnant against a partner's wishes, refusal to use birth control (e.g., condoms, oral contraceptives), or stopping a partner from using birth control [4].

CHILDREN

Children exposed to family violence are at high risk for abuse and for emotional damage that may affect them as they grow older. The Department of Justice estimates that of the 76 million children in the United States, 46 million will be exposed to some type of violence during their childhood [52]. Results of the National Survey of Children's Exposure to Violence indicated that 11% of children were exposed to IPV at home within the last year, and as many as 26% of children were exposed to at least one form of family violence during their lifetimes [31]. Of those children exposed to IPV, 90% were direct eyewitnesses of the violence; the remaining children were exposed by either hearing the violence or seeing or being told about injuries [31]. Of note, according to Florida criminal law, witnessing domestic violence is defined as "violence in the presence of a child if an offender is convicted of a primary offense of domestic violence, and that offense was committed in the presence of a child under age 16 who is a family or household member with the victim or perpetrator" [32].

A number of studies indicate that child witnesses are at increased risk for post-traumatic stress disorder, impaired development, aggressive behavior, anxiety, difficulties with peers, substance abuse, and academic problems than the average child [33; 54; 55]. Children exposed to violence may also be more prone to dating violence (as a perpetrator or a victim), and the ability to effectively cope with partnerships and parenting later in life may be affected, continuing the cycle of violence into the next generation [34; 56].

In addition to witnessing violence, various studies have shown that these children may also become direct victims of violence, and children who both witness and experience violence are at the greatest risk for adverse psychosocial outcomes [53]. Research indicates that between 30% and 65% of husbands who batter their wives also batter their children [27; 35]. Moreover, victims of abuse will often turn on their children; statistics demonstrate that 85% of domestic violence victims abuse or neglect their children. The 2020 Crime in Florida report found that more than 13% of domestic homicide victims were children killed by a parent [8]. Teenage children are also victimized. According to the U.S. Department of Justice, between 1980 and 2008, 17.5% of all homicides against female adolescents 12 to 17 years of age were committed by an intimate partner [36]. Among young women (18 to 24 years of age), the rate is estimated to be 43% in the United States and 8% to 57% globally. Abused teens often do not report the abuse. Individuals 12 to 19 years of age report only 35.7% of crimes against them, compared with 54% in older age groups [28; 37]. Accordingly, healthcare professionals who see young children and adolescents in their practice (e.g., pediatricians, family physicians, school nurses, pediatric nurse practitioners, community health nurses) should have the tools necessary to detect these "silent victims" of domestic violence and to intervene quickly to protect young children and adolescents from further abuse. Without such critical intervention, the cycle of violence will never end.

ELDERLY

Abused and neglected elders, who may be mistreated by their spouses, partners, children, or other relatives, are among the most isolated of all victims of family violence. In a national study conducted by the National Institute of Justice in 2010, 4.6% of participants (community dwelling adults 60 years of age or older) were victims of emotional abuse in the past year, 1.6% physical abuse, 0.6% sexual abuse, 5.1% potential neglect, and 5.2% current financial abuse by a family member [38]. A 2017 study found a self-reported incidence of 11.6% psychological abuse, 2.6% physical abuse, 6.8% financial abuse, 4.2% neglect, and 0.9% sexual abuse [59].

The estimated annual incidence of all elder abuse types is 2% to 10%, but it is believed to be severely under-measured. According to one study, only 1 in 24 cases of elder abuse are reported to the authorities [39].

The prevalence rate of elder abuse in institutional settings is not clear. However, in a 2019 review of nine studies, 64% of elder care facility staff disclosed to having perpetrated abuse against an elderly resident in the past year [40]. In a random sample survey, 24.3% of respondents reported at least one incident of elder physical abuse perpetrated by a nursing home staff member [57].

As healthcare professionals in Florida, which leads the nation in percentage of older residents, it is important to understand that the needs of older Floridians will increase as will the numbers of elder victims of domestic violence. Because elder abuse can occur in family homes, nursing homes, board and care facilities, and even medical facilities, healthcare professionals should remain keenly aware of the potential for abuse. When abuse occurs between elder partners, it is primarily manifested in one of two ways: either as a long-standing pattern of marital violence or as abuse originating in old age. In the latter case, abuse may be precipitated by issues related to advanced age, including the stress that accompanies disability and changing family relationships [39].

It is important to understand that the domestic violence dynamic involves not only a victim but a perpetrator as well. For example, an adult son or daughter who lives in the parents' home and depends on the parents for financial support may be in a position to inflict abuse. This abuse may not always manifest itself as violence but can lead to an environment in which the elder parent is controlled and isolated. The elder may be hesitant to seek help because the abuser's absence from the home may leave the elder without a caregiver [39]. Because these elderly victims are often isolated, dependent, infirm, or mentally impaired, it is easy for the abuse to remain undetected. Healthcare professionals in all settings should remain aware of the potential for abuse and keep a watchful eye on this particularly vulnerable group.

The U.S. Preventive Services Task Force concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for abuse and neglect in all older or vulnerable adults.

(https://jamanetwork.com/journals/jama/fullarticle/2708121. Last accessed July 26, 2022.)

Strength of Recommendation: I (Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.)

MEN

Statistics confirm that domestic violence is predominantly perpetrated by men against women; however, there is evidence that women also exhibit violent behavior against their male partners [4]. Studies demonstrate approximately 5% of homicides against men are perpetrated by intimate partners [36]. It is persuasively argued that the impact on the health of female victims of domestic violence is generally much more severe than the impact on the health of male victims [42]. Approximately 512,770 women were raped and/or physically assaulted by an intimate partner in 2008, compared to 101,050 men [58]. In addition, 1 in 4 women has been physically assaulted, raped, and/or stalked by an intimate partner, compared with 1 out of every 10 men [1]. Rape, non-contact unwanted sexual experiences, and stalking against men are primarily perpetrated by other men, while other forms of violence against men were perpetrated mostly by women [5]. Male victims of IPV experienced 3 victimizations per 1,000 boys and men 12 years of age or older in 1994, and this rate decreased by 64%, to 1.1 per 1,000, in 2010 [11]. Of all homicides committed against men between 1980 and 2008, 7.1% were committed by an intimate partner [36]. Although women are more often victims of IPV, healthcare professionals should always keep in mind that men can also be victimized and assess accordingly.

LESBIAN, GAY, BISEXUAL, TRANSGENDER, AND QUEER/QUESTIONIONG VICTIMS

Domestic violence exists in lesbian, gay, bisexual, transgender, and queer/questioning (LGBTQ+) communities, and the rates are thought to mirror those of heterosexual women—approximately 25% [43]. However, women living with female intimate partners experience less IPV than women living with men [8]. Conversely, men living with male intimate partners experience more IPV than do men who live with female intimate partners [8]. In addition, 78% of IPV homicide victims reported in 2017 were transgender women or cisgender men [24]. This supports other statistics indicating that IPV is perpetrated primarily by men. A form of abuse specific to the gay community is for an abuser to threaten or to proceed with "outing" a partner to others [41; 43].

Transgender individuals appear to be at particular risk for violence. According to a large national report, transgender victims of IPV were 1.9 times more likely to experience physical violence and 3.9 times more likely to experience discrimination than other members of the LGBTQ+ community [24].

In 2017, an annual national report recorded 52 incidences of hate violence-related homicides of LGBTQ+ people, the highest incident number recorded in its 20-year history [24]. This increasing prevalence of anti-LGBTQ+ violence can exacerbate IPV in LGBTQ+ communities. For example, a person who loses their job because of anti-trans bias may be more financially reliant on an unhealthy relationship. An abusive partner may also use the violence that an LGBTQ+ person experiences from their family as a way of isolating that person further [24].

Because of the stigma of being LGBTQ+, victims may be reticent to report abuse and afraid that their sexual orientation or biologic sex will be revealed. In one study, the three major barriers to seeking help were a limited understanding of the problem of LGBTQ+ IPV, stigma, and systemic inequities [41]. Many in this community feel that support services (e.g., shelters, support groups, crisis hotlines) are not available to them due to homophobia of the service providers. Unfortunately, this results in the victim feeling isolated and unsupported. Healthcare professionals should strive to be sensitive and supportive when working with homosexual patients.

CHARACTERISTICS OF PERPETRATORS OF DOMESTIC VIOLENCE

Abuser characteristics have been studied far less frequently than victim characteristics. Some studies suggest a correlation between the occurrence of abuse and the consumption of alcohol. A man who abuses alcohol is also likely to abuse his mate, although the abuser may not necessarily be inebriated at the time the abuse is inflicted [44]. Domestic violence assessment questionnaires should include questions that explore social drinking habits of both victims and their mates.

Other studies demonstrate that abusive mates are generally possessive and jealous. Another characteristic related to the abuser's dependency and jealousy is extreme suspiciousness. This characteristic may be so extreme as to border on paranoia [12]. Domestic violence victims frequently report that abusers are extremely controlling of the everyday activities of the family. This domination is generally all encompassing and often includes maintaining complete control of finances and activities of the victim (e.g., work, school, social interactions) [12].

In addition, abusers often suffer from low self-esteem and their sense of self and identity is directly connected to their partner [12]. Extreme dependence is common in both abusers and those being abused. Due to low self-esteem and self-worth, emotional dependence often occurs in both partners, but even more so in the abuser. Emotional dependence in the victim stems from both physical and psychologic abuse, which results in a negative self-image and lack of self-worth. Financial dependence is also very common, as the abuser often withholds or controls financial resources to maintain power over the victim [1; 4].

SCREENING FOR DOMESTIC VIOLENCE AND ABUSE

There is no universal guideline for identifying and responding to domestic violence, but it is universally accepted that a plan for screening, assessing, and referring patients of suspected abuse should be in place at every healthcare facility. Guidelines should review appropriate interview techniques for a given setting and should also include the utilization of assessment tools. Furthermore, protocols within each facility or healthcare setting should include referral, documentation, and follow-up. This section relies heavily on the guidelines outlined in the Family Violence Prevention Fund's *National Consensus Guidelines on Identifying and Responding to Domestic Violence Victimization in Health Care Settings*; however, protocols should be customized based on individual practice settings and resources available [35]. The CDC has provided a compilation of assessment tools for healthcare workers to assist in recognizing and accurately interpreting behaviors associated with domestic violence and abuse, which may be accessed at https://www.cdc.gov/violenceprevention/pdf/ipv/ipvandsvscreening.pdf [45].

The U.S. Preventive Services Task Force recommends that that clinicians screen for intimate partner violence (IPV) in women of reproductive age and provide or refer women who screen positive to ongoing support services.

(https://jamanetwork.com/journals/jama/fullarticle/2708121. Last accessed July 26, 2022.)

Strength of Recommendation: B (There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.)

Several barriers to screening for domestic violence have been noted, including a lack of knowledge and training, time constraints, lack of privacy for asking appropriate questions, and the sensitive nature of the subject [35]. Although awareness and assessment for IPV has increased among healthcare providers, many are still hesitant to inquire about abuse [46].

At a minimum, those exhibiting signs of domestic violence should be screened. Although victims of IPV may not display typical signs and symptoms when they present to healthcare providers, there are certain cues that may be attributed to abuse. The obvious cues are physical. Injuries range from bruises, cuts, black eyes, concussions, broken bones, and miscarriages to permanent injuries such as damage to joints, partial loss of hearing or vision, and scars from burns, bites, or knife wounds. Typical injury patterns include contusions or minor lacerations to the head, face, neck, breast, or abdomen and musculoskeletal injuries. These are often distinguishable from accidental injuries, which are more likely to involve the extremities of the body. Abuse victims are also more likely to have multiple injuries than accident victims. When this pattern of injuries is seen, particularly in combination with evidence of old injury, physical abuse should be suspected [44].

In addition to physical signs and symptoms, domestic violence victims also exhibit psychologic cues that resemble an agitated depression. As a result of prolonged stress, various psychosomatic symptoms that generally lack an organic basis often manifest. For example, complaints of backaches, headaches, and digestive problems are common. Often, there are reports of fatigue, restlessness, insomnia, or loss of appetite. Great amounts of anxiety, guilt, and depression or dysphoria are also typical. Women who experienced IPV are also more likely to report asthma, irritable bowel syndrome, and diabetes [4]. Healthcare professionals should look beyond the typical symptoms of a domestic violence victim and work within their respective practice settings to develop appropriate assessment mechanisms to detect victims who exhibit less obvious symptoms.

The unique relationship dynamics of the abuser and abused are not easily detected under the best of circumstances. They may be especially difficult to uncover in circumstances in which the parties are suspicious and frightened, as might be expected when a victim presents to the emergency department. The key to detection, however, is to establish a proper assessment tool that can be utilized in the particular setting and to maintain a keen awareness for the cues described in this course. Screening for IPV should be carried out at the entry points of contact between victims and medical care (e.g., primary care, emergency services, obstetric and gynecologic services, psychiatric services, and pediatric care) [35].

The key to an initial assessment is to obtain an adequate history. Establishing that a patient's injuries are secondary to abuse is the first task. Clearly, there will be times when a victim is injured so severely that treatment of these injuries becomes the first priority. After such treatment is rendered, however, it is important that healthcare professionals not ignore the reasons that brought the victim to the emergency department [35].

ASSESSING DOMESTIC VIOLENCE AND ABUSE

Healthcare providers have reported that even if routine screening and inquiry results in a positive identification of IPV, the next steps of assessing and referring are often difficult, and many feel that they are not adequately prepared [46]. According to the Family Violence Prevention Fund, the goals of the assessment are to create a supportive environment, gather information about health problems associated with the abuse, and assess the immediate and long-term health and safety needs for the patient to develop an intervention [35].

Assessment of domestic violence victims should occur immediately after disclosure of abuse and at any follow-up appointments. Assessing immediate safety is priority. Having a list of questions readily available and well-practiced can help alleviate the uncertainty of how to begin the assessment (***Table 1***). If the patient is in immediate danger, referral to an advocate, support system, hotline, or shelter is indicated [35].

If the patient is not in immediate danger, the assessment may continue with a focus on the impact of IPV on the patient's mental and physical health and the pattern of history and current abuse [35]. These responses will help formulate an appropriate intervention.

CULTURALLY SENSITIVE ASSESSMENT

During the assessment process, a practitioner should be open and sensitive to the patient's worldview, cultural belief systems and how he/she views the illness [47]. This may reduce the tendency to over-pathologize or minimize health concerns of ethnic minority patients.

Pachter proposed a dynamic model that involves several tiers and transactions [48]. The first component of Pachter's model calls for the practitioner to take responsibility for cultural awareness and knowledge. The professional should be willing to acknowledge that he/she does not possess enough or adequate knowledge in health beliefs and practices among the different ethnic and cultural groups he/she comes in contact with. Reading and becoming familiar with medical anthropology is a good first step.

The second component emphasizes the need for specifically tailored assessment [48]. Pachter advocates the notion that there is tremendous diversity within groups. For example, one cannot automatically assume that a Cuban immigrant adheres to traditional beliefs. Often, there are many variables, such as level of acculturation, age at immigration, educational level, and socioeconomic status, that influence health ideologies.

ASSESSMENT OF IMMEDIATE SAFETY FOR DOMESTIC VIOLENCE VICTIMS
Are you in immediate danger?
Is your partner at the health facility now?
Do you want to (or have to) go home with your partner?
Do you have somewhere safe to go?
Have there been threats or direct abuse of the child(ren) (if applicable)?
Are you afraid your life may be in danger?
Has the violence gotten worse or is it getting scarier? Is it happening more often?
Has your partner used weapons, alcohol, or drugs?
Has your partner ever held you or your child(ren) against your will?
Does your partner ever watch you closely, follow you or stalk you?
Has your partner ever threatened to kill you, him/herself or your child(ren)?
Source: [35] *Table 1*

Finally, the third component involves a negotiation process between the patient and the professional [48]. The negotiation consists of a dialogue that involves a genuine respect of beliefs. It is important to remember that these beliefs may affect symptoms or appropriate interventions in the case of domestic violence.

Culturally sensitive assessment involves a dynamic framework whereby the practitioner engages in a continual process of questioning. By incorporating cultural sensitivity into the assessment of individuals with a history of being victims or perpetrators of domestic violence, it may be possible to intervene and offer treatment more effectively.

INTERVENTIONS FOR DOMESTIC VIOLENCE AND ABUSE

After the assessment is complete, the patient may or may not want immediate assistance or referral. It is important for healthcare providers to assure patients in a nonjudgmental manner that the decision of what they would like in terms of assistance is their choice and that the provider will help regardless of the decisions they are currently ready to make [35].

If the patient would like to immediately implement a plan of action, information for referral to a local domestic violence shelter to assist the victim and the victim's family should be readily available. The acute situation should be referred immediately to local law enforcement officials. Other resources in an acute situation include crisis hotlines and rape relief centers. After a victim is introduced into the system, counseling and follow-up are generally available by individual counselors who specialize in the care of battered women and their spouses and children. These may include social workers, psychologists, psychiatrists, other mental health workers, and community mental health services. The goals are to make the resources accessible and safe and to enhance support for those who are unsure of their options [35].

In Florida, a 24-hour domestic violence hotline is available for toll-free counseling and information. The number is 800-500-1119. The counselors answering the toll-free line may refer the victim to her or his local domestic violence center. A list of Florida certified domestic violence centers organized by county may also be found on the Florida Department of Children and Families website at https://www.myflfamilies.com/service-programs/domestic-violence. Florida's domestic violence centers provide information and referral services, counseling and case management services, a 24-hour hotline, temporary emergency shelter for more than 24 hours, educational services for community awareness relative to domestic violence, assessment and appropriate referral of resident children, and training for law enforcement personnel.

DOCUMENTATION AND FOLLOW-UP

It is imperative that healthcare professionals document all findings and recommendations regarding domestic violence in the victim's medical record, including a patient's denial of abuse, if applicable. If domestic violence is disclosed, documentation should include relevant history, results of the physical examination, findings of laboratory and other diagnostic procedures, and results of the assessment, intervention, and referral. The medical record can be an invaluable document in establishing the credibility of the victim's story when seeking legal aid [35].

Healthcare professionals should offer a follow-up appointment if disclosure of past or current abuse is present. Reassurance that assistance is available to the patient at any time is critical in helping to break the cycle of abuse [35].

FACULTY BIOGRAPHIES

Marjorie Conner Allen, BSN, JD, received her Bachelor of Science in Nursing degree from the University of Florida, Gainesville, in 1984. She began her nursing career at Shands Teaching Hospital and Clinics at the University of Florida, Gainesville. While practicing nursing at Shands, she gave continuing education seminars regarding the nursing implications for dealing with adolescents with terminal illness. In 1988, Ms. Allen moved to Atlanta, Georgia where she worked at Egleston Children's Hospital at Emory University in the bone marrow transplant unit. In the fall of 1989, she began law school at Florida State University. After graduating from law school in 1992, Ms. Allen took a two-year job as law clerk to the Honorable William Terrell Hodges, United States District Judge for the Middle District of Florida. After completing her clerkship, Ms. Allen began her employment with the law firm of Smith, Hulsey & Busey in Jacksonville, Florida where she has worked in the litigation department defending hospitals and nurses in medical malpractice actions. Ms. Allen resides in Jacksonville and is currently in-house counsel to the Mayo Clinic Jacksonville.

Alice Yick Flanagan, PhD, MSW, received her Master's in Social Work from Columbia University, School of Social Work. She has clinical experience in mental health in correctional settings, psychiatric hospitals, and community health centers. In 1997, she received her PhD from UCLA, School of Public Policy and Social Research. Dr. Yick Flanagan completed a year-long post-doctoral fellowship at Hunter College, School of Social Work in 1999. In that year she taught the course Research Methods and Violence Against Women to Masters degree students, as well as conducting qualitative research studies on death and dying in Chinese American families.

Previously acting as a faculty member at Capella University and Northcentral University, Dr. Yick Flanagan is currently a contributing faculty member at Walden University, School of Social Work, and a dissertation chair at Grand Canyon University, College of Doctoral Studies, working with Industrial Organizational Psychology doctoral students. She also serves as a consultant/subject matter expert for the New York City Board of Education and publishing companies for online curriculum development, developing practice MCAT questions in the area of psychology and sociology. Her research focus is on the area of culture and mental health in ethnic minority communities.

Customer Information/Answer Sheet insert located between pages 96–97.

COURSE TEST - #97923 DOMESTIC VIOLENCE: THE FLORIDA REQUIREMENT

This is an open book test. Please record your responses on the Answer Sheet.
A passing grade of at least 70% must be achieved in order to receive credit for this course.

This 2 contact hour activity must be completed by July 31, 2025.

1. **Most healthcare professionals will encounter patients in their practice who are victims of domestic violence.**
   A) *True*
   B) *False*

2. **The Florida Department of Children and Families' definition of domestic violence may include pet abuse, physical abuse, and/or emotional abuse.**
   A) *True*
   B) *False*

3. **Florida law defines domestic violence exclusively as spouse abuse or battering.**
   A) *True*
   B) *False*

4. **House Bill 1099 strengthened domestic violence services by streamlining the process of allocating funds.**
   A) *True*
   B) *False*

5. **Domestic violence resulted in 217 deaths in Florida in 2020.**
   A) *True*
   B) *False*

6. **The majority of children exposed to intimate partner violence are direct eyewitnesses.**
   A) *True*
   B) *False*

7. **Domestic violence injury patterns are more likely than accidental injuries to involve the extremities of the body.**
   A) *True*
   B) *False*

8. **In addition to physical signs and symptoms, domestic violence victims may also exhibit psychologic cues that resemble an agitated depression.**
   A) *True*
   B) *False*

9. **Assessment of domestic violence victims should occur immediately after disclosure of abuse and at any follow-up appointments.**
   A) *True*
   B) *False*

10. **Florida does not presently have a toll-free domestic violence hotline, although this was a recommendation of the Governor's Task Force on Domestic Violence.**
    A) *True*
    B) *False*

Be sure to transfer your answers to the Answer Sheet insert located between pages 96–97.
PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

Laws and Rules for Florida Nurses

This course fulfills the Florida requirement for 2 hours of education on Laws and Rules.

Audience
This course is designed for all nurses licensed in Florida.

Course Objective
The purpose of this course is to provide basic knowledge of the laws and rules governing the practice of nursing in Florida in order to increase compliance and improve patient care. Florida nurses are legally obligated to be aware of standards that govern professional accountability. Information contained in this course is not intended to be used in lieu of lawful guidelines, but as a learning tool that increases the understanding of some regulations as they apply to nurses who are licensed within the state of Florida.

Learning Objectives
Upon completion of this course, you should be able to:

1. Describe the legislative purpose for the Nurse Practice Act.
2. Identify specific laws and rules related to the practice of nursing and nursing assisting.
3. Outline the pertinent levels of nursing practice in the State and the general scope of practice of each.
4. Discuss the general requirements for continuing licensure in the State.
5. Differentiate between ethical and legal practice.
6. Discuss the process for discipline related to nursing practice.
7. Create a professional plan for career maintenance and development within the limits of the law.

Faculty
Jane C. Norman, RN, MSN, CNE, PhD, received her undergraduate education at the University of Tennessee, Knoxville campus. There she completed a double major in Sociology and English. She completed an Associate of Science in Nursing at the University of Tennessee, Nashville campus and began her nursing career at Vanderbilt University Medical Center. Jane received her Masters in Medical-Surgical Nursing from Vanderbilt University. In 1978, she took her first faculty position and served as program director for an associate degree program. In 1982, she received her PhD in Higher Education Administration from Peabody College of Vanderbilt University. In 1988, Dr. Norman took a position at Tennessee State University. There she has achieved tenure and full professor status. She is a member of Sigma Theta Tau National Nursing Honors Society. In 2005, she began her current position as Director of the Masters of Science in Nursing Program.

Faculty Disclosure
Contributing faculty, Jane C. Norman, RN, MSN, CNE, PhD, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

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Sarah Campbell

Division Planner/Director Disclosure
The division planner and director have disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

Accreditations & Approvals
In support of improving patient care, NetCE is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Designations of Credit
NetCE designates this continuing education activity for 2 ANCC contact hours.

AACN Synergy CERP Category B.

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Special Approvals
This course fulfills the Florida requirement for 2 hours of education on Laws and Rules.

About the Sponsor
The purpose of NetCE is to provide challenging curricula to assist healthcare professionals to raise their levels of expertise while fulfilling their continuing education requirements, thereby improving the quality of healthcare.

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INTRODUCTION

Nursing practice acts have a long history in the United States, with the first standards being enacted in the early 1900s. In Florida, a period of major growth and expansion during this period resulted in an increase in the number of hospitals and training schools, which spurred the formation of professional nurses' associations and an interest in establishing standards for the delivery of nursing care [1]. The first practice act passed the Florida Legislature and was signed into law on June 7, 1913 [1].

The Florida Nurse Practice Act was legislated to safeguard the public, and the purpose of the Act is to ensure that minimum safety requirements are met by every nurse practicing in the state. The Nurse Practice Act, Chapter 464 of the Florida Statutes, includes laws governing scope of practice, licensure and certification, and violations and penalties [3]. Chapter 464 established the Florida Board of Nursing as an authority to adopt rules, develop standards for nursing programs, and discipline nurses who violate regulations [2]. Nurses who fall below Florida's required minimum competency or who present a danger to patients, coworkers, or others are prohibited from working in the state.

In addition to Chapter 464, nurses in Florida are regulated by Chapter 456, which includes general provisions for all health professions, and Title 64B9 of the Florida Administrative Code. Together, these laws and rules form the basis for the legal practice of nursing and the regulation of nursing by the state of Florida.

This course fulfills the education requirement on the laws and rules that govern the practice of nursing in Florida for all levels of nursing, including registered nurses (RNs), licensed practical nurses (LPNs), and advanced practice registered nurses (APRNs) [3]. While this course will provide an overview of the pertinent sections of the laws and rules, all nurses are encouraged to review them in their entirety in order to ensure compliance.

STANDARDS OF PRACTICE

The basic standards of competent practice directly impact how all nurses in Florida provide care. Not only must a nurse possess the knowledge of lawful and current care standards, but the knowledge must be demonstrated through consistent practice and intervention to prevent unauthorized, inappropriate, erroneous, illegal, contraindicated, or intentional nonperformance of care.

The Nurse Practice Act governs the practice of RNs, LPNs, and APRNs. LPNs are those persons licensed to practice practical nursing, while RNs and APRNs are licensed to practice professional nursing, with various levels of specialization [3].

Both professional and practical nurses are responsible and accountable for making decisions that are based upon their educational preparation and experience in nursing.

According to the Nurse Practice Act, the practice of practical nursing means [3]:

> The performance of selected acts, including the administration of treatments and medications, in the care of the ill, injured, or infirm; the promotion of wellness, maintenance of health, and prevention of illness of others under the direction of a registered nurse, a licensed physician, a licensed osteopathic physician, a licensed podiatric physician, or a licensed dentist; and the teaching of general principles of health and wellness to the public and to students other than nursing students. A practical nurse is responsible and accountable for making decisions that are based upon the individual's educational preparation and experience in nursing.

The practice of professional nursing is defined by the Act as "the performance of those acts requiring substantial specialized knowledge, judgment, and nursing skill based upon applied principles of psychological, biological, physical, and social sciences" [3]. The Florida Statutes further define the scope of practice of professional nursing as [3]:

- The observation, assessment, nursing diagnosis, planning, intervention, and evaluation of care; health teaching and counseling of the ill, injured, or infirm; and the promotion of wellness, maintenance of health, and prevention of illness of others
- The administration of medications and treatments as prescribed or authorized by a duly licensed practitioner authorized by the laws of this state to prescribe such medications and treatments
- The supervision and teaching of other personnel in the theory and performance of any of the above acts

ADVANCED PRACTICE REGISTERED NURSES

In addition to the practice of professional nursing, APRNs are certified in advanced or specialized nursing practice. This umbrella term includes certified nurse midwives, certified nurse practitioners, certified registered nurse anesthetists, clinical nurse specialists, and psychiatric nurses [3]. In accordance with the Act, APRNs may perform acts of nursing diagnosis and treatment of alterations of the health status as well as medical diagnosis and treatment, prescription, and operation as authorized within the framework of an established supervisory protocol [3]. Specifically, within the established framework, an APRN may [3]:

- Prescribe, dispense, administer, or order any drug; however, an APRN may prescribe or dispense a controlled substance only if she or he has graduated from a program leading to a Master's or doctoral degree in a clinical nursing specialty area with training in specialized practitioner skills
- Initiate appropriate therapies for certain conditions
- Perform additional functions as may be determined by rule
- Order diagnostic tests and physical and occupational therapy
- Order any medication for administration to a patient in a facility as defined by rule

All APRNs are required to obtain and maintain malpractice insurance or demonstrate proof of financial responsibility prior to licensure, with some exceptions [10]. Proof of compliance with this rule or exemption must be provided to the Board office within 60 days of certification and at each biennial renewal.

Rule 64B9-4.011 states, "APRNs whose protocols permit them to dispense medications…must register with the Board of Nursing by submitting a completed Dispensing Application for Advanced Practice Registered Nurse (APRN), form number DH-MQA 1185" [10]. The APRN dispensing practitioner must comply with all applicable state and federal laws and regulations.

CONTINUING LICENSURE IN FLORIDA

The Florida Board of Nursing is responsible for adopting rules establishing the procedure for the biennial renewal of nursing licenses. All Florida nurses are required to renew their licenses and complete mandated continuing education every two years. The Act stipulates that up to 30 hours of continuing education may be required each biennium [3]. Initial licenses that were issued for less than 24 months are required to complete one hour for each month for which the license was valid. As part of this requirement, all licensees must complete an approved two-hour course on the prevention of medical errors and a two-hour course on the laws and rules that govern the practice of nursing in Florida. Starting in 2019, licensees must also complete a two-hour course on human trafficking every renewal period. Beginning with 2018 renewals, a two-hour course on recognition of impairment in the workplace must be completed every other biennium. Every third renewal (or every six years), licensees must successfully complete two hours of continuing education on domestic violence in addition to the 24-hour requirement. A one-hour course on HIV/AIDS must be completed prior to a licensee's first renewal. In addition to these requirements, beginning in 2017, all APRNs must complete at least three hours of continuing education on the safe and effective prescription of controlled substances for each biennial renewal.

Beginning with 2021 renewals, each biennial, APRNs who engage in autonomous practice must complete at least 10 hours of continuing education (in addition to other mandated continuing education) appropriate to this level of care as approved by the Board [3].

Completion of all mandated continuing education must be reported to the Board. Failure to document compliance with the continuing education requirements or furnishing false or misleading information regarding compliance is grounds for disciplinary action.

A nurse may maintain his or her license in inactive status if there is no intent to practice nursing in the upcoming biennium. However, this requires that the licensee apply for inactive status and renew the license as inactive every two years; completion of continuing education is not required for these renewals. A license to practice nursing that is not renewed at the end of the biennium shall automatically revert to delinquent status [10].

In accordance with Rule 64B9-1.013 of the Florida Administrative Code, all licensed nurses must maintain on file with the Board of Nursing the current address at which any notice required by law may be served [10]. If a nurse moves, even out of state, he or she must notify the Board in writing of the new address within 60 days. In addition, all licensed nurses must alert the Board to their current place of practice. Place of practice is defined as one of the following [10]:

- Acute care facility
- Long-term care facility
- Rehabilitation facility
- Clinic
- Physician's office
- Home health care agency
- Educational institution
- Office of independent nursing practice
- Correctional facility
- Mental health facility
- Occupational health facility
- Managed health care organization or insurance company
- Community health facility
- Other

If a nurse wishes to activate an inactive license, he or she may do so by applying to the Department and paying a reactivation fee. As part of the application process, the licensee must disclose convictions or findings of guilt and/or disciplinary action(s) in or out of state [10]. In addition, the nurse must provide proof of completion of all continuing education for all biennial licensure periods for which the individual was inactive.

Completion of a Board-approved nursing refresher course is required to activate a license that has been inactive for five years or more if the licensee does not hold an active license in good standing in another state [10]. The refresher course must include at least 80 hours of classroom instruction and 96 hours of clinical experience in medical/surgical nursing and any specialty area of practice of the licensee.

ETHICAL AND LEGAL ISSUES IN NURSING PRACTICE

In addition to their legal obligations, nurses have ethical obligations to their patients. The practice of nursing is primarily one of caring, and the ethical theories for nursing are often referred to as "the ethics of caring." Nurses are expected to address both ethical and legal issues in their practice, which can be complex. As medical advancements and new technology progress, these must be incorporated into established ethical standards. The American Nurses Association has established the Code of Ethics for Nurses, which is intended to act as "a guide for nurses to use in ethical analysis and decision-making" [5]. The full text of this Code is available at https://www.nursingworld.org/practice-policy/nursing-excellence/ethics/code-of-ethics-for-nurses. Major ethical issues that may arise in the practice of nursing are related to the provision of patient-centered care, confidentiality, advocacy, delegation, self-care, and supporting colleagues and the profession.

There are also a variety of legal issues that affect the provision of nursing care and maintenance of a nursing license. It is important to note that, although possibly related, the laws governing nursing practice are different from the ethical framework(s) that nurses use to guide decision making. Laws pertaining to documentation, licensure, and standards of care have been established to ensure that nurses practice within a defined scope of practice and are aware of the boundaries of independent nursing action and responsibilities. These laws also act to hold nurses accountable for maintaining an acceptable standard of patient care. However, perhaps the greatest concern for nurses is the threat of negligence or malpractice claims.

According to tort law, four elements must be established for a ruling of malpractice [6]:

- Duty: The nurse owed a duty to meet a particular standard of care.
- Breach of duty: The nurse failed to perform the owed duty.
- Causation: There is a causal connection between the nurse's failure and the patient's injury.
- Damages: An injury occurred for which monetary compensation is adequate relief.

These elements must be shown by a "preponderance of the evidence," defined as more than 50% probability, a lower standard than the "beyond a reasonable doubt" used in criminal law [7; 8]. Malpractice cases are decided on the basis of what a "jury is likely to think is fact" rather than actual fact [9].

DISCIPLINARY ACTIONS

The Board of Nursing was created to assure protection of the public from nurses who do not meet minimum requirements for safe practice or who pose a danger to the public [3]. Violations of the laws established by the Board to ensure safe nursing practice are punishable by disciplinary action. These penalties are in addition to the results of any legal or civil proceedings that may be brought by the State or by patients or affected parties.

Acts requiring disciplinary or legal action are outlined in sections 464.016, 464.017, and 464.018 of the Nurse Practice Act [3]. According to section 464.016, the following acts are considered felonies in the third degree [3]:

- Practicing advanced or specialized, professional, or practical nursing unless holding an active license or certificate to do so
- Using or attempting to use a license or certificate that has been suspended or revoked
- Knowingly employing unlicensed persons in the practice of nursing
- Obtaining or attempting to obtain a license or certificate by misleading statements or knowing misrepresentation

In addition, the following acts constitute misdemeanors in the first degree [3]:

- Using the name or title "Nurse," "Registered Nurse," "Licensed Practical Nurse," "Clinical Nurse Specialist," "Certified Registered Nurse Anesthetist," "Certified Nurse Practitioner," "Certified Nurse Midwife," "Advanced Practice Registered Nurse," or any other name or title that implies that a person was licensed or certified as same, unless such person is duly licensed or certified
- Knowingly concealing information relating to violations of this part

These actions are punishable by law according to sections 775.082, 775.083, and 775.084 of the Statutes, Constitution, and Laws of Florida [3].

Several actions are also considered grounds for denial of a license or disciplinary action. According to section 464.018, this includes [3]:

- Procuring, attempting to procure, or renewing a license to practice nursing by bribery, by knowing misrepresentations, or through an error of the Department or the Board
- Having a license to practice nursing revoked, suspended, or otherwise acted against, including the denial of licensure, by the licensing authority of another state, territory, or country
- Being convicted or found guilty of, or entering a plea of *nolo contendere* to, regardless of adjudication, a crime in any jurisdiction that directly relates to the practice of nursing or to the ability to practice nursing
- Being convicted of or found guilty of, or entering a plea of guilty or *nolo contendere* (no contest) to, regardless of adjudication, any of the following offenses:
  - A forcible felony
  - Theft, robbery, and related crimes
  - Fraudulent practices
  - Lewdness and indecent exposure
  - Assault, battery, and culpable negligence
  - Child abuse, abandonment, and neglect
  - Abuse, neglect, and exploitation
  - For an applicant for a multistate license or for a multistate license-holder, a felony offense under Florida law or federal criminal law
- Having been found guilty of, regardless of adjudication, or entered a plea of no contest or guilty to, any offense prohibited under Section 435.04 or similar statute of another jurisdiction; or having committed an act which constitutes domestic violence
- Making or filing a false report or record, intentionally or negligently failing to file a report or record required by state or federal law, or willfully impeding or obstructing such filing or inducing another person to do so (limited to reports or records signed in the nurse's capacity as a licensed nurse)
- False, misleading, or deceptive advertising
- Unprofessional conduct
- Engaging or attempting to engage in the possession, sale, or distribution of controlled substances for any other than legitimate purposes
- Being unable to practice nursing with reasonable skill and safety to patients by reason of illness or use of alcohol, drugs, narcotics, or chemicals or any other type of material or as a result of any mental or physical condition

- Failing to report any person who the licensee knows is in violation of this part or of the rules of the Department or the Board to the Department or a consultant operating an impaired practitioner program, if appropriate
- Knowingly violating any provision of this part, a rule of the Board or the Department, or a lawful order of the Board or Department previously entered in a disciplinary proceeding or failing to comply with a lawfully issued subpoena of the Department
- Failing to meet minimal standards of acceptable and prevailing nursing practice, including engaging in acts for which the licensee is not qualified by training or experience
- Delegating professional responsibilities to a person when the nurse delegating such responsibilities knows or has reason to know that such person is not qualified by training, experience, certification, or licensure to perform them

For a full list of punishable acts, please refer to Chapter 464.018 of the Florida statutes.

Sexual misconduct is considered a breach of mutual trust and can irreparably damage the nurse-patient relationship. According to section 464.017, "Sexual misconduct in the practice of nursing means violation of the nurse-patient relationship through which the nurse uses said relationship to induce or attempt to induce the patient to engage, or to engage or attempt to engage the patient, in sexual activity outside the scope of the practice or the scope of generally accepted examination or treatment of the patient" [3]. Sexual misconduct in the practice of nursing is prohibited and is grounds for disciplinary action.

Disciplinary actions encompass a wide range of possible punishments, and the action chosen will depend on the individual circumstances (e.g., the severity of the violation, the number of past offenses). The Board may take the following actions in response to violations listed above [4]:

- Refusal to certify, or to certify with restrictions, an application for a license
- Suspension or permanent revocation of a license
- Restriction of practice or license
- Imposition of an administrative fine not to exceed $10,000 for each count or separate offense
- Issuance of a reprimand or letter of concern
- Placement of the licensee on probation for a period of time and subject to such conditions as the Board may specify
- Corrective action
- Imposition of an administrative fine for violations regarding patient rights
- Refund of fees billed and collected from the patient or a third party on behalf of the patient
- Requirement that the practitioner undergo remedial education

Nurses who have been found guilty on three separate occasions of violations relating to the use of drugs or narcotics or involving the diversion of drugs or narcotics from patients to personal use or sale are not eligible for reinstatement of licensure [3].

In the annual report of fiscal year 2020–2022, more than 800 nurses licensed in Florida had received disciplinary actions. The most common orders are suspension of the nursing license (36%), limitations/obligations of a nursing license (12%), revocation of the nursing license (10%), and voluntary surrender of a nursing license (8%) [11]. In most cases, nurses are also responsible for paying any costs associated with their order (e.g., investigation, court costs).

Certain offences may be resolved by mediation. Rule 64B9-8.012 states that mediation is an acceptable resolution for the first instance of the following violations [10]:

- Issuance of a worthless bank check to the Department or the Board for initial licensure or renewal of license, provided the licensee does not practice on a delinquent license
- Failure to report address changes, provided the failure does not constitute failure to comply with an order of the Board
- Failure to pay fines and investigative costs by the time ordered
- Failure to timely submit documentation of completion of continuing education imposed by Board order
- Failure to update a practitioner profile within 15 days

EXCEPTIONS

In addition to the limitations listed in this course, it is important to note that there are exceptions to the Nurse Practice Act. The law expressly states that the Act does not prohibit [3]:

- The care of the sick by friends or members of the family without compensation, the incidental care of the sick by domestic servants, or the incidental care of non-institutionalized persons by a surrogate family
- Assistance by anyone in the case of an emergency
- The practice of nursing by students enrolled in approved schools of nursing

- The practice of nursing by graduates of prelicensure nursing education programs, pending the result of the first licensing examination for which they are eligible following graduation, provided they practice under direct supervision of a registered professional nurse
- The rendering of services by nursing assistants acting under the direct supervision of a registered professional nurse
- Any nurse practicing in accordance with the practices and principles of the body known as the Church of Christ Scientist
- The practice of any legally qualified nurse or licensed attendant of another state who is employed by the U.S. Government, or any bureau, division, or agency thereof, while in the discharge of official duties
- Any nurse currently licensed in another state or territory of the United States from performing nursing services in this state for a period of 60 days after furnishing to the employer satisfactory evidence of current licensure in another state or territory and having submitted proper application and fees to the Board for licensure prior to employment. If the nurse licensed in another state or territory is relocating to this state pursuant to his or her military-connected spouse's official military orders, this period shall be 120 days after furnishing to the employer satisfactory evidence of current licensure in another state or territory and having submitted proper application and fees to the Board for licensure prior to employment. The Board may extend this time for administrative purposes when necessary.
- The rendering of nursing services on a fee-for-service basis or the reimbursement for nursing services directly to a nurse rendering such services by any government program, commercial insurance company, hospital or medical services plan, or any other third-party payor
- The establishment of an independent practice by one or more nurses for the purpose of rendering to patients nursing services within the scope of the nursing license
- The furnishing of hemodialysis treatments in a patient's home, using an assistant chosen by the patient, provided that the assistant is properly trained (as defined by the Board by rule) and has immediate telephonic access to a registered nurse who is licensed pursuant to this part and who has dialysis training and experience
- The practice of nursing by any legally qualified nurse of another state whose employment requires the nurse to accompany and care for a patient temporarily residing in this state for not more than 30 consecutive days, provided the patient is not in an inpatient setting, the Board is notified prior to arrival of the patient and nurse, the nurse has the standing physician orders and current medical status of the patient available, and prearrangements with the appropriate licensed healthcare providers in this state have been made in case the patient needs placement in an inpatient setting
- The practice of nursing by individuals enrolled in board-approved remedial courses

CONCLUSION

It is the responsibility of the Florida Board of Nursing to enforce the laws and rules regulating the practice of nursing as the law is currently stated—not how individuals may wish the law to be. However, as nurses are affected by these rules and regulations, they have the responsibility to keep informed of regulatory changes and provide public comment regarding regulations. Board meetings are held every two months, generally during the first week of every even month, and are open to the public. The full board meetings include disciplinary cases, application review, committee reports, rule discussions, and other necessary Board actions. For more information, please contact the Board at 850-488-0595 or https://floridasnursing.gov.

Customer Information/Answer Sheet insert located between pages 96–97.

COURSE TEST - #31253 LAWS AND RULES FOR FLORIDA NURSES

This is an open book test. Please record your responses on the Answer Sheet.
A passing grade of at least 70% must be achieved in order to receive credit for this course.

This 2 contact hour activity must be completed by October 31, 2025.

1. **The purpose of the Nurse Practice Act is to encourage the growth and expansion of hospitals and training schools.**
   A) *True*
   B) *False*

2. **The Nurse Practice Act is Chapter 464 of the Florida Statutes.**
   A) *True*
   B) *False*

3. **The Nurse Practice Act governs the practice of registered nurses, licensed practical nurses, and advanced practice registered nurses.**
   A) *True*
   B) *False*

4. **According to the Nurse Practice Act, the practice of practical nursing may be conducted under the direction of a registered nurse, licensed dentist, or licensed physician.**
   A) *True*
   B) *False*

5. **Ordering diagnostic tests and physical and occupational therapy is a part of the scope of practice for licensed practical nurses.**
   A) *True*
   B) *False*

6. **At least 40 hours of continuing education must be completed every biennium in order to maintain a nursing license in Florida.**
   A) *True*
   B) *False*

7. **Apology is one of the elements that must be established for a ruling of malpractice.**
   A) *True*
   B) *False*

8. **Using the name or title "Registered Nurse" without being duly licensed or certified is considered a misdemeanor in the first degree under the Nurse Practice Act.**
   A) *True*
   B) *False*

9. **Nurses who have been found guilty on three separate occasions of violations relating to the use of drugs or narcotics involving the diversion of drugs or narcotics from patients to personal use or sale are not eligible for reinstatement of licensure.**
   A) *True*
   B) *False*

10. **Board meetings are held annually.**
    A) *True*
    B) *False*

Be sure to transfer your answers to the Answer Sheet insert located between pages 96–97.
PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

Recognizing Impairment in the Workplace: The Florida Requirement

This course fulfills the Florida requirement for 2 hours of education on Recognizing Impairment in the Workplace.

