Part 1. Professional Boundaries And Chiropractic Practice

The establishment of professional boundaries between a Doctor of Chiropractic and their patient is essential to the patient’s health and well being and the legal protection of the doctor. The first step in understanding the myriad issues that pertain to professional boundaries entails examining the terms component parts and exploring existing definitions and perspectives.

Merriam- Webster’s Dictionary defines a professional as an individual with expertise in a field of endeavor who conforms to the standards of ethics in their profession and who exhibits a courteous, conscientious and businesslike manner in the workplace.1

Professional boundaries are important because they define the limits and responsibilities of each individual involved in the doctor - patient relationship. “The definition of a boundary is the ability to know where you end and where another person begins. When we talk about needing space, setting limits, determining acceptable behavior, or creating a sense of autonomy, we are really talking about boundaries. It is a general misconception that having good boundaries will distance you from others. However, the truth is that when you know where you end and others begin, you can then closely engage with others because you won’t feel overwhelmed or unprotected. Having a sense of autonomy prevents the need to distance our self from others with a barrier.” 2

Professional boundaries are the parameters within which the doctor-patient relationship occurs. Professional boundaries define effective and appropriate interaction between doctors and the patients they serve. The existence of boundaries provides for safeguards for both the doctor and the patient by defining acceptable and unethical/ illegal behaviors. Professional boundaries must be established in every facet of the doctor-patient relationship to include limitations regarding personal disclosure, the use of touch during treatment, the length and time of the day of a treatment session, and the general tone of conversation during the professional relationship. The professional boundary that must exist in the doctor-patient relationship refers to the line of demarcation between the self of the doctor and the self of the patient. As a general rule, the doctor must establish, manage and strictly adhere to professional boundaries that first and foremost take into consideration the best interests of the patient. With the exception of behaviors of a sexual nature or obvious conflict of interest activities, the major challenge faced by the Doctor of Chiropractic is the fact that many boundary considerations often are not clear-cut matters of right and wrong. The primary purpose of this continuing education course is to broaden the Doctor of Chiropractics knowledge base regarding the various types of professional boundary violations and the methodologies that can be utilized to prevent such violations.

The Balance Of Power In The Doctor- Patient Relationship

There is an inherent power differential found in most doctor-patient relationships. The power of the doctor comes from the professional position that they hold and their access to private knowledge about the patient. Establishing boundaries allows the doctor to control this power differential and allows a safe connection to meet the therapeutic needs of the patient. According to the New Zealand Medical Council, the ethical doctor-patient relationship depends upon the
doctor creating an environment of mutual respect and trust in which the patient can have confidence and safety”.3

The doctor - patient relationship is a fiduciary relationship. The doctor - patient relationship is a relationship founded in trust. The fiduciary relationship is formed when the patient seeks a physician’s care and the physician agrees to provide a service. The patient agrees to take the physician into their confidence and reveal personal information related to their health. In turn, the physician must become the patient’s advocate in all matters related to the patient's health. The doctor must place the patient’s interests above their own. A strong fiduciary relationship is what patients have come to expect and what professional licensing boards have demanded as a standard of care.

In a fiduciary doctor - patient relationship, there is an expectation of trustworthiness, an unequal power relationship exists and the interaction occurs under conditions of privacy4. The unequal power distribution between the doctor and the patient has to be acknowledged and contained in an ethically correct manner. The onus of responsibility for this task falls on the doctor because they have the most power in the relationship.

According to ethicist, Howard Brody, there are four sources of medical power: Aesculapian, Charismatic, Social and Hierarchical. Aesculapian power is "... the power that a physician possesses by virtue of their training in the discipline and the art or craft of medicine”. Charismatic power is based on "... the personality characteristics of the physician independent of the disciplinary knowledge and skill that give rise to Aesculapian power”. Social power is that which "... arises from the social status of the physician”. Hierarchical power is “the power inherent by one's position in a medical hierarchy”.5

Transference and Counter-transference

Transference refers to feelings which the patient has for the caregiver which are based on projections of feelings associated with key figures from the past or strong needs. These may be feelings of excessive affection, trust, or even anger.6 Counter-transference refers to feelings that a doctor develops towards a patient.

Sexual contact is never acceptable in a professional relationship. Sexual or other misconduct by professionals is always wrong, unethical, and criminal. Such behavior by a physician, therapist, teacher, trainer, or clergyman is in violation of professional ethics.7

The Effect of Transference on Autonomous Choice And Consent

According to Simon and Zelos, a current patient cannot validly consent to have sexual intercourse with his/her doctor. A lack of competence due to the presence of transference (of which the patient is usually unaware and/or lacking insight into its significance) is the most common and strongest basis for this claim.8 9 The New Zealand Medical Council opined that “... patient consent cannot be a defense in disciplinary hearings of sexual abuse ...”10
The American Psychiatric Association itself has clearly stated that "sexual activity with a current or former patient is unethical", with no qualifications.\(^\text{11}\) Transferences can persist indefinitely and with it the perpetuation of the potential or real incompetence of the patient to recognize these feelings for their true nature (and the same for doctors with respect to counter-transference)\(^\text{12}\)

There is no empirical research to demonstrate that transference disappears for the patient or even simply decreases with cessation of the doctor-patient relationship (or counter-transference for the doctor although this is less studied): "the concept of a supposed ‘waiting period' after termination before sexual intimacies is naïve because it does not take into account the timeless nature of the subconscious . . . there have been no published studies demonstrating or even suggesting that doctor-patient sexual involvement becomes safe at a point 3 months or even 3 years after termination."\(^\text{13}\)

The Council of Ethical and Judicial Affairs of the American Medical Association has stated "sexual or romantic relationships with former patients are unethical if the physician uses or exploits trust, knowledge, emotions, or influence derived from the previous professional relationship".\(^\text{14}\)

There are a myriad number of reasons why both patients and doctors become vulnerable to boundary violations. These vulnerabilities can be attributed to low self-esteem, childhood abuse, marital problems, impulsivity, borderline personality disorders and other assorted psychiatric disorders, familial problems, financial difficulties, sociopathic personality disorders and sexual and drug addictions.

**Boundary Violations**

Any behavior that damages the patient, the doctor, and/or the therapy is a boundary violation. A boundary violation is the victimization and exploitation of a patent by the doctor and is a betrayal of the fiduciary covenant of trust. Boundary violations include sexual and non-sexual misconduct.

Boundary violations harm the patient and the professional alike. The ramifications of boundary violations are widespread. The damage from boundary violations can extend to the Chiropractic profession in general and to the families of the patient and the doctor.

Many boundaries exist in the doctor-patient relationship. These include boundaries of role, time, place and space, money, gifts and services, clothing, language and physical contact.\(^\text{15}\) Sexual misconduct usually commences with violations of more minor boundaries: Simon writes, "The road to doctor-patient sex is paved with progressive boundary violations. Except when a patient is raped, the doctor who eventually sexually abuses a patient follows a remarkably predictable ‘natural history' of sexual misconduct."\(^\text{16}\)

The general stages of sexual misconduct include: the gradual erosion of doctor neutrality; socialization of therapy; the patient is treated as 'special'; doctor's self-disclosures begin; physical contact begins (e.g. hugs, kissing); extra therapeutic contacts occur; dating begins;
sexual intercourse occurs. The long-term emotional consequences for the patient of being sexually involved with a doctor have been likened to rape or incest.

### Boundary Crossing vs. Boundary Violation

A boundary crossing is a brief excursion across boundaries with a return to established limits of the doctor-patient relationship. Boundary crossings, such as the disclosure of small bits of personal information, the giving of small gifts, compliments on a patient’s attire or flirting, may be trivial, but have the potential of progressing to a boundary violation if there is an increase in the frequency and severity of the crossings.