Have you already completed your Impairment in the Workplace requirement? You can skip this course and still receive 26 hours of continuing education.

Audience
This course is designed for nurses in Florida who may intervene to prevent or identify impairment in the workplace.

Course Objective
The purpose of this course is to provide nurses with an appreciation of the impact of impairment on the provision of nursing care and on patient health as well as the skills to identify and report instances of workplace impairment.

Learning Objectives
Upon completion of this course, you should be able to:

1. Outline the epidemiology and scope of impairment in the healthcare workplace.
2. Discuss unique risk factors for substance abuse in nurses.
3. Identify the signs of impairment in the nursing workplace.
4. Analyze the process and legal obligations involved in reporting an instance of impairment in the workplace.
5. Describe the treatment programs available for nurses who have been impaired in the workplace.

Faculty
Nancy Campbell, RN, BSN, PHN, received her Bachelor of Science in Nursing degree from California State University, Bakersfield in 1987. She has nursing experience in a variety of clinical settings, including medical/surgical, community health, and preschool health. She was a nurse case manager for a community program supporting teen parents and a public health nurse focusing on communicable disease management. Her primary focus and passion is on direct patient care and patient education. She is presently employed as a registered nurse for the Head Start program in Tulare County, California.

Faculty Disclosure
Contributing faculty, Nancy Campbell, RN, BSN, PHN, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

Division Planner
Jane C. Norman, RN, MSN, CNE, PhD

Director of Development and Academic Affairs
Sarah Campbell

Division Planner/Director Disclosure
The division planner and director have disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

Accreditations & Approvals
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AACN Synergy CERP Category B.

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Special Approvals
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About the Sponsor
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INTRODUCTION

Impairment of a healthcare professional can place everyone in a workplace at risk for injury. First and foremost is the risk to patients, who trust healthcare professionals to provide safe, reliable, and effective care. The ethical duty to not harm patients is a cornerstone of nursing, yet impaired healthcare workers injure patients daily. Another concern is the potential for impaired nurses to harm other professionals in the workplace, either directly or indirectly. Direct harm falls on a spectrum ranging from serious, injury-causing accidents to excessive absenteeism, which puts additional strain on staff. Presenteeism (i.e., reporting for work while impaired) places colleagues in the difficult position of having to work harder as a result of another's impairment, working in a potentially dangerous environment, and facing the dilemma of reporting a coworker, colleague, or friend.

Reporting impairment can be a difficult ethical situation for healthcare professionals, who often cover for impaired colleagues out of friendship or loyalty and who fear that reporting may ruin the nurse's career or their own. The truth is that the circumstances causing impairment have already eroded a nurse's professional abilities to some degree, and in most states, including Florida, good-faith reporters (i.e., those with sincere and honest intentions) are protected from retaliation by whistleblower laws. Conversely, not reporting a known impaired nurse is a violation of the Nurse Practice Act that can lead to disciplinary action by the Florida Board of Nursing.

Injury to patients and coworkers is increasingly likely when a worker is impaired, but impairment also gravely affects the individual nurse, whose health, safety, career, and social and financial standing are at risk if interventions are not undertaken. The American Nurses Association (ANA) definition of impairment describes a broad array of conditions that can interfere with workplace functioning, including mental or physical illness, fatigue, substance abuse, and other personal circumstances that adversely affect job performance [2]. Though fatigue and certain personal circumstances may be more easily resolved, these types of impairment still pose a danger. Fatigue, acute physical illness, and personal issues (e.g., stress, relationship problems) are generally dealt with in a different manner than impairment related to chemical dependence, other psychologic disorders, and chronic physical conditions. It should be remembered that alcohol and/or substance abuse is a type of medical and psychologic disorder, and helping the nurse obtain treatment so she or he can get healthy and return to work is the ultimate goal of reporting and intervention. Nearly all states, including Florida, now offer nurses found to be impaired at work an alternative to criminal prosecution, the chance to retain their license, and a return to nursing if they agree to enter and participate in an intervention program.

This course presents information on recognizing the signs and symptoms of emotional-, mental health-, and substance-related workplace impairment. Strategies for intervention and reporting (e.g., how and to whom impairment should be reported) are also outlined, particularly within the context of the Florida Nurse Practice Act. Treatment of impairment, including intervention programs, employer initiatives for impaired nurses, and returning to work, will be discussed. In the state of Florida, the Intervention Project for Nurses (IPN) is the Department of Health's contracted program to address nurse impairment; this program will be discussed in detail.

SCOPE OF THE PROBLEM

Historically, the rate of substance use disorder among healthcare professionals was thought to be much higher than in the general public, due to job stress and easy access to pharmaceutical drugs. However, the rate among nurses and physicians is now estimated to be only slightly higher than or equal to the rate found in the general public (10% to 15%) [3; 5; 6; 9]. The ANA has reported that approximately 15% of all nurses abuse substances to the point at which interference with vocational practice can be expected [13; 17]. Based on these data, up to 525,000 of the more than 3.5 million nurses in the United States have substance use disorders that may affect job performance [12]. Furthermore, one survey indicated that alcohol abuse continues to rise among nurses, particularly since the start of the COVID-19 pandemic [4]. Nurses make up the greatest proportion of healthcare workers in the country; therefore, substance-related impairment among nurses is a major healthcare problem, despite similar rates of abuse and dependency among other healthcare professionals [9].

According to the Nurse Worklife and Wellness Study, past-year illicit drug use among nurses was 5.7% and prescription drug misuse was 9.9% [6]. Another study found that while the rate of drug dependence was similar among female nurses and women in the general population, the rate of prescription drug abuse was much higher (more than double) among nurses; use of street-type drugs (e.g., cocaine, cannabis) was found to be lower in nurses than in the general population [5]. Reasons cited for the higher rates of prescription drug abuse included easier access, familiarity with dosages and effects, and comfort experimenting with drugs commonly prescribed to patients [6]. This phenomenon, referred to as "pharmacologic optimism," is based on the ingrained belief that pharmaceutical drugs cause profound healing with few to no negative effects, an idea that is established early in some nurses [9]. Aside from alcohol, which is the most commonly abused substance among nurses, one study identified the classes of drugs most often abused, in order of frequency, as amphetamines, opioids, sedatives, tranquilizers, and inhalants. In this study, abuse was defined as prescription drug use without a script, using greater than the prescribed dosage, or using a drug for indications other than those prescribed [6; 9]. In many instances of abuse, drugs were obtained through diversion. Drugs are diverted in several different ways [6; 11]:

- A physician writes a prescription for the nurse in the absence of a true indication.
- The nurse steals scripts and falsifies prescriptions for him- or herself.
- A whole dose of an injectable drug ordered for a patient is used by the nurse and replaced with saline, or the nurse retains the correct (drug-filled) syringe and replaces it with another filled with saline.
- Partial doses of medications are administered to patients while the nurse saves or uses the remainder.
- A nurse applies a skin patch to him- or herself before transferring it to the patient.
- A nurse removes syringes or ampules from a sharps waste container to scavenge any remaining drugs.
- The nurse has a colleague who, without actually witnessing the disposal, cosigns a record indicating waste while the nurse actually retains or takes the drug dose.
- The nurse obtains medications for patients who have not asked for them or who refused them.
- The nurse signs out medications for a patient who has been transferred.

All of these examples of diversion techniques have been documented, including cases in which patients have been infected with hepatitis C when a nurse used a syringe of opioid narcotic intended for them before replacing the missing contents with saline and injecting the patient [11]. One study found that 65% of nurses addicted to a pharmaceutical drug were diverting medication from their workplace [19]. Most addicted nurses in this study admitted to treating patients while impaired.

UNIQUE RISK FACTORS

In addition to the common risk factors for substance abuse in all individuals, several unique risk factors have been identified for nurses, including [9; 15]:

- Positive attitudes toward drugs and drug use (i.e., "pharmacologic optimism")
- Relaxed physician prescribing practices in the facility
- Lack of pharmaceutical controls in a facility
- Little or no education regarding substance use disorders
- Enabling by peers and managers
- Role strain

The prevalence of substance misuse varies by nurse specialty. Critical care, psychiatric, emergency room, and oncology nurses have been found to have the highest rates of substance misuse , but alcohol misuse, particularly binge drinking (four or more drinks for women or five or more drinks per occasion for men), is a significant problem among oncology nurses [9; 19]. Another study found that binge drinking was more common among all nurses than in the general population 35 years of age or older [10]. The Nurse Worklife and Wellness Study showed the highest rates of drug misuse among nurses occurred in those working in home health/hospice care (19%) followed by those working nursing homes (15.8%) [6]. In addition, staff nurses, charge nurses/coordinators/managers, and other administrators had 9- to 12-times the odds of substance use disorder compared with educators/researchers [6].

Gender is another factor for substance abuse in nursing professions. Male nurses are more likely to abuse substances and are over-represented in treatment programs [9]. However, the majority of RNs (90.9%) and LPNs (92.4%) in the United States are women; therefore, the vast majority of nurses with substance use disorders are women [9; 12]. Studies have shown that men's addiction runs a more acute course, with less pronounced physical and mental effects; men also tend to seek help sooner for the actual addiction. In contrast, women's addiction tends to be prolonged, with a greater mental and physical toll. Women typically seek help for the manifestations of addiction, such as depression, anxiety, and insomnia, which can delay treatment for the root cause [9].

IDENTIFYING IMPAIRMENT IN THE WORKPLACE

It is important that nurses have the ability to recognize signs and symptoms of impaired practice and be able to differentiate a pattern of impairment from isolated incidents that may be caused by job stress. Studies have shown that most nurses are not able to accurately identify impairment in the workplace because they have little education on signs and symptoms of impairment in a professional setting and among other professionals [3; 18]. This is compounded by the fact that some individuals, particularly experienced healthcare providers, may be able to function at a high level while under chemical influence. Failure to identify impairment or a belief that reporting is unnecessary because an individual is able to function normally despite alcohol/drug abuse may result in a failure to document and report suspected impairment, inadvertently enabling the substance abuse [3]. On the other hand, nurses who have the knowledge and confidence to identify impairment are empowered to confront colleagues and report their peers according to employer protocol.

DEFINITION OF IMPAIRMENT

The Florida Legislature defines impairment among health professionals as "a potentially impairing health condition that is the result of the misuse or abuse of alcohol, drugs, or both, or a mental or physical condition that could affect a practitioner's ability to practice with skill and safety." [21].As defined, Impaired practice is not strictly related to substance abuse disorders; common mental health disorders, such as depression and anxiety, have the potential to interfere with nurses' ability to provide adequate patient care as well [24]. In a meta-analysis of research related to the impact of mental disorders on the work performance of nurses and other healthcare professionals, strong evidence was found to support a relationship between mental disorders and general errors, medication errors, near errors, impaired patient safety, and decreased patient satisfaction [26]. This is a particular concern given the fact that nurses are at greater risk for certain mental health issues (e.g., depression) than the general public [24].

Physical disability may also impede nurses' performance, and steps should be taken to create disability inclusive workplaces [27]. Some nurses may be hesitant to disclose disabilities or known limitations for fear of losing their jobs [28]. Physical limitations are not grounds for dismissal, and failure to disclose poses a greater safety risk than working with healthcare professionals with known disabilities.

SIGNS OF IMPAIRMENT

Signs of impairment related to substance abuse among healthcare professionals fall into three general categories: job performance issues, emotional and mental status, and workplace drug diversion [7]. Impairment specifically related to substance abuse may present differently in nurses than in the general public. Signs of impairment related to job performance include [7; 8; 22]:

- An excessive number of mistakes at work (e.g., frequent medication errors, errors of judgment in patient care)
- "Job shrinkage" (i.e., the nurse progressively performs the minimal amount of work necessary)
- Increased difficulty meeting deadlines or adhering to schedules
- Frequent or unexplained disappearances
- Implausible and/or elaborate excuses for unusual behavior
- Dishonesty over trivial matters
- Illegible or sloppy charting
- Tremors or shaking
- Extended breaks or lunch hours

- Excessive absence due to alleged illness, particularly following scheduled days off
- Last-minute requests for time off
- Absence without notice
- Smell of alcohol or cannabis
- Excessive use of breath mints, chewing gum, mouthwash, or perfume

Signs of changes in emotional and mental status include [7; 8; 22]:

- Inappropriate or uncharacteristic responses to criticism (e.g., crying, uncontrolled anger, snapping at or arguing with colleagues)
- Emotional lability (e.g., becoming uncommonly gregarious or quiet, withdrawn, or irritable; has recurrent mood swings and is unpredictable)
- Reduced alertness (e.g., forgetfulness, preoccupation, appearing dazed and confused, slow reaction time)
- Increasing isolation from coworkers (e.g., avoiding informal staff gatherings, eating or taking breaks alone, requesting transfer to another shift)
- Increased and uncharacteristic problem with authority
- Change in dress and/or appearance

Signs that a healthcare professional is diverting drugs for personal use include [7; 8; 22]:

- Volunteering to work with patients who receive regular or large amounts of pain medication
- Consistently volunteering to be the medication administrator
- Often signing out more controlled drugs than coworkers
- Failing to obtain co-signatures
- Frequently reporting medication spills or other waste
- Reports reflecting excessive use of pain medications on patients
- Discrepancies in end-of-shift medication counts
- Evidence of tampering with vials, other drug containers, or medication counts
- Waiting until alone to open the narcotics box or cabinet, or disappearing after opening it
- An increase in patients' complaints of unrelieved pain
- Defensiveness when questioned about medication errors
- Consistently coming to work early and staying late

Nurse supervisors and managers should maintain an active role in identifying impairment in the workplace by refusing to allow personal manipulation by another nurse or to fear confronting a nurse if patient safety is in jeopardy. It is important to reduce or change a nurse's role or patient assignment and not accept excuses for or ignore poor performance [16]. Several tools have been developed to assess nurses' job performance and fitness for work, such as the Common Risky Behaviors Checklist, which assesses five dimensions: absence/tardiness, cognitive impairment, unprofessional communication/boundaries, physical impairment, and drug diversion [24; 25]. These measures may be completed by supervisors or individual nurses (i.e., self-report).

REPORTING COLLEAGUES AND MANDATORY REPORTING LAW

Florida law requires that a Board-licensed nurse make a good faith report of another individual's known workplace impairment, whether the situation is acute or there is growing suspicion. But, reporting a colleague is a decision with which many nurses struggle [3]. Experienced, older nurses are more likely to report impairment because they have likely witnessed the negative effects in coworkers at some point; younger and less experienced nurses are less likely to report. Many professionals choose to ignore the problem because they think someone else will or is already handling the situation [1; 3]. One study identified several factors that contribute to failure to report by coworkers, including feeling like a "tattle-tale," fear of revenge or retaliation, fear the colleague might react in a violent manner, not wanting to be responsible for jeopardizing a colleague's job, not being confident enough in one's own observations or instincts to confront a colleague, not being an expert in chemical dependence, and believing the intervention would be better dealt with by an expert [3]. Although these concerns may be valid, nursing is a profession that holds patient safety and healing as the highest duty—and not one of these concerns seems related to protecting patients. Furthermore, few of the reasons for non-reporting show any regard for helping a coworker to heal. Nursing is about action, and there is no excuse for failing to act.

FLORIDA LAW

The Florida Statutes Chapter 464.018 Disciplinary Actions defines nursing impairment and describes the conditions and actions an impaired nurse will face. The section states that the following constitutes grounds for disciplinary action or denial of a license [14]:

> Being unable to practice nursing with reasonable skill and safety to patients by reason of illness or use of alcohol, drugs, narcotics, or chemicals or any other type of material or as a result of any mental or physical condition. In enforcing this paragraph, the department shall have, upon a finding of the State Surgeon General or the State Surgeon General's designee that probable cause exists to believe that the licensee is unable to practice nursing because of the reasons stated in this paragraph, the authority to issue an order to compel a licensee to submit to a mental or physical examination by physicians designated by the department. If the nurse refuses to comply with such order, the department's order directing such examination may be enforced by filing a petition for enforcement in the circuit court where the nurse resides or does business. The nurse against whom the petition is filed shall not be named or identified by initials in any public court records or documents, and the proceedings shall be closed to the public…A nurse affected by this paragraph shall at reasonable intervals be afforded an opportunity to demonstrate that she or he can resume the competent practice of nursing with reasonable skill and safety to patients.

The Florida Statutes Chapter 464.018 Disciplinary Actions also contains the mandatory reporting law. Reporting known impairment in Florida is mandatory, not optional. Failure to report an impaired individual who is providing health care can lead to disciplinary action by the Board of Nursing. The following act constitutes grounds for denial of a license or disciplinary action [14]:

> Failing to report to the department any person who the nurse knows is in violation of this part or of the rules of the department or the board. However, a person who the licensee knows is unable to practice nursing with reasonable skill and safety to patients by reason of illness or use of alcohol, drugs, narcotics, chemicals, or any other type of material, or as a result of a mental or physical condition, may be reported to a consultant operating an impaired practitioner program...rather than to the department.

HOW TO REPORT AN IMPAIRED NURSE

Nurses should be familiar with their organization's policies and procedures for reporting employee substance abuse or other impairment and those regarding assistance programs [16]. When aware of the resources available to an impaired nurse, including the process, programs, and benefits of employee assistance programs or alternative-to-discipline programs, nurses are better prepared and more likely to report impairment. In 1983, the Florida legislature established the IPN as a contact point for nursing impairment reporting, as a treatment and rehabilitation facilitator, and as a monitoring program for impaired nurses within the state [20]. Florida nurses are required to report suspected impaired practice to the IPN and/or the Florida Department of Health [21]. Reporting to either of these entities fulfills the mandatory reporting obligation. With the knowledge that recovery, nonpunitive rehabilitation, and returning to work are the goals of such programs, nurses should feel confident that their colleagues will receive the help they need to overcome their impairment [3]. In the long-term, the report will be beneficial to the impaired nurse, and in the short-term, patients are being protected from harm.

Before making a report, documenting changes in the suspected nurses' behavior and work performance is recommended [16]. The signs and symptoms listed in the previous section of this course are a good starting point. Taking note of specific actions or behaviors will help when making the report and/or confronting a colleague or supervisee.

In the past, professional organizations recommended confronting the impaired individual directly, but this strategy was found to be unrealistic and is no longer endorsed [2; 3; 16; 22]. The ANA Code of Ethics no longer recommends confronting colleagues as the initial course of action before notifying a supervisor [3]. The 2015 ANA Code of Ethics states that "the nurse's duty is to take action to protect patients and to ensure that the impaired individual receives assistance. This process begins with consulting supervisory personnel, followed by approaching the individual in a clear and supportive manner and by helping the individual access appropriate resources" [2]. The Code further states that "nurses must follow policies of the employing organization, guidelines outlined by the profession, and relevant laws to assist colleagues whose job performance may be adversely affected by mental or physical illness, fatigue, substance abuse, or personal circumstances" [2]. The Florida Nurse Practice Act clearly states that the IPN or the Department of Health must be notified, but does not specify how an intervention must proceed [21].

Some sources suggest that the best outcomes are achieved when a professional or other personnel trained in intervention confronts the individual [22]. Many facilities have employee assistance or human resources personnel who are trained to intervene. The IPN offers intervention training [23].

The ANA Code of Ethics also provides the following additional advice regarding intervening in cases of suspected workplace impairment [2]:

- The nurse should extend compassion and caring to colleagues throughout the processes of identification, remediation, and recovery.
- Care must also be taken in identifying impairment in one's own practice and in seeking immediate assistance.
- In instances of impaired practice, nurses within all professional relationships should advocate for appropriate assistance, treatment, and access to fair institutional and legal processes. Advocacy includes supporting the return to practice of individuals who have sought assistance and, after recovery, are ready to resume professional duties.
- If impaired practice poses a threat or danger to patients, self, or others, regardless of whether the individual has sought help, a nurse must report the practice to persons authorized to address the problem.
- Nurses who report those whose job performance creates risk should be protected from retaliation or other negative consequences.
- If workplace policies for the protection of impaired nurses do not exist or are inappropriate—that is, they deny the nurse who is reported access to due legal process or they demand resignation—nurses may obtain guidance from professional associations, state peer assistance programs, employee assistance programs, or similar resources.

TREATMENT PROGRAMS

When a nurse is reported to either the IPN or the Department of Health, the referral triggers a consultation with the reporter and/or the employer of the impaired nurse [1]. This is followed by an intervention and evaluation. The intervention typically occurs one to three days after a report (whereas a standard disciplinary process typically takes 9 to 12 months to remove a nurse from practice) [1]. If a nurse self-reports to the IPN, the intake and evaluation process begins immediately. In Florida, the IPN is charged with accepting reports, evaluating referrals, determining the proper course of action, monitoring the nurse's progress in treatment, and case managing all individuals returning to work [13]. The IPN program objectives are to [13]:

- Ensure public health and safety through a program that provides close monitoring of nurses who are unsafe to practice due to the use of drugs, including alcohol, and/or psychiatric, psychologic, or physical condition
- Require the nurse to withdraw from practice immediately, and until such time that the IPN is assured that he/she is able to safely return to the practice of nursing
- Facilitate early intervention, thereby decreasing the time between the nurse's acknowledgment of the problem and his/her entry into a recovery program
- Provide a program for affected nurses to be rehabilitated in a therapeutic, non-punitive, and confidential process
- Provide an opportunity for retention of nurses within the nursing profession
- Provide a cost-effective alternative to the traditional disciplinary process
- Develop a statewide resource network for referring nurses to appropriate services
- Provide confidential consultations for nurse managers

Although the IPN assesses referrals to the program to decide the best course of action for the individual, the program does not actually provide treatment for addiction or other diseases/disorders. Rather, the IPN directs individuals to approved treatment programs and providers [1]. Additional services provided by the IPN include advocacy for participants; tracking meeting attendance and discussing recovery progress with group facilitators; comprehensive monitoring of nurses following discharge from treatment; providing random drug screening of participants and detecting relapse; and reporting compliance issues to the proper authority [1; 13]. If at any time during the process the nurse refuses to participate in the program or fails to comply with program guidelines, including after returning to work, the individual is referred to the Department of Health for discipline, which entails investigation, hearings, and disciplinary action.

RETURNING TO WORK

Following completion of approved treatment, the IPN determines if nurses in the program are ready to return to practice based on several criteria, including the individual's stability in recovery, cognitive functioning, decision-making/problem-solving ability, use of good judgment, ability to deal with stressful situations, and development of a support system [1]. A signed advocacy contract and completed relapse prevention workbook must also be submitted. Stability in recovery is crucial and is indicated by advocacy contract compliance, consistently negative random urine drug screens, regular attendance at support and monitoring groups, and favorable monitoring reports [1]. Progress reports are generated by treatment providers, nurse support group facilitators, and by the nurses in recovery (i.e., self-reports).

The support system for nurses returning to work includes a weekly support group for ongoing self-care and relapse prevention. A coworker is also established as a workplace monitor to provide feedback to the IPN on the nurse's job performance [1]. If a nurse was referred to the IPN due to pharmaceutical use or diversion, it is recommended that the nurse be assigned a labor exchange colleague assigned to handle patient medication duties. Other restrictions for these individuals may include no overtime or floating; no multiple employers; and no agency, hospice, or home care employment [1].

The Florida Board of Nursing allows nurses two opportunities to return to work after referral for diversion of drugs or narcotics [14]. A nurse will not have their license reinstated after a third violation of drug diversion for sale or personal use.

PROMOTING SAFETY IN THE WORKPLACE AND PROVIDING ASSISTANCE

Employers should have clear policies and procedures for fostering and maintaining a drug- and alcohol-free workplace and ensuring that nurses are fit to practice. When system deficiencies are found to exist, these should be remedied. Employees benefit from a sense that policies are enforced equally and without exception; otherwise, uncertainty will exist as to whether poor behavior is overlooked or ignored if an employee is well liked or has perceived seniority. The National Council of State Boards of Nursing (NCSBN) recommends several employer policies to promote safety, including drug testing before employment, testing when there is suspicion of drug use, and conducting regular fitness-to-practice evaluations [9].

All employees should be familiar with and abide by their facility's policies, guidelines, and procedures. The NCSBN recommends that nurses be familiar with procedures (internal and external) related to how to document concerns, how and when to report impairment, return to practice after treatment, and relapse management [9]. Nurses should also be provided with information about employee assistance programs (if applicable), including a clear understanding of the confidentiality of such programs.

Customer Information/Answer Sheet insert located between pages 96–97.

COURSE TEST - #31112 RECOGNIZING IMPAIRMENT IN THE WORKPLACE: THE FLORIDA REQUIREMENT

This is an open book test. Please record your responses on the Answer Sheet.
A passing grade of at least 70% must be achieved in order to receive credit for this course.

This 2 contact hour activity must be completed by October 31, 2025.

1. **The rate of alcohol and drug dependency among nurses and physicians is estimated to be slightly higher than or equal to the rate found in the general public (10% to 15%).**
   A) *True*
   B) *False*

2. **Use of street-type drugs (e.g., cocaine, cannabis) is higher in nurses than in the general population.**
   A) *True*
   B) *False*

3. **A positive attitude toward drugs and drug use (i.e., "pharmacologic optimism") is a unique risk factor for substance use in nurses.**
   A) *True*
   B) *False*

4. **Male nurses are more likely than female nurses to abuse substances and are over-represented in treatment programs.**
   A) *True*
   B) *False*

5. **Impaired nursing practice is defined as isolated incidents that may be caused by job stress.**
   A) *True*
   B) *False*

6. **Frequently reporting medication spills or other waste may be a sign that a healthcare professional is diverting drugs for personal use.**
   A) *True*
   B) *False*

7. **Experienced, older nurses are more likely to report impairment because they have likely witnessed the negative effects in coworkers at some point.**
   A) *True*
   B) *False*

8. **Reporting suspected impaired practice to Florida's Intervention Project for Nurses does not fulfill the mandatory reporting obligation.**
   A) *True*
   B) *False*

9. **The American Nurses Association Code of Ethics recommends confronting potentially impaired colleagues as the initial course of action, before notifying a supervisor.**
   A) *True*
   B) *False*

10. **When a nurse is reported for suspected impairment at work, intervention typically occurs within one to three days.**
    A) *True*
    B) *False*

Be sure to transfer your answers to the Answer Sheet insert located between pages 96–97.
PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

Recognizing and Reporting Human Trafficking in Florida

This course fulfills the Florida requirement for 2 hours of education on Human Trafficking.

Audience
This course is designed for all health and mental health professionals in Florida who may identify and intervene in cases of human trafficking and exploitation.

Course Objective
The purpose of this course is to provide physicians, nurses, and other healthcare professionals an in-depth, practical review of human trafficking, including the definition and scope of the problem, the means of identification and assessment of individuals who may be victims, guidance on reporting of cases, and interventions and resources available to victims.

Learning Objectives
Upon completion of this course, you should be able to:

1. Define human trafficking.
2. Identify the forms of human trafficking.
3. Identify economic, political, social, and cultural factors that contribute to human trafficking.
4. Analyze the trafficking experience, including how traffickers recruit and the financial implications of trafficking.
5. Explain the psychological, health, and social consequences of human trafficking.
6. Utilize interviewing strategies to assess and identify victims and promote the ethical treatment of trafficking victims.
7. Describe the appropriate steps for reporting suspected cases of trafficking.
8. Describe various interventions and resources for human trafficking victims.

Faculty
Alice Yick Flanagan, PhD, MSW, received her Master's in Social Work from Columbia University, School of Social Work. She has clinical experience in mental health in correctional settings, psychiatric hospitals, and community health centers. In 1997, she received her PhD from UCLA, School of Public Policy and Social Research. Dr. Yick Flanagan completed a year-long post-doctoral fellowship at Hunter College, School of Social Work in 1999. In that year she taught the course Research Methods and Violence Against Women to Masters degree students, as well as conducting qualitative research studies on death and dying in Chinese American families. (A complete biography appears at the end of this course.)

Faculty Disclosure
Contributing faculty, Alice Yick Flanagan, PhD, MSW, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

Division Planner
Jane C. Norman, RN, MSN, CNE, PhD

Director of Development and Academic Affairs
Sarah Campbell

Division Planner/Director Disclosure
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Special Approvals
This course meets the Florida requirement for Human Trafficking education.

About the Sponsor
The purpose of NetCE is to provide challenging curricula to assist healthcare professionals to raise their levels of expertise while fulfilling their continuing education requirements, thereby improving the quality of healthcare.

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- Read the following course.
- Complete the test.
- Return your Customer Information/Answer Sheet and payment to NetCE by mail or fax, or complete online at **www.NetCE.com/FL23**.
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EVIDENCE-BASED PRACTICE RECOMMENDATION

Sections marked with this symbol include evidence-based practice recommendations. The level of evidence and/or strength of recommendation, as provided by the evidence-based source, are also included so you may determine the validity or relevance of the information. These sections may be used in conjunction with the study questions and course material for better application to your daily practice.

INTRODUCTION

Although human trafficking has always existed, it has begun to receive increased attention as a result of awareness and outreach efforts. Gaining recognition of a problem as a social issue often involves various groups making compelling claims using persuasive rhetoric and dramatic statistics [1]. Human trafficking, sometimes referred to as "modern slavery," has garnered attention as a human rights issue from a broad spectrum of organizations, including feminists, religious conservatives, labor activists, immigration specialists, mental health and healthcare professions, the media, politicians, and the public, all of whom have responded to the gravity of the condition. It is through this process of claims-making and counter claims-making that "conditions" that may not necessarily have initially attracted attention can develop into a recognized social problem [1; 2]. How the problem is described or constructed will influence public opinion, which will then ultimately facilitate action from governmental agencies, social service organizations, and international agencies [3; 4; 5].

This course will provide a basic overview of human trafficking (e.g., the scope, definitions and frameworks, contributing factors, different forms). The course will attempt to provide practitioners a glimpse of the lives of human trafficking victims, including the physical, psychological, social, and sexual abuse that human trafficking victims experience and the types of control tactics perpetrators use. Specific interventions and responses will be covered, including mental health, social services, educational, prevention, and legal efforts. Finally, for practitioners who do work with human trafficking victims, the emotional toil that it takes upon practitioners as well as the importance of self-care will be discussed. The course will end by offering an array of resources. Practitioners will be encouraged to view films and documentaries about human trafficking, as this is one way to "enter the lives" of human trafficking victims and better understand the dynamics of the complex world of human trafficking.

SCOPE OF HUMAN TRAFFICKING

As the issue of human trafficking is so complex, it is difficult to determine the scope of the problem. Many scholars and researchers believe that published estimates are just educated guesses. On a global level, the International Labour Organization has estimated that there are 40.3 million human trafficking victims at any given time [6]. The estimates for the United States are not totally clear, but there were approximately 78,000 human trafficking victims reported to the U.S. State Department in 2016; only an estimated 0.2% are rescued [7; 120]. According to Polaris, which founded and

runs the National Human Trafficking Hotline, there have been a total of 73,946 cases of human trafficking reported since 2007 [7; 12; 120; 121].

Weitzer's content analysis of websites and publications about human trafficking found that human trafficking is portrayed as an epidemic, growing at alarming rates, with some government reports estimating 40,000 to 50,000 individuals trafficked in the United States each year [8; 120]. Weitzer argues that many of the reports have overestimated the scope of the problem and points out that the estimates fluctuate drastically year to year [9]. Sex trafficking tends to be portrayed more frequently due to its sensationalism. In a study of 50 human trafficking campaigns in Spain between 2004 and 2017, 40 (80%) depicted sex trafficking and exploitation involving women [10].

The U.S. Department of Justice reported 1,045 convictions for human trafficking-related crimes in 2017, including forced labor and sex trafficking of adults and minors. This was an increase of more than 78% over the number reported in 2015 [6]. In 2016, the International Labour Organization stated that there were 4.8 million victims of sex trafficking, and 15.4 million in forced marriages. The majority (62%) of those trafficked are in Asia and Pacific regions [11]. In 2017, it is estimated that there are 24.9 million people around the world who are in forced labor [11].

Florida ranks third in the United States in terms of cases of trafficked persons [12]. In 2020, the National Human Trafficking Hotline received 2,539 contacts (e.g., phone calls, texts, e-mails) and 738 human trafficking cases reported in Florida. The most common type was sex trafficking (70.1%), followed by labor trafficking (14.6%) and combined sex/labor trafficking (5.6%) [12]. The majority of victims were female (82.1%) and adult (67.3%).

DEFINITIONS OF HUMAN TRAFFICKING

The United Nations defines human trafficking as [13]:

> The recruitment, transportation, transfer, harbouring or receipt of persons, by means of threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability, or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation or the prostitution or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude, or the removal of organs.

In essence, this definition involves three elements: the transport of the person, the force or coercion of the victim, and the abuse and exploitation [14]. The United Nations Office on Drugs and Crime divides the definition of human trafficking into three sections: the act, means, and purpose [15]. The act, or what is done, generally refers to activities such as recruitment, transportation, transfer, harboring, or receipt of persons. The means of trafficking consists of threats or use of force, coercion, abduction, fraud, deception, abuse of power or vulnerability, or giving payments or benefits to a person in control of the victim. Finally, these acts are carried out for the purpose of exploitation, which includes prostitution, sexual exploitation, forced labor, slavery or forced servitude, and the removal of organs [15]. It is important to remember that human trafficking is not human smuggling. Human smuggling involves an individual being brought into a country through illegal means and is voluntary. The individual has provided some remuneration to another individual or party to accomplish this goal [16].

interactive activity

Watch the 12-minute video clip The Top 10 Facts About the "S" Word at https://www.youtube.com/watch?v=TJlDBKZmRrE.

This video provides a snapshot of modern slavery, including the economics of slavery and the various types of slavery worldwide.

The Trafficking Victims Protection Act (TVPA) defines human trafficking to include both sex trafficking and labor trafficking [17]. Sex trafficking is the recruitment, harboring, transportation, provision, obtaining, patronizing, or soliciting of a person for the purposes of a commercial sex act, in which the commercial sex act is induced by force, fraud, or coercion, or in which the person induced to perform such an act has not attained 18 years of age. Labor trafficking is the recruitment, harboring, transportation, provision, or obtaining of a person for labor or services, through the use of force, fraud, or coercion for the purposes of subjection to involuntary servitude, peonage, debt bondage, or slavery. A victim need not be physically transported from one location to another for the crime to fall within this definition.

In many cases, women and children are considered the typical victims of human trafficking. Hart posits that women are more vulnerable to trafficking due to the lack of social safety nets in many developing countries [18]. Coupled with women's subordinate social statuses in many cultures, this leads to the "feminization of poverty." Although the social conditions may make women and children more vulnerable to human trafficking, the reality is that men are also victims of human trafficking.

Overall, the definition of human trafficking is ambiguous because of the many intersections with other issues (e.g., sexual abuse, domestic violence, forced marriage, forced labor) [19]. It occurs both domestically and internationally, but is primarily a hidden problem. This makes research efforts, the prosecution of perpetrators, and policy and community efforts to protect victims even more challenging [19].

FORMS OF TRAFFICKING

SEX TRAFFICKING

The TVPA of 2000 is a U.S. federal statute passed by Congress to address the issue of human trafficking and offers protection for human trafficking victims [17]. This statute defines sex trafficking as, "the recruitment, harboring, transportation, provision, or obtaining of a person for the purpose of a commercial sex act" [17]. A commercial sex act is, "any sex act on account of which anything of value is given to or received by any person" [17]. In other words, it usually involves the illegal transport of humans into another country to be exploited in a sexual manner for financial gains [20]. However, it does not always involve the transport of victims from one region to another; such cases are referred to as "internal trafficking" [21]. Victims of sex trafficking could be forced into prostitution, stripping, pornography, escort services, and other sexual services [22]. Victims may be adult women or men or children, although there is a higher prevalence of women and girls. The term "domestic minor sex trafficking" has become a popular term used to connote the buying, selling, and/or trading of children younger than 18 years of age for sexual services within the country, not internationally [22; 23]. An element of force, fraud, or coercion is not necessary, as the victims are children and inherently vulnerable [23]. In the United States, the children most vulnerable to domestic minor sex trafficking are those who are homeless, abused, runaways, and/or in child protective services [22].

Although highly controversial, it is said that sex trafficking victims differ from sex workers in that sex trafficking victims are forced to involuntarily perform sexual services and are often not paid for their "work." Sex trafficking involves the use of force and coercion and can encompass other forms of criminal sexual activities, including forced erotic dancing, "mail-order brides," and pornography [21]. On the other hand, individuals involved in prostitution make a decision to provide sex services for a fee. The decision to enter prostitution does not eliminate the possibility of being a victim of trafficking if one is held against his/her will through physical and/or psychological abuse [24]. It is also important to remember that this does not necessarily mean prostitution is a choice these individuals would have made if other options were available or that they have a choice in selecting their sexual partners and/or sexual activities [25].

interactive activity

Visit the PBS Frontline website (https://www.pbs.org/wgbh/pages/frontline/slaves/map) and read the transcripts of interviews with a sex trafficker and five Eastern European female victims who were deceived into sexual slavery.

BONDED LABOR/FORCED LABOR

The United Nations has defined debt bondage as [26]:

> The status or condition arising from a pledge by a debtor of his personal services or of those of a person under his control as security for a debt, if the value of those services as reasonably assessed is not applied towards the liquidation of the debt or the length and nature of those services are not respectively limited and defined.

Essentially, because the individual does not have money as collateral for the debt owed, the individual pledges his/her labor or, in some cases, the labor of a child or another individual for an unspecified amount of time [27]. These individuals may be transported or trafficked into another country for the purpose of forced labor.

In many cases of bonded labor, the initial loan may be welcomed by the individual. However, the victims do not realize that with the low wages, unspoken high interest rates and other continually accruing fees, and the perpetrator's manipulation of the "accounts," laborers can never repay the loans. Some estimate that half of all persons in forced labor are bonded laborers. The majority of bonded labor cases occur in India, Bangladesh, and Pakistan [28]. Some families find themselves in a cycle of poverty as the debt cannot be paid off and is passed down from generation to generation [27]. Bonded labor can involve laborers in brick kilns, mines, stone quarries, looming factories, agricultural farms, and other manufacturing factories [27]. In the United States, individuals may be trafficked to work long hours in garment factories, restaurants, and other manufacturing sectors. Frequently, the employer/captor will take away victims' identifications, monitor their movements, socially isolate them, and/or threaten deportation if they do not comply [29]. Migrant workers are at high risk of forced labor [24].

In the United States, forced labor is predominantly found in five sectors [29]:

- Prostitution and sex industry
- Domestic servitude
- Agriculture
- Sweatshops and factories
- Restaurant and hotel work

It is speculated that most of the forced labor occurs in California, Florida, New York, and Texas, all major routes for international travel [29].

Domestic servitude refers to a category of domestic workers (usually female) who work as servants, housekeepers, maids, and/or caregivers, often in private homes. In some cases, young women are lured with the promise of a good education and work, and when they arrive in the United States, they are exploited economically, physically, and/or sexually. Their passports or identification papers are taken away, and they are told they have to pay off the debt incurred for their travel, processing fees, and any other bogus expenses. Because they do not speak English, they find they have no other recourse but to endure exploitive working conditions [30]. Unfortunately, as in many sectors of forced labor, there are no regulations to monitor the conditions under which domestic servants operate [29].

interactive activity

Watch the 20-minute documentary A Global Alliance Against Forced Labour, produced by the International Labour Organization (ILO) at https://www.netce.com/courseoverview.php?courseid=2424.

CHILD LABOR

Child labor can be viewed as a specific form of bonded labor or forced labor. However, not all child laborers have been trafficked. Child labor is defined by International Labour Organization (ILO) as economic labor performed by a child younger than 15 years of age or hazardous labor done by a child 18 years of age or younger. Child labor is deeply rooted in poverty and the infrastructure and political stability of the country as well as market forces [31]. A joint report by UNICEF and the ILO estimates that there are 160 million child laborers in the world as of 2020, of which 63 million are girls and 97 million are boys. This report indicates an increase of 8.4 million child laborers, and the first time that rates have increased in more than two decades of declining child labor [32]. The largest numbers of child laborers are found in Asia and the Pacific region; however, there is evidence that the number of child laborers in sub-Saharan Africa is increasing due to population growth, extreme poverty, and inadequate social protection measures [32].

The definition of child labor is controversial because the definitions for "work" and "childhood" are ambiguous and often culturally defined [33]. On a conceptual level, work may be beneficial for the socialization and educational processes of children [33; 34]. So, it is important to differentiate between child work and child labor. Child work has been defined as activities that are supervised by an adult and that promote the development and growth of the child, while child labor does not benefit the child [31]. Many definitions of child labor create a dichotomy whereby child work is considered not harmful while child labor has negative emotional, intellectual, and social consequences [35]. Work that is exploitive for children has been defined as working long hours at a young age, work that is poorly compensated, and work that produces physical, social, and psychological stress that will hamper development, access to education, and self-esteem [36]. The ILO adds that child labor is work that interferes, deprives, and interrupts schooling and places children in the position of trying to balance school and long work hours [34].

It is important to remember that child labor occurs in the United States. Runaway and homeless youths are at greatest risk, often lured by promises of work and housing [37]. The Polaris Project found that the top three forms of child labor trafficking in the United States were begging, peddling, and traveling sales crews [37].

CHILD CONSCRIPTION

In some cases of trafficking, children are kidnapped and trafficked to serve as soldiers. Other times, children are coerced by a narrative indicating they will be serving a higher purpose and avenge the deaths of family and friends; this is known as comradeship [38]. Some children are actively recruited and may be promised a small salary to "voluntarily" join. In a study of 132 cases of child conscription in Columbia, 18% of the children were motivated by perceived economic rewards [39]. Many children lack educational opportunities or hope for a better future, perceiving soldiering as the only option [38]. Conscripted girls often cite educational opportunities as a motive [38]. In Nepal, former female soldiers also indicated they were driven to volunteer in the armed groups by a fear that if they stayed with their families they would be married away as children or raped [38].

It is estimated that at any one time 250,000 to 300,000 children younger than 18 years of age are currently serving as child soldiers [40; 41]. Traffickers prefer to recruit children to serve as soldiers because they are inexpensive and more easily molded and shaped to comply and obey without question [42]. They are also more likely to kill fearlessly and recklessly. Child soldiers are treated as adults, without any regard to how the physical and psychological rigors of war will affect them psychologically and developmentally. In Uganda, where children are kidnapped or recruited as child soldiers relatively often, the Lord's Resistance Army has been known to initiate new child soldiers in brutal ritualized killings of others so as to terrorize them into submission and annihilate any moral conscience they may have about killing [42]. In Afghanistan, children have been recruited by the Taliban and have served as suicide bombers [28].

It can be difficult to comprehend the atrocities that these children witness and experience. Bayer, Klasen, and Adam conducted a study involving 169 former Ugandan and Congolese child soldiers who were an average of 15.3 years of age [43]. Almost all (92.9%) reported having witnessed a shooting, 89% witnessed someone wounded, and 84% witnessed someone seriously beaten. A total of 54.4% reported having killed someone, and 27.8% reported that they were forced to engage in sexual activity [43]. In another study, the researchers found that the experience of conscription among children produced significant emotional and psychological traumas and a host of cognitive and behavioral problems [24]. In this study of 19 child soldiers, 18 had volunteered to join the army and one had been abducted. Although most of the children volunteered into the army, their participation became involuntary. Some tried to run away or disobey, which resulted in beatings and imprisonment. If captured, they were told to commit suicide [24]. The reintegration of child soldiers is not easy. Many are stigmatized when they return to their home villages, as their families and friends fear that these former child soldiers may be violent [41; 44].

interactive activity

Listen to a National Public Radio interview with Ishmael Beah, a former child soldier, at https://www.npr.org/2007/02/21/7519542/ishmael-beahs-memoirs-of-a-boy-soldier.

FACTORS THAT CONTRIBUTE TO HUMAN TRAFFICKING

GLOBALIZATION

Human trafficking has been called one of the "darkest sides of globalization" [45]. Globalization is the term used to describe the interconnectedness of countries and nations, which facilitates easy communication, exchange of ideas, and flow of goods, capital, and services [45]. Crimes such as human trafficking are affected by globalization just as legitimate businesses are [46]. Furthermore, the ideals of Western capitalism may reinforce human trafficking as a business or industry, with its emphasis on the free market and the flow of goods and services across international borders [46].