Boundary crossings are departures from usual practice that are not exploitive of the patient.

In contrast to a boundary crossing, a boundary violation is a behavior/transgression that is extremely harmful or exploitive of the patient. According to Gutheil and Gabbard, “Sexual exploitation is seen as an extreme boundary violation.”

Professional boundary violations come in many forms, both sexual and nonsexual in nature. The following is an overview of the myriad professional boundary violations.

### Professional Boundary Issues in Chiropractic Practice

#### Physical Contact

Chiropractic means done by hand. The practice of Chiropractic can involve palpation of the patient’s body, the movement of extremities, and the touching of the patient’s body during examination and the application of physiotherapy procedures. These forms of reasonable physical touching of the patient could be easily misconstrued by the patient as being inappropriate. Therefore, it is imperative that the doctor communicate to the patient on the first visit the type of clinically correct therapeutic contact that takes place during the course of chiropractic treatment. Physical contact beyond the clinical encounter would represent a boundary violation. Even forms of physical contact which are generally acceptable as forms of greeting such as hugging and handshaking should be avoided in the clinical setting. Such touch can be interpreted as sexual or inappropriate which necessitates careful and sound clinical judgment when using touch for supportive or therapeutic reasons. Clinicians must be cautious and respectful when any physical contact is involved, recognizing the diversity of cultural norms with respect to touching, and cognizant that such behavior may be misinterpreted.

The crossing of boundaries per se does not necessarily mean that an unethical act occurred: after all, the crossing or erosion of boundaries is a normal part of the evolution of intimate relationships between human beings. Nor do all boundary transgressions between doctor and patient ultimately lead to sexual misconduct. As Gutheil and Gabbard write, "... the specific impact of a particular boundary crossing can only be assessed by careful attention to clinical context". To decide whether any instance of a boundary crossing is a boundary violation, the analysis has to examine the profiles of offending doctors. As mentioned previously, sexual
misconduct is often progressive in nature. Consequently, the offending doctor’s history may be
demonstrative of numerous boundary crossings which eventually lead to a serious boundary
violation.

Self disclosure

In some cases, self disclosure may be appropriate. However, doctors need to be careful that the
purpose of the self disclosure is for the patient’s benefit. A number of dangers may exist in self
disclosure including shifting the focus from the needs of the patient to the needs of the doctor or
moving the professional relationship toward one of friendship. The blurring of boundaries can
confuse the patient with respect to roles and expectations. The doctor needs to ask themselves the
question "Does the self disclosure serve the patient’s therapeutic goals?" Excessive self-
disclosure, where the doctor discusses personal problems or aspects of their intimate life with the
patient or discusses feelings of sexual attraction, must always be avoided. Excessive self-
disclosure by the doctor personalizes the doctor - patient relationship and may inadvertently lead
to the development of a doctor patient sexual relationship.

Gift Exchange

Giving or receiving gifts of more than token value is contrary to professional standards because
of the risk of changing the therapeutic relationship. A gift exchange can cause a patient to feel
pressured to reciprocate to avoid receiving inferior care. Conversely, if a doctor accepts a
significant gift from a patient, they risk altering the therapeutic relationship and could feel
pressured to reciprocate by offering "special" care.

Dual Relationship

A dual relationship is one where the doctor is both the clinician and also holds a different
significant authority or emotional relationship with the same person. Examples can include
course instructor, or family member. The purpose of avoiding dual relationships is to avoid
exploiting the inherent power imbalance in the therapeutic relationship.

Doctors should avoid relationships with their patients outside of therapy where either the doctor
or patient is in a position to give a special favor, or to hold any type of power over the other. For
example, a doctor should avoid employing a patient or their close relatives and engaging in
business ventures with the patient. Doctors should refrain from requesting favors or assistance
from patients that involves a relationship outside of therapy.

Developing Friendships

Generally, doctors should avoid becoming friends with patients and should refrain from
socializing with them. Although there are no explicit guidelines that prohibit friendships from
developing once therapy has terminated, doctors must use their clinical judgment in assessing the
appropriateness of this for the individual patient. Potential power imbalances may continue to
exist and influence the patient well past the termination of the formal therapeutic relationship.21
Personal Space

The performance of therapeutic and diagnostic procedures can cause a doctor to unavoidably invade a patient’s personal space. With respect to personal space, the key to averting a boundary crossing / violation is to communicate to the patient your intended actions before acting and receiving their verbal consent for entering into their personal space.\(^{22}\)

Care of Relatives or Friends

The treatment of relatives and friends is a common occurrence for the Doctor of Chiropractic. According to Haldeman, with respect to the care of relatives and friends, “Doctors should question themselves regarding their objectivity, training, emotional involvement, ability to sustain patient compliance and accountability to standards of care.”\(^{23}\)

Dress

The Doctor of Chiropractic should dress in a professional manner at all times during the course of the treatment of patients. Both male and female doctors should dress appropriately in clinical attire. The continuum of appropriate clinical attire can include the wearing of casual business clothes and smocks to the use of a tie and suit jacket. Unprofessional looking clothes such as tee shirts with offensive printing should be avoided at all times.

Money

According to Haldeman “Transfers of money clearly delineates the business boundaries of therapeutic relationships. Non-monetary forms of payment and barter may be ill advised at current times. Boundary violations regarding billing and insurance are common, and giving away free care may be construed negatively from a professional liability standpoint.”\(^{24}\)

Language

The appropriate use of language is essential throughout the doctor - patient relationship. “Communication with patients on a first name basis can personalize doctor - patient relationships. The use of first names with pediatric patients is typically appropriate, yet a younger doctor may be better off to default to the use of Mr. or Ms. with an elderly patient.”\(^{25}\)

Personal Contact with a Patient After the Termination of Care

The inherent power imbalances that exist in the doctor patient relationship may continue to influence the patient well past termination of care. Professional standards tend to prohibit a doctor from engaging in a sexual relationship with a former patient to whom any professional
service was provided in the past two years. Even the most casual dating relationship may lead to forms of affectionate behavior that could fall within the definition of sexual abuse.

Ignoring established conventions that help to maintain a necessary professional distance between patients and members can lead to boundary violations. Examples include providing treatment in social rather than professional settings, not charging for services rendered, not maintaining clear boundaries between living and professional space in home offices, or scheduling appointments outside of regular hours or when no one else is in the office.

During the course of the treatment of a patient, it is always a boundary violation when a doctor acts upon a feeling of attraction for a patient. Haldeman writes, “although patients or doctors experiencing feelings of attraction to one another is neither abnormal or wrong, choosing to act on such feelings is a boundary violation. Before a physician initiates any kind of dating or romantic relationship, at a minimum, the doctor - patient relationship should be terminated and documented in the patient record. Furthermore, the notation should be signed by the patient. Different jurisdictions may have specific requirements or prohibitions and some have established guidelines, such as a 2 year waiting period following discharge.”

Sexual Misconduct

Sexualizing a professional, health-care relationship is against the law in many states. Sexual abuse can be defined broadly as: sexual intercourse or other forms of physical sexual relations between a doctor and a patient; touching, of a sexual nature of the patient by the doctor; or, behavior or remarks of a sexual nature by a doctor toward a patient.

There are NO circumstances in which sexual activity between a doctor and a patient is acceptable during the care of the patient. Because of the unequal balance of power and influence in the doctor - patient relationship, it is impossible for a patient to give meaningful consent to any sexual involvement with their doctor. A patient’s consent and willingness to participate in a personal relationship does not relieve the doctor of their duties and responsibilities for ethical conduct in this area.