Globalization has also created the need for cheaper labor [28; 47]. A study involving 160 countries examined the effects of globalization and human trafficking trends [48]. Researchers found a positive relationship between globalization and trafficking for forced labor, prostitution, and debt bondage.

POVERTY

Poverty and incessant economic stressors caused by civil wars, natural disasters, and collapses of government systems all contribute to human trafficking [18; 23; 49]. Families entrenched in deep poverty may feel they have no other recourse but to sell a child or may be more easily lured with promises of money and a better future [49; 50; 51]. In one study, the odds of being trafficked were nine times greater for those who felt extremely hopeless about upward mobility compared with those with lower levels of hopelessness [49].

SOCIAL AND FAMILIAL DISORGANIZATION

Community factors (such as high social disorganization characterized by violence, unemployment, substance use disorder, and high crime) contribute to higher risk of trafficking [23]. In addition, families marked by instability (e.g., domestic violence, child abuse, continual unemployment) are also at higher risk of having a member trafficked [23].

CORRUPTION

Human trafficking cannot occur without the existence of corruption within existing infrastructures. Public officials, police officers, and local leaders in many developing countries have been known to take bribes to provide protection to parties involved in various aspects of human trafficking [45; 48; 52].

DIGITAL TECHNOLOGY

The rampant use of digital technology, such as the Internet, greatly facilitates sex trafficking. The relative anonymity of online contact can empower traffickers to recruit or sell victims. Graphic images of women and children engaged in sexual acts can be easily disseminated over the Internet [53]. Traffickers may employ the Internet for advertising, marketing to those interested in making pornography [53]. In addition, social media sites such as Facebook, Craigslist, and Instagram have been used as a means of facilitating trafficking (e.g., by connecting and grooming potential victims) [54; 55; 56]. Newsgroups offer opportunities for those interested in locating women and children for sexual exploitation.

In a qualitative study, smartphones were found to be integral in the business of trafficking [54]. Researchers indicated the phones were used "to maintain contact with each other, in order to facilitate the business 'transactions' and stay in touch with transnational 'partners' and other traffickers who remained in the country of origin" [54; 55].

RACIALIZED SEXUAL STEREOTYPES

Race and ethnicity have been inextricably linked to sexual violence and victimization. Myths regarding sexuality in certain cultures or racial fetishization may affect trafficking patterns. For example, there is an over-representation of Asian women on American Internet pornography sites in part due to popular myths sexualizing, eroticizing, and exoticizing Asian women. This has translated into trafficking, as

traffickers respond to the demand for young Asian women and girls in part fueled by these stereotypes of exotic, docile, submissive, and eager-to-please Asian women [30]. These stereotypes devalue and dehumanize people, which is the underlying core of human trafficking. This contributes to the acceptability of the exploitation of individuals, particularly members of marginalized groups [57].

These racial stereotypes go beyond simply framing the victims in a particular manner [58]. They raise implicit questions regarding how the powers of state are depicted. In other words, the patriarchal attitudes of certain countries lead to "bad" or "backward" cultural practices or ways of being that then cause trafficking—setting up is a dichotomy of the "West" and "others" [58].

CULTURE

Although many are careful in linking cultural factors to the etiology of human trafficking for fear of imposing judgment on a particular culture, many maintain that cultural ideologies that tolerate sexual trafficking, bonded labor, and child labor may be a stronger factor than poverty in predicting trafficking rates [30; 36]. For example, some cultures emphasize collectivism and prioritizing the needs of the family and group first before the needs of the individual. Some children may feel they have to sacrifice themselves for their family when traffickers promise money [30]. Traffickers also know that they can threaten to hurt victims' families to keep them from escaping [30].

Furthermore, in many cultures, boys are more highly valued than girls, and as a result, girls are considered more dispensable [30]. Sons are considered the family's social security, staying with the family while daughters marry into other families. Therefore, girls may be more likely to be sold into slavery than boys.

Child labor is also inextricably tied to cultural factors. In India, for example, child labor is common because it is believed that children in the lower levels of caste system (i.e., the "untouchables") should be socialized early to understand their positions in society [36]. It has been observed that when traditional cultural and societal norms about women's roles were relaxed in some European countries and more women entered the labor force, child labor decreased [36]. Ultimately, it is difficult to unravel the effects of poverty and culture because the pressures of poverty can lead families to use tradition as a justification to sacrifice young men, women, and children [36].

Ultimately, the conversation about human trafficking is complex, and to attempt to isolate the causes is beyond challenging. Multiple factors have been suggested as possibly predicting human trafficking, including macroeconomic factors (e.g., gross domestic product per capita), unemployment rates, LGBTQ+ discrimination, cultural oppression, and lack of protection of women's rights [59; 60]. In addition, the COVID-19 pandemic has potentially exacerbated the rates of isolation, poverty, and lack of resources/funding, all of which are risk factors for human trafficking [24]. In one study, ease of land access to the destination country appeared to be a powerful predictor in terms of the number of individuals trafficked [59].

THE TRAFFICKING EXPERIENCE

Five stages of the trafficking experience have been identified [61; 62; 63]:

- Pre-departure stage: The period before the victim becomes involved in the trafficking situation. This may include recruitment and preparing for travel.
- Travel and transit stage: The time after recruitment during which the victim "agrees" or is coerced into the trafficked situation. This phase also includes the journey whereby the trafficker(s) brings the victim(s) to their work destination. It is important to remember that this stage can be very dangerous and can involve numerous transit points.
- Destination stage: This is the period during which the victim arrives at the intended destination. This stage is marked by exploitation, abuse, victimization, and coercion. One way to control the victims is to continually inflate their debt so they have to constantly work to pay it off. Another is to confine and isolate victims.
- Detention, deportation, and criminal evidence stage: If a victim is arrested by the police or immigration authorities, victims are held in legal proceedings and they often fear deportation, and/or retaliation from the trafficker(s).
- Integration and re-integration stage: During this stage, government and nongovernment agencies provide services to victims that involve a long process of attempting to reintegrate the victim back into his/her community.

TRAFFICKERS: AN OVERVIEW

Much attention has been focusing on victims of trafficking; however, it is important to also understand the perpetrators.

Methods of Recruitment

It has been suggested human traffickers employ five general strategies to recruit and traffic victims [64; 65; 66; 67]:

- Kidnapping: Traffickers may kidnap their victims. They may lure them with food or treats or take them by force. Victims with few if any social ties are highly vulnerable, as no one will miss them or report their disappearance.

- Targeting poor families: Traffickers may convince families to sell their children (often daughters). Because many families in developing countries live in abject poverty, traffickers will stress to victims' families how the money will help them to survive. Other traffickers may tell families that selling their daughter will provide her with more promising opportunities.
- Developing a false romantic relationship with victim: A tactic often used with young girls, perpetrators pose as boyfriends by romancing victims, buying gifts, and proclaiming their love. Victims have a difficult time believing that their boyfriends would hurt or deceive them, making them easy targets for trafficking.
- Fake storefronts: Some employment, modeling, or marriage agencies are fronts for illegal trafficking operations. A potential victim might be lured with the promise of employment, a lucrative modeling contract, or an arranged marriage in the United States. After victims have been lured in, traffickers come to assess their "product." Perpetrators may be family members or friends.
- Legal storefronts: Some legal businesses in the tourism, entertainment, and leisure industries integrate trafficking activities into their business structure.
- Recruiting local sex workers: Traffickers might hire sex workers working in local night clubs from brothel owners or simply lure sex workers by promising them a more affluent future. As victims get older, they may later recruit younger victims.

The Financial Profits

Unfortunately, human trafficking can be a lucrative business. According to the ILO, profits from forced labor, trafficking, and modern slavery are estimated to be $150 billion annually [68]. The majority of this total is attributable to commercial sexual exploitation ($99 billion) followed by construction/manufacturing/mining ($34 billion), agriculture ($9 billion), and domestic work ($8 billion) [68].

The receiving country and location of trafficking will affect the profits. For example, if a girl is kidnapped from a village in Nepal and taken to India, she can be sold in India for $1,000 [64]. If she is then trafficked to the United States, she could be sold for $20,000.

Interestingly, the "cost" of a slave has not risen over time. According to Bales, the cost of obtaining a slave to work in the agriculture sector in 2007 was about $100; in 1850, this same slave would cost the equivalent of $40,000 in 2007 currency [69]. In one study, it was approximated that in the United States, a trafficker can make an average of about $300,000 per victim lifetime, which would total $32 billion annually [70]. Income in larger cities (e.g., Atlanta, San Diego, Washington, DC) may be even greater.

CONSEQUENCES OF HUMAN TRAFFICKING: IMPACT ON VICTIMS

The social realities of victims of human trafficking are difficult to comprehend, and some may wonder why victims remained silent and complied with their traffickers. The Silence Compliance Model was created to explore the factors that promote victims' seeming willingness to comply to their traffickers' demands [71]. This model has three categories: coercion, collusion, and contrition. Victims are coerced, brutalized, and threatened, and basic necessities of life are withheld from them. Methods of psychological coercion include isolation, induced exhaustion, threats, degradation, and monopolizing perception [72]. This serves to silence victims and create a sense of helplessness. By isolating and controlling victims' movements and limiting their exposure to the outside world, traffickers have complete monopoly of their attention and perception of reality [72]. Victims are then forced to collude with the traffickers as a result of their relative isolation, fear, false sense of belonging, and complete dependence on the trafficker. Finally, victims feel contrite, ashamed, stigmatized, and remorseful of the things they have been made to do [71].

PSYCHOLOGICAL AND MENTAL HEALTH CONSEQUENCES

Victims of trafficking experience a host of psychological, mental health, and emotional distress. Depression, suicidal ideation, substance use, and anxiety are typically cited mental health problems [23]. Post-traumatic stress disorder (PTSD) is also common given the trauma many victims experience, including physical and/or sexual violence and abuse; victims forced into prostitution experience continual, daily sexual assault [73]. In a study of 192 European women who were trafficked but who managed to escape, the overwhelming majority (95%) disclosed that they experienced physical and sexual violence during the time of their trafficked experience [74]. More than 90% reported sexual abuse, and 76% reported physical abuse.

Trafficked victims experience fear from the start of their capture through the transit phase and after they arrive at their destination. During the transit stage, many victims experience dangerous border crossings, risky types of transports, injury, beatings, and sexual assault [61]. Upon arrival to their destination, many trafficking victims have been socially isolated, held in confinement, and deprived of food [75]. All sense of security is stripped from them—their personal possessions, identity papers, passports, visas, and other documents [61; 75]. The continual fear for their personal safety and their families' safety and the perpetual threats of deportation ultimately breed a sense of loss of control and learned helplessness. It is not surprising that depression, anxiety, and PTSD are common symptoms experienced by trafficked victims.

In a study of 164 survivors of human trafficking who returned to Nepal, the authors examined the extent to which they experienced PTSD, depression, and anxiety [76]. All of the survivors experienced some level of these disorders, but the survivors who were trafficked for sex experienced higher levels of depression and PTSD compared to those who were not trafficked for sex. In a study with Moldovan survivors of human trafficking, researchers found that six months after their return, 54% had diagnosable mental health issue. Specifically, 35.8% met the diagnostic criteria for PTSD, 12.5% met the criteria for major depression, and 5.8% were diagnosed with an anxiety disorder [77].

There is also some evidence that trafficked victims may experience complex PTSD, a type of PTSD that involves an acute change of the victims' sense of self, their relationship with others, and their relationship with God or higher being [78]. These persons direct anger inwardly (toward themselves) in addition to toward their perpetrators, which results in a loss of faith in themselves and the world [63; 75; 78]. Perhaps due to self-directed anger and shame, some will engage in risky sexual behaviors, self-harm, and substance abuse. Some victims also have difficulty managing and expressing how they are feeling, while others experience dissociation [75].

Substance abuse is also common among victims. In interviews, trafficked women discussed how traffickers forced them to use substances like drugs and/or alcohol so they could work longer hours, take on more clients, and/or perform sexual acts that they could not normally [61]. Other victims used substances as a means to cope with their situations. Trafficked individuals who are gender and/or sexual minorities report shame, confusion, and sexual identity issues if forced into heterosexual relationships [63].

Children forced into labor experience grueling hours and are frequently beaten by their captors. According to Clawson and Goldblatt, underage victims of domestic sex trafficking fluctuate through a range of emotions from despair, shame, guilt, hopelessness, anxiety, and fear [79]. Depending upon the level of trauma, some engage in self-destructive behaviors like self-mutilation or suicide attempts. For some, their ambivalence toward the perpetrators may be confusing. On the one hand, they want to escape the abuse, yet simultaneously, they may have a sort of traumatic bond with the perpetrators [79].

Children forced into conscription will also experience a host of psychological symptoms. In a study comparing former Nepalese child soldiers and children who were never conscripted, former child soldiers experienced higher levels of depression, anxiety, PTSD, psychological difficulties, and functional impairments [80]. In another study of former child soldiers from the Congo and Uganda, one-third met the criteria for PTSD [43]. The researchers found there was a relationship between greater levels of PTSD symptoms and higher levels of feelings of revenge and lower levels of openness to reconciliation [43]. In-depth narrative interviews of former child soldiers from northern Uganda found that the children spoke of the violence and atrocities they witnessed without any emotion, as if they had removed themselves from their experiences [81]. This speaks to how the victims have to numb themselves psychologically in order to cope. The researchers also found that the children who lost their mothers were more traumatized by this experience than the violence they witnessed as soldiers.

Some have argued that the diagnostic criteria of PTSD may not be easily applied to those from different cultures. As a result, it is important to assess for other psychiatric disorders, such as depression. Japan, for example, never used the PTSD diagnosis prior to 1995, despite the fact that they have a large and intricate mental health system [82]. Ultimately, PTSD cannot be universally applied to every culture and for every humanitarian crisis; therefore, if a human trafficking victim does not necessarily fall within the Diagnostic and Statistical Manual of Mental Disorders criteria for PTSD, one cannot necessarily conclude that they have not experienced trauma or are not traumatized [82].

SOCIAL CONSEQUENCES

When rescued and attempting to reintegrate into their communities, victims of human trafficking often experience stigma, ostracism, and marginalization [80; 83]. For example, in Nepal, community members perceived returning child soldiers who had performed acts such as carrying dead bodies or coed sleeping as in violation of Hindu cultural norms [80]. One documentary following former child soldiers living in a refugee camp in northern Uganda found that preconceived notions and myths about child soldiers often led to ridicule and ostracism after they were liberated from the army and returned home.

However, girls who were recruited as soldiers, who were forced to have sex, or who return with children appear to be the most marginalized group [84]. In a qualitative study of former girl soldiers in Sierra Leone, researchers found that, compared to returning boy soldiers, girls were perceived to have violated gender norms and values about sexuality. Although psychologically and developmentally they were still children, the community perceived and treated them as "damaged" or "unclean" women. Their communities were not able to integrate them back in despite the victimization they experienced. These girls lacked voice and experienced shame, marginalization, poverty, and powerlessness upon their return [84]. In a study of former child soldiers in Uganda, the children reported having difficulty finding jobs or getting married when they returned home. Girls who had been raped were stigmatized and made to feel unwelcome in their communities. Others stated that their community perceived them as murderers [44].

HEALTH CONSEQUENCES

In studies of trafficked women, headaches, fatigue, dizziness, back pain, pelvic pain, stomach pain, sexually transmitted infections (STIs), unwanted pregnancies, and gynecologic infections were common, generally the result of continual physical, psychological, and sexual abuse [23; 74]. Victims of labor trafficking also experience health issues related to the type of work, workplace conditions, malnutrition, and violence [85]. It is important to remember that some of these somatic complaints, such as headaches, fatigue, and gastrointestinal problems, may be underlying symptoms of anxiety, depression, and stress [74]. Some cultural groups might not use the terms "depression," "sad," or "anxious," but may use metaphors and somatic symptoms to describe their pain, all of which are embedded within cultural ideologies. The most common culture-based idioms of distress are somatic symptoms. Some groups tend not to psychologize emotional problems; instead, they experience psychological conflicts as bodily sensations (e.g., headaches, bodily aches, gastrointestinal problems, and dizziness).

Using an in-depth, direct interview survey designed to explore each stage of the trafficking experience, a multi-country European study identified a range of aversive health, sexual, and reproductive consequences common among women and adolescent victims of human trafficking [61]:

- Pre-departure stage: All victims reported having had limited knowledge of the health implications of having sex with strangers, and only 1 in 25 felt well-informed regarding the risks of acquiring HIV or other STIs.
- Travel and transit stage: Half of those interviewed reported having been confined, beaten, and/or raped during the journey.
- Destination stage: A large majority reported having been "intentionally hurt" (as evidenced by contusions, lacerations, loss of consciousness, and signs of head trauma); subjected to solitary confinement and deprived of human contact and adequate food and nutrition; subject to a variety of physical ailments, including headache, fever, undiagnosed pelvic pain, urinary tract infection, STIs, rash/scabies, and oral/dental health issues. All had experienced repeated sexual abuse or coercion, and 1 in 4 reported at least one unintended pregnancy (often involving negative outcomes of abortions performed in unsafe and unhealthy conditions).

In the context of forced prostitution among trafficked victims, safeguards against infection (e.g., regular condom use), early diagnosis, and adequate antimicrobial treatment are inconsistently employed or absent entirely [61]. Consequently, in addition to unwanted pregnancy, the risk for pelvic inflammatory disease and subsequent infertility is relatively high. Moreover, the relationship between forced prostitution and HIV infection is stronger when sexual violence is involved. Women who are forced into prostitution are 11 times more likely to become HIV-infected than women who entered prostitution voluntarily [86]. Sexual violence may increase the transmission risk as a result of open abrasions and injuries to the vagina. Furthermore, sexual violence can negatively impact self-esteem, which could then deter victims from advocating more strongly for condom use [86].

The British Association for Sexual Health and HIV has identified trafficked women/commercial sex workers as a group vulnerable to sexual violence. Inquiries about such vulnerabilities will help to identify those in need of additional support and help to facilitate appropriate referrals to mental health services, general practitioners, and support agencies. Access to interpreter and advocacy services may be helpful.

(https://www.bashhguidelines.org/media/1079/4450.pdf. Last accessed August 24, 2022.)

Level of Evidence: Expert Opinion/Consensus Statement

Among child victims of human trafficking, healthy growth and development is especially problematic. Malnourishment and poor hygiene often lead to delayed bone growth, poorly formed teeth, and early dental caries [87]. The intense nature of child labor also has severe negative physical and health consequences. Children working in unsafe conditions without protection, such as in mines or mills, can lead to respiratory problems such as asthma and bronchitis [88]. A study of adult and child laborers on tobacco farms in Kazakhstan found that the workers were unaware that exposure to tobacco and pesticides could affect their health. Protective garments were also rare, with many children not even having gloves [89].

Under normal circumstances, young children are still developing physically; however, such adverse conditions can halt their development. The lungs of adolescent boys typically experience the most rapid growth around 13 to 17 years of age; working in conditions characterized by excessive toxic dust or unclean air makes them more vulnerable to developing silicosis and fibrosis [88]. In the United States, young children participating in agricultural work are at risk of the major traumas associated with farm work, such as injuries caused by tractors or falling from heights, in addition to those injuries associated with repetitive stress and exposure to toxins. Children have thinner layers of epidermis, which make them more vulnerable to the toxicity of pesticides, and this can ultimately increase their risks for certain cancers [88]. Children working in gold mines do intensive digging,

lifting, and transporting and mix mercury with the crushed ore, often with their bare hands. Mercury toxicity can lead to neurologic symptoms such as loss of vision, tremors, and memory loss [89].

IDENTIFICATION AND ASSESSMENT

Healthcare providers are often the most likely to encounter a victim of human trafficking under circumstances that provide an opportunity to intervene. Yet, many providers lack the training and confidence to identify and assist victims. In a survey of 110 emergency department physicians, nurses, and physician assistants, the majority (76%) reported having a knowledge of human trafficking, but only 13% felt equipped to identify a trafficking victim and only 22% were confident in their ability to provide satisfactory care for such patients [90]. Less than 3% had ever received any training on this topic. In a separate survey of healthcare and social service providers, only 37% had ever received training on identification of trafficking victims [91].

Because human trafficking and exploitation are, by nature, covert processes, the identification and rescue of the victim can be difficult. Traffickers move victims from one area to another to reduce the risk of identification, and one of the main problems with the assessment of such individuals is that practitioners may only have a one-time encounter with the victim [92; 119].

POTENTIAL RED FLAGS

Bruises, scars, and other signs of physical abuse may be missed on examination, as victims are often beaten in areas hidden by clothing (e.g., the lower back) so as not to affect the victim's outer appearance. Physical trauma symptoms may be present, commonly on the torso, breast, and/or genital areas [70]. Burns, broken bones, pelvic pain, and/or STIs (particularly in children) may also be red flags [93]. However, more common physical injuries are also typical with other circumstances, making physical exam of limited value. The entire clinical picture should be considered.

It may also be helpful to assess for tattoos and/or other modifications (e.g., branding, piercings). Some perpetrators use tattoos to identify victims or to signify "ownership" [56].

With regard to episodic clinical encounters, recommendations for providing safe assessments in a culturally sensitive manner are lacking. The U.S. Department of Homeland Security maintains a useful website that addresses practical issues of human trafficking for allied professional groups, known as the Blue Campaign [87]. Included are diagnostic and interviewing tips to help healthcare providers recognize, intervene, and refer trafficking victims. Emergency and primary care providers should be cognizant of clues that a patient may be the victim of trafficking and prepared to engage in greater depth of inquiry with special attention to the following indicators [87; 93; 94; 95; 119]:

- Does someone, other than family, who behaves in a controlling manner, accompany the patient? Traffickers attempt to guard and control most every aspect of the victim's life, while maintaining isolation from family, friends, and other common forms of human interaction.
- Are there inconsistencies in answers to basic questions (e.g., name, age, address)?
- Does the patient speak English? If not, has he or she recently been brought to this country, and from where? Many victims of human trafficking have recently been trafficked from other countries. As discussed, common sending countries/regions include Eastern Europe, Asia, Latin America, Africa, India, and Russia.
- If the patient is accompanied by someone other than a family member, who does the talking, and why? Attempt to interview and examine the patient separately and alone, using an interpreter if necessary. Probe in a sensitive manner for detailed information on the situation and relationship.
- Does the patient show signs of psychosocial stress (e.g., appears withdrawn, submissive, fearful, anxious, depressed)? Can the individual account for this?
- Are there visible signs of physical abuse (e.g., bruises, lacerations, scars)? How does the individual explain these?
- Does the patient lack a passport or other immigration and identification documentation (e.g., driver's license, social security number, visa)? If so, what explanation is given? To control victims' movements, traffickers often take away passports and any legal identification documents.
- What is the patient's home and work situation? Basic questions about what they eat, where they live and sleep, who else lives with them, and what work they do can be revealing. For example, "Can you leave your work or job situation if you wish?" or "When you are not working, can you come and go as you please?"
- Is the explanation given for the clinical visit consistent with the patient's presentation and clinical findings?
- Does the victim appear fearful when asked questions about citizenship, country of origin, immigration status, or residence? This may indicate a fear of deportation.
- If the victim is a minor, is s/he in school? Living with parents or relatives? If not, what reasons are given for these circumstances?

SCREENING QUESTIONS

Examples of questions to screen for human trafficking include [96; 97; 98]:

- Can you tell me about your living situation?
- Has anyone ever threatened you with violence if you attempted to leave?
- Does anyone force/require you to have sexual intercourse for your work?
- Has anyone ever threatened your family if you attempted to leave?
- Does anyone make you feel scared at work?
- Are you free to come and go as you wish?
- Does your home have bars on windows, blocked windows/doors, or security cameras?
- How many hours do you work?
- Have you ever worked without receiving payment you thought you would get?
- Do you owe your employer money?
- Do you have to ask permission to eat, sleep, use the bathroom, or go to the doctor?

The Polaris Project has developed a flow chart for the assessment of potential trafficking victims, available at https://humantraffickinghotline.org/sites/default/files/Assessment%20Tool%20-%20Medical%20Professionals.pdf. If a person is thought to be a victim, one should follow workplace protocols and/or contact the National Human Trafficking Hotline at (888) 373-7888 for next steps.

INTERVIEWING TRAFFICKED VICTIMS: BEST PRACTICE GUIDELINES

Service providers should repeatedly weigh the risks and benefits of various actions when interviewing human trafficking victims [65; 99; 100]. The following interviewing recommendations were published by the World Health Organization to encourage service providers to continually and ethically promote human trafficking victims' safety during every phase of the interviewing process [93; 101]:

- Each victim and trafficking situation should be treated as unique; there are no standard templates of experiences. Listen carefully to the victim's story. Each story told is unique, and each patient will voice distinctive concerns. Believe each story, no matter how incredible it may seem. As rapport and trust build (perhaps very slowly), accounts may become more extensive.
- Always be safe and assume the victim is at risk of physical, psychological, social, and legal harm.
- Evaluate the risks and benefits of interviewing before starting the interviewing process. The interviewing process should not invoke more distress. In other words, the interviewing process should not end up re-traumatizing the victim.
- Provide referrals for services where necessary; however, it is necessary to be realistic and not make promises that cannot be kept. Trust is vital because it has been severed on so many levels for trafficking victims.
- Victims' readiness to change will not be based on what societal defines as "ready" or social expectations. Some victims will eagerly grasp new opportunities, while others may be fearful of potential traffickers' threat and be less receptive to help.
- Determine the need for interpreters and if other service providers should be present during the interviewing phase. Ensure that everyone involved is adequately prepared in their knowledge about human trafficking, how perpetrators control their victims, and how to ask questions in a culturally sensitive manner. Keep in mind that often times, traffickers will offer to help with the interpreting. Using interpreters from the same community of the victim should be avoided to prevent breaches in confidentiality.
- All involved should be prepared for an emergency plan. For example, is there a set plan for a victim who indicates he/she is suicidal or in danger of being hurt?
- Always be sure to obtain informed consent. Remember the informed consent process is going to be unfamiliar to many victims. In addition, self-determination and autonomy have been compromised by continual threats and being forced to commit dehumanizing acts. Avoid using legal and technical jargon.

It is important to use a trauma-informed approach when assessing and caring for potential victims, which requires that practitioners understand the impact of trauma on all areas of an individual's life [102]. Physical, emotional, and psychological safety is at the heart of trauma-informed care. Providers should assume that human trafficking victims are describing their reality to the best of their ability, given the trauma they have experienced. Responses and behaviors (e.g., being guarded, defensive, belligerent) may be coping mechanisms [102].

REPORTING

If screening and assessment findings indicate that an individual may be a victim of human trafficking, one should contact the National Human Trafficking Hotline at 1-888-373-7888. A text telephone (TTY) option for people who are deaf, hard of hearing, or speech impaired can be accessed by dialing 711. Reporting by text is available by texting the National Human Trafficking Hotline at 233733. Online chat is also accessible at https://humantraffickinghotline.org.

The National Human Trafficking Hotline collects information about the location of the trafficking case and the name of the suspected trafficker. The hotline will also request non-personally identifying information, such as the city and state of the reporter and how he or she learned of the hotline; reporting can be done anonymously. Reporters and/or victims are only asked to provide information they feel comfortable sharing, and the hotline does not share information with external agencies unless permission is given or when required by law. Hotline calls are managed by anti-trafficking hotline advocates, who are specifically trained. After receiving a report of suspected human trafficking, the National Human Trafficking Hotline will assess each case individually to determine if a case should be reported to a local, state, or federal investigative and/or service agency equipped to investigate the tip and/or respond to the needs of the potential victim.

Under the child abuse laws, practitioners who are mandated reporters and who are suspicious that a minor is being abused should immediately report the abuse. Persons in Florida who know, or have reasonable cause to suspect, that a child is abused, neglected, or abandoned must immediately report such knowledge or suspicion to the Florida Abuse Hotline of the Department of Children and Families at 1-800-96-ABUSE (1-800-962-2873).

INTERVENTIONS AND RESOURCES

EDUCATION AND PREVENTION

Education is believed to be a key ingredient in the prevention of human trafficking. Raising awareness through advertisements, campaigns, and other creative vehicles regarding recruitment threats, the various deception techniques employed, the different forms of human trafficking, and the consequences of human trafficking can decrease the incidence [64; 103]. Because the general public often believes human trafficking is a problem that only occurs in developing countries, there is a clear need for public education about trafficking and safety for young children and women in and outside the United States [22]. The U.S. Department of Homeland Security provides brochures and posters about human trafficking through its Blue Campaign, which are available to be ordered (at no cost) from https://www.dhs.gov/blue-campaign/request-materials [87]. Posting these brochures or posters increases the possibility that a trafficked victim will self-report [100].

Education about human trafficking has become a higher international priority. Innovative and creative approaches are being implemented to disseminate information about human trafficking, particularly how perpetrators recruit high-risk groups (e.g., youths with disabilities, runaways) [67]. For example, groups have used street plays to educate communities about child labor dangers in India [104].

interactive activity

Watch a video produced by the ILO exploring the use of street plays to educate communities about child labor in India at https://www.netce.com/courseoverview.php?courseid=2424.

Although the topic of human trafficking has become more common in public discourse, service providers and law enforcement authorities remain under-educated about human trafficking. They are not sure what to look for, what to ask, and what to do if they do identify individuals who are victims of human trafficking [103]. Law enforcement officials require training to identify and assess potential victims at various borders and ports of entry. If a minor is accompanied by an adult who is not the child's parent or legal guardian, this should raise a red flag [103]. Furthermore, to work effectively to identify human trafficking victims, there is a need for service providers to navigate and collaborate with a complex host of government, social service, mental health, and nongovernment legal entities [103].

MENTAL HEALTH AND SOCIAL SERVICES

Care and services provided to victims can be organized into three distinct categories: immediate and concrete services at the time of rescue; services related to recovery; and long-term services pertaining to reintegration [105]. When trafficking victims are rescued, a great deal of counseling services and practical, day-to-day assistance will be required. Housing, transportation, food, clothing, medical care, dental care, financial assistance, educational training, reunification (for those who wish to return to their homeland), and legal aid are some of the concrete services needed [71]. Practitioners should connect, coordinate, and case manage these services as much as possible. During this stage, it is also important to understand victims' needs, their strengths, and their risks and vulnerabilities [75].

Safety planning is also crucial in the immediate rescue stage. Traffickers may be continuing to try to locate some victims; placing victims in safe houses may be necessary [63]. The National Human Trafficking Hotline encourages that safety planning be based on the unique needs and circumstances of the individual.

During the recovery and reintegration stages, as discussed, human trafficking victims experience an array of mental health and psychological issues. Mental health counseling is vital, but it is important to remember that the concept of counseling or talk therapy may be foreign to victims from non-Western cultures [65]. The expression of emotions may be in opposition to cultural values of emotional restraint, which can be intensified by feelings of shame and guilt resulting from experiences with sexual and physical assault. Beyond

the paramount importance of the practitioner gaining the patient's trust, practitioners may educate patients about the counseling process and explore their patients' expectations about counseling, healing, and recovery [106]. As noted, victims' symptoms may not only be a manifestation of the trauma but also coping mechanisms to cope with self-blame, shame, and trauma [56].

Given differing cultural beliefs about healing, it is crucial that practitioners be open to alternative treatment and explore with patients the use of traditional healing methods [65]. There are many indigenous healing interventions victims may be using, including cultural rituals, faith healing, therapeutic touch, herbal remedies, and spiritual practices [107]. These interventions are multi-layered, taking into account the physical, psychological, communal, and spiritual [107]. These healing methods are historically rooted in specific cultures, and therefore, practitioners should become familiar with traditional healing methods and how they can be integrated with Western counseling techniques [106]. For example, given many cultural groups' beliefs that unmarried girls are defiled if raped, a cultural cleansing ritual may be needed as a first step to help a community accept a returning victim who was sexually assaulted during her trafficking experience [30]. After this ritual is performed, it is possible that both the patient and her family may be more open to counseling and other services.

Other trauma interventions that might be beneficial include cognitive-behavioral therapies, eye movement and desensitization reprocessing therapies, mindfulness techniques, and expressive therapies [56; 63].

Physicians, social workers, nurses, therapists, and counselors must be familiar with legal, case management, educational, job and life skills training, and housing services in the community. Human trafficking victims are not only unfamiliar with navigating the social service system, but many are also not proficient in English. Therefore, practitioners will serve as coordinators and advocates, linking necessary services. In one study, the majority of agencies had to rely on collaboration in order to refer clients [108]. Social workers and practitioners relied on word-of-mouth and community meetings to learn about services in order to better meet the needs of human trafficking victims. Furthermore, because many community organizations and agencies are not familiar with human trafficking, practitioners must take a primary role in educating colleagues about the complex dynamics of human trafficking.

It is important to remember that the evidence supporting interventions and therapies for victims of human trafficking is in its infancy [105]. Most efficacy studies of therapies and interventions do not involve experimental designs, which makes it difficult to draw definitive conclusions regarding efficacy. Future work is needed to develop and evaluate interventions that address the multilayered and complex needs of human trafficking survivors.

interactive activity

For more information on how to identify and assist victims, watch the information video Labor Trafficking Awareness: Medical Clinic, produced by the Blue Campaign public awareness campaign, an initiative of the U.S. Department of Homeland Security, at https://www.dhs.gov/medialibrary/assets/video/21856.

ADVOCACY

Physicians, social workers, nurses, allied health professionals, counselors, and psychologists will find themselves in multiple roles when working with victims of human trafficking. Advocacy is one of these roles and involves the practitioner being an agent for change. This consists of engaging in activities that alter the social conditions at the individual, family, community, and institutional levels [109]. One way to advocate on behalf of human trafficking victims is by signing petitions or joining credible organizations concerned with changing the circumstances that lead to human trafficking. Many organizations have petitions established on their websites for individuals to persuade policymakers, legislators, and government officials to advocate for the protection of human trafficking victims, create greater awareness of the problem, and prosecute traffickers, including:

- https://www.freetheslaves.net
- https://polarisproject.org
- https://www.stopthetraffik.org

LAWS AND POLICIES

Justice for Victims of Trafficking Act

In 2015, the Justice for Victims of Trafficking Act (JVTA) became law, allowing survivors formal input in federal anti-trafficking policy and providing incentives for states to enact laws to prevent the prosecution of child victims for crimes committed as a direct result of being subjected to trafficking. The JVTA provides additional bases of criminal liability for those who patronize or solicit trafficking victims for commercial sex and creates a new offense prohibiting the advertising of sex trafficking activity. It also clarifies that traffickers in child sex trafficking cases who had a reasonable opportunity to observe the victim can no longer claim ignorance about a victim's age as a defense [24].

Victims of Trafficking and Violence Protection Act

A wide range of laws have been established to protect human trafficking victims and to prosecute perpetrators. A general knowledge of these laws is helpful when caring for victims and seeking appropriate social services. The TVPA was enacted in 2000 and reauthorized in 2003, 2005, 2008, 2013, and 2018

by the Trafficking Victims Protection Reauthorization Acts [24; 110]. It emphasizes the three Ps: prevention, protection, and prosecution [111]. The prevention component consists of training and awareness; the protection dimension gives trafficked victims the ability to receive services using federal funds like other refugees; and the prosecution component focuses on laws and policies for the prosecution of traffickers.

Because victims of trafficking are often viewed as criminals, this law states that victims of severe trafficking should not be penalized for any illegal behaviors or acts they engaged in as a result of being trafficked, including entering the United States with false documents or no documentation or working without appropriate paperwork [64]. This law also allows T Nonimmigrant Status (T visas) to be granted to victims of trafficking so they may remain in the United States with the purpose of collaborating with the federal authorities to prosecute the perpetrators. During this time, victims are offered a range of benefits and services, including access to the Witness Protection Program [64]. After three years, victims can apply for permanent resident status [16].

One of the criticisms of the Act is that it places the burden of demonstrating innocence and coercion on the victim [112]. The Act also fails to recognize the complex dynamics of human trafficking. For example, it focuses more on sex trafficking versus other forms [113]. Many victims have been abused and terrorized by the perpetrators, who they must now provide information and evidence against to stay in the country. Victims are continually fearful that they will be deported [112].

Victims who are of minor age are eligible for Unaccompanied Refugee Minors programs, the Children's Health Insurance program, and Temporary Assistance to Needy Families [103]. Furthermore, victims between 16 and 24 years of age are eligible for work permits and can apply for the Job Corps program [103]. However, it is important to remember that the key to this law is that the victim must have experienced a "severe form" of trafficking and the victim must be willing to assist in the apprehension and prosecution of the perpetrator to receive services [114].

Preventing Sex Trafficking and Strengthening Families Act

The Preventing Sex Trafficking and Strengthening Families Act was signed into law in 2014. In accordance with this law, child welfare agencies are required to monitor and report the number of child sex trafficking victims. Cases of suspected or known child sex trafficking must also be reported to law enforcement [37].

Trafficking Victims Protection Reauthorization Act

The Trafficking Victims Protection Reauthorization Act was introduced and signed into law in 2013. It allocated $5 million in 2009, $7 million in 2010, $7 million in 2011, $8 million annually through 2017, and $19.5 million (including $3.5 million annually for the National Human Trafficking Hotline) to provide services to victims and to prevent human trafficking [22; 110; 115; 116]. It amends the TVPA and assists foreign governments to implement programs to prevent human trafficking. Victims of human trafficking in other countries are also eligible for assistance through organizations that have grants from the U.S. government [115]. Greater monitoring of trafficking trends through databases will also be implemented. The Act also declares that it is not a defense that a defendant is not criminally liable or is subject to reduced criminal liability due to acceptance of the illicit conduct in the foreign jurisdiction.

The Prosecutorial Remedies and Other Tools to End the Exploitation of Children Today Act

The Prosecutorial Remedies and Other Tools to End the Exploitation of Children Today Act was enacted in 2003. This law maintains that all sexual activity with minors, within or outside the United States, is illegal. American citizens who engage in sex with minors in any country and who are caught will be prosecuted in the United States [64].

As of 2022, all 50 states have enacted criminal anti-trafficking laws. In addition, every state has a law on labor trafficking, and all have passed criminal statutes for sex trafficking [117].

SOAR to Health and Wellness Act

The SOAR (Stop, Observe, Ask, and Respond) to Health and Wellness Act was signed into law in 2018. It directs the Department of Health and Human Services to develop a program to train healthcare providers and practitioners to identify possible human trafficking victims, to work with law enforcement agencies, and to refer victims to services [7].

Florida House Bill 369

In 2015, The Florida Legislature passed House Bill 369, which mandates the display of a human trafficking public awareness sign in a wide range of locations, including [118]:

- Every public rest area, turnpike service plaza, weigh station, primary airport, passenger rail station, and welcome center in the state
- Emergency rooms at general acute care hospitals
- Strip clubs or other adult entertainment establishments
- A business or establishment that offers massage or bodywork services for compensation that is not owned by a healthcare professional

The sign must contain text, in both English and Spanish, regarding the steps to take if you or someone you know is the victim of trafficking, exploitation, and/or forced labor.

RESOURCES

For more information and to become involved in advocacy movements, please utilize the following resources. In some cases, the tools provided may be valuable for patient and/or peer training. In particular, the National Human Trafficking Hotline provides free, downloadable awareness materials for victims, first responders, and healthcare and mental health professionals, including a flyer available in 20 languages.

Alliance for Children in Trafficking
https://www.napnappartners.org/provider-public-resources

Coalition to Abolish Slavery & Trafficking
https://castla.org

Coalition Against Trafficking in Women
http://www.catwinternational.org

Futures Without Violence
https://www.futureswithoutviolence.org

HEAL Trafficking
https://healtrafficking.org

Human Rights Watch
https://www.hrw.org

International Justice Mission
https://www.ijm.org

International Labour Organization
https://www.ilo.org

Office of Refugee Resettlement
https://www.acf.hhs.gov/orr

National Human Trafficking Hotline
https://humantraffickinghotline.org

Polaris Project
https://polarisproject.org

Salvation Army
https://www.salvationarmyusa.org

Urban Justice Center
Sex Workers Project
https://swp.urbanjustice.org

U.S. Department of Health and Human Services
Administration for Children and Families
https://www.acf.hhs.gov

U.S. Department of Health and Human Services
Administration for Children and Families
SOAR to Health and Wellness Training
https://www.acf.hhs.gov/otip/training/soar-to-health-and-wellness-training

Services Available to Victims of Human Trafficking:
A Resource Guide for Social Service Providers
https://www.acf.hhs.gov/otip/training-technical-assistance/resource/services-available-victims-human-trafficking

U.S. Department of Homeland Security
Blue Campaign
https://www.dhs.gov/blue-campaign

U.S. Department of Justice
Bureau of Justice Assistance
https://www.bja.ojp.gov

U.S. Department of Justice
Office for Victims of Crime
https://ovc.ojp.gov

U.S. Department of Labor
Bureau of International Labor Affairs
https://www.dol.gov/agencies/ilab

U.S. Department of State
Office to Monitor and Combat Trafficking in Persons
https://www.state.gov/bureaus-offices/under-secretary-for-civilian-security-democracy-and-human-rights/office-to-monitor-and-combat-trafficking-in-persons

CONCLUSION

Human trafficking is a severe human rights violation. Because the roots of human trafficking are multifaceted, no one solution exists to eliminate this problem. Unfortunately, as the problem grows, practitioners will be confronted with the issue in their patient populations. Practitioners should be committed to the collaboration amongst disciplines to address poverty, racism, discrimination, and oppression in order to reduce the vulnerable positions of human trafficking victims and their families. Because of the social justice component in the codes of ethics of professionals such as physicians, nurses, social workers, psychologists, and counselors, all practitioners can play a key role in the individual, community, and systemic levels to help address this gross abuse of power. One way to begin is to educate oneself and one's respective disciplines about the global nature of human trafficking and the complex dynamics of the problem.

interactive activity

To view an excerpt of U.S. Vice President Kamala Harris's keynote address at Examining the Roots of Human Trafficking and Exploitation, the 2014–2015 UCLA School of Law Symposium, visit http://www.netce.com/coursecontent.php?courseid=2424.

FACULTY BIOGRAPHY

Alice Yick Flanagan, PhD, MSW, received her Master's in Social Work from Columbia University, School of Social Work. She has clinical experience in mental health in correctional settings, psychiatric hospitals, and community health centers. In 1997, she received her PhD from UCLA, School of Public Policy and Social Research. Dr. Yick Flanagan completed a year-long post-doctoral fellowship at Hunter College, School of Social Work in 1999. In that year she taught the course Research Methods and Violence Against Women to Masters degree students, as well as conducting qualitative research studies on death and dying in Chinese American families.

Previously acting as a faculty member at Capella University and Northcentral University, Dr. Yick Flanagan is currently a contributing faculty member at Walden University, School of Social Work, and a dissertation chair at Grand Canyon University, College of Doctoral Studies, working with Industrial Organizational Psychology doctoral students. She also serves as a consultant/subject matter expert for the New York City Board of Education and publishing companies for online curriculum development, developing practice MCAT questions in the area of psychology and sociology. Her research focus is on the area of culture and mental health in ethnic minority communities.

Customer Information/Answer Sheet insert located between pages 96–97.

COURSE TEST - #97111 RECOGNIZING AND REPORTING HUMAN TRAFFICKING IN FLORIDA

This is an open book test. Please record your responses on the Answer Sheet.
A passing grade of at least 70% must be achieved in order to receive credit for this course.

This 2 contact hour activity must be completed by August 31, 2025.

1. **The United Nations Office on Drugs and Crime divides the definition of human trafficking into three sections: the act, means, and purpose.**
   A) *True*
   B) *False*

2. **Domestic servitude refers to a category of domestic workers (usually female) who work as servants, housekeepers, maids, and/or caregivers, often in private homes.**
   A) *True*
   B) *False*

3. **Digital technology, such as the Internet, greatly inhibits sex trafficking.**
   A) *True*
   B) *False*

4. **Myths that certain races or ethnicities are more erotic and exotic do not affect sex trafficking patterns.**
   A) *True*
   B) *False*

5. **Developing a false romantic relationship with a victim is a method of recruitment used by human traffickers.**
   A) *True*
   B) *False*

6. **Post-traumatic stress disorder is uncommon among human trafficking victims.**
   A) *True*
   B) *False*

7. **Child laborers who work in agricultural fields might be more susceptible to certain cancers due to their rapid growth.**
   A) *True*
   B) *False*

8. **When interviewing a victim of human trafficking, it is important to assess if an interpreter is needed and ensure the interpreter is knowledgeable about the dynamics of human trafficking.**
   A) *True*
   B) *False*

9. **If a practitioner suspects an individual is a victim of human trafficking, he/she should contact the National Human Trafficking Hotline.**
   A) *True*
   B) *False*

10. **One of the criticisms of the Trafficking Victims Protection Act of 2000 is that it places the burden of demonstrating innocence and coercion on the victim.**
    A) *True*
    B) *False*

Be sure to transfer your answers to the Answer Sheet insert located between pages 96–97.
PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

Anxiety Disorders in Older Adults

Audience
This course is designed for the benefit of a broad range of allied health professionals, including but not limited to, nurses, physicians, medical assistants, and nursing home administrators.