The ACA Ethics Committee opined that sexual intimacies with a patient is unprofessional and unethical based on the existing provisions in the ACA Code of Ethics: A(6), A(7), A(10) and C(2).

In a 1992 survey of 10,000 doctors in the United States, Nonette Gartrell found that 9% acknowledge sexual contact with patients.

In 1784 Ben Franklin wrote “the physician can, if he will, take advantage of his patient. Even if we ascribe to him superfluous virtue, since he is exposed to emotions which awaken such desires, the imperious law of nature will affect his patient, and he is responsible, not merely for his own wrong doing, but for that he may have excited in another.”
Warning Signs of Impending Sexual Misconduct

There may be times in practice when a doctor could find himself or herself drawn toward a patient or could experience feelings of attraction to a patient. It is vital that these feelings be recognized as early as possible and actions must be taken to prevent the relationship from developing into something other than a professional one. If the patient attempts to sexualize the relationship, by initiating or consenting to sexual contact, the sexual relationship is still considered sexual misconduct on the part of the doctor.

Research has shown that before actual physical contact or abuse occurs there are often a number of warning signs, or changes in the doctor’s behavior. Be alert to such signs that suggest he or she may be starting to treat a particular patient differently. These may include sharing personal problems with the patient, offering to provide therapy in social situations such as over dinner, offering to drive a patient home, not charging for therapy, or making sure the patient’s appointments are scheduled when no one else is in the office.

In 1996, the Federation of State Medical Boards of the U.S., Inc. accepted the report from the Ad Hoc Committee on Physician Impairment regarding sexual boundary issues. (Federation Bulletin 1994)

This Committee defined sexual violations by physicians as:

A sexual violation may include physician-patient sex, whether or not initiated by the patient, and any conduct with a patient that is sexual or may be reasonably interpreted as sexual, including but not limited to:

1. Sexual intercourse, genital-to-genital contact;
2. Oral to genital contact;
3. Oral to anal contact, genital to anal contact;
4. Kissing in a romantic or sexual manner;
5. Touching breasts, genitals, or any sexualized body part for any purpose other than appropriate examination or treatment, or where the patient has refused or has withdrawn consent;
6. Encouraging the patient to masturbate in the presence of the physician or masturbation by the physician while the patient is present;
7. Offering to provide practice-related services, such as drugs, in exchange for sexual favors.

Sexual impropriety comprises behavior, gestures, or expressions that are subjective, sexually suggestive, or sexually demeaning to a patient, including but not limited to:

- Disrobing or draping practices that reflect a lack of respect for the patient's privacy; deliberately watching a patient dress or undress, instead of providing privacy for disrobing;
- Subjecting a patient to an intimate examination in the presence of medical students or other parties without the explicit consent of the patient or when consent has been withdrawn;
- Examination or touching the genitals without the use of gloves;
Inappropriate comments about or to the patient, including but not limited to making sexual comments about patient's body or underclothing, making sexualized or sexually demeaning comments to a patient, criticizing the patient's sexual orientation (homosexual, heterosexual, or bisexual), making comments about potential sexual performance during an examination or consultation, except when the examination or consultation is pertinent to the issue of sexual function or dysfunction, requesting details of sexual history or sexual likes or dislikes when not clinically indicated for the type of consultation;

- Using the physician-patient relationship to solicit a date;
- Initiation by the physician of conversation regarding the sexual problems, preferences, or fantasies of the physician;
- Examining the patient intimately without consent.  

Guidelines to Prevent Sexual Misconduct Boundary Violations

1. Respect cultural differences and be aware of the sensitivities of individual patients.
2. Do not use gestures, tone of voice, expressions, or any other behaviors which patients may interpret as seductive, sexually demeaning, or as sexually abusive.
3. Do not make sexualized comments about a patient’s body or clothing.
4. Do not make sexualized or sexually demeaning comments to a patient.
5. Do not criticize a patient’s sexual preference.
6. Do not ask details of a patient’s sexual history or sexual likes/dislikes unless directly related to the purpose of the consultation.
7. Do not request a date with a patient.
8. Do not engage in inappropriate 'affectionate' behavior with a patient such as hugging or kissing.
9. Do not engage in any contact that is sexual, from touching to intercourse.
10. Do not talk about your own sexual preferences, fantasies, problems, activities or performance.

Learn to detect and deflect seductive patients and to control the therapeutic setting. Maintain good records that reflect any intimate questions of a sexual nature and document any and all comments or concerns made by the patient relative to alleged sexual abuse, and any other unusual incident that may occur during the course of, or after an appointment.

Statistical Analysis of Boundary Violations

- In California, there were disciplinary actions against 2,309 doctors, including 57 for sexual abuse of or sexual misconduct with a patient. 20,125 Questionable Doctors. 2000 Edition.
- According to a survey reported in the Journal of the American Medical Association (JAMA), 10% of psychiatrists admitted to having sexual relations with their patients. In a July 1997 report, published by the Public Citizen Health Research Group, 28% of psychiatrists were disciplined for sex-related offenses, which is a figure far higher than any of the other medical specialty groups.
Should Convicted Psychiatrists and Psychologists Be Listed As Sexual Predators? PR Newswire, 9/14/97.  

- The number of all doctors disciplined for sexual misconduct doubled from 1990 to 1994. Of the total disciplinary actions taken against doctors, 5.1% were for sexual abuse of patients or other sexual misconduct.  


- The Federation of State Medical Boards reports 2.6%, 3.6%, and 3.9% of disciplinary violations reported were the result of complaints of sexual misconduct in 42 states for the years 1990 to 1992 (Winn, 1993). Data from a 1994 study of all medical boards in the United States revealed that of the 34 boards responding (Enborn & Thomas, 1997), 38% used a formal assessment process to investigate physicians for sexual misconduct.  

- Enborn and Thomas, (1997) found higher proportions of complaints filed against physicians who practiced family medicine, obstetrics/gynecology, and psychiatry. Kardener, Fuller and Mensh (1973) had a 46% return survey rate of physicians; 12% male practitioners of OB/GYN, internal medicine, surgery, family practice, and psychiatry acknowledged sexual contact with patients.  

- Gartrell, Herman, Olarte, Feldstein and Localio (1986) surveyed psychiatrists in the United States and reported that 7% male and 3% female respondents acknowledged having sexual contact with patients. Gartrell Herman, Olarte, Localio and Feldstein (1988) studied senior psychiatry residents, of which 54% returned the survey; 4% males and 6% females acknowledged sexual contact with patients. Gartrell, Milliken, Goodson and Thiemann (1992) report nine percent of family practice, internists, OB/GYN, and surgery practitioners surveyed had had sexual contact with patients.  

- Using a national database Dehlendorf and Wolfe (1998), examined trends and characteristics of 761 physicians who had disciplinary orders for sexual misconduct, between the years 1981 to 1996. Sex related disciplinary orders taken against physicians increased significantly from 2.1% in 1989 (47 orders involving 42 physicians), to 4.4% in 1996 (154 orders involving 147 physicians).  

- Another study (Morrison, Wickerson, 1998) presented information on 375 physicians who had been disciplined over an 18-month period by the Medical Board of California. Ten percent of those 375 disciplinary actions were for inappropriate sexual contact with patients.  

- Bloom, Nadelson and Notman (1999) amplified the study of Enborn and Thomas (1997) indicating that 97% of the physicians in the sample were male, ranging in age from 33 to 83 years, with a mean age of 53 years. They had been in practice from 5 to 57 years, with an average of 25 years of practice. Ninety-three percent of the physicians in the sample were graduated from American medical schools; 58% were board certified. Patients or relatives of patients initiated most of the complaints (64%). Only 13% came from other sources.  

- From these reports the number of physicians struggling with sexual boundary problems appears to be 3% to 10% of the U.S. physician population (reported incidents). Furthermore, the problem crosses all medical specialties. There is no reason to assume that sexual misconduct is
limited to United States physicians, although there is little in the literature illuminating this issue. Because of the dearth of research, more studies are needed in this area.\footnote{41}

- According to the American Medical Association (2001-2002 Edition), 797,634 physicians are actively practicing in the United States. If the survey data are accepted, the potential problem estimates at up to 10\% of the physician population or 79,763 physicians. This is a substantial number and should be considered a priority problem for, medical educators, physician leadership groups, and the Federation of State Medical Boards of the United States.\footnote{42}

- Gabbard (1989) provided summaries of the incidence of sexual boundary problems in various mental health professional disciplines and examined the nature of the fiduciary relationships. Ten years later Bloom et al focused on sexual abuse by physicians and included detailed consideration of forensic, ethical and regulatory issues. (Bloom, Nadelson, Notman, 1999)\footnote{43}

- Gabbard (1999) classified the majority of physician sexual misconduct cases into four psychologically based categories.

1. The lovesick physician may feel that normal ethical guidelines do not apply in matters of "love." This subset may have a diagnosis of mild depression, or appear quite healthy, but with significant life crises or a personality disorder.

2. The limitless physician, with tireless and selfless devotion to patients, may be vulnerable to the demands of difficult patients. This physician avoids conflict and has almost no ability to limit any patients' request. Personality disorder of the compulsive or dependent type is the usual underlying diagnosis.

3. The predatory physician represents a small but notorious group of physician misconduct cases that fall under the category of psychopathic personality or paraphilia. Predatory behavior towards patients is often associated with severe narcissistic and antisocial personality disorders.

4. The psychotic physician, the smallest group, is the truly mentally ill physician whose sexual misconduct is associated with psychotic disorders such as hypomania or schizophrenia.

- Abel and Osborne (1999) diagnosed approximately 20\% of professional sexual misconduct cases referred to their clinic as paraphilia extending into the practice of medicine. Irons and Schneider (1999) described the evaluation of 150 professionals, 75\% were physicians, who were assessed following allegations of professional sexual impropriety. Thirty-one percent of their sample were diagnosed chemically dependent (p.13). Addictive sexual behavior was a significant factor in two-thirds of cases.\footnote{44}

- Public Citizen Health Research Group’s 13,012 Questionable Doctors lists doctors who faced disciplinary action as of December 1995. The number is up from 10,289 listed in the organization’s previous compilation, but too many bad doctors continue practicing, says Dr. Sidney Wolfe, the group’s director.\footnote{45}

“If airline pilots were as poorly regulated as physicians, we would have . . . one plane crashing every day killing 200 people,” says Wolfe.

Among Wolfe’s conclusions:
• 5.1% of disciplinary actions were for sexual abuse of patients or other sexual misconduct, up from 2.5% in 1990.

• 67% of doctors disciplined for substandard, incompetent or negligent care were allowed to continue practicing with little or no restriction. 31% of doctors whose narcotics licenses were restricted by the federal Drug Enforcement Administration faced no state discipline.

• 30% of doctors barred from the federal Medicare program were not disciplined by state medical boards.

**Statistical Analysis of the Chiropractic Profession**

It has been reported that chiropractors are 3.39 times more likely to be involved in violating professional boundaries than medical physicians.

According to Foreman and Stahl’s retrospective analysis of 216 chiropractors disciplined in California January 1998 and April 2002, 49 (22.6%) were for sexual offenses. A comparison to medical doctors over the same period demonstrates 10% of their violations were for sexual misconduct. The discipline rate for California MD's was 0.23/1,000 practitioners. The incidence rate for chiropractors was 1.01/1,000 practitioners for a resultant rate of incidence that is 339% higher than the medical profession.

**Treatment of Physicians Who Cross Sexual Boundaries**

The range of severity of sexual impropriety and sexual violation in physicians ranges from inappropriate use of language to rape (Benedek & Wahl, 1999). There have been demands to prevent all such offenders from ever practicing again. However, with treatment and/or education, some physicians guilty of professional sexual misconduct or sexual impropriety have been allowed to return to a modified form of practice with supervision, monitoring and appropriate safety measures in place (Irons & Schneider, 1999), (Abel & Osborn, 1999), (Gabbard, 1999).

The physician who is suspected of sexual boundary violations will require specialized and comprehensive evaluation involving a multidisciplinary team consisting of a physician, a psychiatrist, a psychologist, a social worker, and an addiction specialist.

**Education of Medical Physicians Who Cross Sexual Boundaries**

The Report on Sexual Boundary Issues by the Ad Hoc Committee on Physician Impairment of the Federation of State Medical Boards of the US, Inc. (FSMB) outlines the current concepts
regarding physician impairment in sexual boundary issues and recommends guidelines for state medical boards that are investigating sexual misconduct in physicians. (Ad Hoc Committee, 1994). The FSMB recommends that state medical boards provide proactive strategies including:

- Improvement in continuing medical education of physicians about acceptable and unacceptable behavior in regard to sexual boundary issues;
- Addressing physician sexual misconduct during medical school or residency training;
- Taking a proactive stance to educate their licensees about sexual misconduct;
- Publishing information in newsletters and contacting media to inform the public.  

**Education of Doctors of Chiropractic Who Cross Sexual Boundaries**

State Chiropractic Boards dealing with a complaint against a doctor who has violated a sexual boundary are required to make a decision about the level of discipline required in each case. We have observed that individual state boards differ in their approach to sexual boundary violations. Usually those doctors who have engaged in sexual improprieties, and are not diagnosed with a sexual disorder are mandated to an educational intervention. Those who have completed appropriate treatment may be required to have continuing education credits in sexual boundary education and suitable monitoring and supervision in place before returning to practice.

**Challenges for The Doctor of Chiropractic**

- In most cases, as a chiropractic students, physicians did not receive education or training about sexual and/or romantic boundaries.
- Some doctors are naïve about the seductive patient.
- Doctors fail to recognize non-sexual boundaries violations including dual relationships, gifts and services from patients, and problems of sexual harassment (Spickard, Swiggart, Manley and Dodd, 2002).  

**Penalties For Acts of Sexual Misconduct**

Penalties imposed by a Chiropractic State Board of Examiners for acts of sexual misconduct can range from reprimands to the permanent loss of a license.

Criminal penalties for extreme acts of sexual misconduct such as rape, vary form state to state. A study by the U.S. Department of Justice found that the average sentence for convicted rapists was 11.8 years, while the actual time served was 5.4 years.  

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Prevention of Boundary Violations

1. Begin with a self-evaluation and assessment of your practice style and behaviors. Determine which practice style or behaviors present potential liability risks.

   During the process of self-assessment, the Doctor of Chiropractic should ask themselves the following questions:

   1. Do I have a sexual attraction to a particular patient?
   2. Do I ask more personal questions than I clinically need to in order to find out about my patient’s personal life?
   3. Do I show favoritism to certain patients by scheduling off-hour or off-site appointments for them?
   4. Do I fantasize about becoming sexually involved with my patient?
   5. Do I share my personal problems with patients?
   6. Do I initiate social contact with certain patients outside of the clinical setting of my office?
   7. Do I flirt with my patient?
   8. Do I use sexual innuendo in my communication with my patient?
   9. Do I accept gifts from patients?
  10. Do I seek advice for personal benefit from my patient?
  11. Do I enter into business deals with patients?
  12. Do I explain what I am about to do before I examine patients or perform procedures that involve personal touch?
  13. Do I embrace, hug or kiss patients as a form of greeting?
  14. Do I ever physically touch a patient during a therapeutic procedure with out first explaining to the patient the clinical necessity of my actions?
  15. Do I have a third party present during the examination and treatment of patients?
  16. Do I keep information regarding my patient confidential?
  17. Do I dress in a professional manner at all times during office hours?
  18. Do I give away free care to my cash patients and not to my insurance patients?
  19. Can I retain my objectivity in the treatment of friends and relatives?
  20. Do I act for my personal benefit or for the therapeutic benefit of the patient?