Course Objective
Older adults are the fastest growing demographic in the world, and anxiety disorders are the most common mental disorder in this age group. The purpose of this course is to provide clinicians with the knowledge and skills necessary in order to improve the assessment and treatment of anxiety disorders in older adults.

Learning Objectives
Upon completion of this course, you should be able to:

1. Describe the history and neuroanatomy of anxiety and anxiety disorder.
2. Discuss the assessment and classification of anxiety disorders in older adults.
3. Analyze the epidemiology of anxiety disorders in elderly patients.
4. Describe the clinical implications of late-life anxiety disorders and their treatment.

Faculty
Beyon Miloyan, PhD, received his PhD in Psychology from the University of Queensland in 2015 for his thesis on late-life anxiety disorders. He completed his postdoctoral training in the Epidemiology and Biostatistics of Aging program at the Johns Hopkins University before taking a tenure-track position in the School of Psychology and Health Sciences at Federation University, Australia. Dr. Miloyan has published 30 peer-reviewed journal articles and book chapters and has been teaching since 2012. He has supervised 10 student theses at doctoral, Master's, and undergraduate levels and served as an ad hoc peer reviewer for various journals in the fields of psychology, psychiatry, and public health.

Faculty Disclosure
Contributing faculty, Beyon Miloyan, PhD, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

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INTRODUCTION

The first known clinical case description of an anxiety disorder appeared in the medical corpus of the Ancient Greek physician Hippocrates. The description tells of Nicanor, a man who developed an extreme fear of a "flute girl" whom he encountered one night at a drinking party and who haunted him every night for many years. Five hundred years after this case description, the Ancient Roman Stoic philosophers Seneca the Younger and Cicero addressed the topic of anxiety at length, recognizing both its benefits and harms, depending on the severity and circumstances of the anxiety [1]. These texts reveal a sophisticated understanding of fear and anxiety among these ancient authors, even by modern medical standards. It was not until the 19th century that Charles Darwin noted essential similarities in the expression of fear and anxiety in mammals, reinforcing Seneca's notion that fear and anxiety are ultimately adaptive traits [2]. In its normal state, anxiety facilitates the management of potential future hazards [3; 4; 5]. In its extreme state, the individual regards it as excessive or distressing or it can cause impairment in the individual's daily life, thus constituting a disorder [6; 7].

The analogy of a smoke detector demonstrates the adaptive and maladaptive aspects of anxiety [8; 9]. Just as the function of a smoke detector is to signal potential fires so that one can take action to prevent harm, the function of anxiety is to signal any potential hazards so that preventive actions can be taken. In this analogy, an anxiety disorder is an extreme that renders the individual more sensitive to threat signals [10]. Although those with higher anxiety experience more false alarms (signals for a threat that does not occur), this is advantageous to the extent that it reduces the risk of a fatal miss. In other words, the costs associated with false alarms and misses are not equal: over-reacting to non-threats is generally less costly than failing to detect one danger. Nonetheless, living in a chronic state of high anxiety can take a long-term toll on an individual's health and quality of life, and in these cases, intervention is warranted.

Age-related changes in anxiety can occur over the course of one's life, and understanding these changes is key to facilitating clinical detection and treatment, particularly among older adults, who are the largest and fastest-growing age demographic in the United States. This course begins by addressing the neuroanatomy of anxiety, followed by its classification and a review of commonly used methods of assessment. The course goes on to cover the epidemiology of anxiety disorders in older adults, including its prevalence, incidence, course, risk factors, and consequences. Finally, treatment considerations are addressed.

NEUROANATOMY

In 1949, the Nobel Prize in Medicine was awarded to António Egas Moniz for his discovery of "a simple operation, always safe, [and] which may prove to be an effective surgical treatment in certain cases of mental disorder" [11]. Specifically, Moniz discovered the prefrontal leukotomy as a treatment for mental disorders, including anxiety disorders [12]. Since then, studies have found that damage to the ventromedial prefrontal cortex produces resistance against anxiety and depression [13; 14; 15; 16]. Despite the effective reduction of anxiety in these patients, it took many decades until research began to address the harms imposed by damage to the prefrontal cortex. For example, in addition to reducing anxiety, damage to the ventromedial prefrontal cortex also impairs self-regulation and decision-making and can induce sociopathic behaviors [17; 18; 19; 20; 21]. Similar patterns of anxiety reduction were also observed in one patient with focal bilateral lesions to the amygdalae who showed a similar pattern of impairment in her daily life as those with damage to the prefrontal cortex [22]. Although the prefrontal cortex and amygdala are critical structures in a neural network that is necessary for anxiety, these findings highlight the fact that damage to these structures comes with unintended consequences. These findings also highlight the more general point that, in treating anxiety disorders, it is also important to not abolish otherwise useful traits as it is to reduce the anxiety to a manageable level.

CLASSIFICATION

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) sub-classifies anxiety disorders into panic disorder, agoraphobia, specific phobia, social anxiety disorder, and generalized anxiety disorder (GAD) [6]. In the following sections, each of these subtypes are described, including the relevant criteria for diagnosis and a description of age-related differences in symptom patterns. The most frequently reported symptom(s) for each disorder in older adults are based on data from the National Epidemiological Survey on Alcohol and Related Conditions (NESARC).

PANIC DISORDER AND AGORAPHOBIA

Panic disorder is characterized by the occurrence of panic attacks. Panic attacks are defined as sudden, unexpected, and brief onsets of terror, accompanied by at least four of the following symptoms: sweating, trembling, chest pain, dizziness, nausea, chills or hot flashes, numbness or tingling, shortness of breath or choking, a feeling of loss of control, desensitization, or a fear of death. In order to be classified as panic disorder, the DSM requires such panic attacks to be accompanied by a period of at least one month in which the individual also fears the possibility of a future panic attack [6]. Two main subtypes of panic disorder have been observed, diverging between individuals with respiratory and non-respiratory symptoms [23; 24; 25]. Determining the subtype may be informative for treatment purposes. Older adults with panic disorder experience fewer symptoms of panic compared with younger adults, and their panic attacks are also reported to be less intense and shorter in duration [26; 27; 28; 29].

Agoraphobia is characterized by a fear or avoidance of situations from which escape is difficult. The diagnosis requires a fear or avoidance of two or more of the following specific situations: public transportation, open spaces, closed spaces, crowds, or being alone in public. Although the presence of these fears is also associated with panic disorder and specific phobia, a distinguishing factor of agoraphobia is defined by the frequency of the aforementioned fears. Individuals with greater and more frequent occurrences of these fears tend to be classified as having agoraphobia [30].

Table 1 displays the most commonly reported panic symptoms among older adults (55 years of age and older) with a diagnosis of panic disorder (with or without agoraphobia). The total percentage of each symptom is displayed. The prevalence of panic disorder in this sample was 1.2% (95% confidence interval [CI]: 1.0–1.5).

SPECIFIC PHOBIA

The central feature of specific phobia is the fear or avoidance of specific objects or situations. These include, but are not limited to, animals (e.g., snakes or insects), the natural environment (e.g., storms, water, or heights), situations (e.g., typically closed or open spaces), and blood, injections, or injury. A diagnosis of specific phobia requires the individual to recognize that the fear or avoidance is unreasonable and to regard it as distressing or interfering with their everyday life. The most common fears reported by adults involve animals, heights, and flying [32; 33; 34]. However, older adults frequently report situational fears [35]. Individuals who report having at least one specific fear are likely to report having other fears [33; 36].

Table 2 displays the most commonly reported specific fears among older adults (55 years of age and older) with a diagnosis of specific phobia. The prevalence of specific phobia in this sample was 5.5% (95% CI: 5.0–6.0).

SOCIAL ANXIETY DISORDER

The core feature of social anxiety disorder is the fear or avoidance of social situations. The fear or avoidance concerns the possibility of negative judgment by others (e.g., resulting in embarrassment or humiliation). Social anxiety may pertain to particular types of social settings or situations, such as small or large group settings, or the anxiety may generalize to a variety of social situations. Older adults endorse fewer social anxiety symptoms relative to younger adults [37]. The most common social fears among older adults include public speaking or being confronted or criticized by others, while

PREVALENCE OF PANIC SYMPTOMS AMONG OLDER ADULTS WITH PANIC DISORDER			
Symptom	**Age Groups**		
	55 to 64 Years	**65 Years and Older**	**55 Years and Older**
Shortness of breath	82%	85%	83%
Heart racing/pounding	91%	82%	88%
Trembling/shaking	73%	69%	72%
Perspiring/sweating	75%	65%	72%
Felt as if choking	45%	57%	50%
Dizzy/lightheaded	74%	74%	74%
Things seemed unreal	61%	56%	59%
Tingling/numbness	57%	50%	54%
Flushes/hot flashes/chills	71%	53%	64%
Nauseous/upset stomach	50%	56%	53%
Pain/pressure in chest	63%	56%	60%
Going crazy/losing control	63%	61%	62%
Felt might die	58%	64%	60%
Source: [31]			*Table 1*

PREVALENCE OF SPECIFIC FEARS AMONG OLDER ADULTS WITH SPECIFIC PHOBIA				
Object of Fear/ Avoidance	**Age Groups**			
	55 to 64 Years	**65 to 74 Years**	**75 Years and Older**	**55 Years and Older**
Animals	57%	56%	62%	58%
Heights	53%	60%	49%	55%
Storms	26%	30%	45%	31%
Being in/on water	31%	41%	45%	37%
Flying	35%	36%	33%	35%
Crowds/lines	13%	12%	23%	15%
Closed spaces	40%	38%	41%	40%
Blood/injections	16%	11%	17%	15%
Public transportation	9%	6%	7%	7%
Going to the dentist	31%	32%	27%	30%
Hospitals	15%	12%	17%	15%
Source: [31]				*Table 2*

PREVALENCE OF SOCIAL ANXIETY SYMPTOMS AMONG OLDER ADULTS WITH SOCIAL ANXIETY DISORDER			
Symptom	**Age Groups**		
	55 to 64 Years	**65 Years and Older**	**55 Years and Older**
Social situations made you nervous	81%	85%	83%
Social situations made you upset/anxious	93%	93%	93%
Endured social situations that frightened you	88%	85%	87%
Avoided social situations out of strong fear	82%	72%	77%
More frightened in social situations than most people	80%	76%	78%
Thought fear of social situations stronger than it should be	92%	89%	90%
Had a panic attack in social situations	22%	8%	15%
Frightened of social situations out of fear of panic attack	16%	8%	12%
Remained in social situation despite fear of panic attack	20%	11%	15%
Source: [31]			*Table 3*

discomfort with and avoidance of social situations and experiencing anxiety when thinking about social situations appears equally common to both younger and older adults [37; 38].

Table 3 displays the most commonly reported social fears among older adults (55 years of age and older) with a diagnosis of social anxiety disorder. The prevalence of social anxiety disorder in this sample was 2.0% (95% CI: 1.7–2.3).

GENERALIZED ANXIETY DISORDER

The central feature of GAD is intrusive worry, defined as repetitive thinking about potentially harmful future events. Worries generally pertain to everyday concerns and involve attempts to minimize the likelihood or consequences of disadvantageous outcomes. Although some degree of worry is recognized as helpful, when the individual reports experiences of excessive and uncontrollable worry for a period of six months or more, this constitutes a diagnosis of GAD if, and only if, the worry is also regarded by the individual as causing distress or impairment [39]. Age-related reductions in worry frequency have been observed in older adult samples from the United States, United Kingdom, Canada, and Australia [40; 41; 42; 43; 44; 45; 46]. There are also age-related differences in the subjects of individuals' worries. For example, for younger adults, common worries concern work, finances, and personal relationships. For older adults, these concerns give way to worries about personal health and the health and welfare of loved ones [41; 44; 46]. These "world issue" worries typically focus outwardly on problems that could be faced by future generations, which may be of particular relevance during this developmental life stage [43]. In fact, late-life developmental transitions have been associated with other context-specific worries, such as concerns of becoming a burden after transitioning out of a primary caregiver role and into retirement [47; 48]. Caregiving, too, can be a significant source of worry, anxiety, and distress in later life [49; 50; 51]. Older adults who report financial worries tend to be concerned about receiving care and about their own capacity to make decisions [52]. However, despite the observation that older adults with GAD tend to endorse a greater variety of worries than matched non-GAD controls, there are fewer differences in the experience of worry between older adults with and without GAD than there are between younger adults with and without GAD [53; 54]. In essence, the expression of worry may vary significantly as a function of the developmental stage of the individual, with older adults endorsing worries commensurate with their changing life circumstances [55].

Table 4 displays the most commonly reported generalized anxiety disorder symptoms among older adults (55 years of age and older) with a diagnosis of GAD. The prevalence of GAD in this sample was 2.0% (95% CI: 1.7–2.3).

PREVALENCE OF GENERALIZED ANXIETY DISORDER SYMPTOMS AMONG OLDER ADULTS WITH GENERALIZED ANXIETY DISORDER			
Symptom	**Age Groups**		
	55 to 64 Years	**65 Years and Older**	**55 Years and Older**
Worry a lot about things you usually didn't worry about?	83%	72%	78%
Ever think your worrying was excessive?	56%	47%	52%
Often got tired easily	83%	81%	82%
Often had tense, sore, aching muscles	76%	67%	71%
Became so restless you paced, fidgeted, or could not sit still	62%	55%	58%
Often felt keyed up or on edge	82%	78%	80%
Often had trouble concentrating	83%	83%	83%
Often felt irritable	80%	62%	71%
Often had trouble falling/staying asleep	77%	72%	74%
Often forgot what you were talking about/ mind went blank	75%	66%	70%
Often felt heart racing, skipping, or pounding in chest	59%	45%	52%
Often perspired/sweated	50%	35%	43%
Often had cold and clammy hands	44%	27%	36%
Often had dry mouth	58%	49%	54%
Often felt dizzy/lightheaded/like might faint	48%	53%	50%
Often felt nauseous	54%	34%	45%
Often urinated frequently	54%	47%	51%
Often had trouble swallowing/felt like lump in throat	37%	34%	35%
Often had pain/pressure in chest	40%	31%	36%
Often trembled/shook	34%	39%	36%
Often had trouble catching breath/felt like smothering	43%	33%	39%
Source: [31]			*Table 4*

ASSESSMENT

STRUCTURED AND SEMI-STRUCTURED INTERVIEWS

The standard procedure for anxiety disorder assessment is the structured diagnostic interview, which is administered by a trained professional. The structured interview consists of pre-determined questions that assess for relevant symptoms based on diagnostic criteria. For example, an interview for GAD would start by asking the individual questions about the presence of worry symptoms over the past six months. If the interviewee answers this question affirmatively, the interviewer would then ask the individual about the presence of secondary symptoms associated with the worry (e.g., sleep, irritability). If the individual responds affirmatively to the minimum number of secondary symptoms required for a diagnosis of GAD, the individual would then be queried about the presence of distress or impairment due to the worry. The key advantage of the structured interview is its standardized administration, procedure, and scoring, which minimize bias and error in assessment. Two commonly used structured interviews for the assessment of mental disorders are the Diagnostic Interview Schedule (DIS) and the Composite International Diagnostic Interview (CIDI) [56;

57]. In addition, the Anxiety Disorders Interview Schedule (ADIS) is a structured diagnostic interview that was developed specifically for anxiety disorder assessment [58]. These interviews are regularly updated along with diagnostic criteria, as for example with new editions of the DSM. Structured interviews rely essentially on self-report; in addition to being administered by clinicians, they may also be conducted by trained lay persons and/or computer-assisted technology (as in epidemiologic surveys).

The examination modality of assessment contrasts with the interview technique in that the person conducting the assessment, typically a trained clinician, decides about the presence or absence of a symptom instead of relying on the report of the individual. The Structured Clinical Interview for the DSM (SCID) and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN) are examples of semi-structured interviews/examinations that allow the clinician to take a more flexible approach to the interview while retaining some degree of structure [59; 60]. Structured interviews and semi-structured examinations are not always practical to use because they are time-consuming to administer. Nonetheless, they are essential for validating briefer, easier to administer, and more widely used questionnaires and screening tools for use in particular contexts.

As a result of the evolving racial and immigration demographics in the United States, interaction with patients for whom English is not a native language is inevitable. Because diagnosing anxiety disorders is reliant on good communication, it is each practitioner's responsibility to ensure that interviews and assessments are conducted in such a way that allows for patient understanding. When there is an obvious disconnect in the communication process between the practitioner and patient due to the patient's lack of proficiency in the English language, an interpreter is required.

Mental health professionals should consider undertaking a language needs analysis for the service population and consider how to best meet identified needs. If possible, 10 to 15 minutes should be reserved in advance of sessions to brief the interpreter about the purpose of the meeting and to enable them to explain any cultural issues that may have bearing on the session.

RATING SCALES

Generalized Anxiety Disorder

The Generalized Anxiety Disorder 7-item (GAD-7) scale is a brief, self-administered screening instrument for use in medical settings. The scale assesses for symptoms occurring over the previous two weeks of the respondent's life [61; 62]. Each item is rated on a four-point scale (0 to 3) yielding a maximum score of 21. A score of 10 or greater indicates a probable diagnosis of GAD based on validation against the psychiatrist-administered SCID [62]. There is also a shorter, two-item version called the GAD-2. The GAD-7 (along with scoring instructions) can be accessed online at https://adaa.org/sites/default/files/GAD-7_Anxiety-updated_0.pdf. The GAD-2 consists of only the first two items of the GAD-7, with scores of 3 or greater indicating clinically significant anxiety symptoms [63].

Panic Disorder

The Panic Disorder Severity Scale (PDSS) is a brief, self-administered screening instrument [64]. There are seven items, each rated on a five-point scale (0 to 4) yielding a maximum score of 28. A score of eight or greater indicates a probable diagnosis of panic disorder based on validation against the ADIS or the psychiatrist-administered SCID [65]. The PDSS and scoring instructions can be accessed online at http://www.goodmedicine.org.uk/files/panic,%20assessment%20pdss.pdf.

Social Anxiety Disorder

The Social Phobia Inventory (SPIN) is a self-administered screening instrument [66]. There are 17 items, each rated on a five-point scale (0 to 4), yielding a total score of 68. A score of 19 or greater indicates a probable diagnosis of social anxiety disorder. There also a shorter, three-item version called the Mini-SPIN [67; 68]. The SPIN and its scoring instructions can be accessed online at http://www.goodmedicine.org.uk/files/social%20anxiety,%20assessment%20spin.full_.tahoma_0.pdf.

Specific Phobia/Agoraphobia

There are currently no validated rating scales for the assessment of specific phobia or agoraphobia. However, screening for specific phobia is simpler than for other anxiety subtypes. The clinician starts by assessing whether the individual has a fear or avoidance of any specific stimulus or situation. If the individual answers affirmatively, then the clinician assesses whether the fear/avoidance is regarded as excessive or unreasonable and whether it interferes with the individual's life. Both criteria must be met for a patient to screen positive.

General (Transdiagnostic) Anxiety Screening

The Overall Anxiety Severity and Impairment Scale (OASIS) is a brief, transdiagnostic screening tool designed to assess for the severity of anxiety in the past week of the individual's life [69]. There are five items, each rated on a five-point scale (0 to 4), yielding a total possible score of 20. A raw score of 8 or greater indicates the presence of anxiety disorder based on validation against anxiety disorder diagnosis using the psychiatrist-administered SCID [70]. Raw scores of 10 and 12 indicate the presence of marked and severe anxiety, respectively, based on validation against the clinician-rated Clinical Global Impression-Severity (CGI-S) scale in a sample of individuals with any anxiety disorder ascertained using the Mini International Neuropsychiatric Interview (MINI) [71].

Scales for Older Adult/Geriatric Use

The Geriatric Anxiety Inventory (GAI) is a 20-item questionnaire designed specifically for older adults (65 years of age and older) [72; 73]. It is a self-report or clinician-administered measure, with each item rated on a binary response scale (agree/disagree), for a total score of 20. Scores of 10 or greater indicate a probable diagnosis of anxiety disorder. The GAI has been translated to more than 20 languages. The GAI has also been validated in clinical and non-clinical samples and in those with cognitive impairment and Parkinson disease [74; 75; 76]. There is also a five-item version called the Geriatric Anxiety Inventory-Short Form (GAI-SF) [77]. Both versions can be accessed online at http://gai.net.au.

The Geriatric Anxiety Scale (GAS) is a self-report questionnaire designed for use among adults 65 years of age and older [78]. The GAS contains 30 items, of which only 25 are used to derive a total score. The remaining five questions are used to help the clinician identify areas of concern for the respondent. Each item is rated on a four-point scale (from 0 to 3), yielding a total score of 100. The GAS consists of three sub-scales assessing somatic (9 items, total possible score: 36), cognitive (8 items, total possible score: 32), and affective (8 items, total possible score: 32) symptoms. There is also a shorter, 10-item version called the GAS-10 [79]. The standard GAS can be accessed at https://gerocentral.org/wp-content/uploads/2013/03/Geriatric-Anxiety-Scale-v2.0_FINAL.pdf, and the GAS-10 can be accessed at https://gerocentral.org/wp-content/uploads/2013/03/GAS-10-item-version-2015-1-15.pdf.

Assessment Implications

Compared with younger adults, older adults report fewer and less concrete anxiety symptoms across anxiety subtypes [40; 41; 42; 43; 45]. In addition to this, age-related neurocognitive impairment makes self-reporting a more difficult method of assessment [55]. For example, those with memory impairment can experience stressors that evoke negative effects without leaving memory traces [22; 80]. Although informant report can be a way of effectively gathering information about observable (e.g., physical) symptoms, it is ineffective for identifying unobservable (i.e., subjective) symptoms [81].

EPIDEMIOLOGY

This section addresses the epidemiology of anxiety disorders in older adults, which focuses on the occurrence, determinants, and course and consequences of anxiety disorders in the population. The focus is on the U.S. population, using data from nationally representative surveys. The section begins by addressing the occurrence of anxiety disorders by describing their prevalence and incidence. It then addresses the course and consequences of anxiety disorder, which includes their chronicity, persistence, and comorbidity. Finally, the determinants of anxiety disorders are explored by focusing on risk factors.

PREVALENCE

Prevalence is an estimate of the percent of individuals in the population who meet diagnostic criteria for anxiety disorder, either overall or by subtype. While lifetime prevalence estimates are concerned with the presence of anxiety disorders within the lifetime of individuals, these estimates are typically unreliable because they require respondents to recall prior episodes of anxiety and associated symptoms [82]. Estimating lifetime prevalence in older adults is particularly unreliable, due to general age-related memory deficits [83]. In contrast to lifetime prevalence, period prevalence estimates focus on the presence of anxiety disorder within a given timeframe, typically 12 months. The data in this section are one-year prevalence estimates of anxiety disorder (i.e., whether anxiety disorders were present or absent in the past year of respondents' lives) in nationally representative samples of the U.S. population.

Anxiety disorders are the most prevalent mental disorders in older adults [54; 84]. The most prevalent subtypes are, in descending order, specific phobia, GAD, social anxiety disorder, and panic disorder. ***Table 5*** displays the one-year prevalence of anxiety disorders, both overall and by subtype, in the NESARC and the Collaborative Psychiatric Epidemiology Surveys (CPES) of the United States. The prevalence of anxiety disorders is higher among women relative to men, and the prevalence of all anxiety subtypes decreases among persons 75 years of age or older. Previous studies have also reported ethnic differences in prevalence, such that Native and White Americans have the highest prevalence, and Hispanic and Asian Americans have the lowest prevalence of anxiety disorders [85]. Black Americans have a higher or lower prevalence of anxiety disorders depending on subtype; specific phobias and GAD are more prevalent, comparable to Native and White Americans, whereas panic disorder and social anxiety disorder are less prevalent, closer to levels observed in Hispanic and Asian Americans. The prevalence of anxiety disorders does not vary substantially by educational attainment or marital status.

INCIDENCE

The incidence of a disease is defined as the rate at which new cases occur. In contrast to prevalence estimates, which are based on single diagnostic assessments, incidence estimates require at least two diagnostic assessments. The reason for this is that anyone meeting criteria for an anxiety disorder at any time is counted as a case for the purpose of prevalence estimation, whereas only those individuals who did not have anxiety disorder at time one and who went on to be diagnosed with anxiety disorder at time two are counted as cases for the purpose of incidence estimation, showing that the individuals represent new occurrences of the disorder. The individuals

ONE-YEAR PREVALENCE OF ANXIETY DISORDER AMONG ADULTS 55 YEARS OF AGE AND OLDER IN TWO NATIONAL SAMPLES

Population	Specific Phobia		Social Anxiety Disorder		Generalized Anxiety Disorder		Panic Disorder		Any Anxiety Disorder	
	NESARC	CPES[a]	NESARC	CPES	NESARC	CPES	NESARC	CPES	NESARC	CPES[b]
Total	5%	6%	2%	3%	1%	3%	1%	2%	9%	6%
Age (years)										
55–64	6%	8%	3%	5%	2%	4%	2%	2%	11%	9%
65–74	5%	5%	2%	3%	1%	2%	1%	1%	8%	4%
75+	3%	4%	1%	1%	1%	15%	1%	2%	6%	4%
Sex										
Male	4%	4%	2%	2%	1%	2%	1%	1%	6%	5%
Female	7%	7%	2%	4%	2%	3%	2%	2%	11%	7%
Education										
Less than high school	6%	10%	3%	4%	2%	3%	2%	2%	9%	7%
Completed high school	6%	5%	2%	3%	1%	2%	1%	1%	9%	5%
Some college	6%	6%	2%	3%	2%	4%	1%	2%	9%	9%
Bachelor's degree	4%	4%	1%	2%	1%	2%	1%	1%	7%	5%
Marital status										
Married or cohabiting	5%	5%	2%	2%	1%	2%	1%	1%	8%	4%
Widowed, divorced or separated	6%	8%	2%	5%	2%	4%	2%	2%	10%	9%
Never married	5%	7%	2%	6%	2%	2%	1%	2%	9%	7%

[a]Specific phobia was assessed in a sub-sample of 9,282 respondents from the NCS-R.
[b]Specific phobia was not included in the overall anxiety disorder estimate for the CPES.

Source: [31; 84] *Table 5*

at time one who do not meet criteria for an anxiety disorder are the "risk set" and form the denominator of the incidence ratio, and the individuals at time two or later who meet criteria for an anxiety disorder form the numerator over the period in which the diagnostic assessments were made.

Just as the prevalence of anxiety disorder is higher in older adults than other mental disorders, so too is the incidence, or the rate of newly diagnosed cases [86]. The subtypes with the highest incidence, in descending order, are specific phobia, social anxiety disorder, panic disorder, agoraphobia, and GAD [87; 88]. Data from the Epidemiologic Catchment Area (ECA) study and National Comorbidity Survey (NCS) in the United States, and the Netherlands Mental Health Survey and Incidence Study (NEMESIS) indicate that women have a higher incidence than men [88; 89]. Although anxiety disorder often peaks in young adulthood, there is a smaller but important second peak that occurs in older adulthood [88; 89].

COURSE

The chronicity of a disease refers to its persistence. Persistence is defined here as the percentage of respondents who meet diagnostic criteria for an anxiety disorder at baseline and who then meet criteria again at follow-up. Data from the NESARC indicate that approximately 30% of older adults (55 years of age and older) have persistent cases of anxiety disorder, or chronicity, assessed over a three-year follow-up period. The most persistent subtypes were specific phobia (25%) and GAD (20%), followed by social anxiety disorder (16%) and panic disorder (10%) [31].

There is high co-occurrence between anxiety and other mental disorders, particularly major depression [90; 92; 93]. Panic disorder and GAD have a particularly high comorbidity with mood and substance use disorders in adults [94]. Specific phobia has a strong association with social anxiety disorder and depression [95]. Finally, there are strong associations between social anxiety disorder, GAD, and bipolar disorder [91]. These patterns generally persist among older adults [54]. Anxiety subtypes also have high degrees of overlap [91; 94; 95].

EVIDENCE-BASED PRACTICE RECOMMENDATION

When assessing an adult with possible social anxiety disorder, the National Collaborating Centre for Mental Health recommends that clinicians be aware of comorbid disorders, including avoidant personality disorder, alcohol and substance misuse, mood disorders, other anxiety disorders, psychosis, and autism.

(https://www.nice.org.uk/guidance/cg159/resources/social-anxiety-disorder-recognition-assessment-and-treatment-pdf-35109639699397. Last accessed February 17, 2022.)

Level of Evidence: Expert Opinion/Consensus Statement

Data from the NCS suggest that anxiety disorders are also associated with various physical conditions [96]. While panic attacks are associated with vascular conditions, specific phobias are linked with respiratory conditions, and social anxiety disorder with metabolic conditions. Among older adults, there are high rates of anxiety disorders in individuals who have chronic obstructive pulmonary disease (COPD) and/or cardiovascular diseases [35; 97]. The Baltimore ECA study reports an association between blood-injection phobia and vascular complications among individuals with diabetes, which suggests the possibility that fear of blood and injections may interfere with medical treatment [98]. Blood-injection phobia is also associated with respiratory conditions, similar to the data on overall phobias in the NCS sample [99]. The prevalence of blood-injection phobia ranges from 4% to 8% in older adults [36; 100].

CONSEQUENCES

As discussed, anxiety is diagnosed as a disorder only when it is deemed by the individual to be a cause of distress and/or to interfere with daily life. In the NEMESIS study, those with anxiety disorder at baseline had more suicidal ideation and suicide attempts at three-year follow-up, after adjustment for demographic characteristics and past history of mental disorders [101]. Similar associations were observed in cross-sectional studies of the NESARC and NCS-R samples of adults residing in the United States [102].

Importantly, the findings of a 2016 systematic review and meta-analysis of prospective, longitudinal studies suggest that a diagnosis of any anxiety disorder at baseline is not associated with increased risk of all-cause mortality at follow-up [5]. In fact, in a population study of Norwegians, high anxiety symptoms were associated with lower mortality among individuals with depression [103]. In a population study of a 1946 UK birth cohort, individuals who demonstrated lower levels of trait anxiety in adolescence were associated with higher risk of accident mortality at follow-up [104]. Thus, low anxiety (but not high anxiety) is associated with increased mortality risk, and some degree of anxiety is beneficial for survival. Some anxiety likely encourages individuals to engage in preventive health behaviors. For example, women who worry about the possibility of breast cancer are more likely to seek routine screenings, people who are more worry-prone are more likely to vaccinate than those who worry less, and smokers with higher worries about their health have been found to be more likely to quit [105; 106; 107].

RISK FACTORS, RISK ASSESSMENT, AND PREVENTION

The two strongest risk factors for anxiety disorders among older adults are female sex and younger age [84; 108; 109]. However, other risk factors have also been identified. Cigarette smoking is shown to be a major risk factor of anxiety disorder onset, while smoking cessation is associated with reduced anxiety, suggesting that smoking interventions would have a significant effect on anxiety disorder onset [110; 111]. Another important risk factor of anxiety disorder onset in longitudinal studies is the occurrence of adverse life events, such as the ending of a relationship or the injury, illness, or death of a loved one [112; 113; 114].

The presence of adverse events at baseline is associated with an increased risk of overall anxiety disorder onset in older adults. In addition to female sex, history of any mood disorder, and cigarette smoking at baseline, lower levels of educational achievement are associated with higher risk of anxiety disorder onset at follow-up. Although previous studies have reported that excessive anxiety may be a result of licit or illicit substance use or abuse, this has not been replicated in more recent analyses [115; 116; 117]. The association between anxiety disorder and increased substance abuse (including prescription medication) observed in prior studies has been interpreted as evidence of self-medication for emotional distress [118; 119; 120]. A 2019 study assessed the longitudinal association of baseline social anxiety disorder and incident alcohol use disorder at 3- and 10-year follow-up periods in two national samples and did not find evidence of an association between social anxiety and self-medication with alcohol [121].

The prevalence of anxiety disorder is substantially higher in medical versus community settings, and there is a particularly high prevalence of anxiety disorder in individuals with Parkinson disease and among caregivers of older adults [51; 61; 122; 123; 124; 125]. Studies have demonstrated that, in part, the psychological distress (e.g., anxiety and depression) experienced by caregivers is linked to their patients' overall cognitive well-being, patient functional ability, and the reported caregiver burden [126; 127; 128; 129].

TREATMENT

This section will review the available evidence base for the treatment of anxiety disorders. First, preference is given to systematic reviews and network meta-analyses in the general population. However, individual studies are also used in discussion of specific phobia due to a lack of more rigorous research.

PANIC DISORDER

A 2016 network meta-analysis of 54 intervention studies assessed the effectiveness of eight methods of psychological interventions for treating panic disorder with or without agoraphobia [130]. These interventions included [130]:

- Psychoeducation
- Supportive psychotherapy
- Physiological therapies
- Behavior therapy
- Cognitive therapy
- Cognitive behavioral therapy (CBT)
- Third-wave CBT
- Psychodynamic therapies

Researchers found that not one of these treatments was supported as being more efficacious than the others, although any psychological treatment was generally mildly efficacious in comparison with a wait-list control condition [130]. In a subsequent study, the same investigators assessed whether particular components of CBT were associated with better responses to treatment. They reported that face-to-face administration (as compared to self-help) and graded interoceptive exposure to the physiological aspects of the panic response are the most effective features of CBT for treating panic disorder, although it is important to note that the principle of totality applies: the whole of a treatment is more than the sum of its parts [131]. Individual studies addressing treatments for late-life panic disorder have found that both psychological and pharmacological interventions tend to be less efficacious for older adults compared with younger adults [132].

SOCIAL ANXIETY DISORDER

A systematic review and network meta-analysis compared the effectiveness of seven classes of psychological interventions, five classes of pharmacological interventions, and three control groups [133]. Interventions included:

- Promotion of exercise
- Exposure and social skills
- Group CBT
- Individual CBT
- Other psychological therapy (including interpersonal psychotherapy, mindfulness training, and supportive therapy)
- Psychodynamic psychotherapy
- Self-help with or without support

Individual CBT was found to be effective for acute treatment compared with waitlist control groups. Pharmacologic interventions included anticonvulsants, benzodiazepines, monoamine oxidase inhibitors (MAOIs), noradrenergic and serotonergic antidepressants, selective serotonin reuptake inhibitors (SSRIs), and selective norepinephrine reuptake inhibitors (SNRIs). SSRIs and SNRIs were found to be the most effective class of pharmacological treatment compared with placebo control groups [133].

In this study, the promotion-of-exercise intervention was not found to be effective; however, this was not actually an exercise intervention. A 2020 systematic review and network meta-analysis assessing the efficacy of aerobic, resistance, and mind-body training regimens for treating depression reported that actual exercise interventions elicit high levels of treatment compliance and can be effective in reducing depressive symptoms [134]. Thus, similar treatments may also prove to be efficacious for treating anxiety disorders or subtypes.

GENERALIZED ANXIETY DISORDER

The results of two systematic reviews and meta-analyses suggest that psychological therapy has short-term efficacy for treating GAD [135]. A systematic review and network meta-analysis of 27 randomized, double-blind, placebo-controlled studies compared the relative effectiveness of nine pharmacologic treatments of GAD [136]. Although none of the treatments stood out as being clearly more successful than the others, it was concluded that fluoxetine may be preferred for response and remission and sertraline for treatment tolerance. Sertraline is also the most cost-effective pharmacologic treatment of GAD [137]. A separate systematic review and meta-analysis of 27 clinical trials assessed the effectiveness of psychological and pharmacologic treatments for late-life GAD [41]. In this study, benzodiazepines were found to be mildly efficacious relative to placebo, and psychotherapy was found to be mildly efficacious relative to waitlist control groups. A 2016 meta-analysis also reported that CBT is effective for treating GAD in older adults [138].

According to the National Collaborating Centre for Mental Health, the recommended high-intensity psychological intervention for persons with generalized anxiety disorder is cognitive-behavioral therapy (CBT) or applied relaxation.

(https://www.nice.org.uk/guidance/cg113. Last accessed February 17, 2022.)

Level of Evidence: Expert Opinion/Consensus Statement

SPECIFIC PHOBIAS

Exposure therapy is the treatment of choice for specific phobias [139; 140]. This includes in vivo (real-life) and virtual reality exposure to phobic stimuli or situations. Virtual reality exposure therapy was introduced in the 1990s, and although it may have some treatment benefit, it has not been found to have strong efficacy [141]. A one-session exposure therapy treatment for specific phobias was pioneered more than 30 years ago with a suggested duration of two hours and was subsequently used to treat various specific phobia subtypes [142; 143; 144; 145]. More recent studies suggest that one session does not always turn out to be adequate and that multiple sessions are generally more efficacious [140; 146]. However, there may be some cases where the single-session approach is viable.

EVIDENCE-BASED PRACTICE RECOMMENDATION

The National Collaborating Centre for Mental Health recommends against routinely offering computerized CBT to treat specific phobias in adults. (https://www.nice.org.uk/guidance/cg159/resources/social-anxiety-disorder-recognition-assessment-and-treatment-pdf-35109639699397. Last accessed February 17, 2022.)

Level of Evidence: Expert Opinion/Consensus Statement

Pharmacotherapy is not a common treatment for specific phobias. However, studies have sought to supplement exposure therapy using pharmacologic approaches. One such intervention administers cortisol to augment exposure therapy due to its role in interfering with memory for fearful scenarios [147; 148]. Although this treatment shows some efficacy, it does not seem to be particularly advantageous relative to exposure therapy alone. A second form of pharmacologic augmentation for exposure therapy, introduced more than 20 years ago, is the antibiotic D-cycloserine, which is thought to facilitate fear extinction due to its role as an *N*-methyl D-aspartate (NMDA) receptor agonist [149; 150]. D-cycloserine has also been used to augment exposure therapy for social anxiety disorder, with studies suggesting that this antibiotic can produce a marginal benefit for treating specific phobias and social anxiety disorder when combined with exposure therapy [151]. However, while these studies mention that the antibiotic is of a low dosage, they do not mention that this marginal benefit needs to be traded off against the risk of accelerating antibiotic resistance, which is a pressing global public health challenge. Computational studies suggest that increasing administration of low doses of antibiotics (as these studies suggest doing in conjunction with exposure therapy) accelerates resistance [152; 153].

Although the short-term efficacy of exposure therapy for specific phobias is moderately high, it is important to note that specific phobias are prone to high rates of relapse [139; 140; 154; 155; 156; 157]. Accordingly, studies have sought to eliminate conditioned responses to phobic stimuli over multiple contexts to make for a more successful extinction [158; 159; 160; 161; 162].

TREATMENT IMPLICATIONS

Given that anxiety itself is an adaptive trait, anxiety disorders are better seen as poorly regulated defenses than as defects. As decades of lesion studies indicate, a lack of anxiety may also create non-trivial problems for individuals' lives. Low levels of anxiety are associated with higher mortality risk, and those who report greater worries about particular health problems are likely to seek medical care and take preventative or corrective action [39; 103; 104; 105; 106; 107]. If some degree of anxiety is advantageous, then insufficient and excessive anxiety can both be considered maladaptive.

CONCLUSION

Anxiety facilitates the management of potential future hazards. Even though anxiety is effective at reducing danger, excessive anxiety is often a cause of significant distress and impairment, and anxiety disorders are the most prevalent mental disorders among older adults. Female sex and smoking are the strongest risk factors for late-life anxiety disorders, although adverse life events are also an important factor. About one-third of all cases have considerable chronicity, and therefore prevention is important. Interventions should focus on reducing anxiety to a sufficient, but not excessive, degree.

Customer Information/Answer Sheet insert located between pages 96–97.

COURSE TEST - #96690 ANXIETY DISORDERS IN OLDER ADULTS

This is an open book test. Please record your responses on the Answer Sheet.
A passing grade of at least 70% must be achieved in order to receive credit for this course.

This 3 contact hour activity must be completed by February 28, 2025.

1. **António Egas Moniz was awarded the 1949 Nobel Prize for treating mental disorders with leukotomy.**
   A) *True*
   B) *False*

2. **Two neural structures that are necessary for anxiety responses are the temporal pole and amygdala.**
   A) *True*
   B) *False*

3. **The standard for anxiety disorder assessment is the structured interview.**
   A) *True*
   B) *False*

4. **The Overall Anxiety Severity and Impairment Scale (OASIS) consists of two items.**
   A) *True*
   B) *False*

5. **The most prevalent anxiety disorder subtype in older adults is specific phobia.**
   A) *True*
   B) *False*

6. **Women 55 years of age or older have the highest prevalence of any anxiety disorder according to data from the NESARC.**
   A) *True*
   B) *False*

7. **The most persistent anxiety disorder subtype in older adults is generalized anxiety disorder.**
   A) *True*
   B) *False*

8. **The most significant modifiable risk factor for anxiety disorder is cigarette smoking.**
   A) *True*
   B) *False*

9. **SSRIs and SNRIs are the most effective in the treatment of social anxiety disorder.**
   A) *True*
   B) *False*

10. **The treatment of choice for specific phobias is exposure therapy.**
    A) *True*
    B) *False*

Be sure to transfer your answers to the Answer Sheet insert located between pages 96–97.
PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

Pathophysiology: Muscles, Joints, and Connective Tissues

Audience
This course is designed for nurses in all practice settings.

Course Objective
As health care becomes more complex, it is essential that the theoretical concepts of the basis of illness (pathophysiology) be well understood. The purpose of this course is to reinforce the scientific rationales for the interventions nurses perform and the decisions nurses make as patients move through the ever-changing struggle with their illness.

Learning Objectives
Upon completion of this course, you should be able to:

1. Describe the structure and function of the muscles, joints, and connective tissues.
2. Discuss the pathophysiologic influences that may affect the muscles, joints, and connective tissues.
3. Outline the role of subjective data in completing a full nursing assessment of the muscles, joints, and connective tissues.
4. Describe objective data compiled during a nursing assessment of the muscles, joints, and connective tissues.
5. Identify imaging and diagnostic studies used in the identification and classification of muscles, joints, and connective tissues.
6. Discuss genetic conditions manifesting in the muscles and connective tissues.
7. Evaluate the presentation and differential diagnosis of inflammatory muscle and connective tissue disorders.
8. Describe the clinical presentation and treatment of immunologic disorders of the muscles and connective tissues.
9. Review the assessment and treatment of traumatic conditions of the muscles and connective tissue.
10. Discuss disorders of the joints with multifactorial origin.
11. Analyze the manifestations and therapeutic approaches for degenerative joint diseases.
12. Outline the presentation, treatment, and nursing considerations for patients with immunologic joint conditions, such as rheumatoid arthritis.
13. Compare and contrast the various joint diseases with an infectious origin.
14. Describe cancers of the joints, muscle, and connective tissues.
15. Evaluate the appropriate assessment and management of traumatic joint injuries.

Faculty
Jane C. Norman, RN, MSN, CNE, PhD, received her undergraduate education at the University of Tennessee, Knoxville campus. There she completed a double major in Sociology and English. She completed an Associate of Science in Nursing at the University of Tennessee, Nashville campus and began her nursing career at Vanderbilt University Medical Center. Jane received her Masters in Medical-Surgical Nursing from Vanderbilt University. In 1978, she took her first faculty position and served as program director for an associate degree program. In 1982, she received her PhD in Higher Education Administration from Peabody College of Vanderbilt University. In 1988, Dr. Norman took a position at Tennessee State University. There she has achieved tenure and full professor status. She is a member of Sigma Theta Tau National Nursing Honors Society. In 2005, she began her current position as Director of the Masters of Science in Nursing Program.

Faculty Disclosure
Contributing faculty, Jane C. Norman, RN, MSN, CNE, PhD, has disclosed no relevant financial relationship with any product manufacturer or service provider mentioned.

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Director of Development and Academic Affairs
Sarah Campbell

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INTRODUCTION

Along with the bones, muscles, ligaments, tendons, cartilage, and the joints provide the body with a supportive framework that allows flexibility of movement and protects the internal organs. These tissues also give shape to the body and act partially as a storage and supply area for minerals. When the tissues are unable to perform their usual functions because of trauma or rheumatic, inflammatory, or degenerative conditions, a person's physical support, protection, mobility, and ability to carry out activities of daily living are affected.

MUSCLES, JOINTS, AND CONNECTIVE TISSUES: STRUCTURAL AND FUNCTIONAL INTER-RELATIONSHIPS

The musculoskeletal system is composed of many anatomical structures that work together to produce movement, support, and protection of the body and its parts. These structures include the bones and joints of the skeletal system; the skeletal muscles; and the tendons, ligaments, and other elements that connect these tissues. This course will focus on the components of the system excluding the bones.

STRUCTURE AND FUNCTION OF SKELETAL MUSCLES

Contraction of skeletal muscle is its primary function, with the intent of moving the bones of the skeleton. Bone serves as a lever, the joint serves as a fulcrum upon which the bone pivots, and the muscle provides the force that moves the lever. A second function of skeletal muscles is maintenance of body posture. A residual amount of contraction in the muscles, known as muscle tone, serves to keep the body erect. A third function is heat production. To combat hypothermia, small, rapid contractions of skeletal muscle (shivering) produce body heat [1].

Producing Skeletal Movement

A typical skeletal muscle is anchored at each end to bone by a tendon. The muscle often stretches across a joint. The muscle's attachment to the less movable bone is called its origin, and its attachment to the more movable bone is called its insertion. When the muscle contracts, one bone remains more or less stationary, forcing the other bone to move [2].

Most skeletal muscles work in groups. The prime mover is the muscle that contracts to produce the movement. Synergists are muscles that work with prime movers to assist in performing the movement. Antagonists are muscles that work opposite prime movers by relaxing during their contraction or by producing an opposite effect. For example, the arm is flexed by contracting the biceps brachia, which acts as the prime mover; at the same time, the triceps brachii on the opposite side of the humorous relaxes, acting as the antagonist (***Figure 1***). When the arm is extended, the roles of the biceps and triceps are reversed. An isotonic contraction occurs when a muscle shortens during contraction. An isometric contraction occurs when a muscle becomes tense while remaining the same length [2].

Skeletal Muscle Structure

Muscle—skeletal, smooth, and cardiac—is made up of elongated cells called fibers (***Figure 2***). The fibers contain strands of contractile protein called myofibrils that extend the length of the cell. At the neuromuscular junction, the chemical acetylcholine creates the stimulus for muscle-nerve conduction of movement. Skeletal muscle fibers are multinucleated, and their myofibrils have striations: light and dark bands perpendicular to the long axis of the cell. The dark bands (anisotropic or A strands) are composed of the protein myosin, and the light bands (isotropic or I strands) contain the protein actin. A sense fibrous line called the Z line crosses the center of each I band and divides the myofibrils into a series of repeating units called sarcomeres. The bands are visible to the unaided eye and give skeletal muscle its alternate name: striated muscle. Smooth and cardiac muscles are made up of uninucleated cells. They further differ from skeletal muscle in that smooth muscle has tapered fibers with no striations and cardiac muscle has branched fibers [2].

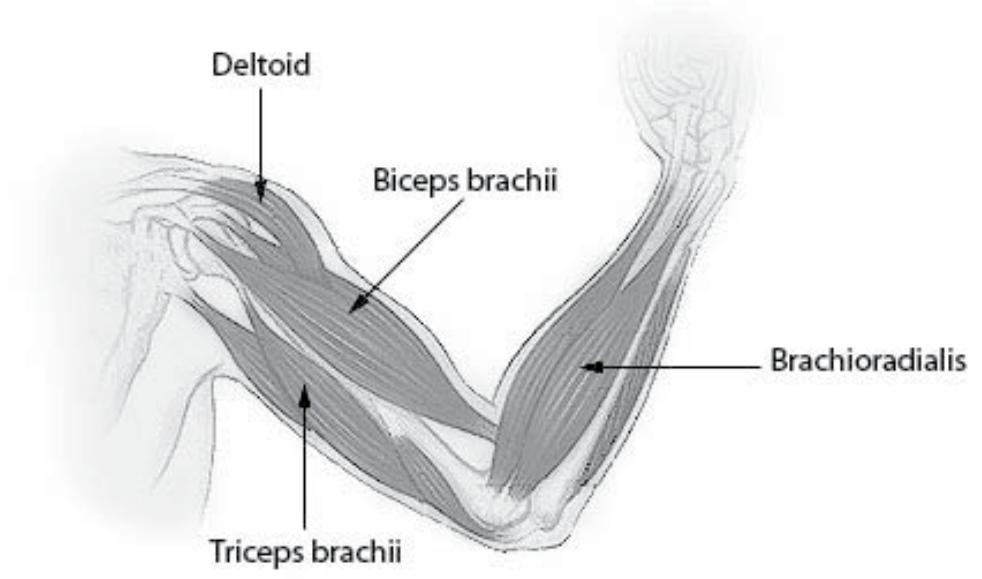
Muscle fibers are bound together by connective tissue into small bundles called fascicles, visible to the unaided eye. Fascicles are bound into larger bundles, which collectively form the muscle. The entire muscle is enclosed by a connective tissue covering called the epimysium, which is continuous with the connective tissue surrounding the fascicles and fibers. The epimysium is also continuous with the tendon or other connective tissue at attachment of muscle to bone. Thus, there is a continuous network of connective tissue extending from individual muscle fibers to the tendon. Blood vessels and nerves penetrate the connective tissue of the muscle, so muscle has sufficient blood supply to furnish nutrients and oxygen and to remove the waste products of muscular activity [2; 3].

OTHER CONNECTIVE TISSUE STRUCTURES

Tendons are cords of connective tissue that attach muscles to the periosteum of the bones. During muscle contraction, the muscle pulls the tendon, which pulls the bone to which it is attached, producing movement. Flexion, extension, adduction, and abduction are normal movements of muscles and bones.

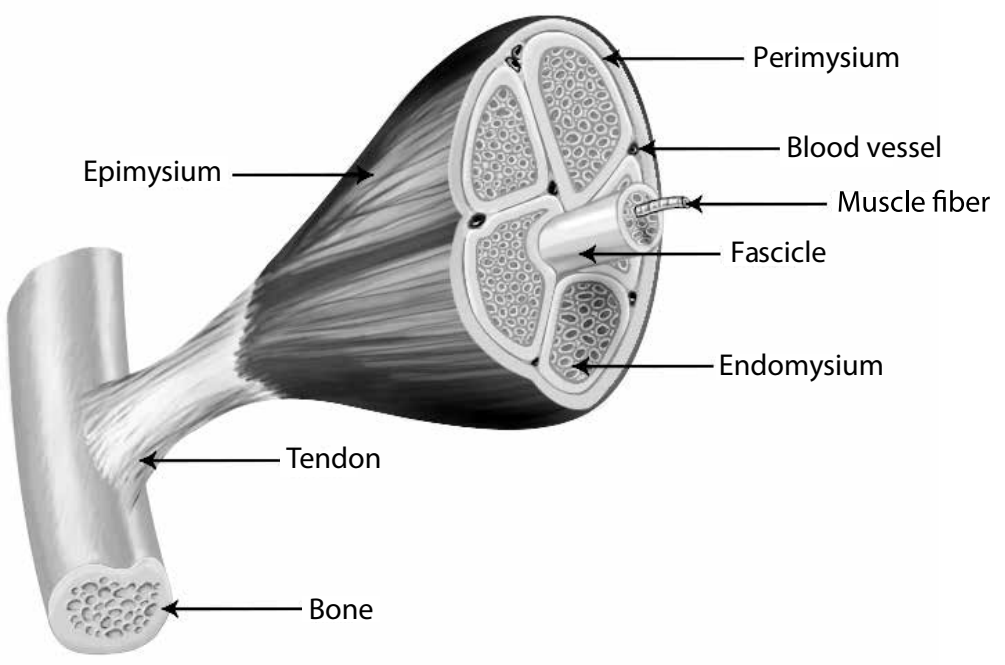
Ligaments, made of fibrous connective tissue, connect bones to one another. They have the ability to stretch while providing stability. The knee joint, for example, is stabilized by ligaments, such as the anterior and posterior cruciate ligaments, which bind the femur to the tibia within the joint capsule, and by the medial and lateral collateral ligaments outside the joint capsule [4].

MUSCLES OF THE UPPER EXTREMITY



Source: National Cancer Institute *Figure 1*

STRUCTURE OF A SKELETAL MUSCLE



Source: National Cancer Institute *Figure 2*

A bursa is a fluid-filled sac that facilities motion of structures that move against each other. It can be found between skin and bone, muscle and bone, tendons and bone, ligaments and bone, and between muscles. The bursae function as padding between structures to reduce friction caused by moving parts [4].

Connective tissue, in the broad sense of the term, include all tissues made up of cells in a matrix, including bone, cartilage, blood, and lymph. However, the term is used in a more limited sense when discussing diseases of the connective tissues. In this sense, connective tissue means the binding and covering tissues of the body, inducing tendons, ligaments, muscle fascia, and the deep layers of the skin. This kind of connective tissue (sometimes called "connective tissue proper") is essential in holding together all the components of the musculoskeletal system. Also included are intervertebral discs (or intervertebral fibrocartilage), which serve as "shock absorbers" to cushion the spine and help it move [4; 5].

THE PROCESS OF SKELETAL MUSCLE CONTRACTION

Skeletal muscle contraction begins with the stimulus of a muscle fiber by a motor neuron. Every motor neuron ends in many fine branches, with each branch connecting with an individual muscle fiber. A group of muscle fibers activated by a single motor neuron is called a motor unit. Motor units range in size from a single muscle fiber in muscles controlling fine, skilled movements to over one hundred fibers in muscles involved in gross movements. All the fibers of a motor unit contract together when the neuron is stimulated [6]. There are two types of motor units in skeletal muscle, Type 1 and Type 2. Type 1 has a small cell diameter, with a high excitability and fast conduction velocity. It has an oxidative profile with moderate contraction velocity and low fatigability. There are few muscle fibers of this type. In contrast, Type 2 has a large cell diameter, with low excitability but a very fast conduction velocity. Type 2 fibers are numerous in quantity, with a glycolytic profile and high fatigability. The small motor units, with Type 1 (also known as "slow-twitch") fibers, are recruited first and are frequently active, while the large motor units, with Type 2 ("fast-twitch") fibers, are used infrequently, in forceful contractions. Maximal efforts, in which fast motor units are recruited, cannot be sustained because of the rapid depletion of glycogen.

When a nerve impulse reaches the end of a motor neuron, small vesicles in the ends of the nerve branches release acetylcholine, which increases the permeability of the muscle cell and causes an influx of calcium ions into the cell. The calcium ions cause structural changes in the myofilaments that allow them to slide past each other, causing contraction. The structural changes also allow breakdown of adenosine triphosphate (ATP) to adenosine diphosphate (ADP) to provide energy for the contraction. The muscle relaxes as a result of the action of the enzyme cholinesterase, which breaks down acetylcholine, allowing the muscle to return to its resting state [6].

At the beginning of muscle contraction, ATP is formed from creatine phosphate stored in the muscle. The supply of creatine phosphate is limited, however, and even with mild muscle activity, additional ATP must be formed from ADP. The energy for forming this additional ATP is supplied by respiration. The first step in respiration is glycolysis, or anaerobic respiration, which produces lactic acid and small amounts of ATP. Under normal conditions, the lactic acid is broken down further by aerobic respiration, which requires an oxygen supply. The final products of aerobic respiration are carbon dioxide, water, and large amounts of ATP [6].

During sustained strenuous exercise, the blood cannot supply enough oxygen to keep pace with glycolysis, and lactic acid accumulates in the muscle, causing an oxygen debt. Muscle contractions continue for a short time using the small amount of ATP produced by glycolysis, but soon the demand exceeds the supply and the muscle is fatigued. The contractions decease in strength and then stop. The pain of muscle fatigue is the result of accumulated lactic acid. Oxidation of excess lactic acid occurs after exercise, when the person breathes deeply to pay off the oxygen debt [6].

The effects of exercise on the body's cells are significant. Physical activity increases the size and number of mitochondria, increases muscle's ability to use fat as a source of energy, increases the size of muscle fibers, and increases the content of myoglobin in muscle fibers. Exercise also results in increased fat oxidation. All of these increases lead to hypertrophy of the muscle, which leads to an increase in strength of the muscle. The wasting of muscle due to lack of use is assessed as atrophy

PATHOPHYSIOLOGIC INFLUENCES AND EFFECTS

The primary function of the musculature and connective tissues of the body is to provide body movement. When disease or trauma alters the system, the individual's ability to move and ambulate can be affected, which can profoundly affect a person's lifestyle. Movement is often still possible, but not without pain or difficulty [7].

INFLAMMATION

Inflammation may occur in muscle or connective structures as a result of excessive or repeated strain or pathogenic invasion. Restricted motion and pain usually result. One such example is rotator cuff injury, when the patient is unable to abduct the arm because of pain and muscle spasms. Other connective tissues of the body may be affected by inflammation, resulting in changes in other organs as well as the musculoskeletal system. Many of these connective tissue disorders are believed to be associated with immune processes [7].

DEGENERATIVE CHANGES

The joint is the musculoskeletal structure most frequently influenced by degenerative disease. Changes are most often associated with aging, excess weight, trauma, and inflammatory conditions. In the presence of these factors, articular cartilage softens, thins, and ulcerates, and the joint surfaces become rough. There may be a narrowing of the joint space and swelling of adjacent soft tissue. The normal smooth-gliding joint action is diminished, and the periosteum becomes irritated by friction, stimulating the growth of bone spurs at the joint margins. The effects of this destruction include joint pain, stiffness, and joint deformity, which can result in slight to moderate limitation of movement. Crunching or grating sounds, called crepitus, may be heard upon movement [8; 9].

The intervertebral discs can also be affected by degeneration. The water content of the discs decreases with age, causing them to become thinner. The surrounding ligaments also change with age, so the disc becomes unstable. These changes along with increased bone resorption cause decreased height and painless restriction of spinal movement in the elderly. In some cases, the condition becomes more severe, with pressure on nerves causing pain and neurologic deficits [8; 9].

Somewhat akin to degeneration is the process of atrophy. Muscle can atrophy as a result of disuse. As noted, the normal strain on muscles contributes to their development and to the maintenance of their size, shape, strength, and composition. Through disuse, muscle cells become reduced in size and weakened, and the muscle mass becomes more fibrous. Inactivity can also lead to joint contracture; the muscle fibers become shortened and fixed, and the joint's range of motion becomes limited. These conditions are reversible with the resumption of activity. However, contractures can progress to an irreversible state without treatment [8; 9].

INFECTION

Musculoskeletal structures, such as joints and bursae, can be infected by pathogens entering from penetrating wounds or via the circulation. Pain and restricted motion are common in these cases [10].

NEOPLASIA

Malignant neoplasms of the bone, muscle, and cartilage are called sarcomas. Cancer affecting the muscle is called rhabdomyosarcoma; chondrosarcoma originates in the bones but can extend to the cartilage [11]. Depending on the specific cancer and location, patients may experience a temporary limitation in mobility (e.g., following surgery for tumor removal) or permanent limitation due to extensive surgical intervention, such as amputation [11].

TRAUMA

Skeletal muscle can be injured by trauma. Fortunately, skeletal muscle fibers can regenerate, but when the damage is extensive, the fibers are replaced by scar tissue. Trauma to the musculoskeletal structures supporting the joints is common. Muscle fibers may be injured due to overuse, overstretching, forcible twisting and other abnormal movement. The fibers may be torn, or stretched too far, and joint surfaces may dislocate, that is, separate partially or completely. Associated blood vessels and nerves may be damaged in the process. Pain and limited motion are the result [12].

Direct muscle trauma, overuse, or exposure to high temperatures can induce rhabdomyolysis. Rhabdomyolysis is a complex syndrome involving the rapid dissolution of damaged skeletal muscle, resulting in the leakage of intracellular contents to such an extent that it results in organ (particularly kidney) damage.

RELATED INFLUENCES AND EFFECTS

NEUROLOGIC AND VASCULAR PROBLEMS

Neurologic and vascular problems can cause or contribute to connective tissue and muscle disorders. Because muscle functioning is the result of the combined effect of muscle fibers and motor nerves, neurologic damage or interference can impair muscle functioning, causing atrophy and paralysis. Likewise, disruption of the vascular supply to these tissues can limit the nutrient and oxygen supply to cells and interfere with removal of cellular waste products. Prolonged interruption of circulation leads to necrosis [13; 14].

Connective tissue disorders can also give rise to neurologic or vascular problems, which may in turn cause further musculoskeletal damage. Pressure from bandages, traction devices, tumor growth, and poor positioning are a few problems that can hinder nerve and blood vessel functioning. Trauma to muscles causes edema and hemorrhage in soft tissues, increasing the pressure within a confined space. Pressure on nerves and blood vessels in the area can become so great as to produce irreversible necrosis of the muscle tissue. A permanently disabling contracture of the limb may occur, as well as loss of motor and sensory functioning [13; 14].

OCCUPATION AND LIFESTYLE

A person's occupation and lifestyle can contribute to alterations in the muscular and connective tissues. Interest in physical fitness has prompted many people to become active in athletic endeavors. Highly athletic activities, including weightlifting, distance running, and more intense sports, are associated with an increased risk for injury, particularly with improper conditioning and training [15].

Sport injuries can generally be categorized as acute or overuse. Acute injuries occur most often in contact sports and include strains, sprains, and dislocations. Overuse injuries are usually a result of repetitive motions or excessive intensity or duration of exercise. Acute injuries are typically traumatic (e.g., ligament tears), while the most common overuse injuries are tendinosis and osteoarthritis [15].

With muscle and connective tissue disorders, patients may be unable to continue their usual recreational activities. Further, roles within the family may change to accommodate impaired ability to conduct usual activities of daily living. Occasionally, it may be necessary to use assistive devices or to modify the environment, which requires a period of adjustment [15].

NURSING ASSESSMENT: ESTABLISHING THE DATA BASE

The nursing assessment of patients with muscle, joint, and/or connective tissue disorders requires special emphasis on the musculoskeletal, neurologic, and vascular systems [16].

SUBJECTIVE DATA

As part of any nurse assessment, patients should provide important information about what they are experiencing as a result of their conditions.

Pain

Pain, in some cases severe, is a common manifestation of joint, muscle, and connective tissue problems. Patients should be asked to describe their pain thoroughly, including location, intensity, quality, duration, radiation, precipitating factors, and successful relief measures. Some patients ache all over and should indicate each of the areas involved. Knowing the quality of pain may help pinpoint a specific problem, but the patient may require help in describing the pain. All these data are helpful in reaching a diagnosis [16].

Some patients experience pain so severe they cannot tolerate moving or being touched. Others have learned to live with chronic pain. It is important to pay attention to descriptions of pain that seem unusual or excessive for the patient's condition; such complaints warrant a thorough assessment. Changes in pain status may indicate a new or undiagnosed condition [16].

Paresthesia

Some patients with musculoskeletal conditions will experience paresthesia, such as tingling, numbness, and/or and diminished or absent sensation. The affected area should be defined as precisely as possible. Paresthesia is an indication of a neurologic problem and requires an in-depth assessment [16].

Changes in Activities of Daily Living and Mobility

Nurses can obtain additional subjective data by asking the patient how the problem affects activities of daily living and mobility. Changes in normal activities may be from pain alone or from other effects of their illness, including fatigue, weakness, stiffness, or decreased mobility of a particular body part. Some patients may have abandoned activities or made adjustments to maintain independence. Patients should be encouraged to discuss their view of the situation to bring insights and misconceptions to the surface [16].

Assistive Devices

Patients should be asked about any assistive devices used to help maintain independence, including aids for walking, eating, dressing, bathing, or toileting. These may not be devices designed specifically for the tasks; some are creative and adaptive in finding new ways to meet their daily needs [16].

History of the Injury

Subjective data are particularly helpful in the case of injury when the patient can describe the traumatic event and the action taken. This information can help the healthcare team determine what tissues and structures were inured as well as anticipate potential problems.

OBJECTIVE DATA

Physical Assessment

Objective data include the results of physical assessment and of laboratory and other diagnostic tests. When assessing patients with musculoskeletal disorders, vital signs, posture, muscle strength and tone, ability to ambulate, and neurologic status should all be included in the patient assessment [16].

Vital Signs

Assessment of vital signs is of particular importance in cases of musculoskeletal trauma. Hyperthermia may accompany inflammation and is common with an infection. Observing respiration is essential when injury occurs to the face, neck, or chest. Patients with spinal or chest changes may also have abnormal respirations [16].

Inflammation and Swelling

Inflammation is an immune response to infection, physical trauma, or autoimmune reaction. Swelling occurs as inflammatory exudate forms to defend the tissues from the injury. Edema may also be present. Inspection and palpation are used when assessing patients for swelling and inflammation and comparing one extremity to the other for size, warmth, and erythema. A joint will appear swollen when there is an increase in synovial fluid or when blood or purulent material is present in the joint capsule. This swelling is known as effusion. Effusion in the knee is detected by displacing the fluid with an upward stroke along the medial side of the knee and then pressing on the lateral side. The fluid will return and form a bulge (the bulge sign).

It is important to be gentle when assessing inflamed areas because they are usually tender. It is best to start palpating at the distance from the obvious tender area and work toward it, letting patients know when and where they will be touched and reassuring them that the touch will be gentle [16].

Skin Integrity

Injury or disease processes may cause changes in the skin. Discoloration results when trauma to soft tissues causes ecchymosis (bruising). The skin may be broken or torn as result of injury. Describe any lesions completely: include

the occasion, length, depth, and appearance of the involved tissue. If there is any drainage, describe the amount, color, type, and odor [17; 18].

Rashes are common in connective tissue disorders. Look for changes in the skin such as discoloration, dryness, scaliness, and lesions. With some types of arthritis, the hair, skin, and nails may show signs of changes. Discoloration, usually redness, may occur in the palms, over joints, and at the distal ends of the toes and fingers. Normal pigmentation may also be altered. Characteristic nodules may be noted when palpating and observing the skin [17; 18].

Structural Changes

Joints may be assessed for changes by observation and palpation. Heberden nodes may be noted on the distal interphalangeal joint of patients with osteoarthritis. Likewise, rheumatoid nodules may be noted need the joints of patients with rheumatoid arthritis, even in the absence of other signs. Joints may be compared bilaterally to assess symmetry, position, and changes in alignment [17; 19].

The curvature of the spine should be assessed to identify the presence of scoliosis (lateral curve), kyphosis (convex curve of the thoracic spine), or lordosis (concave curve of the lumbar spine). Patients with skeletal changes may shift another body part in the opposite direction to compensate for the imbalance; for example, the pelvis may tilt to compensate when one leg is shorter than the other [17; 18].

Range of Motion

Range of motion can be measured with an instrument called a goniometer. Placing the arms of the goniometer parallel to the axis of the bones that form the joint, the examiner measures the angle for the typical positions of the joint. The elbow's normal flexion, for example, is 160°, whereas its normal extension is 0°. To determine what is normal for a patient, compare a joint with an apparently impaired range of motion to the corresponding joint in the other extremity, if possible. Patients can have differences in range of motion for a variety of reasons, particularly as they age, so it is vital to assess typical range of motion on an individualized basis. Dexterity is usually assessed by asking the patient to pick up an object from a flat surface [17; 18].

If a patient is unable to move an extremity, range of motion may be determined through passive movement. Joints should not be moved beyond the point of comfort, and if possible, assessments should not include acutely inflamed joints, which may be tender [17; 18].

During the assessment of range of motion, note joint stiffness, instability, and changes. Boney crepitation may be heard or felt during movement when there is a rough surface of the articular cartilage or when broken bone ends rub together. A limitation of motion may be due to a contracture. Early detection of signs movement limitation can allow for the implementation of measures to improve range of motion and prevent further limitations [17; 18].

Posture

Observe the patient's standing posture for abnormalities. Posture can be affected by structural changes or differences, muscle weakness, or trauma. In addition, patients may hold themselves in positions that relieve or decrease pain. Patients should be observed for symmetry. Posture is also an indication of energy and muscle tone. Normally, posture is erect but not rigid [16].

Muscle Strength, Size, and Tone

Assessment of muscle strength, size, and tone can support the diagnostic process, but it can also provide information about the amount of assistance necessary for ambulation and participating in activities. Muscle strength is assessed by asking the patient to resist movements or to move against resistance [16].

Muscles should be observed and palpated bilaterally to check their size and asymmetry. If there seems to be a significant discrepancy in size, the limb circumferences should be measured [16].

Muscle tone is assessed by moving the extremities passively. While the patient is relaxed the examiner moves the extremity through the ranges of motion, noting resistance to movement. A muscle with diminished tone is described as flaccid. When the muscle is tight and tense from involuntary contraction, it is said to be spastic [16]. Function of the muscles depends on proper function of the nervous system. Muscle abnormalities noted during the assessment may be due to disorders of the nervous system rather than musculoskeletal disorders.

Ability to Ambulate

To assess the ability to ambulate, the patient should be asked to get up to walk across the room, turn around, and come back. Any difficulties rising to standing, starting or stopping walking, or turning should be noted. In a typical gait, the feet are 2–4 inches apart, and the body shifts from side to side about 1 inch. The posture is erect, with toes pointed straight ahead and shoulders in a straight line; the arms swing back and forth at the person's sides, and movement is smooth with good balance [16].

There can be a variety of irregularities in gait, with an equally diverse underlying etiology. A limp can occur from differences of leg length, joint motion, muscle strength, or other causes. The gait may appear stiff, unsteady, or wide-based; the feet may drag, or the steps may be very short. The body may lurch to the side as the individual shifts weight from one leg to the other. An irregular gate can cause fatigue because of the extra energy needed for walking. Ambulation may also be affected by pain, fear of falling, and loss of balance and coordination. As adults age, walking speed and balance may decrease. Steps may be short and shuffling, without the confidence and poise of youth [16].

DIAGNOSTIC STUDIES

Diagnostic studies provide information useful in diagnosing and following the course of the disease process.

Serum Enzyme Tests

Blood tests performed to detect presence of muscle disease measure levels of enzymes released when muscle tissues are destroyed or injured. These enzymes are creatine phosphokinase or creatine kinase, lactic dehydrogenase (LDH), and serum glutamic-oxaloacetic transaminase (SGOT), also known as aspartate amino-transaminase (AST). The same tests indicate cardiac muscle destruction in the patient with a myocardial infarction [20].

Serum Tests for Antibodies and Antigens

The antinuclear antibody (ANA) test is the most specific and sensitive test for lupus and is therefore the most commonly used autoantibody test. Ninety-seven percent of patients with lupus have a positive ANA blood test. The titer and patterns of the blood sample are reported. A titer greater than 1:80 is usually considered positive [21]. It is important to note that a positive ANA test is found in 97% of patients with lupus, but alone, it does not indicate a conclusive diagnosis of lupus [21]. A positive ANA test, although not always found, satisfies one of the four typical clinical characterizations required for a definitive diagnosis of lupus. ANA tests may also be positive in patients with other connective tissue diseases, chronic infectious diseases, and autoimmune diseases [21].

The 2010 American College of Rheumatology (ACR) and European League Against Rheumatism (EULAR) joint working group recommends several laboratory tests for the diagnosis of rheumatoid arthritis, including rheumatoid factor, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), and anti-cyclic citrullinated peptide (anti-CCP) antibody [22]. A positive rheumatoid factor is the most specific and sensitive laboratory marker of rheumatoid arthritis, as it is seen in about 70% to 80% of patients [23; 24; 27]. It is also present in many healthy individuals, patients with other rheumatic diseases, and individuals with chronic infections [26]. The anti-CCP antibody test is a specific blood test available for diagnosing rheumatoid arthritis and distinguishing it from other types of arthritis [24; 27]. The anti-CCP antibody test is a marker of anti-citrullinated protein antibody (ACPA) and is positive in about 80% to 90% of patients; it can also be present in other diseases, including active tuberculosis, and is especially useful in early synovitis. While rheumatoid arthritis differs from person to person, individuals with rheumatoid factor, the anti-CCP antibody, or subcutaneous nodules tend to have more severe forms of the disease [24; 26; 27]. However, biomarkers for the initial tissue processes that cause joint damage in rheumatoid arthritis lack prognostic accuracy and are therefore inadequate as stand-alone tests. As such, they are typically used to help rule out other causes of arthritis when a patient has clinical features of rheumatoid arthritis [28].

The presence of human lymphocyte antigen B27 (HLA-B27) is used to help diagnose or rule out ankylosing spondylitis and reactive arthritis. This antigen is present in 90% of those with these conditions, but it can also be found in those without pathology, so it is not diagnostic [20].

Serum Uric Acid

Serum uric acid is elevated during an acute episode of gout but may be normal during remission. Serum uric acid level is also used to assess kidney function [20].

Erythrocyte Sedimentation Rate and C-Reactive Protein

The ESR is a test in which the settling of red blood cells in uncoagulated blood is timed. This is a nonspecific test, and elevations in ESR are indicative of generalized inflammation. Changes in the ESR give an indication of improvement or worsening of the condition [20].

CRP is also associated with disease activity, and the CRP value over time correlates with radiographic progression in patients with rheumatoid arthritis [24; 26; 29]. ESR is typically ≥30 mm/hour, and CRP level is typically ≥0.7 pg/mL.

Synovial Fluid Analysis

In certain instances, clinicians may perform an arthrocentesis in order to differentiate rheumatoid arthritis from other arthropathies [30]. Findings from synovial fluid aspiration that support a diagnosis of rheumatoid arthritis include straw-colored fluid with a significant number of fibrin flecks, synovial fluid ability to clot at room temperature, and 5,000–25,000 white blood cells/mm^3 (5–25 × 10^9/L) with 85% polymorphonuclear leukocytes [23; 24]. In addition, bacterial cultures are negative, no crystals are present, and the synovial fluid glucose level is low [23; 24].

X-ray

Examination by x-ray helps diagnose joint problems; it also allows following of the progress of a condition and its response to treatment. X-rays are able to show joint changes, such as erosion of joint margins, joint space narrowing, bone spurs, loose bodies, and dislocation. Specific injuries to soft tissues such as tendons and ligaments do not show on x-rays, but soft tissue swelling may be obvious [20].

For patients with chronic extremity joint pain and suspected rheumatoid arthritis, the American College of Radiology recommends x-ray as the imaging study of choice for evaluation.

(https://acsearch.acr.org/docs/3097211/Narrative. Last accessed September 26, 2022.)

Strength of Recommendation: 9 (Usually appropriate)

Magnetic Resonance Imaging (MRI)

Magnetic resonance imaging (MRI) can produce a detailed and highly useful image of the joints and soft tissues. As such, it is usually the best option when evaluating major joints, the spine and the muscles, tendons, and ligaments of the extremities. MRI has a role in the diagnosis of a variety of musculoskeletal disorders, including osteoarthritis, back pain, tears in the connective tissues of the joints, congenital disorders of the joints, and occupational/sports-related injuries [31].

Musculoskeletal Ultrasound

Because it is readily available and avoids the use of radiation, ultrasonography is often a good option in the assessment of musculoskeletal disorders and injuries. Ultrasound allows for the visualization of joints, tendons, muscles, bursae, ligaments, cartilage, nerves, fascia, and related soft tissue and can have a role in diagnosis and/or evaluation of disease progression for a variety of conditions. The American Academy of Physical Medicine and Rehabilitation indicates that ultrasound is an essential component in the diagnosis of tendinopathies/tendon tears, nerve entrapments (e.g., carpal tunnel syndrome), and acute or chronic muscle injury [32]. It may also be involved in the evaluation of ligamentous injury and joint instability syndromes, subluxations/dislocations, and fascia injury or inflammation. When joint aspiration is necessary, it may be guided by ultrasound, as may therapeutic injections.

Electromyogram

The electromyogram is a test to measure the electric currents produced by muscles, at rest and during contraction. Small needle electrodes are inserted into the muscle being tested and then connected by wires to an electromyography machine. Changes in muscle electrical activity may be helpful in diagnosing neuromuscular disease, and the test is particularly useful in differentiating muscular disease from neurologic disease [20].

Biopsy

Various biopsies may be performed on the musculoskeletal system. Skin samples, obtained by a punch biopsy, may be examined to diagnose certain connective tissue disorders. Muscle biopsies are usually operative procedures done to evaluate muscle disease. The synovial membrane can be biopsied, and analysis can be useful in diagnosing different types of arthritis. Buccal mucosa may be biopsied to help diagnose Sjögren syndrome, and the temporal artery may be biopsied to diagnose temporal arteritis [20].

SPECIFIC DISORDERS OF CONNECTIVE TISSUE AND MUSCLES

Injury to connective tissue and muscle may arise from congenital or acquired disease or from trauma. Diagnosis and treatment/management of these conditions are specific to the disorder.

GENETIC DISORDERS

Genetic disorders of connective tissue are structural connective tissue changes present at birth. Most of these disorders are transmitted by a single autosomal dominant gene. Although there are many congenital connective tissue disorders, most are rare; two more widely known conditions are Marfan syndrome and Ehlers-Danlos syndrome. The obvious manifestations of these disorders may not appear until the second decade of life or later [33].

Both syndromes are serious and require collaborative assessment and treatment by the entire healthcare team. Healthcare providers should gather careful family histories detailing the patterns of disease transmission so families can see the degree of risk [33].

Marfan Syndrome

Marfan syndrome is one of the most common inherited (autosomal dominant) disorders of connective tissue, occurring in 1 in every 10,000 to 20,000 individuals [34]. It is the result of mutations in the *FBN1* gene. *FBN1* mutations are associated with a broad continuum of physical features ranging from isolated features of Marfan syndrome to a severe and rapidly progressive form in newborns.

Clinical Manifestations

There is wide variability in clinical symptoms in Marfan syndrome, with the most notable occurring in eye, skeleton, connective tissue, and cardiovascular systems. The most common symptom is myopia. Ocular problems are a result of defective supporting tissue of the lens, which can cause bilateral subluxation or total dislocation of the lens. The dislocation is usually upward, but slit-lamp examination is done to detect more subtle variations. Complications such as reduced visual acuity, uveitis, glaucoma, cataracts, and retinal detachment may also occur [33].

Cardiovascular complications of Marfan syndrome are potentially life-threatening and commonly involve the aorta. Marfan syndrome causes degeneration of the elastic fibers of the aortic media, which can lead to dissecting aneurysm. Aortic regurgitating may occur, producing a diastolic murmur. Mitral valve prolapse, thickening of the coronary arteries, conduction system abnormalities, and aortic coarctation have also been associated with this condition [33].

Echocardiogram is useful in following aortic and mitral valve abnormalities. Patients with valve involvement are at risk for endocarditis. These patients should be prescribed antibiotic prophylaxis for any dental work causing bleeding or for any other invasive procedures, to prevent bacteremia [33].

The most obvious skeletal manifestations in patients with Marfan syndrome are extreme height and long extremities. These patients are usually much taller than other members of their families and have excessively long arms and legs in relation to their bodies. The measurement from fingertip to fingertip with the arms outstretched is typically greater than the body height. Arachnodactyly (extremely long fingers) is commonly noted. The sternum may bulge outward (pectus carinatum, or pigeon breast), or it may be depressed (pectus excavatum, or funnel breast). If the chest differences are extreme, the echocardiogram becomes unreliable [33].

Kyphoscoliosis may be quite severe because of the weakness of the ligaments and other supporting connective tissues. Other skeletal manifestations include a long and narrow skull, with a high, arched palate, and flat feet. Joints and ligaments are hyperextensive, leading to recurrent dislocations of the knees and hips [33].

Therapeutic Measures

Therapeutic approaches in Marfan syndrome are directed toward the specific manifestations. Corrective lenses are almost universally necessary, and yearly ophthalmologic examinations aid in early detection of retinal detachment and lens dislocation [33].

Because cardiovascular problems are the major cause of mortality, most diagnostic and treatment efforts are directed here. Echocardiograms are done yearly, unless the diameter of the aorta exceeds the upper limits by 50%, in which case echocardiogram is performed every six months [33]. Beta blockers are used to decrease the stress on the aorta at the time of diagnosis or when there is progressive aortic dilatation. There is some evidence that angiotensin receptor blockers may be used, and clinical trials are underway to evaluate this use. Surgery to repair the aorta is done when the aortic diameter is greater than 5 cm in adults and older children, when the aortic diameter increases by 1.0 cm per year, or when there is progressive aortic regurgitation [34].

Kyphoscoliosis is the most deforming and disabling skeletal manifestation of Marfan syndrome. Patients should be examined biannually, and therapy (e.g., bracing, physical therapy, spinal fusion) should be initiated as soon as possible to prevent or slow further changes [33]. In more severe cases, the thoracic cavity in patients with kyphoscoliosis can be so reduced that cardiac and respiratory function are compromised. These patients are particularly susceptible to upper respiratory infections and should be treated aggressively if an infection occurs [33].

Prepubertal girls are often given estrogen and prepubertal boys given androgens to decrease height and help prevent kyphoscoliosis. While these hormones induce early epiphyseal closure, they also trigger the physical and psychosocial changes of puberty, which can create additional psychosocial stresses.

While Marfan syndrome is not always inherited, it is always heritable. Approximately 75% of cases are inherited, and the offspring of patients with Marfan syndrome have a 50% chance of developing the syndrome. In addition, patients with Marfan syndrome who become pregnant are at risk for potentially dangerous aortic changes resulting from cardiovascular overload and increased intra-abdominal pressure [33].

Specific Nursing Measures

The health history is extremely important in patients with congenital disorders such as Marfan syndrome. Particular attention should be paid to the patient's coping abilities in terms of living with a chronic disease that involves numerous changes in body image [7; 35].

At each visit, the patient should be thoroughly assessed, with particularly attention to the eyes, cardiovascular system, and musculoskeletal system [7; 35]. When examining the patient's eyes, look for tremor of the iris as it is moved horizontally. This is an indication of subluxation of the lenses. These patients may also have myopia and blue sclera (due to the presence of thin sclera through which the vessel-rich choroid can be seen).

Patients may display early diastolic murmurs of aortic regurgitation. This consists of a high-pitched blowing sound, heard best with the stethoscope over the second right or third left intercostal space. Increased pulse pressure and collapsing (water-hammer) pulse may also be evident. Occasionally, a midsystolic click indicative of mitral valve prolapse may be auscultated.

Nursing interventions for these patients will focus on supportive symptomatic care and education needs. The nurse should be prepared to discuss the nature and course of the disease and the importance of genetic and pregnancy counseling. The patient should be urged to keep current with biannual exams. Patients should also be counseled to avoid trauma, including contact sports, and invasive surgical procedures (when possible) [7; 35]. They are also advised to avoid medications and foods that can lead to chronic increases in blood pressure and stretch the connective tissue in the cardiovascular system.

Ehlers-Danlos Syndromes

Ehlers-Danlos syndromes are a group of rare genetic disorders of connective tissue that affect the skin, joint, and hematopoietic systems. It is usually transmitted by an autosomal dominate gene, but it may also be recessive or an X-linked recessive gene [33].

Clinical Manifestations

The major manifestations of Ehlers-Danlos syndromes are fragile and increased elasticity of skin, hyperextensible joints, and fragility of blood vessel walls [33]. In the 2017 classification system, 13 types of Ehlers-Danlos syndrome were identified, including rarer forms [36]. They are generally organized according to the dominant system(s) involved, severity, and mode of transmission.

The skin of most patients with an Ehlers-Danlos syndrome is very smooth and hyperextensible; it can be pulled away from the body but returns to its original shape. Fragility and bruising are often evident. Minor cuts cause gaping wounds with little bleeding. Even the slightest trauma may cause purpura or hematomas that calcify, particularly over pressure points such as knees and elbows [33].

An unusually large range of joint movement (hypermobility) occurs in most forms of Ehlers-Danlos syndrome, and it is a hallmark feature of the hypermobile type. Dislocations, effusion, and hemarthrosis of the hip, patella, and shoulders may occur. Kyphoscoliosis, flat feet, and hyperextensible knees are often present. Thoracic changes are not as common but do sometimes occur, as does a forward slipping of the lower lunar vertebrae (spondylolisthesis) [33].

The patient may have episodes of bleeding, including spontaneous epistaxis; bleeding into the joints (hemarthrosis); blood in the sputum (hemoptysis); dark, tarry stools (melena) indicating bleeding in the digestive tract; and bleeding gums. It is not known whether the abnormal bleeding is from weakness in blood vessel walls or abnormal interactions of platelets with collagen [33]. Patients with Ehlers-Danlos syndrome who become pregnant are at risk for uterine rupture.

Abnormalities of the heart and blood vessels occur in patients with the cardiac-valvular type. These include mitral valve prolapse, right bundle branch block, and other conduction abnormalities. Patients with this type of Ehlers-Danlos syndrome have friable arteries, increasing the risk for adverse events during invasive angiography [33].

Other manifestations of Ehlers-Danlos syndrome can include spontaneous bowel rupture, pneumothorax, and diaphragmatic hernias or diverticula. In rare instances, a patient may have glaucoma, retinal detachment, or corneal abnormalities [33].

Specific Nursing Measures

Care for patients with an Ehlers-Danlos syndrome is limited to symptomatic treatment and support; there is no curative treatment. The main concern is to protect the patient's skin and joints from cuts, bruises, and dislocations. At each visit, the patient should be assessed for bleeding gums, melena, hemoptysis, and nosebleeds. Inadequate wound healing or wound dehiscence after a surgical procedure should be noted. Assessment of the lungs for pneumothorax, particularly following surgery, is important [35].

As with any chronic condition, the nurse needs to teach patients and their families about the nature and course of the disease. The patient should also be referred to a genetic counselor, as there are varying modes of heritability. A patient with Ehlers-Danlos syndrome who becomes pregnant is at risk for abortion, preterm birth, exacerbation of joint problems, increased bruisablity, abdominal hernia, and varicosities. Serious complications may arise with cesarean deliveries, because sutures do not hold well and wound dehiscence may result [7].

INFLAMMATORY DISORDERS

Many pathologic conditions involve inflammation of connective tissue. In this section, most of the inflammatory conditions are related to alterations in the immune system [37].

Bursitis, Tendinitis, and Tendinosis

Bursitis is an inflammation of the synovial membrane lining a bursa; tendinitis is an inflammation of a tendon. These inflammations may result from trauma, or they may be secondary to disease. Although both conditions are usually acute, they can become chronic and disabling with repeated injury or inadequate care [37]. Note that tendinitis is distinct from tendinosis, which is the result of a noninflammatory condition characterized by degeneration of the tendon in response to chronic overuse.

Bursitis and tendinosis develop from prolonged overuse of a particular muscle group that can eventually damage a bursa or tendon. Overuse may be due to repetitive work movements or to a sports activity. Because the vascular supply of tendons is poor, their healing is limited and inflammation can become chronic, resulting in tissue damage and persistent pain. Often, the patient becomes unable to continue performing the movements that led to the condition, potentially impairing their ability to continue working.

Calcium deposits in tendons or bursae may also be the cause of inflammation. Tendon sheaths may become inflamed secondarily to systemic disease, such as gout, rheumatoid arthritis, or scleroderma [37].

Clinical Manifestations

The major symptom of bursitis/tendinitis/tendinosis is pain, often so severe that the patient is unwilling to move the affected part. Swelling may be present, and this alone may keep the patient from moving the joint. Any of the body's many bursae and tendons can become inflamed, but some joint areas are more commonly affected than others. Differential diagnosis of acute pain and erythema in joint areas should include infection, gout, and rheumatoid arthritis [37].

Bursitis and tendinitis/tendinosis of the shoulder involve the subacromial and subdeltoid bursa (different sections of the same large bursa) and the tendon of the supraspinatus muscle. The onset of bursitis or tendinitis in the shoulder usually follows activities involving repetitive movements of the whole arm, such as sanding, painting, sawing, throwing, or repeated lifting. Pain in the deltoid area increases when the patient lies on the shoulder or actively abducts the arm. A classic sign of bursitis/tendinitis/tendinosis of the shoulder is the "painful arc" between 80° and 120° of active arm abduction. The patient is often unable to support the weight of the arm at these angles. Further abduction causes no pain, and the examiner can perform assisted range of motion. If passive range of motion causes pain, capsulitis, rather than a periarticular disorder, is suspected [37].

Inflammation of the elbow region most often involves the olecranon bursa and the medial and lateral epicondyles. "Tennis elbow" is generally lateral epicondylitis, and "pitcher's elbow" is medial epicondylitis. These conditions cause pain that radiates from the elbow down to the forearm. The patient may drop heavy objects because of a feeling of decreased strength, although there is no real loss of strength or range of motion. Palpation of the involved epicondyle causes pain. Activities involving lower arm movement, such as tennis or hammering, may precipitate an attack. Olecranon bursitis usually is caused by leaning or falling on the elbow. There may not be severe pain, but swelling is often extensive [37].

Tenosynovitis involves inflammation of the tendon and tendon sheath and is also known as de Quervain tenosynovitis of the wrist [38]. When the tendons at the base of the thumb become irritated or inflamed this causes the tunnel around the tendon to swell and results in pain and difficulty grasping and holding objects. Overuse is the most common cause [38]. New repetitive activity, hormonal fluctuations associated with pregnancy and breastfeeding, and wrist fractures also are possible causes of de Quervain tenosynovitis [39].