2. Become cognizant of power differentials, boundary dynamics and psychological dynamics that occur during the course of the doctor - patient relationship.

3. Identify your personal vulnerabilities that place you at risk for a boundary violation.

   4. Determine your stage of professional and personal growth. Business successes / failures or personal crises or challenges can increase the likelihood of boundary crossing which typically precedes a boundary violation. From awareness comes enlightenment and the reduction of risks.

   5. One of the most important methods to avoid boundary violation charges is good verbal communication with your patients. “From a legal standpoint; lack of proper communication is often cited as the primary reason patients file a law suit against their doctor. Many patients who experience a poor medical outcome, but have good communication with their doctors, will tend to not pursue legal action when an adverse event occurs.”

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Physician Insurance Fraud

It has been reported by a number of authoritative sources that insurance fraud constitutes an estimated $100-billion-a-year problem. The United States Government Accountability Office (GAO) estimates that $1 out of every $7 spent on Medicare is lost to fraud and abuse and that in 1998 alone, Medicare lost nearly $12 billion to fraudulent or unnecessary claims.56

Insurance Physician Fraud Perspectives

- Nearly one of three physicians say it's necessary to game the health care system to provide high quality medical care. *Journal of the American Medical Association (2000)*57
- More than one of three physicians says patients have asked physicians to deceive third-party payers to help the patients obtain coverage for medical services in the last year. *Journal of the American Medical Association (2000)*58
- One of 10 physicians has reported medical signs or symptoms a patient didn't have in order to help the patient secure coverage for needed treatment or services in the last year. *Journal of the American Medical Association (2000)*59
- Healthcare fraud alone costs Americans $54 billion a year, the Coalition Against Insurance Fraud estimates.
- More than one third of people hurt in auto accidents exaggerate their injuries. This adds $13-$18 billion to America’s annual insurance bill, notes a study by the Rand Institute for Civil Justice.

Types of Insurance Fraud and Abuse

The most common type of health insurance fraud is false claim schemes. The goal in these schemes is to obtain undeserved payment for a claim or series of claims.60 Such schemes include any of the following when done deliberately for financial gain:

- Billing for services, procedures, and/or supplies that were not provided.
- Misrepresentation of what was provided; when it was provided; the condition or diagnosis; the charges involved; and/or the identity of the provider recipient.
- Providing unnecessary services or ordering unnecessary tests.61

“Many insurance policies cover a percentage of the physician's "usual" fee. Some physicians charge insured patients more than uninsured ones but represent to the insurance companies that the higher fee is the usual one. This practice is illegal. It is also illegal to routinely excuse patients from co-payments and deductibles. (A co-payment is a fixed dollar amount paid whenever an insured person receives specified health-care services. A deductible is the amount that must be paid before the insurance company starts paying.) It is legal to waive a fee for people with a genuine financial hardship, but it is not legal to provide completely free care or discounts to all patients or to collect only from those who have insurance. Routine waivers thus raise overall health costs. They are considered fraudulent because averaging them with the doctor's full fees would make the "usual" fees lower than the amounts actually billed for.”62

Other illegal procedures include:

- Charging for a service that was not performed.
• Unbundling of claims: Billing separately for procedures that normally are covered by a single fee. An example would be a podiatrist who operates on three toes and submits claims for three separate operations.

• Double billing: Charging more than once for the same service.

• Up coding: Charging for a more complex service than was performed. This usually involves billing for longer or more complex office visits (for example, charging for a comprehensive visit when the patient was seen only briefly), but it also can involve charging for a more complex procedure than was performed or for more expensive equipment than was delivered. Medicare documentation guidelines describe what the various levels of service should involve.63

• Miscoding: Using a code number that does not apply to the procedure.

• Kickbacks: Receiving payment or other benefit for making a referral. Indirect kickbacks can involve overpayment for something of value. For example, a supplier whose business depends on physician referrals may pay excessive rent to physicians who own the premises and refer patients. Another example would be a mobile testing service that performs diagnostic tests in a doctor's office. Kickbacks can distort medical decision-making, cause overutilization, increase costs, and result in unfair competition by freezing out competitors who are unwilling to pay kickbacks. They can also adversely affect the quality of patient care by encouraging physicians to order services or recommend supplies based on profit rather than the patients' best medical interests. In 2000, the Office of the Inspector General issued a fraud alert warning against kickbacks disguised as rental payments.64

Excessive or Inappropriate Testing

Many standard tests can be useful in some situations but not in others. The key question in judging whether a diagnostic test is necessary is whether the results will influence the management of the patient. Billing for inappropriate tests—both standard and nonstandard—appears to be much more common among chiropractors and joint chiropractic/medical practices than among other health-care providers. The commonly abused tests include:

• Computerized inclinometry: Inclinometry is a procedure that measures joint flexibility. Inclinometer testing may be useful if precise range-of-motion measurements are needed for a disability evaluation, but routine or repeated measurements "to gauge a patient's progress" are not appropriate.65

• Nerve conduction studies: These tests can provide valuable information about the status of nerve function in various degenerative diseases and in some cases of injury.66 However, "personal injury mills" often use them inappropriately "to "follow the progress" of their patients.

• Surface electromyography: This test, which measures the electrical activity of muscles, can be useful for analyzing certain types of performance in the workplace. However, some chiropractors claim that the test enables them to screen patients for "subluxations" and to follow their progress. This usage is invalid.67

• Thermography: Thermographic devices portray small temperature differences between sides of the body as images. Chiropractors who use thermography typically claim that it can detect nerve impingements or "nerve irritation" and is useful for monitoring the effect of chiropractic adjustments on subluxations. These uses are not appropriate.68

Personal Injury Protection (PIP)
More than one of every three bodily-injury claims from car crashes involve fraud. *Insurance Research Council (1996)*

17-20 cents of every dollar paid for bodily injury claims from auto policies involves fraud or claim buildup. *Insurance Research Council (1996)*

Fraud adds $5.2-$6.3 billion to the auto premiums that policyholders pay each year. *Insurance Research Council (1996)*

Claims for bodily injuries under the Personal Injury Protection portion of New York's no-fault auto coverage rose 79 percent between 1999 and 2000, compared to 25 percent in all no-fault states. *Insurance Research Council (2001)*

Insurers increased auto premiums up to 25 percent for New York City in 2001. *Insurance Information Institute (2001)*

The average PIP claim is $7,950 in New York State — 47 percent higher than the national average. *Insurance Information Institute (2001)*

Fraud costs each insured driver in New York State $75-$115 per year. *Insurance Information Institute (2001)*

PIP claims in New York State rose nearly one third in 2000, more than twice as fast as second-place Florida. *Insurance Information Institute (2001)*

The average PIP claim in New York State jumped 19 percent over the first nine months of 2000, and 64 percent between 1995 and 3Q 2000. This compares to a 33-percent increase for other states. *Insurance Information Institute (2001)*

Auto insurers in New York pay out nearly twice as much in PIP claims as they collect in premiums. For every $100 auto insurers received, they paid $177 in claims through 3Q 2000. *Insurance Information Institute (2001)*

**Penalties For Insurance Fraud**

Insurance fraud has been described as being a low-risk and high-reward form of crime. At present, six states do not have specific insurance fraud laws. Consequently, prosecutors in those states are often discouraged from undertaking prosecution in tough fraud cases. Overall, courts are still very lenient in their sentencing of individuals convicted of insurance fraud. Also, professional societies overseeing the behavior of doctors have been reluctant to severely discipline peers convicted of insurance fraud.