Stenosing tenosynovitis, also referred to as "trigger finger," occurs when the pulley/tendon relationship between the hand and fingers is restricted by thickening or swelling at the base of the fingers. This creates pain and a distinctive catching, popping, or locking action in the finger or thumb. A cycle of triggering, inflammation, and swelling is common. Like carpal tunnel syndrome, stenosing tenosynovitis has been associated with other health conditions, such as gout, diabetes, and rheumatoid arthritis. In many cases, the actual cause is not clear [40].

The most common inflammatory problem of the hip is trochanteric bursitis. Pain, which is distributed over the lateral aspect of the hip and thigh, may inhibit ambulation. An increase in pain is seen with abduction and internal rotation against resistance. The patient feels tenderness with palpation over the greater trochanter. Patients who have leg length discrepancy may develop this inflammation in the hip of the longer leg [37].

Four bursa in the knee can cause significant discomfort for the patient when inflamed [37]:

- Prepatellar bursa
- Superficial infrapatellar bursa
- Deep infrapatellar bursa
- Pes anserine bursa

Prepatellar bursitis ("housemaid's knee") results from the combined action of excessive kneeling and leaning forward, as when gardening. Superficial infrapatellar bursitis ("clergymen's knee") can result from excessive kneeling. Deep infrapatellar bursitis and pes anserine bursitis are secondary to excessive weight bearing or unusually strenuous exercise [37].

Achilles tendinitis is a painful inflammation of the tendon of the ankle with or without swelling. This injury often results from a single episode of overuse. It can also occur in runners who wear shoes with rigid soles. Recurrent episodes of Achilles tendinitis, when a patient resumes activity before complete healing has occurred, can result in progressive scar formation, which may require surgical repair [37].

Therapeutic Measures

The measures employed for relief of bursitis and tendinitis vary according to the patient's age and the location, cause, and severity of the injuries. Recommendations usually include [37]:

- Short-term immobilization, particularly during differential diagnosis
- Ice packs applied to the affected area
- Physical therapy and structured exercise after the initial period of rest
- Anti-inflammatory medication

Occasionally, local corticosteroid injections are administered to the inflamed bursa or tendon area. While this approach is relatively widespread, it is not supported by well-designed systematic reviews [41].

Physical therapy and increasing return to activities is the best practice for these patients. Physical therapy consists of a four-step approach [42]:

1. Pain reduction and load management (isometric loading and avoiding positions of compression)
2. Isotonic loading (heavy-slow resistance through concentric-eccentric phases)
3. Energy-storage loading (plyometric loading)
4. Return to activity/sport

Exercise is crucial in the rehabilitation process, and active movement is started early. For example, in bursitis of any bursa of the knee, quadriceps-setting exercise is begun as soon as pain allows. When pain and tenderness have completely subsided, range of motion and full quadriceps activity are initiated. Physical therapists are often involved in designing and implementing exercises for patients, according to their individual needs. Occupational therapists may also participate if the nature of the problem involves a modification or change in job [15].

In some cases, fluid may be aspirated from the bursal space to relieve the symptoms. Any fluid obtained should be cultured and inspected. X-rays of joints are usually normal, but in some instances, calcium deposits can be identified as the precipitating factor. Arthrography is indicated in specific types of shoulder trauma to rule out any disruption of the joint capsule. Surgery is rarely used for bursitis or tendinitis unless rupture of the tendon occurs [37].

Specific Nursing Measures

Goals of nursing care are to relieve the patient's pain, maintain maximum mobility, and prevent joint contracture. Assessment of pain and range of motion is important both initially and after treatment to measure improvements. Reassurance and support can contribute to the relief of pain, so it is helpful to assure the patient that the pain of bursitis or tendinitis/tendinosis is usually of short duration [35].

Instrumental to the success of treatment is comprehensive patient education. Patients should receive instruction on physical therapy exercises (including frequency), pain management techniques, and return to activities; written instruction should also be provided. If pain is relieved with pharmacotherapy, the patient may be tempted to use the affected area too soon. It is important to caution patients to refrain from early resumption of activity to avoid reinjury and/or the creation of scar tissue [35].

Polymyalgia Rheumatica

Polymyalgia rheumatica is an immune-mediated inflammatory disorder characterized by muscle stiffness, pain, and weakness around the neck, shoulders, and hip. While this is an inflammatory disorder, the cause of trigger is unclear; genetic, infectious (e.g., Epstein-Barr virus, parvovirus), and gut health-related etiologies have all been suggested, with varying levels of evidence [43]. The incidence increases with age, with the greatest incidence in White patients older than 50 years of age; the average age at diagnosis is 70 years.

Clinical Manifestations

As noted, the characteristic symptoms of polymyalgia rheumatica are pain and stiffness in the shoulders, neck, upper arms, and hip area. The pain and stiffness are usually worse upon waking in the morning or after resting, and usually last an hour or more. Patient may experience difficulty performing normal activities, including rising from bed or a chair, dressing, and brushing hair. Many patients will have difficulty raising their arms above the shoulders [44]. Less common signs and symptoms include flu-like symptoms (e.g., low-grade fever, weakness, loss of appetite, weight loss) and swelling of the wrists or joints in the hands. Onset of symptoms is typically over the duration of a few days but may be as short as overnight.

Diagnosis is typically based on the presence of elevated inflammatory markers, particularly ESR and immunoglobulin G (IgG). In addition, these patients will display a decreased number of circulating B cells compared with healthy adults [43].

A significant portion of patients with polymyalgia rheumatica are also diagnosed with giant cell arteritis, and research indicates the co-occurrence of these conditions is common even without the presence of symptoms [43].

Therapeutic Measures

The EULAR and the ACR have issued a joint guideline for the management of polymyalgia rheumatica [45]. The cornerstone of treatment is at least 12 months of glucocorticoid therapy. This typically consists of 12.5–25 mg prednisone, although a lower dose may be preferred in patients at risk for glucocorticoid-related adverse events (e.g., those with osteoporosis, glaucoma, diabetes). Drug therapy should be tapered up to effective dose and tapered down when discontinued.

Care of patients with polymyalgia rheumatica includes monitoring for and preventing (when possible) the adverse effects of long-term steroid therapy. This can include vitamin D and calcium supplementation as well as bisphosphonate prophylaxis for those at increased risk for fracture [43]. Because close monitoring is necessary, patient education should include the necessity for keeping all follow-up appointments.

IMMUNOLOGIC DISORDERS

The disorders in this section are believed to have an autoimmune etiology. As with many autoimmune disorders, there are a variety of potential initiating factors, including viral infections, genetic predisposition, and exposure to toxins [46].

Autoimmune disorders may be generally classified as organ-specific or generalized. Autoimmune connective tissue diseases are generalized, usually involving a progressive degradation of collagen in connective tissue throughout the body. Rheumatoid arthritis is among autoimmune disorders but will be discussed later in this course, because joint involvement is the major problem [46]. Some autoimmune disorders result in musculoskeletal manifestations but have an etiology in another body system. For example, fibromyalgia is characterized by widespread musculoskeletal pain and fatigue, but it is believed to be the result of nervous system dysfunction.

Autoimmune connective tissue disorders can be associated with significant morbidity mortality. However, early diagnosis and treatment have improved prognosis, though they remain chronic (incurable) conditions. Successful therapy for patients with autoimmune disease requires an interprofessional team approach in order to ensure the best outcomes for patients [46].

Familiarity with each disorder will prepare the nurse to be alert for manifestations, exacerbations, and patient education needs. Because patients are often prescribed several medications to help manage the disorder, nursing management often includes medication management. Comfort measures are another important aspect of nursing care during acute phases or exacerbations. Proper positioning, use of splints, and small comfort measures (e.g., backrubs, smoothing wrinkled sheets, creating a calm environment) all contribute to the patient's well-being [46].

The nurse will explain to patients how they can try to prevent exacerbations of specific manifestations of their disease and how to cope with them when they do occur. Prevention measures may include avoiding stress, cold, sun, or certain drugs [46].

Systemic Lupus Erythematosus

Four different forms of lupus have been identified: cutaneous lupus erythematosus, drug-induced lupus, neonatal lupus, and systemic lupus erythematosus (SLE) [47]. Cutaneous lupus mainly affects the skin. It is associated with chronic skin eruptions that, if left untreated, can lead to scarring and permanent disfigurement. Drug-induced lupus is associated with ingestion of various drugs that result in lupus-like symptoms. Neonatal lupus is a rare, non-systemic condition affecting infants of women with lupus. SLE, which affects multiple organ systems as well as the skin, is considered the most common of the four forms.

SLE, often referred to simply as lupus, is a chronic inflammatory autoimmune disorder of the connective tissue, primarily affecting the skin, joints, blood, and kidneys [47; 48; 49]. In this autoimmune disorder, antibodies are formed within the body that target healthy body systems, causing inflammation and structural changes. The word lupus means "wolf" in Latin, while erythematosus means "redness." The disease is named for the characteristic red rash that appears on the face and is thought to resemble a wolf's face [47; 49]. The term "lupus erythematosus" was coined in 1851 by Pierre Cazenave, a French dermatologist, but writings describing lupus date to ancient Greece [49; 50].

Lupus has been characterized as a multidimensional, unique, complex, challenging, unpredictable, and often elusive disease [47]. It is a non-organ-specific systemic disease with a varying prognosis that can be mild, serious, life-threatening, or even fatal. The disease is characterized by recurring remissions and exacerbations, often called flares, that occur most commonly in the spring and summer [48; 51]. Periods of remission vary considerably among those diagnosed with lupus [47].

The number of reported cases of lupus varies based on different sources; it is believed that there are at least 1.5 million affected individuals in the United States [52; 53]. More than 90% of SLE cases occur in women, with most women developing symptoms in their childbearing years (15 to 45 years of age) [54]. New diagnoses of lupus in women older than 45 years of age are uncommon [49]. SLE is most common among African Americans, with African American women having three times the incidence of White American women [54]. The incidence of lupus is also greater in Hispanic, Asian, and Native American women when compared to White women [55]. Statistics show that Black and Hispanic women tend to develop the disease at a younger age, are more likely to develop more serious complications (particularly cardiovascular complications and kidney disease), and tend to have a higher mortality rate from the disease as compared to White women [54].

The exact cause of lupus remains a mystery, but researchers believe that it results from multiple factors [49; 56]. Possible causes may be interrelated and include immunologic dysfunction, genetic factors, hormones, and environmental influences [50; 51].

Immune dysregulation, in the form of autoimmunity, is thought to be the prime cause of lupus. In patients with lupus, the body produces an accelerated inflammatory response, resulting in the production of autoantibodies, causing immune complexes (antigens combined with antibodies) [49; 56]. These autoantibodies and complexes assault the body's own healthy cells and tissues [47; 49; 50; 51]. Symptoms of SLE are the result of the damage to the body's tissues secondary to the immunologic response. One of the hallmark indicators of lupus is the formation of autoantibodies, and the presence of autoantibodies in the blood is a key factor to the diagnosis of lupus [47; 49; 51].

The strong hereditary component of lupus is supported by the fact that first- and second-degree relatives of patients with lupus are at a greater risk for developing lupus [57]. Estimates indicate that 5% to 13% of relatives will develop lupus, but only 5% of children whose mothers had lupus will develop the disease [57]. For those with a genetic predisposition, environmental factors may trigger lupus [47]. Environmental factors that may precipitate or exacerbate lupus include physical or emotional stress, streptococcal or viral infections, exposure to sunlight, immunizations (live vaccines), surgery, smoking, chemical agents (drugs, metals, or toxins), certain foods or supplements, and other environmental irritants [47; 50; 58]. Further, female sex hormones are believed to have a potential role, as women in their reproductive years are most susceptible to lupus.

CLASSIFICATION CRITERIA FOR THE DIAGNOSIS OF SYSTEMIC LUPUS ERYTHEMATOSUS		
Domain	**Criteria**	**Weight**
Entry Criterion		
Positive antinuclear antibody (ANA) titer	ANA titer of >1.80 on Hep-2 cells or an equivalent positive test (ever)	Must be positive to continue to additive criteria
Additive Criteria, Clinical		
Constitutional	Fever	2
Hematologic	Leukopenia Thrombocytopenia Autoimmune hemolysis	3 4 4
Neuropsychiatric	Delirium Psychosis Seizure	2 3 5
Mucocuteanous	Non-scarring alopecia Oral ulcers Subacute cutaneous OR discoid lupus Acute cutaneous lupus	2 2 4 6
Serosal	Pleural or pericardial effusion Acute pericarditis	5 6
Musculoskeletal	Joint involvement	6
Renal	Proteinuria >0.5 g/24h Renal biopsy Class II or V lupus nephritis Renal biopsy Class III or IV lupus nephritis	4 8 10
Additive Criteria, Immunology		
Antiphospholipid antibodies	Anti-cardiolipin antibodies OR Anti-ß2GP1 antibodies OR Lupus anticoagulant	2
Complement proteins	Low C3 OR low C4 Low C3 AND low C4	3 4
SLE-specific antibodies	Anti-dsDNA antibody OR Anti-Smith antibody	6

Source: [59] *Table 1*

Diagnosis

The diagnosis of lupus may be a challenge for the healthcare provider as well as the patient. In 2019, the EULAR and the ACR published updated classification criteria for lupus (***Table 1***) [59]. The EULAR/ACR criteria classifies a person as having lupus if they meet entry criterion of an ANA titer of >1:80, followed by additive weighted criteria (seven clinical and three immunologic) in which the patient must meet one clinical criterion and ≥10 points between the clinical criteria and immunologic criteria [59].

Clinical Manifestations

No two people with lupus will experience identical symptoms. The onset of lupus may be acute or insidious, vague, or even nonspecific. On average, individuals with lupus have symptoms of the disease for two to three years before a diagnosis is made [49]. Symptoms are the result of the inflammatory and immune response of the individual's body to the disease process [49]. Repetitive cycles of exacerbations and remissions of symptoms are a hallmark of the lupus disease process.

Common symptoms of lupus include fever, weight loss, malaise, fatigue, skin rashes, polyarthralgia, vasculitis, Raynaud syndrome (discussed in detail later in this course), patchy alopecia (hair loss), and painless ulcers of the mucous membranes [51]. Fatigue is probably the most universal symptom,

described as a persistent complaint of a paralyzing fatigue that normal rest may not relieve [47]. Vague symptoms of lupus include aching, fatigue, low-grade or spiking fever, chills, and malaise. Episodic fever is reported by more than 80% of all patients with lupus, with a low-grade fever most often noted [47]. Infection is certainly a major concern and is a potential symptom for patients with lupus. Those with lupus are more susceptible to opportunistic infections due to alterations in their hematologic system, especially in white blood cells. Women with lupus may also experience irregular periods or amenorrhea due to the disease process [47; 49].

Skin rashes are very common among patients with lupus; approximately 80% of patients report skin involvement [47]. A red, raised rash over the nose and cheeks characterizes the classic "butterfly rash" of lupus. The butterfly rash is reported by 55% to 85% of all patients with lupus at some point during their disease process [47]. Discoid lupus lesions may also be seen. Ultraviolet light often aggravates skin eruptions, and approximately one-third of all patients with lupus are found to be photosensitive [47; 60]. Oral, nasal, and vaginal ulcers may occur. Conditions such as alopecia, pruritus, alteration in wound healing, and bruising are other common dermatologic symptoms.

Polyarthralgia (pain in multiple joints) occurs in more than 90% of lupus cases [47]. The joint pain associated with lupus is similar to that experienced by rheumatoid arthritis patients and is often called lupus arthritis. Most patients complain of morning joint stiffness and pain. The pain is typically symmetrical, and joints may become tender, warm to the touch, and swollen. The dominant extremities are usually more inflamed. Joints commonly affected include the toes, ankles, fingers, wrists, elbows, and knees [61]. Joint pain is often one of the first and most common complaints of those with lupus and is often what initially brings them to a healthcare provider [50]. Additional musculoskeletal symptoms that may occur include subcutaneous nodules, tendonitis, tendon rupture, and carpal tunnel syndrome [47].

Anemia and cardiopulmonary abnormalities are relatively common among patients with SLE, affecting 50% of patients [47; 49; 62]. The most common cardiac complication of lupus is pericarditis, while pleurisy is the most common respiratory complication [47; 49].

Nervous system involvement secondary to lupus is common and can range from mild to severe. Central nervous system involvement may result in cognitive disorders, including confusion, fatigue, memory impairment, and difficulty in articulating thoughts [49]. Cognitive dysfunction is estimated to occur in up to 90% of patients with lupus and is not associated with lupus disease activity [63].

Renal damage is one of the most serious complications of lupus, often causing such symptoms as hematuria, proteinuria, urine sediment, cellular casts, urinary tract infections, and fluid/electrolyte imbalance. Renal involvement has the potential to cause renal failure, affecting up to 50% of patients [47]. Renal disease is a leading cause of death in patients with lupus [47].

Ophthalmic disease affects approximately 20% of patients with lupus [47]. Ophthalmic symptoms associated with lupus may include a lupus rash on the eyelids, conjunctivitis, dry eyes, glaucoma, and cataracts [47]. In severe cases, retinal exudates or blindness may occur.

Therapeutic Measures

There is currently no cure for lupus, and long-term disease management is required. Due to the variability of lupus symptoms, treatment protocols differ for each individual. The range of treatments, however, are increasing in number and becoming more effective; thus, the disease can be controlled reasonably well in most people. The ultimate goal of treatment is to suppress immune system abnormalities, prevent disease flares, and reduce inflammation and other complications secondary to lupus [51].

Treatment is based on such factors as symptoms and severity, overall general health, activity level, school and/or family schedule, age, family and social situations, other medical conditions, and financial and insurance considerations [50].

Although there is no cure for lupus, there are several types of drugs available to aid in the treatment and management of secondary symptoms. Among these drug classes are nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, antimalarials, biologics, and immunosuppressives. In cases of severe lupus kidney disease not helped by pharmacologic intervention, dialysis or kidney transplant may be necessary.

Specific Nursing Measures

Nurses may see patients with SLE in both inpatient and ambulatory care settings. Discovering early symptoms and signs of exacerbations and complications is important in prolonging the life of patients with SLE. Carefully monitor all diagnostic study reports to remain well informed about the patient's progress [46].

Individuals diagnosed with lupus are encouraged to do all of the following [47; 49; 50; 51]:

- Get plenty of physical and emotional rest.
- Maintain a healthy diet.
- Establish an exercise regimen.
- Avoid sunlight.
- Seek prompt treatment of infection.
- Limit stress.

- Set realistic goals and priorities.
- Maintain effective communication with their healthcare providers.
- Develop a support system, including family, friends, healthcare professionals, community organizations, and organized support groups.
- Avoid triggering or aggravating factors.
- Seek regular health care.

Eight to 10 hours of sleep per night along with naps are recommended for patients with lupus. In addition, individuals with lupus should minimize stress to reduce emotional distress, as well as avoid direct prolonged sunlight, especially during the hours between 10 a.m. and 4 p.m. The use of a sunscreen with a sun protective factor (SPF) of 15 or greater that protects against both ultraviolet A and B rays is recommended along with protective clothing such as long sleeves and a hat [47]. Routine exercise is important to reduce fatigue and maintain joint mobility.

Social support can have a positive impact on individuals diagnosed with lupus. However, seeking and gaining social support can be difficult when one is experiencing a chronic illness such as lupus, because tremendous energy is necessary to maintain social networks [64]. Lupus symptoms, as well as treatment side effects, can present a challenge for individuals in maintenance of their pre-illness social relationships and activities. Furthermore, to gain necessary support, individuals with lupus should understand and then communicate to others what they need to assist them in managing their disease.

Keller noted similar findings in her research on social support and psychologic distress in women with lupus. She concluded that "younger women with lupus were more psychologically distressed than older women with lupus and that women with shorter duration since diagnosis were more distressed" [65]. Keller also found that the perception of having social support and being satisfied with the social support were more important than the number of social supports [65]. Thus, perception of and satisfaction with social support has been found to reduce psychologic distress.

One important potential source of assistance can be support groups. It has been noted that "participating in a support group can provide emotional assistance, boost self-esteem and morale, and help to develop or improve coping skills" [51]. Successful support groups can assist patients to gain insights into how to live with their lupus [66]. Darner found that women with lupus who had been diagnosed for longer periods of time had a healthier psychosocial adjustment [67]. Therefore, those newly diagnosed with lupus may require more support and interventions to aid in psychosocial adjustment.

Systemic Scleroderma

Systemic scleroderma, also called sclerosis, is an autoimmune connective tissue disorder that causes fibrous changes in the skin, synovium, and small arteries of the digits, as well as in various internal organs, most notably the esophagus, intestines, heart, lungs, kidneys, and thyroid. The disease occurs in various forms, ranging from a primarily skin condition (localized scleroderma) to the CREST (calcinosis, Raynaud phenomenon, esophageal dysmotility, sclerodactyly, and telangiectasia) syndrome, which is thought to be more benign, to involvement of visceral organs (systemic scleroderma). Some patients with mild-to-moderate types of scleroderma can progress to the visceral and more extensive cutaneous lesions associated with systemic scleroderma [46].

In all forms of the disease, there is vascular injury at the level of small arteries and capillaries, and the resulting decrease in circulation is the cause of the tissue changes. The precipitating factor for the onset of systemic scleroderma is not clear, although there is some evidence that genetic and environmental factors play a role. Silica and certain organic solvents are recognized as risk factors of occurrence of systemic scleroderma. In addition, the prevalence of the disease is 13 times higher in first-degree relatives of patients than in the general population [68]. The result is an activation of the immune system, causing blood vessel damage and injury to tissues that result in scar tissue formation and the accumulation of excess collagen.

There are no definitive tests to diagnose systemic scleroderma, and diagnosis is primarily based on clinical evaluation. Autoantibodies occur in this disorder, and the ESR may be elevated. As part of the diagnostic workup, the following tests may be performed [68]:

- Nailfold capillaroscopy
- Screening for antinuclear antibodies (mainly anti-centromere and anti-scl70/ anti-topoisomerase antibodies)
- Transthoracic echocardiography
- High-resolution computed tomography (CT) of the chest
- Diffusing capacity of the lung for carbon monoxide and spirometry
- Hand x-ray
- Esophageal manometry

Clinical Manifestations

The most frequent presentation in systemic scleroderma is the clinical triad of skin changes, Raynaud phenomenon, and esophageal hypomotility. However, manifestations are often present in other organ systems, requiring continual monitoring [46].

The most typical changes in all types of scleroderma occur in the skin. Typically, skin changes begin with swelling of the hands and gradual thickening, tightening, and hardening of the skin of the fingers (sclerodactyly). The fingers become tapered and in severe cases claw-like, with impaired mobility. Ulcers may develop on fingertips and over knuckles as the skin becomes taught. Skin changes can progress proximally at a slow rate, eventually affecting the face. In these cases, the skin of the face becomes tight and shiny, with a loss of normal wrinkles and skin folds. The nose may become beaked, and sometimes radial furrowing is seen around the mouth. Patients may experience an impaired ability to fully open their mouths. In extreme cases, the face becomes expressionless [46].

Most patients with systemic scleroderma have Raynaud syndrome, and this is often the first symptom to appear. With Raynaud syndrome, there is diminished blood flow to the digits secondary to vasoconstriction of the digital arteries, typically triggered by cold, vasoconstriction drugs, or emotional states. The initial sign is digital pallor, which progresses to cyanosis, then to erythema on rewarming [46].

The patient may have pain and stiffness in both small and large peripheral joints. Occasionally, patients develop arthritis and synovial effusion. Contracture and atrophy of the fingers may eventually occur [46].

Hypomotility of the esophagus occurs in most patients with systemic scleroderma. This typically presents as gastroesophageal reflux, with resulting heartburn and stricture, and potentially difficulty swallowing. In some cases, patients require esophageal dilation. Gastrointestinal involvement can progress to the intestine and colon, with development of hypomotility of the small intestine and wide-mouth diverticula [46]. In patients with gastrointestinal involvement, impaired nutrition is common.

Systemic scleroderma can also cause cardiopulmonary problems. Dyspnea may develop as a result of pulmonary hypertension and interstitial fibrosis. The examiner may hear fine dry rales or crackles at the bases of the lungs, and spirometry is often abnormal. Manifestations involving the heart are primarily the result of lung complications, but dysrhythmias, conduction disturbances, pericarditis, and pericardial effusions uncommonly occur [46].

In some patients, the kidneys can be seriously affected, with malignant hypertension rapidly producing renal failure, the leading cause of death for these patients. High renin levels and proteinuria are signs of kidney involvement [46].

Hematologic problems, in addition to a mild normochromic, normocytic anemia, include vitamin B_{12}/folic acid deficiency anemia, which may occur secondary to bacterial overgrowth in an atonic small intestine. There is also a risk for gastrointestinal bleeding and resultant iron-deficiency anemia [46]. Other manifestations include thyroid disease, biliary cirrhosis, trigeminal sensory neuropathy, and Sjögren syndrome [46].

Therapeutic Measures

Treatment of systemic scleroderma is symptomatic and driven by the stage and organ involvement of the disease. In its 2017 guideline for the treatment of systemic scleroderma, the EULAR has established guidelines for the management of manifestations, organized by affected body system [69]. For patients with systemic scleroderma-associated Raynaud phenomenon, evidence supports nifedipine to reduce the frequency and severity of attacks. As such, oral nifedipine should be considered as first-line therapy. Phosphodiesterase-5 (PDE-5) inhibitors should also be considered [69]. For patients with severe disease who do not improve on oral therapy, intravenous iloprost is the recommended approach.

Intravenous iloprost is also recommended for patients with systemic scleroderma who experience digital ulcers [69]. PDE-5 inhibitors have been proven to expedite healing and prevent the development of digital ulcers and should be considered for these patients. Patients who do not respond to calcium channel blockers, PDE-5 inhibitors, or iloprost therapy, may be prescribed bosentan, which has been shown to reduce the number of new digital ulcers in patients with systemic scleroderma. Physical therapy for the hands is important to prevent contractures. For patients with Raynaud phenomenon, biofeedback is sometimes useful for controlling temperature in the hands and feet [46].

For patients whose systemic scleroderma is characterized by pulmonary arterial hypertension, EULAR recommends treatment with endothelin receptor antagonists (e.g., ambrisentan, bosentan, macitentan), PDE-5 inhibitors (e.g., sildenafil, tadalafil), or riociguat [69]. In cases of severe disease, intravenous epoprostenol is the first-line option. In cases of malabsorption by the small intestine, absorption often improves with the use of tetracycline, which destroys the bacterial overgrowth that occurs with hypomotility [46].

Hypertension is treated aggressively with angiotensin-converting enzyme (ACE) inhibitors to prevent irreversible renal damage [46]. The risk for scleroderma renal crisis in increased in patients taking glucocorticoids, and these patients should be closely monitored [69].

Arthritis responds to NSAIDs, and the dry eyes (sicca syndrome) of Sjögren syndrome are helped by artificial tears. A patient with dry mouth (xerostomia) should have frequent dental exams, because this condition predisposes patients to severe dental caries [46].

Specific Nursing Measures

Patients with known or suspected systemic scleroderma should be thoroughly assessed, including the skin, joints, and cardiovascular, pulmonary, and gastrointestinal status. The eyes and mouth should be evaluated for adequate lacrimal and salivary gland secretions. It is important to closely monitor blood pressure and review laboratory results. Venipuncture in the antecubital area may be difficult because of skin changes; further, finger sticks should be avoided. If only a small amount of blood must be drawn, the earlobe may be the best site [35].

Patient education should include a clear explanation of the nature and course of systemic scleroderma, including signs of more serious involvement. For some patients, demonstration of range-of-motion exercises to prevent joint contracture may be warranted. Patients should be encouraged to use moisturizing lotions to decrease dryness [35].

Patients with Raynaud phenomenon are advised to avoid cold, ergotamine, and amphetamines. They should be cautioned to take precautions against cold weather, including the use of warm gloves and socks. The use of nicotine should be avoided, as it is associated with pronounced peripheral vasoconstriction, which markedly aggravates Raynaud syndrome [35].

Patients with esophageal dysmotility should be advised to eat small, frequent meals and to chew their food thoroughly; meals should be followed with water. Proton pump inhibitors (PPIs) and antacids after meals and at bedtime can help to help to relieve gastroesophageal reflux disease. Resting and sleeping with the head of the bed elevated may also help to relieve symptoms [35].

The face and hands often undergo considerable changes in scleroderma, which alters the patient's appearance and manual dexterity. The facial skin becomes taut, the nose may become beaked, and telangiectasias may appear on the face. Tapering of the fingers, with tightness of the overlying skin, occurs as flexion contractures may be present [35]. These physical changes may cause varying levels of disability, but they can also have a negative effect on the patient's self-esteem and self-worth. Referral to mental health care and participation in support groups can be helpful.

TRAUMATIC DISORDERS

Sprains and Strains

Traumatic injuries to the soft tissues surrounding joints—muscles, ligaments, and tendons—are called sprains and strains; chronic injury is joint instability. The acute injury may arise from blunt trauma to the muscle or joint; excessive exercise; or twisting, stretching, or forcible extension of a joint (e.g., "twisting" the ankle). Surgery is seldom needed unless complete rupture occurs, but the pain of such an injury can be severely limiting [70].

A sprain is an injury to a ligament caused by forcing a joint beyond its normal range of motion. The ligament may be stretched or actually torn. Sprains usually occur following a blunt blow during sports activities or falls. A strain is an injury to a muscle and/or tendon at any location from origin to insertion.

Strains are associated with excessive stretching of a muscle or muscle unit; they usually do not occur because of a blow or direct trauma. Poor conditioning, improper warm-up before activity, muscle fatigue or weakness, and strength imbalance can all contribute to muscle or tendon strain. Both strains and sprains have a high incidence of recurrence [70].

Clinical Manifestations

A sprain causes pain, swelling, local hemorrhage, spasm of the muscle that moves that joint, and disability. Pain occurs with passive movement of the joint, and there is intense pain over the involved ligament itself. Sprains are graded according to damage to the ligaments and the resultant joint instability [70]. A Grade I sprain is characterized by slight stretching and microscopic tearing of the ligament fiber, mild tenderness, and swelling around the joint. A Grade II sprain is identified by partial tearing of the ligament, moderate tenderness and swelling, and an abnormal looseness in the joint. The most severe is a Grade III sprain, which consists of a complete tear of the ligament, significant swelling and tenderness, and substantial instability.

The most common sprains affect the ankle and occur when inversion of the foot tears a ligament, usually the anterior talofibular ligament. Knee sprains cause swelling, hemarthrosis, significant decrease in range of motion, and joint laxity. Often the person hears a "pop" when the injury occurs and later describes the knee as feeling as it is going to "give way." The medial collateral ligament is most commonly involved [70]. Following the acute injury, patients are usually able to bear weight.

Strains cause pain, swelling, muscle spasm, and hemorrhage into the muscle. Discoloration and weakness may also be present. Pain increases with active flexion or passive stretching, which helps in differentiating strains from sprains. Strains are graded according to loss of muscle strength [70; 71]:

- Grade 1: A mild injury with no appreciable tissue tearing and no substantial (less than 5%) loss of function or strength
- Grade 2: A moderate injury with nearly half of muscle fibers torn, reduced strength, and some residual function
- Grade 3: A severe injury resulting from the complete rupture of the muscle, severe swelling and pain, and complete loss of function

Therapeutic and Specific Nursing Measures

Approaches to the treatment of strains and sprains are similar. Before initiating treatment, a thorough assessment and history to determine the nature and cause of the injury as well as any significant health problems that may influence the treatment. When a suspected strain or sprain occurs, the first-line treatment consists of five components known by the acronym PRICE:

- **P**rotection: The affected joint or muscle should be covered to minimize the risk of additional traumatization.
- **R**est: The patient should take steps to avoid use of the joint, tendon, or muscle to allow time for repair and healing.
- **I**ce: The application of cold will reduce pain and swelling (by causing vasoconstriction), and patients should be instructed to apply cold compresses up to several times per day, but to limit duration to 20 minutes or less.
- **C**ompression: In order to reduce diapedesis and promote lymphatic drainage, the area may be bandaged. Patients should be instructed that wrappings should not be so tight as to restrict circulation.
- **E**levation: The affected limb should be elevated to the level of the heart (or as close as possible) to promote venous return and reduce inflammation.

The PRICE regimen is usually continued for one week after injury, though there is some controversy about whether cold or heat is used after the first 24 hours. Cold is usually recommended for five to seven days because of its anti-inflammatory and analgesic effect. Then, wet heat may be used to aid in muscle relaxation and promote blood flow to the area [35].

With a second- or third-degree sprain, an x-ray should be taken to rule out fracture. Patients with sprains are usually immobilized for one week. When all pain on motion has ceased, patients can begin active range-of-motion and muscle-strengthening exercises. NSAIDs are the treatment of choice [35].

The PRICE regimen and NSAIDs are also appropriate for management of a strain. Emphasis is placed on prevention of recurrence through the use of muscle-strengthening and stretching exercises. Patients should be advised to engage in warm-up exercises before engaging in strenuous activity. For example, for patients with chronic ankle sprain/instability, slow stretching of the Achilles tendon daily can effectively reduce the incidence of recurrent sprain. Surgical intervention is recommended only in cases of complete muscle rupture [35].

Rhabdomyolysis

Rhabdomyolysis is a condition that develops as a result of the rapid dissolution of damaged or injured skeletal muscle [72]. Though not strictly a traumatic disorder, the most common cause of rhabdomyolysis is direct trauma to the skeletal muscle. However, any trigger of muscle destruction can theoretically result in rhabdomyolysis, and additional causes include infection, drugs/toxins, electrolyte disorders, endocrine disorders, extremes of body temperature, and excessive exertion [73].

As discussed, the function of skeletal muscle relies on ATP metabolism, electrolyte exchange, and intact myocytes. When these factors break down, the intracellular components of the muscle (e.g., electrolytes, creatine kinase, lactate dehydrogenase, myoglobin) are released into the body and enter the bloodstream. In more severe cases, this can lead to acute kidney injury, electrolyte imbalances, renal failure, and even death.

Clinical Presentation

The presentation of rhabdomyolysis is typically believed to consist of muscle pain, weakness, and discolored (reddish-brown) urine. Though this is considered the "classic" triad of symptoms, less than 10% of patients will present with all of these symptoms [73]. More than half of patients present only with myoglobinuria.

Diagnosis of rhabdomyolysis depends on detection of plasma creatine kinase. A diagnostic level has not been definitively identified, but most experts use a concentration five times the upper limit of the normal reference range (1,000 IU/L) [72].

Therapeutic Measures

Treatment of rhabdomyolysis focuses mainly on prevention of kidney damage and acute renal failure. Therefore, fluid therapy to increase urine output (and dilute urine) is the standard of care. The American Society of Nephrology has identified an ideal fluid regimen for these patients consisting of half isotonic saline (0.45%, or 77 mmol/L sodium), to which 75 mmol/L sodium bicarbonate is added [74]. At least 3–6 L should be administered per 24 hours; however, up to 10 L (or more) may be given if continuous supervision is possible. If necessary, 10 mL/hour of mannitol 15% may be added to further increase urine output. In cases that have already progressed to overt renal failure, extracorporeal blood purification is warranted [74].

In addition, supportive treatment of resultant hypovolemia and electrolyte imbalances (e.g., hyperkalemia, hypocalcemia) is necessary. Measures to help stabilize temperature are often necessary. Patients' input and output should be monitored and documented. Pain management is often necessary, and patients should be assessed for severity and quality of ongoing pain.

SPECIFIC DISORDERS OF THE JOINTS

Because of their location and constant use, joints are particularly susceptible to stress, injury, and inflammation. In addition, many autoimmune disorders manifest in the joints.

DISORDERS OF MULTIFACTORIAL ORIGIN

A wide variety of joint conditions are multifactorial in origin, including ankylosing spondylitis, reactive arthritis, psoriatic arthritis, gout and pseudogout, low back pain, scoliosis, Charcot arthropathy, and carpal tunnel syndrome [37; 75].

Joint disorders of multifactorial origin can disrupt normal life activities, and families and job security can be negatively affected unless patients seek proper medical attention and counseling. Among the disorders discussed in this section, only gout can be cured, but the other disorders can be controlled to varying degrees so that in most instances the patient can maintain a fairly normal lifestyle [37; 75].

Psoriatic Arthritis

Psoriasis is often associated with inflammatory arthritis and a negative rheumatoid factor. Psoriatic skin lesions usually precede the development of arthritis, and in most cases, there is correlation between joint flares and skin flares. However, some patients with psoriatic arthritis have very mild or no psoriatic skin lesions. Heredity is the most specific risk factor, but environmental factors also play a role; the exact etiology is unknown [76].

Clinical Manifestations

The manifestations of psoriatic arthritis vary from patient to patient. Some have distal joint involvement, while others have widespread deformity, ankyloses, and joint destruction. The disease can be symmetrical or asymmetrical, and some patients have spondylitis, sacroiliitis, eye problems, or a combination. Nodules are not present with psoriatic arthritis [76].

In patients with psoriasis, silver-white scaly patches develop on the elbows, legs, scalp, and back. Nails are often pitted (20 pits or more per nail), and arthritis is more common with nail changes than with skin lesions. Onycholysis is common [76].

Joint symptoms usually begin with the acute onset of pain and swelling of distal interphalangeal (DIP) joints. A gout-like symptom in the great toe often gives a "sausage" appearance to the joint, but the disability is usually not as great as with rheumatoid arthritis. Spondylitis is often found in families with a strong background of psoriatic arthritis. Upon x-ray examination, some people show marked articular destruction with resorption of bone. A shortening of the middle phalanx of the DIP joints of fingers and toes has a characteristic cuplike appearance, and in some cases, an entire phalanx is destroyed. Extra-articular symptoms include conjunctivitis, episcleritis, or uveitis [76].

Laboratory studies of patients with psoriatic arthritis reveal mild anemia, an elevated ESR, negative rheumatoid factor, positive ANA, and an elevated uric acid level. Clinical diagnosis is made by considering nails, peripheral arthritis, and spinal involvement. Nail and skin changes in psoriatic arthritis may be hard to differentiate from those in reactive arthritis [76].

Therapeutic Measures

Therapeutic measures for psoriatic arthritis are aimed at both the arthritis and the psoriasis [76]. Nonpharmacologic approaches include physical and occupational therapy, exercise, smoking cessation, weight loss, and massage therapy. Symptoms may be controlled with NSAIDs and/or glucocorticoids (oral or injection). In treatment-naive patients with active psoriatic arthritis, a tumor necrosis factor (TNF) inhibitor is recommended over oral, small-molecule drugs (OSMs) as a first-line option. However, OSMs may be used instead of a TNF inhibitor in patients without severe disease, particularly if they prefer an oral treatment option [77].

Gout

Gout is a metabolic disorder associated with elevated urate levels in the body and is the most common cause of inflammatory arthritis in the United States. Gouty arthritis is characterized by recurring episodes of acute, usually monoarticular, arthritis that tend to remit over several days to weeks; however, undiagnosed, untreated patients are at risk for developing a chronic deforming arthritis. An estimated 9.2 million adults in the United States are affected [78]. Gout is rarely encountered in persons younger than 30 years of age, with the predominant age range being 30 to 60 years. However, onset may occur in men in their early 20s who have a genetic predisposition and lifestyle risk factors. The peak age of onset in women is the sixth to eighth decade of life [78]. The estimated prevalence of gout is 5.9% in men and 2.0% in women [78]. The prevalence and incidence of gout has increased over the past several decades [78; 79].

Gout develops in persons with hereditary or acquired chronic hyperuricemia or in those with marked perturbations in serum urate associated with such factors as alcohol consumption, drug use, eating foods high in purines, overweight/obesity, and myeloproliferative disorders [78; 80]. The normal serum urate is generally considered to be ≤6.8 mg/dL. The majority of patients at the time of an acute flare have demonstrable hyperuricemia (in excess of 7 mg/dL); however, about 20% do not. The presence of hyperuricemia in the absence of symptoms is not diagnostic of gout [78]. In all cases, the hyperuricemia is caused by some dysregulation in the balance between production and excretion of urate. An estimated 80% to 90% of gout cases are due to urate underexcretion and not overproduction [78]. Hyperuricemia can occur without precipitating gout, and in the absence of symptoms, it may not warrant intervention [78; 81].

EVIDENCE-BASED PRACTICE RECOMMENDATION

The American College of Rheumatology conditionally recommends that patients with gout limit their consumption of purine-rich foods (e.g., meat and seafood), alcohol, and high-fructose corn syrup (particularly in sweetened soft drinks and energy drinks).

(https://www.rheumatology.org/Portals/0/Files/Gout-Guideline-Final-2020.pdf. Last accessed September 26, 2022.)

Certainty of Evidence: Low or very low

Uric acid is a final metabolic product of purine nucleotides found in many foods and in human tissue. Intermediary processes of purine metabolism include the initial breakdown of purines to inosine and then to hypoxanthine. Hypoxanthine is metabolized to xanthine, and xanthine to uric acid, with both stages catalyzed by the enzyme xanthine oxidase (the primary site for pharmacologic intervention by allopurinol) [82].

The human body is limited in its capacity to excrete a heavy urate load. In the setting of persistent hyperuricemia, often combined with stress to weight-bearing joints such as the great toe, monosodium urate crystals precipitate within joint synovial fluid, producing an intense inflammatory reaction. With chronicity, adjacent tissues may become saturated with urate, leading to deposits within articular, periarticular, bursal, bone, auricular, and cutaneous sites. These deposits, termed tophi, are detectable on physical exam or by radiographs and are a cardinal pathognomonic feature of gout. The presence of crystals, within joint fluid or in tissue, activates monocytes and macrophages to clear the crystals through phagocytosis. The release of proinflammatory cytokines and chemokines into the immediate area triggers an acute inflammatory reaction and influx of neutrophils into the joint space [83; 84; 85].

Clinical Manifestations

The clinical presentation of gout is typically one of arthritis and intense pain, and patients may exhibit inflammation and edema in the afflicted joint. Although the great toe is the most common site, other joints and their surrounding tissue can be affected, including the insteps, ankles, heels, knees, wrists, fingers, and elbows [78]. Gout may be confused with other causes of arthritis as all forms share the cardinal signs of inflammation: pain, redness, warmth, tenderness, and swelling [80; 86]. While gout initially manifests in severe, discrete episodes of pain, the condition may progress to more frequent attacks with shorter asymptomatic periods between attacks [78; 86]. Synovial fluid analysis is the gold standard for diagnosing gout, confirmed by the presence of monosodium urate.

Therapeutic and Nursing Measures

Gout is perhaps the most easily treated, and preventable, form of arthritis. This is due to widespread understanding of its underlying mechanisms and the availability of effective treatment [80]. It is managed by controlling the current acute attack and preventing future attacks. Medications addressing the underlying pathophysiology include the xanthine oxidase inhibitors (XOIs) allopurinol and febuxostat and the uricosuric agents probenecid, fenofibrate, and losartan [80; 87]. (Note: The use of fenofibrate and losartan for the treatment of gout is off label.)

The initial steps include patient education, testing to rule out other causes of hyperuricemia, and evaluation of the disease burden to determine appropriate treatment. All patients with hyperuricemia and established gout should be advised to begin dietary modification. This involves avoiding organ meat high in purine content, high-fructose corn syrup, and excessive alcohol use. Portions of high purine-content seafood, sugar, and salt should be limited. The ideal diet will include low- or non-fat dairy products and vegetables. Other lifestyle modifications can also assist in managing gout, including weight loss in overweight patients, regular exercise, smoking cessation, and adequate hydration [83; 87; 88].

The acute pain of gout may be treated with NSAIDs, a cyclooxygenase-2 (COX-2) inhibitor, systemic corticosteroids, or oral colchicine monotherapy in mild-to-moderate disease (≤6 on a 10-point pain scale). Combination therapy (i.e., colchicine and NSAIDs, oral corticosteroids and colchicine, or intra-articular steroids with each of the other options) may be used in cases of severe disease with intense pain and polyarticular presentation. Intramuscular triamcinolone acetonide is recommended in patients unable to take oral medication or likely to be poorly adherent to the multidose oral regimen [87].

An inadequate response to therapy after escalation (<20% pain reduction within 24 hours or <50% pain reduction after ≥24 hours) should prompt reconsideration of the diagnosis. If gout is confirmed, switching to another form of monotherapy or adding a second agent may prove effective [83; 87].