Recently, the federal government has taken steps to control Medicaid and Medicare fraud. Congress has enacted tougher penalties and expanded current federal health insurance fraud laws.
Penalties Imposed by the Chiropractic Profession

“Increased crackdowns in the 1990s uncovered far more insurance fraud than anyone realized existed. To give prosecutors better legal tools to convict crooks, the Coalition Against Insurance Fraud developed a tough model state fraud law. Some 15 states have adopted or strengthened their insurance fraud laws based on the coalition’s model. Among other provisions, this model:

- creates state fraud bureaus that help hunt down fraud artists and build strong cases against them. Many fraud bureaus even have power to subpoena and fine crooks.

- requires insurance companies to develop thorough plans for preventing and detecting fraud.

- requires insurance applications and claim forms to warn that fraud is a serious crime.

- provides immunity to insurers when sharing fraud information with other insurers, investigators and law enforcement.”70

Each of the fifty states has a Chiropractic State Board of Examiners that have rules and regulations pertaining to insurance fraud. Penalties imposed by theses boards range from reprimands to the permanent revocation of ones license to practice Chiropractic in that particular state.

Suspected Child Abuse Reporting Requirements.

As a general rule in most states chiropractors must submit a report to their Department of Public Welfare when they have reasonable cause to suspect that a child has been abused.

Information Provided In Child Abuse Reports

(1) The names and addresses of the child and the parents or other person responsible for the care of the child, if known.

(2) Where the suspected abuse occurred.

(3) The age and sex of the subjects of the report.

(4) The nature and extent of the suspected child abuse including any evidence of prior abuse to the child or siblings of the child.

(5) The name and relationship of the persons responsible for causing the suspected abuse, if known, and any evidence of prior abuse by those persons.

(6) Family composition.

(7) The source of the report.
(8) The person making the report and where that person can be reached.

(9) The actions taken by the reporting source, including the taking of photographs and X-rays, removal or keeping of the child or notifying the medical examiner or coroner.

**Immunity From Liability**

Under most state laws, a chiropractor who participates in good faith in the making of a report, cooperating with an investigation, or testifying in a proceeding arising out of an instance of suspected child abuse shall have immunity from civil and criminal liability that might result by reason of the chiropractor’s actions. For the purpose of any civil or criminal proceeding, the good faith of the chiropractor shall be presumed.

**Noncompliance by the Chiropractor**

A chiropractor who willfully fails to comply with the child abuse reporting requirements of their state can be subject to disciplinary action from their state board of Chiropractic. Also, in many state, a chiropractor who is required to report a case of suspected child abuse who willfully fails to do so commits a summary offense for the first violation and a misdemeanor of the third degree for a second or subsequent violation.

**Part 2. Ethics and Chiropractic Practice**

Since its genesis in 1895, the chiropractic profession has encountered a myriad of challenges regarding its philosophy, art and science. The chiropractic profession has undergone scrutiny by the medical profession, federal and state governmental bodies, the insurance industry and the general public. This scrutinization has involved a multitude of issues pertaining to the philosophy, art and science of the practice of chiropractic such as: the relative paucity of scientific evidence supporting the efficacy of chiropractic treatment; professionalism in chiropractic; the long standing absence of a prerequisite four year college degree prior to the commencement of chiropractic training(this has changed significantly in recent years with most chiropractic colleges now requiring an undergraduate degree); the wide variance in the scope of chiropractic from state to state: the significant differences amongst the practice styles, claims and beliefs between the various “straight” and “mixer” factions within the profession; the appropriateness of spinal manipulative treatment methodologies in response to both spinal related and organic diseases; utilization / over-utilization of treatment; professional boundaries; insurance billing practices; and ethics associated with the practice of chiropractic.

According to recent statistics, there are 71, 283 Doctors of Chiropractic. Ostensibly, the vast majority of these men and women are ethical professionals dedicated to upholding the tenets of the Hippocratic Oath. However, due to the historically high level of scrutiny of the chiropractic profession, accounts of unethical behavior on the part of a relatively small number of chiropractors often times become sensationalized in the media.

The purpose of this continuing education seminar is to provide the Doctor of Chiropractic with an in depth analysis of the ethical challenges encountered during the practice of chiropractic.
This course will define the elements of professionalism, provide an overview of the principles of ethics and morality, and examine ethical issues specific to the practice of chiropractic.

The Chiropractic Profession

Since 1895, the chiropractic profession has grown into one of the largest health care professions in the world. Members of the chiropractic profession have developed national professional associations, such as the American Chiropractic Association, and state associations which have created codes of ethics for the chiropractic profession.

Tenets of Chiropractic

Chiropractic is:

- “noninvasive, emphasizing the patient's inherent recuperative abilities.
- recognizes the dynamics between lifestyle, environment, and health.
- emphasizes understanding the cause of illness in an effort to eradicate, rather than palliate, associated symptoms.
- recognizes the centrality of the nervous system and its intimate relationship with both the structural and regulatory capacities of the body.
- appreciates the multifactorial nature of influences (structural, chemical, and psychological) on the nervous system.
- balances the benefits against the risks of clinical interventions.
- recognizes as imperative the need to monitor progress and effectiveness through appropriate diagnostic procedures.
- prevents unnecessary barriers in the doctor-patient encounter.
- emphasizes a patient-centered, hands-on approach intent on influencing function through structure.
- strives toward early intervention, emphasizing timely diagnosis and treatment of functional, reversible conditions.”

According to a 2002 survey by the National Center for Complementary and Alternative Medicine, chiropractic care was among the ten most commonly used Complementary and Alternative Medicine (CAM) therapies among adults in the USA.

The U.S. Department of Labor's Occupational Outlook Handbook suggests that chiropractic care will increasingly play an important role in health care:

"Because chiropractors emphasize the importance of healthy lifestyles and do not prescribe drugs or perform surgery, chiropractic care is appealing to many health-conscious Americans. Chiropractic treatment of the back, neck, extremities, and joints has become more accepted as a result of research and changing attitudes about alternative, noninvasive health care practices.”

Definitions

Profession – A profession is the body of qualified persons in an occupation that requires considerable training and specialized study.
**Professionalism** – Is the conduct, aims or qualities that characterize or mark a profession or a professional person.\(^{76}\)

**Professionals** – Are groups in society that profess to possess a body of knowledge and skills that others in society do not possess. The attainment of professional skills and knowledge requires considerable time, study and resources.

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**The Pew Health Profession Commission**

The Pew Health Profession Commission identified 21 characteristics of health care professions:

1. Embrace a personal ethic of social responsibility and service.
2. Exhibit ethical behavior in all professional activities.
3. Provide evidence-based, clinically competent care.
4. Incorporate the multiple determinants of health in clinical care.
5. Apply knowledge of the new sciences.
6. Demonstrate critical thinking, reflection and problem solving skills.
7. Understand the role of primary care.
8. Practice preventative health care.
9. Integrate population-based care and services into practice.
10. Improve access to health care for those with unmet health needs.
11. Practice relationship-centered care.
12. Provide culturally sensitive care to a diverse society.
13. Partner with communities in health care decisions.
14. Use communication and information technology effectively and appropriately.
15. Work in interdisciplinary teams.
16. Ensure care that balances individual, professional, and societal needs.
17. Practice leadership.
18. Provide quality care.
19. Contribute to continuous improvement.
20. Advocate for public policy that promotes and protects the health of the public.
21. Continue to learn and help others learn.\(^{77}\)

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**Comparison of Professional and Commercial Business Relationships**

The doctor-patient relationship is a fiduciary relationship predicated on trust. Patients impart personal information to doctors with the belief that doctors will keep said information confidential. Consequently, the doctor-patient relationship is a professional one based on the concept of credat emptor. Translated from Latin, credat emptor means (let the taker believe in us). Conversely, in a commercial business relationship, the concept of caveat emptor (let the buyer beware) applies.
Characteristics of the Professional

- Professionals can command large sums of money for their services.
- Society often bestows on professionals social privileges, which in turn, place social responsibilities on the part of the professional.
- In return for the professionals knowledge, skills and expertise, society bestows on these individuals a high level of social stature.
- Professional autonomy is arguably the most important privilege a profession is granted and gives a profession incredible social authority.
- Professionals have the power to make independent decisions regarding their own behavior based on their own knowledge.
- Professions are given autonomy with regard to self-regulation. They are expected to establish a code of ethics and regulations, and to enforce them.  

Professional Authority

According to Haldeman “social authority is bestowed with the expectation that the good of the consumer and society prevail over a professional’s self-interest. Additionally, provision of professional services should be based on patient needs (as opposed to wants). Although patient preference has a role in clinical decision making, congruence with the needs of the patient and the appropriateness of treatment is essential. For example, although a patient may want to receive a particular type of treatment or testing, professional accountability, and codes of professional conduct dictate that the appropriateness of treatment prevail when at odds with a patient’s desires. A professional possesses the perspicacity to differentiate a need from a want and should have the courage to confront the patient when their requests are questionable. Haldeman added that within the dynamics of the doctor-patient relationship the patient is the vulnerable party and may not be the best arbiter of quality or appropriateness.”

Professional Duty

Professional duty is something that the professional is expected or required to do by moral or legal obligation. Professional duty is further defined as an action or task required by one’s position or occupation. The primary element of a successful malpractice action by a patient against a doctor is proving that the physician owed some duty to the patient. It must be determined that a doctor--patient relationship had been established. This relationship does not require a written contract. For example, rulings have been made which establish a doctor--patient relationship when a doctor gives professional advice during a social encounter. To avoid the establishment of a doctor--patient relationship, avoid giving professional advice during social encounters, train staff not to give professional advice and avoid giving advice over the telephone. Also, an independent chiropractic examiner should never provide treatment services, or offer a diagnosis, prognosis or future treatment plan to an examinee. Doing so creates a doctor - patient relationship which can result in a malpractice claim. Strict adherence to independent chiropractic examination guidelines and procedures reduces the likelihood of successful malpractice prosecution. The 100 Hour Certified Chiropractic Insurance Consultant program offered by TheWiseDC.com contains valuable information to chiropractors on effective ways to protect their interests and the interests of their patient during the independent chiropractic examination process.
Duties of a Doctor of Chiropractic

- The doctor must abide by the rules and regulations promulgated by their State Board of Chiropractic Examiners.
- The doctor must provide only those chiropractic treatment services which fall within their state's scope of practice.
- The doctor must stay abreast of treatment and technological advancements and meet the requirements for their state's continuing education credit hours of postgraduate instruction.
- The doctor must explain to the patient their treatment plan and the risks of treatment. The doctor must inform the patient of alternative treatment options.
- The doctor must receive consent by the patient for treatment.
- The doctor must perform a thorough history taking of a patient's subjective complaints.
- The doctor must perform a thorough chiropractic, orthopedic and neurological examination of the patient.
- The doctor must render an accurate diagnosis.
- The doctor must perform appropriate diagnostic testing procedures consistent with the etiology and timing of the patient's injury/condition, patient subjective complaints and the provider of care's objective findings. If radiographic studies are utilized, they must be taken of the area/areas of patient complaint.
- The doctor must offer an efficacious course of care with the goal of amelioration of symptomatology or reduction of subluxation, depending upon philosophy.
- The doctor must offer quality treatment within a duration of time and at a frequency consistent with general chiropractic and cross discipline treatment parameters and guidelines. A general rule of thumb is the frequency of treatment should decrease over time commensurate with patient progress.
- Any adjunctive physiotherapy modalities utilized should be consistent with the diagnosed condition with consideration of the modalities' physiological effects.
- The doctor must document daily patient encounters utilizing the S.O.A.P. note format.
- Where significant clinical progression is not noted, the prudent doctor should refer the patient to the appropriate practitioner for alternative care. Failure to refer may result in the Doctor of Chiropractic being held to the same standard of care as the provider to whom the referral should have been made.
- The doctor must document clinical progression to warrant future care consideration.
- The doctor must ensure patient confidentiality.
- The doctor must never abandon a patient.
- The doctor must only bill for those services rendered.

Duties of the Doctor of Chiropractic Imposed by Law

- Continuing education credit requirements and license renewal.
- The Doctor of Chiropractic must adhere to their state’s chiropractic laws.
- Most states have legislative mandates requiring the Doctor of Chiropractic to report cases of child abuse.

Alterations of Duties

- Duties can be altered by one's state chiropractic association. However, typically, a position espoused by a professional association does not have the force of law.
- Duties can be altered by one's state licensing board, which have the full force of law.
- Duties can be altered by court rulings.
**Dereliction of Duty**

Dereliction of Duty - any actions or tasks that do not meet the requirements of one's position or profession involving a deviation from standards of care.

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**Professional Code of Ethics**

It is commonplace for professional organizations to draft a professional code of ethics. Written ethical codes are developed by professional organizations for the purpose of self-regulation of their membership. A professional organization’s code of ethics includes a specific code of conduct that members of the organization agree to abide by.

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**Benefits of Developing a Code of Ethics**

A Code of Ethics Will…

- Define accepted/acceptable behaviors.
- Promote high standards of practice.
- Provide a benchmark for members to use for self evaluation.
- Establish a framework for professional behavior and responsibilities.
- Serve as a vehicle for occupational identity and a mark of occupational maturity.  

Perspectives on Professional Codes of Ethics

"The need for special ethical principles in a scientific society is the same as the need for ethical principles in society as a whole. They are mutually beneficial. They help make our relationships mutually pleasant and productive. A professional society is a voluntary, cooperative organization, and those who must conform to its rules are also those who benefit from the conformity of others. Each has a stake in maintaining general compliance."  

"A code of ethics can be an instrument for persuasion both of members of (a) profession and the public. They enhance the sense of community among members, of belonging to a group with common values and a common mission."

"A profession's ethical standards must be compatible with our common morality, but they go beyond our common morality. You could say that they interpret our common morality for the specific details of work of a particular occupational group."

"The very exercise of developing a code is in itself worthwhile; it forces a large number of people...to think through in a fresh way their mission and the important obligations they as a group and as individuals have with respect to society as a whole."

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**Hippocratic Oath**

The **Hippocratic Oath** is an oath traditionally taken by physicians pertaining to the ethical practice of medicine. Doctors of Chiropractic commonly take this oath during their graduation ceremony. It is widely believed that the oath was written by Hippocrates, the father of medicine, in the 4th century BC, or by one of his students. The Hippocratic Oath is considered a rite of passage for practitioners of medicine, although it is not obligatory and no longer taken up by all physicians.
The Classical Oath

“I swear by Apollo Physician and Asclepius and Hygeia and Panaceia and all the gods and goddesses, making them my witnesses, that I will fulfill according to my ability and judgment this oath and this covenant:

To hold him who has taught me this art as equal to my parents and to live my life in partnership with him, and if he is in need of money to give him a share of mine, and to regard his offspring as equal to my brothers in male lineage and to teach them this art - if they desire to learn it - without fee and covenant; to give a share of precepts and oral instruction and all the other learning to my sons and to the sons of him who has instructed me and to pupils who have signed the covenant and have taken an oath according to the medical law, but no one else.