Urate-lowering therapy should be initiated in all patients with tophaceous gout, radiographic damage due to gout, or frequent gout flares [88]. Therapy should be started within 24 to 36 hours of the onset of an acute gout attack unless otherwise contraindicated. Urate-lowering therapy is not recommended for patients experiencing their first flare, or for patients with asymptomatic hyperuricemia (serum urate >6.8 mg/dL) with no prior gout flares or subcutaneous tophi [88]. Allopurinol (≤100 mg/day) is the preferred first-line agent. Febuxostat (≤40 mg/day) is an acceptable alternative [88]. Probenecid may be used as an alternative to allopurinol or febuxostat if there is contraindication or intolerance to these preferred agents. However, probenecid should be avoided in patients with a history of urolithiasis [83; 87; 88].

Clinicians may also consider screening for the HLA-B*5801 allele, which is associated with high risk of severe allopurinol hypersensitivity reaction. High-risk persons include Koreans with an estimated glomerular filtration rate < 60 mL/min/1.73 m^2 or those with Han Chinese or Thai ancestry [89].

Anti-inflammatory prophylaxis (against precipitating an acute flare) is recommended when initiating urate-lowering therapy in asymptomatic patients [88]. Colchicine was once the treatment of choice but is now less commonly used than NSAIDs because of its narrow therapeutic window and risk of toxicity [90]. To be effective, colchicine therapy is ideally initiated within 36 hours of onset of the acute attack [78]. In the case of colchicine intolerance or contraindication, prednisolone may be used [88]. Prophylaxis should continue after achieving target serum urate level for three months in patients without tophi, for six months in patients with resolved tophi, and with any remaining signs of gout activity in all patients [88].

Patients with intermittent symptoms or chronic synovitis with tophi (chronic tophaceous gouty arthritis) should be treated with a single-agent XOI, such as allopurinol, at a dose to achieve and maintain the serum urate level within normal range [83; 87]. If the serum urate target is not achieved or disease activity persists, a uricosuric agent may be added to the XOI. Pegloticase therapy should be considered if the serum uric target is not achieved, disease activity persists, more than seven attacks occur per year and no tophi, two or more attacks per year and tophi, or chronic tophaceous gouty arthritis is present [88; 89].

Pseudogout

Calcium pyrophosphate deposition disease, or "pseudogout," is a similar crystalline arthritis that occurs in patients with underlying osteoarthritis and is identified by the presence in synovial fluid of calcium pyrophosphate dehydrate crystals [78; 80; 85]. X-ray findings of articular cartilage calcification usually accompany it. Many patients with pseudogout have other disorders, such as diabetes, hypothyroidism, and gout [37].

Clinical Manifestations

In pseudogout, arthritis occurs in a large joint, which is erythematous, swollen, warm, and painful. Like gout, pseudogout is usually monoarticular, but involvement of other joints can follow in succession. Attacks are often precipitated by trauma, surgery, or medical illness. Onset of symptoms is rapid, with a peak in 12 to 36 hours. Episodes are intermittent, usually involve the same joint, and typically last about one to two weeks. Joints are normal between attacks [37].

Therapeutic and Nursing Measures

The deposition of calcium pyrophosphate dihydrate crystals cannot be reversed. Acute attacks of pseudogout are treated with NSAIDs, colchicine, and/or oral corticosteroids; in more severe cases, drainage of the affected joint may be helpful [37].

Nursing measures for pseudogout include careful joint assessment, thermo- or cryotherapy, and monitoring for symptoms and signs of systemic illness and side effects of medications [18]. Patient education for home care includes instruction in the safe application of heat or ice, range of motion exercises, and the nature and side effects of prescribed medications. A weight-reduction diet can be helpful promote the long-term health of weight-bearing joints [18].

Low Back Pain

When it occurs, back pain is most often localized to the lower back, and chronic back pain is almost always chronic low back pain. Although acute-onset low back pain is a common problem that usually resolves within four to six weeks, many patients develop a persistent, disabling pain syndrome with a diminishing prognosis for return to normal function. When low back pain continues beyond 12 weeks, the prospect for subsequent remission is poor and progression to chronic low back pain is likely. Chronic low back pain imposes a great burden: for patients, pain and disability; for society and the healthcare system, an enormous expense in direct and indirect costs.

Risk factors for developing low back pain can be generally categorized as nonmodifiable, such as old age, female sex, poverty, and lower education level, and modifiable, including higher body mass index (BMI), smoking, lower perceived general health status, physical activity (e.g., bending, lifting, twisting), repetitive tasks, job dissatisfaction, and depression. The greatest contributors to low back pain episodes are single-event or repetitive exposures to mechanical stress and age-related degenerative spinal changes. With chronic low back pain, mechanical and biophysiologic factors play a minimal secondary role to the primary contribution from psychosocial factors [91].

Clinical Manifestations

The onset of low back pain is described as discomfort in the vicinity of the low back ranging from a dull ache to a sudden, sharp, shooting or stabbing pain and may include limited flexibility and/or range of motion or inability to stand straight [92]. Although the symptoms of back pain can originate anywhere from the thoracic spine to the sacrum and coccyx, most cases originate in the lumbar spine, as this is the site of support for upper body weight [92].

With low back pain, the clinical presentation varies according to etiology. In general, radicular pain suggests nerve root involvement, while axial pain suggests disk degeneration, facet arthropathy, sacroiliac (SI) joint arthropathy, or myofascial pathology of the spine.

Nonspecific Low Back Pain. Up to 85% of low back pain in patients presenting to the primary care setting is nonspecific, meaning that it lacks a clear origin and is not caused by specific local or systemic disease or spinal abnormality [93]. Nonspecific low back pain is a diagnosis of exclusion made after ruling out serious causes of the back pain. Although pain can originate from ligaments, facet joints, muscle, fascia, nerve roots, the vertebral periosteum, or outer portions of the disk, the effective management of nonspecific low back pain does not require a precise anatomic diagnosis [94]. The pain is usually unilateral and may radiate to the buttocks or posterior thigh but not past the knee. This can lead to incorrect diagnosis of radiculopathy or disk herniation. However, true radicular symptoms radiate below the knee in a dermatomal distribution and can involve sensory loss, weakness, or reflex changes. Painful spasm may be present, and pain may be worsened by movement, while lying flat decreases the pain. Complaints of numbness, weakness, or bowel or bladder dysfunction are absent [95]. Degenerative changes revealed by lumbar imaging should usually be considered nonspecific, because they poorly correlate with symptom severity [96].

Lumbosacral Radiculopathy. Lumbosacral radiculopathy is a clinical diagnosis of nerve root irritation and compression, resulting in a symptom distribution of the affected lumbar or sacral nerve root such as numbness, weakness, or paresthesia. Sciatica is the most common symptom of lumbar radiculopathy and refers to pain that radiates down the leg below the knee in the distribution of the sciatic nerve to indicate nerve root compromise from mechanical pressure or inflammation [96].

Causes of lumbar radiculopathy include disk herniation, arthritic degeneration, cord compression, spinal stenosis, tumor, and infection. With herniated disk, the pain is described as a deep, aching, axial midline pain concurrent with radicular pain. Discogenic pain results from a tear in the outer disk layer (annulus fibrosis) that causes the inner gelatinous material (nucleus pulposus) to prolapse, inflame, and compress a nerve root [95]. The resulting pain from pressure and nerve irritation improves with the resolution of local inflammation, and the disk protrusion may spontaneously remit with time. Although disk herniation and radiculopathy are often viewed as causally linked, herniation is often asymptomatic and only occasionally the cause of sciatica [95].

Lumbar Spinal Stenosis. Lumbar spinal stenosis refers to the frequently age-related narrowing of the spinal canal that may result in bony constriction of the cauda equina and the emerging nerve roots [96]. Spinal stenosis can produce pain in the low back that radiates down the back of both legs, often worsened with standing or walking. To make the pain more bearable, patients often walk a short distance with a hunched back, and then sit down for relief. The pain will then dissipate after several minutes. Congenital lumbar canal stenosis is a predisposing factor. Patients show less tenderness over the lumbar spine than those with acute lumbar disk herniation, and the straight leg-raising test may be normal [97].

Most persons 60 years of age and older exhibit varying degrees of spinal stenosis from disk herniation, osteophytes, or degenerative spondylolisthesis. Fortunately, clinical pain manifests in less than 30% and, just as with degenerative disk disease, there is poor correlation between symptom severity and extent of spinal canal stenosis revealed by MRI [95].

Myofascial Pain. Myofascial pain of the low back or neck is common, especially following trauma or repetitive motion injury. This is thought to result from strain or sprain to the muscles and ligaments. Myofascial pain is described as a deep, aching, poorly localized discomfort made worse by activity. It can be limited to discomfort in the paraspinal muscles or may extend to the buttocks and upper thigh areas [98].

Epidural Compression Syndrome. Epidural compression syndrome is an umbrella term that encompasses spinal cord compression, cauda equina syndrome, and conus medullaris syndrome. While these conditions differ in the level of neurologic deficit at presentation, they are otherwise similar in symptoms, evaluation, and management. Massive herniation of a midline disk, typically at the L4 to L5 disk level, is the most common cause of epidural compression syndrome. Tumor, epidural abscess, spinal canal hematoma, or lumbar spine spondylosis represent other causes [95].

In these patients, neurologic status at diagnosis is the greatest predictor of ultimate neurologic outcome and underscores the importance of early accurate diagnosis. The dominant symptom is back pain with accelerating pain severity. Pain from epidural spinal cord compression is made worse with recumbent positioning, and unilateral or bilateral radiculopathy may develop over time. For many patients, leg pain or neurologic symptoms are more dominant than back pain. Also common at diagnosis is symmetrical lower extremity weakness that may have progressed to gait disturbance or paralysis. Decreased lower extremity reflexes are associated with cauda equina syndrome [95].

Lumbar Facet Joint Syndrome. Lumbar facet joint syndrome is seen in as many as 35% of patients with low back pain and is frequently associated with arthritis or lumbar facet joint injury [97]. Dominant symptoms include unilateral low back pain that may radiate down the back or front of the thigh and morning stiffness with isolated facet arthropathy [99]. Tenderness is usually found over the lumbar paraspinal muscles and facet joints. Back pain is worsened with back extension and lateral rotation to the side of the pain, and the leg-raising test is negative. MRI and CT findings of facet joint arthropathy do not correlate with clinical findings [97].

Sacroiliac Joint Syndrome. SI joint syndrome typically manifests as localized pain in the lower back or upper buttock area that overlies the SI joint. Pain is intensified by attempts to walk up stairs, and while pain may be referred to the posterior thigh, extension below the knee is unusual [100]. Tenderness over the SI joint is often found in physical examination, and pain is aggravated by the Patrick test or

single-leg standing [97]. The onset of SI joint pain is usually gradual (over months to years), and although etiology is often elusive, trauma, infection, and tumor represent infrequent yet known causes of SI joint pain [100].

Assessment and Diagnosis

Most patients with acute low back pain have ligamentous or muscle strain syndrome, follow a benign course, and show significant improvement within two to three weeks. The challenge for clinicians is to recognize early the possibility of serious disease, such as spinal metastatic cancer or vertebral and epidural space infection, and then to identify those with herniated disk, radiculopathy, or spinal stenosis.

The proper assessment of the patient with back pain requires vigilance and careful attention for factors and warning signs suggestive of serious or life-threatening disorders. A thorough history and physical examination should be performed on all patients, during which the patient is assessed for the presence of warning signs or "red flags." Red flags represent alarm symptoms or signs that warrant prompt, specific diagnostic testing, urgent treatment, or referral to a specialist. Among these are weight loss, prior history of cancer, nocturnal or rest pain, age older than 50 years, recent trauma, fever and chills, history of injection drug use, chronic corticosteroid therapy, difficulty urinating, bowel or bladder incontinence, and neurologic deficits such as saddle anesthesia, perianal or perineal sensory loss, or motor weakness in the extremities [93; 95; 101]. As an example, there is a common association between spontaneous vertebral fracture and any combination of age older than 70 years, female gender, recent trauma, and prolonged corticosteroid use. There is also a moderate to highly significant predictive value for age older than 50 years, history of prior cancer, unexplained weight loss, and failure of conservative therapy in identifying spinal malignancy [101].

Patients should also be assessed for "yellow flags," or risk factors for poor prognosis and chronicity [94; 101]. Areas to explore include maladaptive beliefs, attitudes, and behaviors regarding the back pain and recovery, such as passivity or reluctance to self-manage, dependency on the provider to "cure," fear avoidance beliefs, and beliefs that harm will come from activity and discomfort. Other areas include depression, anxiety, maladaptive coping response to stress, social withdrawal or isolation, and lack of social support. Adverse economic and work environment circumstances, such as job dissatisfaction, excessive and inflexible physical workplace demands, high levels of work-related stress, poor workplace social support, and adversarial or dysfunctional workplace relationships should also be noted [94]. Early detection and intervention (if indicated) for problematic motivational, emotional, or social dysfunction are important because these factors influence the selection and effectiveness of therapeutic interventions.

In the absence of red flags, use of imaging and diagnostic tests for acute low back pain is discouraged, as imaging findings rarely change clinical management. Overuse of lumbar imaging in low back pain correlates with, and likely contributes to, the two- to threefold increase in surgical rates for low back pain over the last 10 years [93]. Assigning significance to imaging anomalies requires skill at the specialist level to integrate historical, clinical, and imaging findings. Imaging abnormalities are essentially normative by 40 years of age; for instance, 80% of persons 60 years of age and older exhibit a protruding disk, which is symptomatic for only a fraction of patients. Incorrect communication of imaging findings to the patient may lead to patient fixation, contribute to fear-avoidance behaviors, and increase the risk of iatrogenic aggravation of chronic low back pain. Guidelines suggest that physicians without advanced training defer imaging tests to qualified specialists [93; 102].

However, imaging and other testing should be performed in patients with new-onset or progressive neurologic deficits and those with suspicion of serious underlying conditions. In patients with persistent pain and symptoms consistent with radiculopathy or spinal stenosis, MRI should be performed only when such patients are candidates for surgery or epidural steroid injection. CT scanning is an alternative option to first-line MRI [93].

Therapeutic Measures

Although acute low back pain improves in most patients within three to six weeks using conservative therapy, up to 33% of patients with low back pain report pain of moderate or greater severity at one-year follow-up and 20% report ongoing pain severe enough to limit activity [96]. With chronicity, low back pain may become disabling and impose a severe emotional and functional burden. The management goals for chronic low back pain are to minimize pain and disability, improve functional status, and facilitate restoration of normal activity, while limiting the use of marginally effective or inappropriate medication [93].

Many pharmacologic therapies and minimally invasive or invasive procedures have been utilized in a strategy designed simply to relieve pain—with variable results. However, there is little evidence these focused pain approaches are comparable or superior to interventions that focus primarily on restoration of function instead of pain relief. This contradicts the biomedical model in medicine that emphasizes escalation of costly and invasive therapies to achieve "pain cure" in patients lacking response to lower-intensity approaches [102; 103]. It is now recognized that treatment for conditions such as chronic low back pain persisting in the absence of a unique underlying pathologic lesion must address potential contributory factors such as affective disorders, maladaptive beliefs and coping skills, and interpersonal and occupational dysfunction. Dysregulated cortical, pre-frontal, and higher neural level mechanisms associated with chronic low back pain are being identified and may represent therapeutic

targets in functional restoration-based approaches. As with other chronic pain syndromes, greater understanding of pain pathway alterations will better inform therapy selection.

Virtually universal among practice guidelines for chronic low back pain is the emphasis on a multidisciplinary, multimodal approach that includes exercise and activity, cognitive restructuring of maladaptive attitudes and coping skills, a behavioral component addressing fear avoidance, physiotherapy and manual therapy, and analgesics as indicated [93; 96; 102; 104; 105; 106; 107]. This is often best accomplished by consultation or referral to an established pain treatment center. Multidisciplinary functional restoration programs, which are intensive (more than 100 hours) biopsychosocial interventions whereby physical rehabilitation is combined with cognitive-behavioral therapy and delivered by an interdisciplinary team, embody this recommendation. Moderate-to-strong evidence supports their efficacy in chronic low back pain. They have been found effective in reducing pain and improving physical function, work readiness, and return to work. Weaker outcomes are found in programs that are less intensive or lacking a behavioral component. Patients who do not improve with less intensive therapy options and have high levels of pain, distress, and disability should be considered for multidisciplinary functional restoration programs [94].

According to the Institute for Clinical Systems Improvement, clinicians should advise patients with acute and subacute low back pain to stay active and continue activities of daily living within the limits permitted by their symptoms.

(https://www.icsi.org/guideline/low-back-pain. Last accessed September 26, 2022.)

Strength of Recommendation/Level of Evidence: Strong Recommendation/Moderate Quality Evidence

Scoliosis

Scoliosis is a lateral curvature of the spine, most commonly in the thoracic area with convexity to the right and compensatory convex curve to the left in the cervical and lumbar areas. Scoliosis can be functional (a result of poor posture or leg-length discrepancy) or structural (a result of deformity of the vertebral bodies, paralysis, congenital malformations, or idiopathic causes). Idiopathic causes are the most common and appear with increased growth during adolescence. It disproportionately affects girls, who are 10 times more likely to be diagnosed than boys at 10 years of age or older [108].

Clinical Manifestations

Symptoms of backache, fatigue, and dyspnea occur only after scoliosis is well established. Untreated scoliosis can result in pulmonary insufficiency from decreased lung capacity, back pain, degenerative arthritis of the spine, intervertebral disease, and sciatica [108]. While screening for idiopathic scoliosis has typically occurred between 10 and 18 years of age, the current evidence is insufficient to assess the balance of benefits and harms [109].

Older patients may exhibit kyphosis, a postural curvature of the spine that is due to aging, disc degeneration, atrophy of spinal muscles, osteoporosis, or vertebral collapse. Adults with kyphosis have a rounded back and possible weakness and generalized fatigue. Kyphosis rarely produces local tenderness except in severe osteoporosis with compression fractures [108].

Therapeutic Measures

Early treatment of scoliosis consists of a combination of physical therapy, bracing, and/or surgery. If the condition is untreated in adolescence, problems that develop can only be treated symptomatically. Any upper respiratory tract infections are treated aggressively to prevent pneumonia and atelectasis [108].

Specific Nursing Measures

Patients with scoliosis often have body image issues and difficulty finding clothes that fit properly. When patients with scoliosis are hospitalized for any problem, careful attention to positioning is essential; improper positioning is not only extremely uncomfortable for the patient, but it can precipitate a vertebral fracture, especially in those with osteoporosis [108].

Carpal Tunnel Syndrome

Carpal tunnel syndrome is generally associated with such umbrella terms as repetitive stress injuries, work-related upper extremity disorders, musculoskeletal disorders, entrapment neuropathies, and cumulative trauma disorders [110; 111]. Specifically, carpal tunnel syndrome is a painful disorder of the wrist and hand that occurs when the median nerve (which runs from the hand to the forearm) becomes compressed [112; 113].

The carpal tunnel is a narrow passageway on the palm side of the wrist. Surrounded by bones and ligaments, the carpal tunnel houses and protects the tendons of the hand and the median nerve, which controls sensations to the thumb and fingers. When the median nerve becomes pinched or compressed (due to swelling or irritation in adjacent tissues or tendons), the result can be pain, numbness, hand weakness, and in extreme cases, loss of hand function. Cases of bilateral carpal tunnel syndrome have been reported, but typically only one hand is affected [112; 114; 115]. Carpal tunnel syndrome is rare in children; it usually occurs only in adults [116].

Clinical Manifestations

The symptoms of carpal tunnel syndrome typically appear gradually and may include [114; 116]:

- Numbness, burning, or tingling in the fingers and palm of the hand
- Pain in the wrist, palm, or forearm, especially during use
- Decreased grip strength
- Weakness in the thumb
- Sensation of swollen fingers, whether or not swelling is apparent
- Difficulty distinguishing between hot and cold

Symptoms may cause waking during the night with the urge to "shake out" the hand or wrist. Symptoms may occur with activities that require prolonged grasping and/or flexing of the wrist (e.g., driving, holding a book). Left untreated, carpal tunnel syndrome can progress to persistent numbness and permanent loss of hand function. In severe and chronic cases, irreversible muscle damage or atrophy may occur [112; 116; 117]. Complete sensory loss in the hand has also been reported.

Assessment and Diagnosis

Early diagnosis of carpal tunnel syndrome is important to prevent muscle atrophy or damage to the median nerve that cannot be reversed by treatment [112; 116]. Early diagnosis, including a physical examination, medical history, routine laboratory tests, and imaging, can also help to identify or rule out other health conditions that may present with similar signs and symptoms and require specialized treatment [118; 119]. The physical examination should include specific testing, such as Phalen's maneuver or Tinel's sign, that can produce the symptoms of carpal tunnel syndrome [114; 116]. In elderly patients, particular attention should be given to the objective evidence of carpal tunnel syndrome rather than subjective complaints [120].

Therapeutic and Nursing Measures

Surgery, corticosteroids, NSAIDs, diuretics, wrist splints, exercise, ultrasound therapy, laser therapy, and yoga are among the methods that have been recommended for the treatment of carpal tunnel syndrome [121; 122; 123; 124; 125]. Although no single treatment method has been universally accepted, there is agreement that the treatment of carpal tunnel syndrome should begin as early as possible and should include attention to underlying causes, such as diabetes or rheumatoid arthritis. There is also agreement that successful treatment depends on patient compliance with the treatment program [116; 126].

Corticosteroid injection has been found to improve patient satisfaction, symptoms, and function when measured at intervals of 2, 4, 8, and 12 weeks. As noted, it demonstrates a more significant overall improvement in the symptoms of carpal tunnel syndrome than oral corticosteroids but does not appear to provide a better long-term outcome (greater than six months) than splinting or NSAIDs. Two treatment injections do not appear to provide any added benefit when compared to one treatment injection [124; 127].

According to the American Academy of Orthopaedic Surgeons, strong evidence supports that the use of steroid (methylprednisolone) injection should improve patient-reported outcomes in those with carpal tunnel syndrome. (https://www.aaos.org/globalassets/quality-and-practice-resources/carpal-tunnel/cts_cpg_4-25-19.pdf. Last accessed September 26, 2022.)

Strength of Recommendation: Strong (Evidence from two or more "high" strength studies with consistent findings for recommending for or against the intervention)

Splinting has been found to improve patient satisfaction, symptoms, and function when measured at intervals of 2, 4, and 12 weeks. The American Academy of Orthopaedic Surgeons suggests that splinting be considered before surgery. This may be particularly helpful when weighing the risks of surgery versus the benefits. Splinting is not recommended for use after routine carpal tunnel release surgery. The benefit of splinting for postoperative rehabilitation is undetermined [126; 127; 128].

NSAIDs are used to treat a variety of acute and chronic pain conditions, including carpal tunnel syndrome, but opinion varies as to their effectiveness and safety for long-term use [129; 130; 131]. Specifically, NSAIDs have been associated with gastrointestinal and cardiovascular risks and toxicity with long-term use [132].

Diuretics and vitamin B6 (pyridoxine) may also help with temporary relief of symptomatic carpal tunnel syndrome, but their long-term benefits are unproven [127; 131; 133]. Acupuncture, yoga, exercise, laser therapy, activity modification, and ergonomic workplace modifications also have been mentioned as non-surgical treatment alternatives, but most experts agree that further research is needed to determine the viability and efficacy of these methods [116; 124; 126; 127; 131; 134; 135].

Carpal tunnel release is the preferred treatment for patients with chronic or severe carpal tunnel syndrome. It is achieved by either an open or endoscopic procedure [116; 122; 126; 128]. Both types of surgery are generally performed on an outpatient basis under local anesthesia. Open release surgery involves making an incision of up to 2 inches at the base of the palm of the hand and cutting the transverse carpal ligament, which releases pressure on the median nerve [116; 136]. Endoscopic surgery involves making a small, one-half inch incision at the wrist and introducing an arthroscope beneath the transverse carpal ligament. Using the scope as a guide, the ligament is cut, relieving pressure on the median nerve [116; 134; 136].

DEGENERATIVE DISORDERS

Osteoarthritis

Osteoarthritis is the most common form of arthritis and is characterized by degeneration of cartilage and its underlying bone within a joint, with resultant bony overgrowth. This process of tissue breakdown eventually leads to pain and joint stiffness [137]. Osteoarthritis develops most frequently in the knee, hip, and hand. Although pain in the lower back and the neck are the most frequently occurring musculoskeletal conditions and are the leading cause of functional limitation and work absences, the etiology of back and neck pain is often unclear, with many cases involving muscles and ligaments rather than osteoarthritic changes [138; 139; 140].

Osteoarthritis is classified as primary or secondary. The cause of primary osteoarthritis is idiopathic; no abnormality is the cause of changes in the joint [141]. Secondary osteoarthritis is the result of a known cause, most often trauma/injury or systemic diseases. Secondary osteoarthritis is most often found in the shoulder, elbow, and ankle and is more likely to become clinically apparent at a younger age than primary osteoarthritis [141; 142; 143; 144]. A population-based study showed that secondary osteoarthritis related to trauma accounts for approximately 12% of the overall prevalence of symptomatic osteoarthritis of the knee, hip, or ankle [145]. Injuries sustained in sports activities comprise a large portion of post-traumatic osteoarthritis [146]. A wide variety of systemic diseases have been identified as frequent causes of secondary osteoarthritis; these conditions include metabolic diseases, endocrine disorders, bone dysplasias, and crystal deposition diseases [141; 147].

Clinical Manifestations

The diagnosis of osteoarthritis at most joints is made primarily on the basis of clinical findings, with imaging studies and laboratory tests more useful for ruling out other diagnoses rather than for confirming the diagnosis of osteoarthritis [148; 149; 150]. Although radiographic findings are considered to be diagnostic criteria for osteoarthritis, radiographs are not usually part of the initial diagnostic evaluation for several reasons. The primary reasons are the lack of evidence of early osteoarthritic changes on radiographs and the poor correlation between symptoms and radiographic evidence of osteoarthritis [148; 151; 152; 153]. Thus, the absence of radiographic evidence of osteoarthritis in the presence of joint-related symptoms should not exclude the diagnosis of osteoarthritis.

When obtaining a history, questions should focus on the nature of joint-related symptoms, patients' self-reports of limitations in function or activities, and information related to established risk factors for osteoarthritis. The following questions can help elicit important information needed for a diagnosis:

- Do you have any joints that hurt? If so, how long have they been bothering you?
- When does the pain occur? After certain physical activities? At rest?
- Do you have relief of pain if you rest?
- Does the pain bother you at night? Does pain wake you up at night?
- Are your joints stiff when you wake up in the morning? If so, how long does the stiffness last?
- Do the joints that hurt ever lock up or give out on you?
- Do you have a family history of osteoarthritis or rheumatoid arthritis?
- What types of recreational activities or sports do you participate in? If you play sports, do you do so for leisure or competitively?
- What is your occupation? Are there tasks or activities that are part of your job that bother any joints?
- Have you ever had an injury to a joint?
- Are there daily activities or other tasks that you cannot do because of pain or other symptoms in any joint?

The primary symptom of osteoarthritis of the knee is pain, especially with weight-bearing exercise or activity, that improves with rest. Stiffness in the joint occurs in the morning, lasting 30 minutes or less, and may occur after periods of inactivity [154]. The clinical presentation of hip osteoarthritis is similar to that of knee osteoarthritis, with pain being the most common symptom driving individuals to seek medical care [155]. Pain related to hip osteoarthritis is an ache—most often diffuse—that is usually felt during use of the joint and relieved by rest. Pain is typically gradual, variable, or intermittent; the joint may feel stiff after a period of inactivity [155]. The loss of function or mobility is usually related to the degree of pain.

Osteoarthritis of the hand is characterized by pain with use, which affects one or a few joints at any one time, and mild stiffness in the morning and/or after a period of inactivity [158]. The severity of osteoarthritis-related pain varies, and the pain may be intermittent. The joints most often affected are the distal and proximal interphalangeal joints and the base of the thumb [156; 157; 158]. Individuals who have evidence of osteoarthritis at several joints in the hand are at increased risk for generalized osteoarthritis, and clinicians should evaluate such patients as appropriate [158].

Pain related to osteoarthritis of the shoulder is typically progressive, related to activity, deep in the joint, and often localized posteriorly [142]. Pain is usually present at rest and interferes with sleep, with nocturnal pain becoming more common as the disease progresses. More advanced disease is also associated with stiffness that limits function.

Individuals with osteoarthritis of the elbow typically have pain, stiffness, and weakness in the joint [143]. Later stage disease is associated with pain when carrying a heavy object at the side of the body with the elbow in extension. The history is important when evaluating symptoms related to the elbow because of the strong relationship between trauma or occupation with osteoarthritis, especially in individuals who are younger than 40 years of age [159].

A history of ankle fracture or ligamentous injury is a hallmark feature of osteoarthritis of the ankle [144]. Diagnostic evaluation includes radiographs of the ankles made with the patient standing. MRI is also recommended, as it can provide evidence of osteonecrosis as well as indicate the amount of involvement, the extent of bone loss, and the size of subchondral cysts [144].

Therapeutic Measures

There is currently no curative therapy for osteoarthritis, and treatments to alter or arrest the disease process are few and mostly ineffective [151]. As clinicians on the frontline of care, primary care providers and nurses are typically the first to see individuals with symptoms indicative of osteoarthritis. Primary care providers can coordinate the management of osteoarthritis, and a multidisciplinary approach is best. The ACR and the Association of Rheumatology Health Professionals (a division of the ACR) support such an approach, noting that the healthcare team may include a rheumatologist, primary physician, nurse, nurse practitioner, physician assistant, physical therapist, occupational therapist, physiatrist, psychiatrist, psychologist, orthopedic surgeon, social worker, registered dietician, vocational counselor, and others [160].

The optimal management of osteoarthritis encompasses both nonpharmacologic and pharmacologic measures, beginning with basic modalities and following a so-called pyramid approach as the disease progresses or symptoms do not respond [161]. Several factors should be considered when selecting treatment modalities, including risk factors (e.g., age, comorbidity, overweight/obesity), the level of pain and functional limitations, signs of inflammation, and degree of structural damage [162].

EVIDENCE-BASED PRACTICE RECOMMENDATION

According to the American Academy of Orthopaedic Surgeons, oral acetaminophen is recommended to improve pain and function in the treatment of knee osteoarthritis when not contraindicated.

(https://www.aaos.org/globalassets/quality-and-practice-resources/osteoarthritis-of-the-knee/oak3cpg.pdf. Last accessed September 26, 2022.)

Strength of Recommendation: Strong (Evidence from two or more "high" quality studies with consistent findings for recommending for or against the intervention.)

Many treatment options are associated with benefits and risks, and the clinician should discuss the benefits and risks with patients and support their participation in the decision-making process [163; 164]. Patient preferences are an important consideration when choosing treatment options and establishing treatment goals, and the ACR advocates care that addresses treatment goals that are meaningful to the individual patient [160]. Decision aids can help enhance patients' knowledge of treatment options, improve patients' participation in their care, and produce realistic expectations of outcomes [164]. Decision aids for osteoarthritis have been developed in a variety of media (e.g., print, online, video) and are available online (https://decisionaid.ohri.ca) [164].

The pain and disability associated with osteoarthritis often has a substantial psychologic and social effect. It is important to discuss these aspects with patients and to address psychologic issues, especially depression, in order for treatment measures to be effective [165].

Specific Nursing Measures

Education and self-management, through lifestyle modifications are universally recognized as the core of treatment in clinical guidelines [166]. This recommendation is based on research showing that education helps patients become more involved in their care, leading to improved outcomes [163]. The Agency for Healthcare Research and Quality notes that an effective partnership is the key to the effective management of osteoarthritis; the healthcare professional's role in this partnership is to [163]:

- Encourage patients to change their behavior to improve symptoms or slow disease progression

- Promote the proper use of medications
- Instruct patients on how to interpret and report symptoms accurately
- Support patients' efforts to maintain normal activities
- Help patients adjust to new social and economic circumstances and cope with emotional consequences

Nurses should emphasize to patients that adhering to the management program will alleviate their symptoms, improve their function, and enhance their quality of life. Education should be tailored to address individual needs. For example, patients who participate in sports should be advised to avoid sports with direct contact and high impact and to wear protective equipment to prevent injury [167]. Similarly, for patients in occupations with high risk for osteoarthritis, clinicians should discuss the importance of avoiding high-risk tasks. It is also essential to encourage patients with osteoarthritis of the glenohumeral joint or the elbow to modify activities that led to the development of the disease [143; 159]. Periodic contact during follow-up can help promote self-management [166].

IMMUNOLOGIC DISORDERS

Rheumatoid Arthritis

Rheumatoid arthritis is defined as a chronic inflammatory disease characterized by uncontrolled proliferation of synovial tissue and a wide array of multisystem comorbidities [24]. In its most common presentation, rheumatoid arthritis affects the joints, causing inflammation of the synovium and cartilage and bone loss. The precise etiology of rheumatoid arthritis is presently unknown [26]. Most likely it has an autoimmune origin (whereby an individual's immune system confuses healthy synovial tissue for foreign substances, thereby attacking the synovial joint surfaces) given that autoantibodies (e.g., rheumatoid factor, ACPA) are present and often precede the clinical manifestation of rheumatoid arthritis by many years [22; 25; 168].

The course and severity of the illness can vary considerably, and infection, genetic factors, and hormones may contribute to the disease. Rheumatoid arthritis appears to require the complex interaction of genetic and environmental factors with the immune system and ultimately in the synovial tissues throughout the body. Triggers for rheumatoid arthritis have long been the target of active research. Purported triggers have included bacteria (*Mycobacterium*, *Streptococcus*, *Mycoplasma*, *Escherichia coli*, *Helicobacter pylori*), viruses (rubella, Epstein-Barr virus, parvovirus), and superantigens [25; 26; 27].

Although rheumatoid arthritis has a clear genetic component, only about 1 in 25 White individuals with the so-called shared epitope develop rheumatoid arthritis [27]. Even if one monozygotic twin has rheumatoid arthritis, there is only approximately a one in six chance that the other twin will develop the same disease. Thus, other factors in addition to genetics are active as precipitators or triggers of rheumatoid arthritis [27].

Clinical Manifestations

Findings on general physical examination are normal except for an occasional low-grade fever (38°C) and a slightly elevated pulse rate. The characteristic patient with rheumatoid arthritis initially presents with complaints of pain and stiffness in multiple joints. There is prominent and prolonged morning stiffness (lasting more than one hour) that usually begins gradually with fatigue, loss of appetite, widespread muscle aches, and weakness [23; 25; 27].

After this initial presentation, joint pain appears. When the joint is not used for some time, it can become warm, tender, and stiff. After inflammation of the joint, increased synovial fluid is produced and the joint becomes swollen. There is accompanying soft tissue swelling, and joint pain is often felt bilaterally, affecting the fingers, wrists, elbows, shoulders, hips, knees, ankles, toes, and neck [25]. Though the joints are tender, the small joints of the hands and feet are not usually painful when the patient is at rest. Palmar erythema and prominent veins on the dorsum of the hand and wrist indicate increased blood flow. Distal interphalangeal joints are rarely involved. The temperature over the involved joints (except the hip) can be elevated, but there is usually no accompanying erythema. There are limitations in the range of motion, muscle strength, and function around inflamed joints.

In addition, soft, poorly delineated subcutaneous nodules (rheumatoid nodules) are often found in the extensor surface of the forearm. Soft, small lymph nodes are found occasionally in epitrochlear, axillary, and cervical areas [24]. Other symptoms that may present include anemia due to deficits in bone marrow production; eye burning, itching, and discharge; or lung inflammation (pleurisy) [23; 24; 25; 27]. Joint destruction may occur within one to two years after the appearance of the disease.

Rheumatoid arthritis is not solely a disease of joint destruction; it can involve almost all organs. Approximately 18% to 41% of patients with rheumatoid arthritis develop extra-articular manifestations [169; 170]. Rheumatoid arthritis may cause inflammation of the outer cardiac lining (pericarditis) and cardiac muscle (myocarditis), leading to congestive heart failure. In a population-based cohort study, patients with rheumatoid arthritis had a significantly higher risk of cardiovascular disease than those without rheumatoid arthritis [171]. More than half of the patients 50 to 59 years

of age and all of those older than 60 years of age with a new diagnosis of rheumatoid arthritis had a more than 10% increased risk of cardiovascular disease within 10 years of rheumatoid arthritis onset.

Pulmonary manifestations are also seen in patients with rheumatoid arthritis, occurring in approximately 30% to 40% of patients. In approximately 10% to 20% of these patients, involvement of the respiratory system is the first manifestation of rheumatoid arthritis [170]. There are several types of potential pulmonary manifestations of rheumatoid arthritis: pleural disease, interstitial pneumonitis, and fibrosis. Pleural effusions and pulmonary rheumatoid nodules are the most common manifestations, along with high rheumatoid factor titers [172; 173; 174]. Pleuritis is more often found in autopsies of patients with rheumatoid arthritis than in living patients. In about 20% of patients, pleuritis develops concurrently with rheumatoid arthritis onset [174]. Although pleuritic pain is not usually a major complaint, the effusions may be large enough to cause dyspnea. Pulmonary fibrosis can either be slowly progressive or result from pulmonary inflammatory disease; on physical exam of the lungs, they present with fine, diffuse, dry rales.

Ocular involvement is another major manifestation of rheumatoid arthritis, usually manifesting as scleritis, development of anterior uveitis, and peripheral ulcerative keratitis (corneal melt) [175; 176]. These disorders are associated with inflammatory cytokines produced by ocular mononuclear cell infiltrates [176; 177].

Osteopenia and osteoporosis are very common extra-articular complications in patients with rheumatoid arthritis [178]. The development of osteopenia in patients with rheumatoid arthritis appears to occur independent of corticosteroid use and is directly linked to elevated levels of the RANK ligand expressed by T cells, which promotes osteoclastic bone resorption [178; 179; 180].

Diagnosis

Rheumatoid arthritis is a clinical diagnosis [181]. As discussed, several laboratory tests are recommended for the diagnosis of rheumatoid arthritis, including rheumatoid factor, ESR, CRP, and anti-CCP antibody [22]. While the results of these tests are relatively sensitive and specific, false positives are possible. In 2010, a multi-biomarker disease activity test, Vectra DA, was introduced. This test uses a unique algorithm to derive a composite score (1 to 100) based on the results of 12 blood protein biomarkers, including vascular cell adhesion molecule-1, epidermal growth factor, vascular endothelial growth factor A, interleukin-6 (IL-6), TNF receptor type 1, matrix metalloproteinase-1 or collagenase-1, matrix metalloproteinase-3 or stromelysin-1, YKL-40, leptin, resistin, serum amyloid, and CRP [182; 183]. Vectra DA has been independently verified and found to correlate well to disease activity measured with rheumatoid arthritis assessment tools (e.g., Disease Activity Score in 28 joints using the CRP level). The test is validated for use in adults already diagnosed with rheumatoid arthritis but is not intended to diagnose rheumatoid arthritis [184].

There are several other laboratory tests used in the differential diagnosis of rheumatoid arthritis. Complete blood count may reveal mild normochromic and either normocytic or microcytic anemia (hemoglobin 10 g/dL); white blood cell count and differential may reveal thrombocytosis [24; 29]. Although baseline evaluation of renal and hepatic function is not sensitive or specific for rheumatoid arthritis, it is recommended because the findings will guide medication choices.

Popular imaging tests for rheumatoid arthritis include joint ultrasound, MRI, and joint x-rays. Imaging studies may show normal findings or osteopenia and erosions near joint spaces in early disease; wrist and ankle films are useful as baselines for comparison with future studies [24; 185]. Implementing the modern treatment strategy in rheumatoid arthritis (i.e., early initiation and optimal adjustments of aggressive therapies) requires methods for early diagnosis and sensitive monitoring of the disease process.

A number of different medical conditions may be considered in the differential diagnosis of rheumatoid arthritis [181; 186; 187; 188]. These include:

- Connective tissue diseases (e.g., lupus, scleroderma, polymyositis)
- Fibromyalgia
- Hemochromatosis
- Infectious endocarditis
- Lyme arthritis
- Osteoarthritis
- Polyarticular sepsis
- Sarcoidosis
- Thyroid disease
- Viral arthritis

Therapeutic Measures

Rheumatoid arthritis has no known prevention or cure. Lifelong treatment is usually required, including medication, physical therapy, exercise, and possibly surgery. In order to provide the best outcomes, patients should be educated regarding the most appropriate treatment regimens for their disease manifestations, as earlier rheumatoid arthritis diagnosis can assist in aggressive early treatment for rheumatoid arthritis (when indicated), thereby delaying joint destruction. The 2010 ACR/EULAR Classification Criteria for Rheumatoid Arthritis is now a well-established diagnostic and prognostic tool; as such, guidelines (e.g., the 2016 update of the EULAR Recommendations for the Management of Rheumatoid Arthritis with Synthetic and Biological Disease-

Modifying Antirheumatic Drugs) recommend that patients start treatment with a disease-modifying antirheumatic drug (DMARD) immediately following a rheumatoid arthritis diagnosis [189]. Therapeutic goals include preservation of function and quality of life, minimization of pain and inflammation, joint protection, and control of systemic complications, with the ultimate aim being low disease activity or remission [23; 24; 27; 189; 190].

Today, the recommended standard of treatment is a tightly controlled, aggressive strategy tailored to each patient, with modifications to the individual medication regimen to achieve a particular target (remission, or alternatively, low disease activity) in a specific period of time (usually six months) [189; 191]. The "treat-to-target" approach for a patient with early high disease activity and poor prognostic features typically involves initiation of methotrexate and/or another DMARD(s) immediately upon diagnosis [189; 190; 191]. Initial combination therapies with DMARDs, particularly those including a biologic anti-TNF agent, appear to provide earlier clinical improvement and less joint damage progression in patients with early moderate or highly active disease; they can be withdrawn successfully, and fewer treatment adjustments are needed than with initial monotherapies [189; 191; 192; 193; 194]. Patients with active disease are monitored closely (every one to three months), and it is recommended that treatment adjustments be made if there is no improvement at three months (or if the six-month target has not been reached) [189; 191]. Patients with low-to-moderate disease activity or high disease activity without poor prognostic features are typically started on DMARD monotherapy. NSAIDs, glucocorticoids, or COX-2 inhibitors are often used concurrently to treat rheumatoid arthritis-associated joint pain and inflammation. However, they do not alter the disease course and should not be used as single therapy.

Occasionally, surgery is needed to correct severely affected joints. Surgeries serve to relieve joint pain, correct deformities, and modestly improve joint function [23; 24; 27]. The most successful locations of surgery are those performed on the knees and hips [23; 24; 27]. The first surgical treatment performed is a synovectomy, which removes part or all of the joint lining (synovium). This procedure may only provide temporary relief, but it can be effective for patients for whom pharmacologic treatment has not resulted in improvements. Surgeries performed in later-onset disease include total joint replacement with a joint prosthesis. In extreme cases, total knee or hip replacement can have enhanced importance, making the difference between a dependent or independent lifestyle for a patient.

Range-of-motion exercises and individualized exercise programs prescribed by a physical therapist can also delay the loss of joint function. Joint protection techniques, heat and cold treatments, and splints or orthotic devices to support and align joints may be of assistance [23; 24; 27]. Some therapists will use specialized devices to apply deep heat or electrical stimulation to reduce pain and improve joint mobility [23; 24; 27]. Occupational therapists can construct splints for the hand and wrist and teach patients with rheumatoid arthritis how to protect and use their joints most effectively. In addition to physiotherapy, occupational therapists can also show patients with rheumatoid arthritis how to better cope with limitations that can affect their daily tasks at work and at home. For example, many clinicians have recommended frequent rest periods between activities and proper sleeping habits (e.g., 8 to 10 hours of sleep per night) [195].

In addition to the medical management of rheumatoid arthritis, several lifestyle changes may improve symptom severity and decrease the number of flare-ups. The National Institute of Arthritis and Musculoskeletal and Skin Disorders recommends advising patients regarding rest and exercise, use of orthotic devices, stress reduction, and healthful diet [23].

INFECTIOUS DISORDERS

Infectious Arthritis

Infectious arthritis (also known as septic arthritis) is the inflammation of a joint resulting from an invading organism that attacks the synovium and synovial fluid. Viral, bacterial, and fungal infections all predispose susceptible people to arthritis involvement. Pathogens present in the host circulate freely in the bloodstream and become trapped in the richly perfused synovial membrane, leading to inflammation and subsequent degenerative changes. Infectious arthritis is an opportunistic disease that primarily occurs in patients with immunocompromise or who already have joint destruction from another disorder (e.g., rheumatoid arthritis). Early diagnosis and treatment can prevent serious degenerative changes [76; 196].

Patients with infectious arthritis undergo repeated arthrocentesis, which can be stressful. Additional treatment will depend on the underlying pathogen, with antibiotics, antiviral, or antifungals prescribed as appropriate [76; 196].

The nurse should be available to both the patient and family for psychological support, physical care, health education, and monitoring the patient's response to therapy. The control of pain and protection of the involved joint or joints are priorities of nursing management [76; 196].

Therapeutic and Nursing Measures

The patient history is key to diagnosis, and nurses should be careful to obtain a complete and accurate history. This should include any recent viral (e.g., parvovirus, alphavirus, hepatitis, Epstein-Barr virus) and bacterial (e.g., *Streptococcus pneumoniae*) infection. In young, sexually active patients, the most common causative pathogen is *Neisseria gonorrhea*. For patients who develop infectious arthritis following trauma, puncture wounds, or injection drug use, *Pseudomonas aeruginosa* is the most likely cause [18; 197].

It is important that the pathogen responsible for the infectious arthritis be identified and treatment begun as quickly as possible to prevent joint destruction. Isolating the organism will guide in the selection of intravenous antimicrobial therapy and the level of aggressiveness needed to control the infection. Pathogens are identified through the aspiration of synovial fluid, synovial fluid cultures, and synovial biopsy. Empiric therapy is started after joint aspiration is complete and cultures are obtained [76]. Other therapeutic measures for infectious arthritis include surgical excision of the affected synovium in instances where destruction of the joint cartilage, tendons, or both appears imminent [76].

To protect the intra- and extra-articular structure from future damage and reduce the patient's discomfort, the involved joint should be immobilized during the acute stage. However, after two to three days, aggressive physical therapy is recommended to prevent long-term damage and disability [18].

The involved joint should be assessed frequently for drainage and any change in condition. Sterile technique should be maintained with any dressing changes [18]. For patients receiving parenteral fluids, intake and output should be measured and documented accurately. Laboratory test results will be monitored daily, especially the results of culture and sensitivity tests [18].

Patient education should include instruction about range-of-motion exercises to maintain joint mobility; dressing change techniques and wound care, if appropriate; and adherence to prescribed medications. The patient should be advised of symptoms and signs of repeated infection (e.g., increased pain, fever, swelling, redness, drainage) and to avoid any trauma to the joint [18].

NEOPLASTIC DISORDERS

In this section, the discussion of masses and tumors of the joints and surrounding structures will be limited to the benign and malignant lesions generally included in a differential diagnosis for arthritis.

Masses and Benign Tumors of the Joint

Patients with a benign lesion of the joint may experience years of intermittent minor problems with the involved joint, with a history of discomfort and joint instability. Because the symptoms of a benign tumor can remain innocuous for long periods, joint damage may result prior to diagnosis. No matter the extent of damage, joint surgery is required to resolve the issue and prevent further deterioration [37].

Lipoma

A lipoma of a joint is a lobulated fatty mass. Lipomas develop frequently in the elbow or knee joint of patients with osteoarthritis [37]. In many cases, patients seek medical attention when the involved joint begins locking or when pain, decreased motion, or an effusion occurs. Effusion aspirate is clear, and x-rays are non-diagnostic [37].

Hemangioma

Hemangiomas are rare vascular tumors often associated with arteriovenous malformations of skin vascular disease. They tend to affect younger individuals, often teenage girls who have been symptomatic since childhood. The knee is the most commonly involved joint [37].

In patients with joint hemangioma, there is a history of episodic, unilateral "doughy" joint swelling; pain; limitation of motion; and locking, buckling, or both. Aspiration of the joint repeatedly produces serosanguineous fluid in the absence of trauma. X-rays early in the course of the hemangioma may appear normal; ultrasound is often more helpful. With more advanced disease, enlarged epiphyses, joint narrowing, and enlargement of the intercondylar notch layer may be visualized [37].

Surgical removal yields good results in the treatment of a localized hemangioma. If accessible, therapeutic embolization of a major feeder vessel may be effective as well. Because of the vascular nature of this tumor, a diffuse form may involve the entire joint capsule and make resection impossible. For these patients, radiation therapy is the usual treatment [37].

Synovial Chondromatosis

Synovial chondromatosis is a condition of unknown etiology in which numerous cartilaginous nodules form. These nodules involve the joint, bursae, and in some cases the tendon sheaths of a knee, hip, elbow, shoulder, or ankle. It is a self-limiting disease that most frequently affects young and middle-aged men [37].

Synovial chondromatosis has an insidious onset, and many years often pass before the patient seeks evaluation for the problem. Presenting symptoms usually consist of swelling, pain, stiffness, limitation of motion, and joint locking. Particularly with synovial chondromatosis, the patient experiences joint crepitation or a grating sensation from the multiple intrasynovial nodules. X-ray findings may demonstrate calcified, free-floating bodies in the synovium [37].

Excision of the involved synovium and removal of all loose bodies is the treatment of choice. Surgical therapy has a good prognosis, although the condition may recur if removal is incomplete [37].

Pigmented Villonodular Synovitis

Pigmented villonodular synovitis is a condition in which the synovial lining cells have a marked proliferation that results in the appearance of numerous villi and folds. The formation of the finger-like projections can affect not only the synovial lining but also the tendon sheath, bursa, and bone. Unilateral involvement of the knee, hip, ankle, or elbow joint of young adults is most common [37].

There are two forms of pigmented villonodular synovitis: localized and diffuse. The diffuse type causes pain and mild, episodic joint swelling over a period of months to years. Occasionally, the patient may note an acutely painful, warm, swollen joint with limited motion. Repeated aspirations of joint fluid yield dark serosanguineous fluid in the absence of trauma [37].

The localized type of pigmented villonodular synovitis occurs in either the medial or lateral knee compartment as a solitary nodule. It, too, may begin with episodic pain and mild swelling and can be misdiagnosed as torn meniscus. Serosanguineous fluid is rarely aspirated with this type of lesion [37]. Imaging studies may show soft tissue density, but angiographies are more useful because the vascularity of these enable the condition to be diagnosed [37].

Surgical resection is the treatment for both types of pigmented villonodular synovitis. The localized form is usually cured with simple excision. With the diffuse type, lesions may recur if synovectomy is incomplete [37].

Specific Nursing Measures

During the diagnostic phase, the health history is important. The nurse should concentrate on any significant joint trauma and inquire regarding any past history of arthritis. The patient should be asked for a detailed description of swelling, pain, limitation of motion, and/or joint instability [7].

In cases of significant joint instability, a cane or crutches may be necessary. Patients should also receive education on appropriate pain management measures, including thermotherapy, over-the-counter medications, and biofeedback. In most cases, the patient will also require education to prepare for surgery and postoperative recovery [7].

Postoperative care includes monitoring for wound drainage or other signs of infection, dressing changes (as necessary), and splinting. Discharge planning includes instruction in the care of the surgical site, activity restrictions, and follow-up appointments [7].

Malignant Tumors of the Joint

Malignant tumors of the joint are rare. However, if a patient has a slow-growing monoarticular mass, malignancy should be suspected [198].

Synovial Sarcoma

Though it is the most common primary tumor of the joint, synovial sarcoma is rare. This malignancy can appear at any age, although it seems to predominate in young adults. The growth generally appears on a lower extremity, but synovial sarcomas can also develop in an upper extremity, the neck, or the chest [198].

Patients with synovial sarcoma often present with a slow-growing mass that may have been present for months to years, depending on how deeply seated it is in tissue. Pain may be present, or the patient may have a vague sensation of discomfort over the involved area. There may also be localized swelling. In cases involving the neck, tumor invasion may produce hoarseness, dysphagia, or dyspnea [198].

As with most cancer, survival time is dependent on the size of the tumor, site in the body, and age at diagnosis. The five-year survival rate is approximately 60%; this increases to 75% in patients 30 years of age or younger. If the tumor is in an extremity, five-year survival is about 65%; if the tumor is present in the trunk, the rate decreases to 40% [199].

The goals of treatment for synovial sarcoma are to eliminate the tumor, preserve a functional limb, and minimize mortality and morbidity. Preoperative chemotherapy and radiation therapy may be undertaken to decrease the size of the tumor [198]. Wide surgical resection is typically undertaken, followed by continued radiation therapy.

Clear Cell Sarcoma

Clear cell sarcoma is a rare tumor that involves tendons rather than joint spaces. It can occur in any age group and usually is found in an extremity, particularly the foot. However, it can develop in the trunk, head, genitals, stomach, and intestines. Because of this lesion's location and its predisposition to metastasis, it can be difficult to remove entirely, making treatment complicated and prognosis poor [198]. The average age at diagnosis is 25 years [200].

The primary treatment of clear cell sarcoma is radical resection of the tumor. In some cases, an extremity may be amputated. Preoperative and postoperative radiation therapy are employed. In some cases, chemotherapy may be used, but it is not particularly effective [200].

TRAUMATIC DISORDERS OF THE JOINT

Permanent structural changes may occur in a joint as a result of cartilage and capsular tears, detachment of menisci, hemorrhagic effusions, articular fractures, or repetitive trauma. Because of the realignment of involved bone, bursa, and tendons, a mechanical deterioration of articular cartilage results in osteoarthritis [201; 202].

Traumatic arthritis may result from unexpected force (e.g., sports, motor vehicle accidents) or from repetitive trauma—a chronic injury resulting from repeated smaller stresses to a joint through vibrations, blows, abnormal strain, or position. Injury resulting from repetitive stress is often related to occupation and lifestyle, for example, the stress placed on the metatarsophalangeal joints of a ballet dancer or the knees of a jogger. Over time, repetitive trauma may realign the joint and lead to the same result as an acute injury [201; 202].

The patient with traumatic arthritis must make lifestyle changes. In order to continue participating in chosen sports or occupations, patients may require braces, splints, or special equipment; in some cases, they may need to halt participation

or seek accommodations in their workplace. Although these options are effective in halting the progression of traumatic arthritis, they are often undesired or impossible for patients. The responsibility of the nurse is to provide accurate information about the alternatives available [201; 202].

Nurses also play an important role in the therapeutic and preventive care of traumatic disorders. If they are the first person on the scene of an accident, nurses may be able to prevent any residual damage by splinting, elevating the area, and not allowing weight on the area to protect the joint. It may be possible to identify tasks that expose employees to repetitive trauma; employees then can rotate through the jobs rather than be assigned permanently to potentially harmful tasks [201; 202].

Joint Effusions

Joint effusions can occur as a result of simple trauma or secondary to fractures, internal derangements, or severe sprains. Within 24 hours after a blow to the joint, synovial fluid accumulates. If blood vessels in the synovium are broken, hemarthrosis also occurs. The knee is most commonly affected by this injury, although it can occur in other joints as well [75].

Clinical Manifestations

In simple cases of traumatic synovitis, joint swelling with mild pain occurs. Aspiration of the joint produces clear fluid with elevated protein content and decreased viscosity. Hemarthrosis, which usually develops within 15 minutes to 2 hours after the trauma, is usually more painful than clear effusion and is accompanied by low-grade fever. Diagnosis of traumatic synovitis is primarily by physical examination, but x-ray examination is done to rule out fracture [75].

Therapeutic Measures

Immediately following injury, patients should be advised to apply cryotherapy (e.g., ice) for 30 minutes; this can be repeated up to four times per day to reduce swelling and relieve pain. After the first 24 hours, patients should switch to moist heat to relax surrounding muscles and reduce pain. If fluid accumulates in the joint, repeated joint aspirations may be necessary. Compression dressings applied to the joint, along with limited weight bearing, may be used, depending on the severity of the injury [75].

Dislocation and Subluxation

Dislocation is the complete displacement of a joint's articulating surfaces following trauma. Partial displacement of the articulating surfaces results in subluxation. Both subluxations and dislocations can damage soft tissues, nerves, or blood vessels if not attended to promptly. The joints most often affected are shoulders, wrists, elbows, fingers, hips, knees, and toes [75].

Clinical Manifestations

After injury, the joint appears deformed; it is tender, and motion is limited. The involved extremity may be visibly shortened. Joint pain may be intense, especially if articular surface fractures are present. With immediate treatment, there is a good prognosis. However, bone necrosis can result if reduction of the subluxation or dislocation is delayed [75]. Diagnosis is made through physical examination and patient history, with x-rays taken to evaluate joint displacement and to determine whether fractures are present [75].

Therapeutic Measures

The longer the delay in correcting a joint displacement, the more difficult the procedure becomes because of edema and muscle spasms. Two types of procedures can correct this injury. Closed reduction is manual traction done under local or general anesthesia. The pain associated with this procedure can be intense, and pain management techniques (including strong analgesics) are necessary. If muscle spasms are an issue, tranquilizers and/or muscle relaxants may be administered. Open reduction is done when wire fixations of the joint or repair of torn ligaments is also necessary [75].

If present at the site of injury, the joint should be splinted—even if crooked—to prevent further damage. Cold compresses can be applied to decrease pain and swelling [35]. The area distal to the injury should be observed for evidence of vascular damage (e.g., pallor, absent pulse, abnormal coolness) and nerve damage (e.g., paresthesia, paralysis) [35].

If analgesics, muscle relaxants, or tranquilizers are administered, it is important to monitor the patient's respiratory status. Any dressings or casts should be checked for pressure that may impair blood flow. Patients should receive education on gradual mobilization and return to activities [7].

CASE STUDIES

SYSTEMIC LUPUS ERYTHEMATOSUS

Patient A is a woman, 29 years of age, with two small children. She presents to her primary care provider with complaints of rashes developing on her arms and legs whenever she spends time in the sun. She also reports several small patches of hair loss on her head that she attributes to the stress of new motherhood and to a recent trip and her fear of flying. She reports a lack of energy, being easily fatigued, and always needing to nap during the day. Patient A also reports mild pain in her fingers and elbows but attributes the joint discomfort to caring for the children. She states that these problems have been ongoing for approximately four months.

Medical History

Patient A has no known allergies and takes no prescription or over-the-counter medication aside from occasional naproxen for joint pain and antacid for heartburn. She neither smokes nor drinks alcohol. Her youngest child is 2 years of age, and she reports unremarkable childbirths and postpartum periods. Aside from the current complaints, the patient's medical history is unremarkable.

She has four brothers and three sisters. The family history indicates an older sister with rheumatoid arthritis, an aunt with pernicious anemia, and mother with hyperthyroidism.

Assessment and Diagnosis

The primary care provider conducts a full physical assessment (***Table 2***). Several laboratory tests are ordered, with the following results:

- Hematocrit (HCT): 23%
- Red blood cell (RBC) count: 3.5 million cells/mcL
- White blood cell (WBC) count: 5,500 cells/mcL
- Platelets: 350,000 cells/mcL
- ESR: 25 mm/hour
- Urinalysis: Normal
- ANA: 1:640
- Anti-DNA antibody test: Elevated
- Complement assay: Decreased C3 level at 43 mg/dL and decreased C4 level at 14 mg/dL

Further, a tissue biopsy of one of the lesions is taken and reveals vasculitis (i.e., white blood cells within the walls of blood vessels).

Based on the results of the assessment and laboratory studies, Patient A is diagnosed with SLE.

Management

A one-month course of prednisone with tapered doses is prescribed. Nabumetone, an anti-inflammatory, is added to the regimen prior to the prednisone being weaned off. After one month of treatment, all signs and symptoms of lupus have resolved.

However, 13 years later, Patient A again presents to her primary care provider, this time with complaints of a productive cough and transient stiffness and pain in her hands and feet (migratory polyarthritis). She is afraid that she is developing rheumatoid arthritis like her sister. The provider conducts a physical examination (***Table 3***) and is concerned that the patient may be showing signs of pneumonia. A chest x-ray revealed mild pulmonary edema but no white blood cell infiltrates in the terminal airways. Laboratory tests reveal:

- HCT: 43%
- Platelet: 330,000 cells/mcL
- WBC count: 1,200 cells/mcL
- Urinalysis: Within normal limits

Patient A is diagnosed as experiencing a lupus flare and is prescribed a one-month course of prednisone along with a 10-day course of antibiotics to prevent pneumonia. Within three months, all signs and symptoms have resolved.

Five years later, Patient A returns to her primary care provider complaining of fatigue, anorexia, weight loss (25 pounds in the last four months), and significant swelling in her abdomen, face, and ankles. The nurse practitioner notes a "butterfly-shaped" rash present across the bridge of the patient's nose and cheeks. Blood tests reveal an HCT of 24% and a WBC count of 2,400 cells/mcL. A dipstick examination of the urine reveals an abnormal protein concentration, and microscopy indicates the presence of significant numbers of red and white blood cells. A 24-hour urine protein collection reveals excretion of 2.5 g protein in 24 hours.

Study Questions

1. What is the significance of the patient's family history?
2. Is this patient underweight, normal weight, overweight, or obese?
3. What underlying pathologic process is responsible for Patient A's hair loss? What is the relevance of the abnormal ESR?
4. Vasculitis in lupus results from the trapping of antigen antibody complexes in blood vessel walls followed by an intense inflammatory response to the immune complexes. Why is prednisone effective in relieving vasculitis?
5. What is the most likely cause of jaundice in this patent?
6. What pathophysiology underlies lymph node enlargement in this patient?
7. The patient's WBC differential was: 75% neutrophils, 15% lymphocytes, 5% monocytes/macrophages, 4% eosinophils, and 1% basophils. Which one of these white blood cell types has been specifically targeted by the patient's immune system?
8. Why was Patient A experiencing swelling throughout her body?

LOW BACK PAIN

Patient B is a woman, 35 years of age, who has worked as a housekeeper for the past 10 years. She is 5 foot 3 inches in height with a weight of 178 pounds. She presents to her primary care provider with complaints of low back pain. She reports having had this pain intermittently for several years; however, for the past two days, it has been worse than ever. The recent exacerbation started after vacuuming a rug (i.e., pulling and twisting at the waist). Patient B reports that the pain is primarily on the right lower side and radiates down her posterior right thigh to her knee; it is not associated with any numbness or tingling. The pain can be relieved by lying flat on her back with her legs slightly elevated and is

PATIENT A'S FIRST PHYSICAL EXAM RESULTS	
Parameter	**Findings**
General appearance	Significantly underweight, with a decrease in weight of 23 pounds since last exam one year prior Height: 5 feet 5 inches (165.5 cm) Weight: 108 pounds (49 kg)
Skin and nails	Multiple rash-like lesions on sun-exposed areas of the body, primarily on the arms and legs Slightly jaundiced
Head and nose	Nares clear Oropharynx benign and without obvious lesions Mucous membranes moist
Eyes	Some yellowing within the sclera Pupils equal, round, reactive to light and accommodation Conjunctiva normal No retinal exudates
Ears	Tympanic membranes intact
Neck	Supple No signs of lymphadenopathy, jugular vein distension, or thyromegaly
Chest	Clear to auscultation throughout Equal air entry bilaterally No wheezing or crackles Chest resonant on percussion
Abdomen	Soft and nontender Active bowel sounds No masses or organ enlargement
Extremities	No cyanosis, clubbing, or edema Rash-like lesions present
Genitourinary system	Normal female
Neurologic status	Alert and oriented Deep tendon reflexes 2+ with symmetrical flexor plantar responses No focal deficits noted
Cardiovascular system	Regular rate and rhythm Prominent S_1 and S_2
Vital Signs	
Blood pressure	110/70 mm Hg
Temperature	99.8° F
Heart rate	70 beats per minute with regular rhythm
Respiratory rate	15 breaths per minute
Source: Author	*Table 2*

lessened somewhat when she takes ibuprofen 400 mg. Except for moderate obesity and difficulty maneuvering onto the examination table because of pain, the patient's examination is fairly normal. The only abnormalities noted are a positive straight leg raise test, with raising the right leg eliciting more pain than the left. Her strength, sensation, and deep tendon reflexes in all extremities are normal.

Study Questions

1. What is the patient's likely diagnosis?
2. How will the patient be treated?

PATIENT A'S SECOND PHYSICAL EXAM RESULTS	
Parameter	**Findings**
General appearance	Healthy and calm White woman Height: 5 feet 5 inches (165.5 cm) Weight: 131 pounds (59.5 kg)
Skin and nails	No lesions or abnormalities noted
Head and nose	Nares clear Oropharynx irritated but without obvious lesions Mucous membranes moist
Eyes	Pupils equal, round, reactive to light and accommodation Conjunctiva normal
Ears	Tympanic membranes intact
Neck	Supple Lymph nodes slightly enlarged
Chest	Auscultation reveals abnormal lung sounds (bronchitis) No wheezing, but some crackles
Abdomen	Soft and nontender Active bowel sounds No masses or organ enlargement
Extremities	No cyanosis, clubbing, or edema Axillary lymph nodes swollen
Genitourinary system	Normal female Inguinal lymph nodes slightly enlarged
Neurologic status	Alert and oriented Deep tendon reflexes 2+ with symmetrical flexor plantar responses No focal deficits noted
Cardiovascular system	Regular rate and rhythm Prominent S_1 and S_2
Vital Signs	
Blood pressure	140/90 mm Hg
Temperature	100.0° F
Heart rate	105 beats per minute with regular rhythm
Respiratory rate	15 breaths per minute
Source: Author	*Table 3*

RHEUMATOID ARTHRITIS

Patient C is a woman, 50 years of age, who presents to her primary care provider for her annual exam. She reports having been very tired for the past month and also experiencing stiffness, pain, and swelling in multiple joints. She states, "I ache all over, and I have pain in different places all the time. One day it is in my right shoulder, the next day in my right wrist, and the following day my left wrist. I'm stiff everywhere when I get up in the morning or if I sit for any length of time. And I feel so tired, like I have a case of the flu that won't go away."

The patient has been diagnosed with hypothyroidism in the past, for which she is taking levothyroxine. She is also prescribed venlafaxine to treat major depressive disorder, and she indicates that her mood has been good, despite the fatigue. She is also taking an over-the-counter multivitamin and calcium supplement. Patient C reports rarely using alcohol and never smoking. There is no family history of autoimmune disorders.

PATIENT C'S PHYSICAL EXAM RESULTS	
Parameter	**Findings**
General appearance	Pleasant and alert, but appears very tired and is in moderate acute distress from joint pain Height: 5 feet 4 inches (162.5 cm) Weight: 140 pounds (63.5 kg)
Skin and nails	Intact, warm, pink, and dry No rashes Normal turgor
Head and nose	Head atraumatic
Eyes	Pupils equal, round, reactive to light and accommodation Normal funduscopic examination
Ears	Tympanic membranes intact
Neck	Supple with no jugular vein distention or thyromegaly No bruits Mild lymphadenopathy bilaterally
Chest	Clear to auscultation and percussion No lumps, dimpling, discharge, or discoloration noted in breast exam
Abdomen	Soft, non-tender, and non-distended Positive bowel sounds throughout No superficial veins or organomegaly
Extremities	No clubbing or ankle edema Hands: Swelling of the 3rd, 4th, and 5th proximal interphalangeal joints bilaterally. Pain in the 4th and 5th metacarpophalangeal joints bilaterally. Poor grip strength bilaterally. Wrists: Good range of motion. Fixed nodule at pressure point on left side. Elbows: Good range of motion. Fixed nodule at pressure point in right side. Shoulders: Pain and decreased range of motion bilaterally. Hips: Good range of motion. Knees: Pain, significant edema, and decreased range of motion bilaterally. Feet: No edema. Full plantar flexion and dorsiflexion and full pedal pulse bilaterally.
Genitourinary system	Last menstrual period 16 months ago Normal pelvic exam
Neurologic status	Alert and oriented Cranial nerves II–XII intact Muscle strength 5/5 in upper extremities and 4/5 lower extremities Deep tendon reflexes 2+ in biceps, triceps, and patella
Cardiovascular system	Regular rate and rhythm Normal S_1, S_2, no S_3 or S_4 No murmurs, rubs, or gallops
Vital Signs	
Blood pressure	125/80 mm Hg
Temperature	100.0° F
Heart rate	80 beats per minute with regular rhythm
Respiratory rate	15 breaths per minute
Source: Author	*Table 4*

Assessment and Diagnosis

The primary care provider does a complete physical exam (***Table 4***) and orders laboratory tests. The laboratory blood test results are:

- Sodium: 140 meq/L
- ANA: Negative
- HCT: 43%
- Uric acid: 2.9 mg/dL
- Potassium: 3.7 meq/L
- ESR: 38 mm/hour
- WBC count: 15,100 cells/mcL
- Cholesterol: 189 mg/dL
- Chloride: 104 meq/L
- Creatinine: 1.0 mg/dL
- Platelets: 270,000 cells/mcL
- Albumin: 4.0 g/dL
- Bicarbonate: 23 meq/L
- Blood glucose: 94 mg/dL
- RBC count: 4.7 million cells/mcL
- Thyroid stimulating hormone (TSH): 1.7 mcU/mL
- Blood urea nitrogen: 18 meq/L
- Hemoglobin: 14.9 g/dL
- Calcium: 8.8 mg/dL
- Rheumatoid factor: Positive

A urinalysis is performed and is normal, with no RBCs, WBCs, or protein. A chest x-ray finds no fluid, masses, infection, or cardiomegaly. An x-ray of the hand shows soft tissue swelling and bone demineralization but no erosions. Synovial fluid removed from the left knee (7.4 mL) is cloudy and pale yellow in appearance; analysis indicates 14,000 white blood cells/mcL (primarily neutrophils) and a glucose level of 60 mg/dL.

Based on these findings, Patient C is diagnosed with rheumatoid arthritis and referred to a rheumatologist for follow-up.

Study Questions

1. Which of Patient C's vital signs is consistent with a diagnosis of rheumatoid arthritis and why?
2. Are there any other abnormal findings from the patient's physical exam that are consistent with a diagnosis of rheumatoid arthritis?
3. What is the association between the fixed nodules at pressure points on the left wrist/right elbow and a diagnosis of rheumatoid arthritis?
4. Why is it reasonable that this patient has no stiffness, pain, or swelling in the DIP joints of the fingers?
5. Which of these patient's laboratory test results are consistent with a diagnosis of rheumatoid arthritis?
6. In terms of the progression of the disease, what do the results of the hand x-ray suggest?
7. Which findings in the examination of the synovial fluid are consistent with a diagnosis of rheumatoid arthritis?
8. What causes limitation of joint motion that occurs early in the clinical course of rheumatoid arthritis? What causes limitation of joint motion that occurs late in the clinical course of rheumatoid arthritis?

CONCLUSION

With knowledge of the structures and function of the muscles, joints, and connective tissue and the dynamic pathology that intrudes and impedes normal function, nurses can readily provide quality and often life-saving actions. An awareness of why symptoms appear leads to quicker reporting to physicians of changes in the patient's condition. Nurses can also perform immediate interventions based on standing orders and recognition of what needs to be done in order to provide safe quality care. This knowledge changes what could be only technical care to professional care through the use of decision-making skills built upon the knowledge of pathophysiology.

Customer Information/Answer Sheet insert located between pages 96–97.

COURSE TEST - #38950 PATHOPHYSIOLOGY: MUSCLES, JOINTS, AND CONNECTIVE TISSUES

This is an open book test. Please record your responses on the Answer Sheet.
A passing grade of at least 70% must be achieved in order to receive credit for this course.

This 15 contact hour activity must be completed by September 30, 2025.

1. **A bursa is a fluid-filled sac that facilities motion of structures that move against each other.**
   A) *True*
   B) *False*

2. **Tendons are the musculoskeletal structure most frequently influenced by degenerative disease.**
   A) *True*
   B) *False*

3. **Heberden nodes may be noted on the distal interphalangeal joint of patients with rheumatoid arthritis.**
   A) *True*
   B) *False*

4. **The American Academy of Physical Medicine and Rehabilitation indicates that ultrasound is an essential component in the diagnosis of tendinopathies/tendon tears.**
   A) *True*
   B) *False*

5. **The most common ocular symptom of Marfan syndrome is retinal detachment.**
   A) *True*
   B) *False*

6. **Immune dysregulation, in the form of autoimmunity, is thought to be the prime cause of lupus.**
   A) *True*
   B) *False*

7. **The most common sprains affect the ankle.**
   A) *True*
   B) *False*

8. **Sacroiliac joint syndrome is a diagnosis of exclusion made after ruling out serious causes of the back pain.**
   A) *True*
   B) *False*

9. **Therapeutic goals for patients with rheumatoid arthritis include preservation of function and quality of life, minimization of pain and inflammation, joint protection, and control of systemic complications, with the ultimate aim being low disease activity or remission.**
   A) *True*
   B) *False*

10. **Hemangiomas are rare vascular tumors often associated with arteriovenous malformations of skin vascular disease.**
    A) *True*
    B) *False*

Be sure to transfer your answers to the Answer Sheet insert located between pages 96–97.
PLEASE NOTE: Your postmark or facsimile date will be used as your test completion date.

Course Availability List

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MODERATE SEDATION/ANALGESIA

#30463 • 15 ANCC Hours / 15 FL APRN Pharm Hours

Book By Mail – $83 • **ONLINE – $75**

Pharma-cology

Purpose: The purpose of this course is to provide nurses with the knowledge required for safe drug delivery based on standardized operational guidelines. Preprocedural, intraprocedural, and postprocedural patient care are presented, as well as a thorough review of the drugs used, their advantages and disadvantages, and the safe administration of these agents.
Faculty: Susan Engman Lazear, RN, MN
Audience: This course is designed for all nurses, especially those in procedural and diagnostic areas, such as radiology, endoscopy, cardiac cath, outpatient surgery, intensive care, and emergency departments.
Additional Approval: AACN Synergy CERP Category A

ACUTE CORONARY SYNDROME: AN OVERVIEW FOR NURSES

#30993 • 15 ANCC Hours

Book By Mail – $83 • **ONLINE – $75**

Diff. Diagnosis

Purpose: The purpose of this course is to reduce the widening gap between care according to guidelines and actual care delivered by providing nurses with knowledge necessary to implement the most appropriate approach to diagnosis and treatment.
Faculty: Karen Majorowicz, RN; Lori L. Alexander, MTPW, ELS, MWC
Audience: This course is designed for nurses practicing in primary care, inpatient, outpatient, and home care settings to enhance their knowledge of the evidence-based guidelines related to the assessment, management, and secondary prevention of acute coronary syndrome.
Additional Approval: AACN Synergy CERP Category A

CHILDHOOD OBESITY: IMPACT ON HEALTH CARE

#32013 • 5 ANCC Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: The impact of childhood obesity on an already stressed healthcare system is high and is estimated to rise as the diagnoses of comorbid conditions continue to occur at a younger age. The purpose of this course is to provide nurses with the information necessary to improve the care of children and adolescents who are overweight or obese.
Faculty: Diane Thompson, RN, MSN, CDE, CLNC
Audience: This course is designed for nurses in all practice settings with a desire to better understand the issues facing obese children and their families and the impact of childhood obesity on national and global health care.
Additional Approval: AACN Synergy CERP Category A

PRESSURE INJURIES AND SKIN CARE

#34344 • 5 ANCC Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: The purpose of this course is to provide nurses with the information necessary to accurately identify, treat, and manage skin breakdown (pressure ulcers), thereby improving patient outcomes and quality of life.
Faculty: Maryam Mamou, BSN, RN, CRRN, CWOCN
Audience: This course is designed for nurses in all practice settings, particularly those caring for patients at high risk for developing -.
Additional Approval: AACN Synergy CERP Category A

MULTIMODAL PHARMACOTHERAPY FOR PAIN MANAGEMENT

NEW!

#35270 • 5 ANCC Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: The purpose of this course is to provide healthcare providers with a clear understanding of the concept of multimodal pharmacotherapy for pain relief, including available classes of analgesics.
Faculty: Richard E. Haas, BSN, MSN, EdM, PhD, CRNA, PHRN
Audience: This course is designed for nurses involved in the care of patients with pain.
Additional Approval: AACN Synergy CERP Category A

MIGRAINE: DIAGNOSIS AND THERAPEUTIC ADVANCES

Pharma-cology

#90072 • 5 ANCC Hours / 5 FL APRN Pharm Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: The purpose of this course are to provide an integrated update of the recent developments on the pathophysiology of migraine and resulting "mechanism-related" therapies, to evaluate the clinical benefit-risk ratio of antimigraine medications, and to summarize the current and evidence-based guidelines for the clinical management of migraine. The information provided should contribute to a more positive interaction between patients and healthcare professionals, through fostering patient awareness, implementation of lifestyle changes, and compliance to therapy.
Faculty: A. José Lança, MD, PhD
Audience: This course is designed for physicians, physician assistants, nurses, nurse practitioners, and other healthcare professionals involved in the care of patients with known or suspected migraine.
Additional Approval: AACN Synergy CERP Category A

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Course Availability List *(Cont'd)*

ASTHMA: DIAGNOSIS AND MANAGEMENT

Diff. Diagnosis

#90483 • 10 ANCC Hours

Book By Mail – $58 • **ONLINE – $50**

Purpose: Asthma is increasingly common, and most healthcare professionals will encounter patients with the condition. The purpose of this course is to provide nurses and pharmacy professionals with up-to-date, accurate information regarding the diagnosis and management of asthma and long-term outcomes for those with the condition.

Faculty: Sharon M. Griffin, RN, PhD; Patricia Walters-Fischer, RN, BS

Audience: This course is designed for nurses, pharmacists, and pharmacy technicians who may care for patients with asthma.

Additional Approval: AACN Synergy CERP Category A

STRATEGIES FOR APPROPRIATE OPIOID PRESCRIBING: THE FLORIDA APRN/PA REQUIREMENT

APRN Mandate

#91152 • 3 ANCC Hours

Book By Mail – $23 • **ONLINE – $15**

Purpose: The purpose of this course is to provide clinicians who prescribe or distribute opioids with an appreciation for the complexities of opioid prescribing and the dual risks of litigation due to inadequate pain control and drug diversion or misuse in order to provide the best possible patient care and to prevent a growing social problem.

Faculty: Mark Rose, BS, MA, LP

Audience: This course is designed for all nurses and physician assistants who may alter prescribing practices or intervene to prevent drug diversion and inappropriate opioid use.

Additional Approval: AACN Synergy CERP Category A

Special Approval: This course fulfills the Florida requirement for 3 hours of education on prescribing of controlled substance medications.

AUTISM SPECTRUM DISORDER

UPDATE

#92203 • 5 ANCC Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: The purpose of this course is to provide healthcare professionals with a basic understanding of the very complex, misunderstood, often puzzling, and sometimes disabling condition, enabling them to provide more thorough patient care, recognize symptomatology, and educate patients, families, teachers and communities about autism spectrum disorder.

Faculty: Sharon M. Griffin, RN, PhD

Audience: This course is designed for healthcare professionals in all practice settings who may be involved in the care of patients with an autism spectrum disorder.

Additional Approval: AACN Synergy CERP Category A

PREDIABETES: AN OPPORTUNITY TO PREVENT DIABETES

#94193 • 15 ANCC Hours

Book By Mail – $83 • **ONLINE – $75**

Purpose: Studies have shown that diabetes can be delayed or prevented in people with prediabetes, but risk reduction relies heavily on lifestyle changes on the part of the patients, making education and counseling of vital importance. The purpose of this course is to provide healthcare professionals with the information and skills necessary to effectively deal with this common condition and learn ways to help patients make healthy lifestyle choices.

Faculty: Susan Semb, MSN, RN, CDE

Audience: This course is designed for nurses in adult primary care, clinical, and acute care settings, healthcare and behavioral health professionals in public health and preventive medicine settings, and health education specialists.

Additional Approval: AACN Synergy CERP Category A

HIV/AIDS: UPDATE FOR FLORIDA

Mandate

#94723 • 1 ANCC Hour

Book By Mail – $23 • **ONLINE – $15**

Purpose: HIV infection is now endemic in the United States and throughout much of the world, and HIV/AIDS has become less about cure and more about management and control. As with most chronic diseases, treatment protocols and management strategies change over time. The purpose of this course is to provide a basic, practical review and update of knowledge concerning HIV/AIDS, addressing the key issues that impact clinical care and public health practice.

Faculty: Jane C. Norman, RN, MSN, CNE, PhD; John M. Leonard, MD

Audience: This course is designed for all Florida nurses, physicians, and allied healthcare professionals involved in the care of patients with HIV/AIDS.

Additional Approval: AACN Synergy CERP Category A

OSTEOARTHRITIS

New Guidelines

#94954 • 10 ANCC Hours

Book By Mail – $58 • **ONLINE – $50**

Purpose: The high prevalence of osteoarthritis and its substantial burden at both the individual and healthcare system levels demands sound knowledge and clinical skills in diagnosing and managing the disease. The purpose of this course is to provide healthcare professionals with the information necessary to adequately assess osteoarthritis symptoms, treat osteoarthritis patients based on evidence-based guidelines, and appropriately refer to specialists.

Faculty: Lori L. Alexander, MTPW, ELS, MWC

Audience: This course is designed for physicians, physician assistants, nurses, and other healthcare professionals involved in the care of patients with osteoarthritis.

Additional Approval: AACN Synergy CERP Category A

Prices are subject to change.
Visit www.NetCE.com for a list of current prices.

Course Availability List *(Cont'd)*

ANTIBIOTICS REVIEW

Pharma-cology

#95073 • 5 ANCC Hours / 5 FL APRN Pharm Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: The purpose of this course is to provide a review of the major classes of antibiotics and their characteristics as well as an overview of selected individual agents within each class that are most useful for today's clinical practitioner.

Faculty: Donna Coffman, MD

Audience: This course is designed for healthcare providers who prescribe and administer antibiotics to patients, including physicians, physician assistants, pharmacists, pharmacy technicians, nurses, nurse practitioners, and surgical technologists and assistants.

Additional Approval: AACN Synergy CERP Category A

ATTENTION DEFICIT HYPERACTIVITY DISORDER

Diff. Diagnosis

#96213 • 5 ANCC Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: Attention deficit hyperactivity disorder (ADHD) has a significant effect on day-to-day functioning and quality of life; however, it often goes unrecognized. The purpose of this course is to educate healthcare professionals about the epidemiology, diagnosis, and management of ADHD.

Faculty: John J. Whyte, MD, MPH; Paul Ballas, DO

Audience: This course is designed for all physicians, nurses, and social work/counseling groups involved in the care of patients with attention deficit hyperactivity disorder.

Additional Approval: AACN Synergy CERP Category A

PSYCHEDELIC MEDICINE AND INTERVENTIONAL PSYCHIATRY

NEW!

#96790 • 10 ANCC Hours

Book By Mail – $58 • **ONLINE – $50**

Purpose: The purpose of this course is to provide medical and mental health professionals with the knowledge and skills necessary to effectively treat mental disorders using emerging psychedelic and interventional techniques.

Faculty: Mark S. Gold, MD, DFASAM, DLFAPA

Audience: The course is designed for all members of the interprofessional team, including physicians, physician assistants, nurses, and mental health professionals, involved in caring for patients with mental disorders resistant to traditional treatment approaches.

Additional Approval: AACN Synergy CERP Category A

CANNABINOID OVERVIEW

NEW!

#98010 • 3 ANCC Hours

Book By Mail – $23 • **ONLINE – $15**

Purpose: The purpose of this course is to provide healthcare professionals in all practice settings the knowledge necessary to increase their understanding of the various cannabinoids.

Faculty: Chelsey McIntyre, PharmD

Audience: This course is designed for healthcare professionals whose patients are taking or are interested in taking cannabinoid products.

Additional Approval: AACN Synergy CERP Category A

GETTING TO THE POINT: ACUPUNCTURE AND ACUPOINT THERAPIES

NEW!

#98030 • 4 ANCC Hours

Book By Mail – $28 • **ONLINE – $20**

Purpose: The purpose of this course is to provide healthcare professionals in all practice settings the knowledge necessary to increase their understanding of acupoint and acupressure therapies.

Faculty: Chelsey McIntyre, PharmD

Audience: This course is designed for healthcare professionals whose patients are using or are interested in using acupoint and acupressure therapies.

Additional Approval: AACN Synergy CERP Category A

MICROBIOME MEDLEY: PRE-, PRO-, AND POSTBIOTICS

NEW!

#98060 • 2.5 ANCC Hours

Book By Mail – $23 • **ONLINE – $15**

Purpose: The purpose of this course is to provide healthcare professionals in all practice settings the knowledge necessary to increase their understanding of microbiome-based products, including prebiotics, probiotics, and postbiotics.

Faculty: Chelsey McIntyre, PharmD

Audience: This course is designed for healthcare professionals whose patients are taking or are interested in taking microbiome-based products.

Additional Approval: AACN Synergy CERP Category A

PARKINSON DISEASE

Diff. Diagnosis

#98772 • 10 ANCC Hours

Book By Mail – $58 • **ONLINE – $50**

Purpose: The purpose of this course is to provide physicians, nurses, and other members of the interprofessional healthcare team a review of pathogenesis, disease progression, diagnosis, and management of Parkinson disease, in order to improve patient care and quality of life.

Faculty: Mark Rose, BS, MA, LP

Audience: This course is designed for all healthcare providers in the primary care setting who may encounter patients with Parkinson disease.

Additional Approval: AACN Synergy CERP Category A

ANEMIA IN THE ELDERLY

#99083 • 5 ANCC Hours

Book By Mail – $33 • **ONLINE – $25**

Purpose: The purpose of this course is to provide healthcare providers with the knowledge and tools necessary to identify anemia early and respond appropriately. Better health outcomes for the geriatric population will result from an increase in evidence-based clinical practices.

Faculty: Susan Waterbury, MSN, FNP-BC, ACHPN

Audience: This course is designed for physicians, physician assistants, nurses, and other healthcare professionals involved in the care of elderly patients.

Additional Approval: AACN Synergy CERP Category A

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	96690	Anxiety Disorders in Older Adults / 3 Contact Hours	$15
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- Use pen or pencil; please refrain from using markers.
- **Information on the Customer Information form must be completed.**

#91334 MEDICAL ERROR PREVENTION AND ROOT CAUSE ANALYSIS—2 HOURS

Please refer to page 14.

Expiration Date: 08/31/25 *May be taken individually for $15*

	A	B		A	B
1.	❍	❍	6.	❍	❍
2.	❍	❍	7.	❍	❍
3.	❍	❍	8.	❍	❍
4.	❍	❍	9.	❍	❍
5.	❍	❍	10.	❍	❍

#97923 DOMESTIC VIOLENCE: THE FLORIDA REQUIREMENT—2 HOURS

Please refer to page 26.

Expiration Date: 07/31/25 *May be taken individually for $15*

	A	B		A	B
1.	❍	❍	6.	❍	❍
2.	❍	❍	7.	❍	❍
3.	❍	❍	8.	❍	❍
4.	❍	❍	9.	❍	❍
5.	❍	❍	10.	❍	❍

#31253 LAWS AND RULES FOR FLORIDA NURSES—2 HOURS

Please refer to page 34.

Expiration Date: 10/31/25 *May be taken individually for $15*

	A	B		A	B
1.	❍	❍	6.	❍	❍
2.	❍	❍	7.	❍	❍
3.	❍	❍	8.	❍	❍
4.	❍	❍	9.	❍	❍
5.	❍	❍	10.	❍	❍

#31112 RECOGNIZING IMPAIRMENT IN THE WORKPLACE: THE FLORIDA REQUIREMENT—2 HOURS

Please refer to page 43.

Expiration Date: 10/31/25 *May be taken individually for $15*

	A	B		A	B
1.	❍	❍	6.	❍	❍
2.	❍	❍	7.	❍	❍
3.	❍	❍	8.	❍	❍
4.	❍	❍	9.	❍	❍
5.	❍	❍	10.	❍	❍

#97111 RECOGNIZING AND REPORTING HUMAN TRAFFICKING IN FLORIDA—2 HOURS

Please refer to page 61.

Expiration Date: 08/31/25 *May be taken individually for $15*

	A	B		A	B
1.	❍	❍	6.	❍	❍
2.	❍	❍	7.	❍	❍
3.	❍	❍	8.	❍	❍
4.	❍	❍	9.	❍	❍
5.	❍	❍	10.	❍	❍

#96690 ANXIETY DISORDERS IN OLDER ADULTS—3 HOURS

Please refer to page 74.

Expiration Date: 02/28/25 *May be taken individually for $15*

	A	B		A	B
1.	❍	❍	6.	❍	❍
2.	❍	❍	7.	❍	❍
3.	❍	❍	8.	❍	❍
4.	❍	❍	9.	❍	❍
5.	❍	❍	10.	❍	❍

#38950 PATHOPHYSIOLOGY: MUSCLES, JOINTS, AND CONNECTIVE TISSUES—15 HOURS

Please refer to page 116.

Expiration Date: 09/30/25 *May be taken individually for $75*

	A	B		A	B
1.	❍	❍	6.	❍	❍
2.	❍	❍	7.	❍	❍
3.	❍	❍	8.	❍	❍
4.	❍	❍	9.	❍	❍
5.	❍	❍	10.	❍	❍

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