I will apply dietetic measures for the benefit of the sick according to my ability and judgment; I will keep them from harm and injustice.

I will neither give a deadly drug to anybody who asked for it, nor will I make a suggestion to this effect. Similarly I will not give to a woman an abortive remedy. In purity and holiness I will guard my life and my art.

I will not use the knife, not even on sufferers from stone, but will withdraw in favor of such men as are engaged in this work.

Whatever houses I may visit, I will come for the benefit of the sick, remaining free of all intentional injustice, of all mischief and in particular of sexual relations with both female and male persons, be they free or slaves.

What I may see or hear in the course of the treatment or even outside of the treatment in regard to the life of men, which on no account one must spread abroad, I will keep to myself, holding such things shameful to be spoken about.

If I fulfill this oath and do not violate it, may it be granted to me to enjoy life and art, being honored with fame among all men for all time to come; if I transgress it and swear falsely, may the opposite of all this be my lot.”

The Modern Hippocratic Oath

The modern Hippocratic Oath has been altered over the years in various countries, schools, and societies as the social, religious, and political importance of medicine has changed. Most schools administer some form of oath, but the great majority no longer use the ancient version, which praised Greek deities, and forbade general practitioners from surgery, euthanasia and abortion. Also missing from the ancient Oath and from many modern versions are the complex ethical issues that face the modern physician.

Changed Portions of the Oath

1. To teach medicine to the sons of my teacher. In the past, medical schools would give preferential consideration to the children of physicians.
2. *To practice and prescribe to the best of my ability for the good of my patients, and to try to avoid harming them.* This beneficial intention is the purpose of the physician. However, this item is still invoked in the modern discussions of euthanasia.

3. *Never to do deliberate harm to anyone for anyone else's interest.* Physician organizations in most countries have strongly denounced physician participation in legal executions. However, in a small number of cases, most notably the Netherlands, a doctor can perform euthanasia, by both his and the patient's consent.

4. *To avoid violating the morals of my community.* Many licensing agencies will revoke a physician's license for offending the morals of the community ("moral turpitude").

5. *To avoid attempting to do things that other specialists can do better.* The "stones" referred to are kidney stones or bladder stones, removal of which was judged too menial for physicians, and therefore was left for barbers (the forerunners of modern surgeons). Surgery was not recognized as a specialty at that time. This sentence is now interpreted as acknowledging that it is impossible for any single physician to maintain expertise in all areas. It also highlights the different historical origins of the surgeon and the physician.

6. *To keep the good of the patient as the highest priority.* There may be other conflicting 'good purposes,' such as community welfare, conserving economic resources, supporting the criminal justice system, or simply making money for the physician or his employer that provide recurring challenges to physicians.

7. *To avoid sexual relationships or other inappropriate entanglements with patients and families.* Sexualizing a doctor-patient relationship is a serious professional boundary violation.

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**Ethics**

The field of ethics, also called moral philosophy, involves analyzing, arguing, defending, and recommending concepts of right and wrong behavior. Ethical theories are commonly divided into three general subject areas: metaethics, normative ethics, and applied ethics. **Metaethics** investigates the origin of our ethical principles, and their meaning. The question often arises, "Are ethical principles merely social inventions"? Do they involve more than expressions of our individual emotions? Metaethical answers to these questions focus on the issues of universal truths, the will of God, the role of reason in ethical judgments, and the meaning of ethical terms themselves. **Normative ethics** is less ethereal and more practical in nature as this branch of ethics seeks to arrive at moral standards that regulate right and wrong conduct. This may involve articulating the good habits that we should acquire, the duties that we should follow, or the consequences of our behavior on others. Finally, **applied ethics** involves examining specific controversial issues, such as abortion, euthanasia, infanticide, animal rights, environmental concerns, capital punishment, or nuclear war.

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**Metaethics**

The term "meta" means after or beyond, and, consequently, the notion of metaethics involves a removed, or bird's eye view of ethics. Metaethics is the study of the origin and meaning of
ethical concepts. When compared to normative ethics and applied ethics, the field of metaethics is the least precisely defined area of moral philosophy. Two issues, though, are prominent: (1) **metaphysical** issues concerning whether morality exists independently of humans, and (2) **psychological** issues concerning the underlying mental basis of our moral judgments and conduct.

Metaphysics is the study of the physical and nonphysical things that exist in the universe. The five human senses allow us to perceive physical entities. Conversely, thoughts, spirits and gods would represent things that are nonphysical in nature. The metaphysical component of metaethics involves discovering specifically whether moral values are eternal truths that exist in a spirit-like realm, or simply human conventions. Proponents of the spirit-like, "other-worldly" view typically hold that moral values are objective in the sense that they exist in a spirit-like realm beyond subjective human conventions. They also hold that they are absolute, or eternal, in that they never change, and also that they are universal insofar as they apply to all rational creatures around the world and throughout time. An example of this view is found in the teachings of Plato, who was inspired by the field of mathematics. According to Plato, numbers and mathematical relations, such as 1+1=2, are timeless concepts that never change, and apply everywhere in the universe. Humans do not invent numbers, and humans cannot alter them. Plato explained the eternal character of mathematics by stating that they are abstract entities that exist in a spirit-like realm. He noted that moral values also are absolute truths and thus are also abstract, spirit-like entities. In this sense, for Plato, moral values are spiritual objects. Medieval philosophers commonly grouped all moral principles together under the heading of "eternal law" which were also frequently seen as spirit-like objects. 17th century British philosopher Samuel Clarke described them as spirit-like relationships rather than spirit-like objects. In either case, though, they exist in a spirit-like realm. A different other-worldly approach to the metaphysical status of morality is divine commands issuing from God's will. Sometimes called voluntarism, this view was inspired by the notion of an all-powerful God who is in control of everything. God simply wills things, and they become reality. He wills the physical world into existence, he wills human life into existence and, similarly, he wills all moral values into existence. Proponents of this view, such as medieval philosopher William Ockham, believe that God wills moral principles, such as "murder is wrong," and these exist in God's mind as commands. God informs humans of these commands by implanting us with moral intuitions or revealing these commands in scripture.

The second perspective is a “this-worldly” approach to the metaphysical status of morality. This perspective follows in the skeptical philosophical tradition, such as that articulated by Greek philosopher Sextus Empiricus, who denied the objective status of moral values. “Technically skeptics did not reject moral values themselves, but only denied that values exist as spirit-like objects, or as divine commands in the mind of God. Moral values, they argued, are strictly human inventions, a position that has since been called moral relativism. There are two distinct forms of moral relativism. The first is individual relativism, which holds that individual people create their own moral standards. Friedrich Nietzsche, for example, argued that the superhuman creates his or her morality distinct from and in reaction to the slave-like value system of the masses. The second is cultural relativism which maintains that morality is grounded in the approval of one's society - and not simply in the preferences of individual people. This view was advocated by Sextus, and in more recent centuries by Michel Montaigne and William Graham Sumner. In addition to espousing skepticism and relativism, “this-worldly” approaches to the
metaphysical status of morality deny the absolute and universal nature of morality and hold instead that moral values in fact change from society to society throughout time and throughout the world. They frequently attempt to defend their position by citing examples of values that differ dramatically from one culture to another, such as attitudes about polygamy, homosexuality and human sacrifice”.

Objectivism and Relativism

Moral objectivism or moderate moral realism is the position that certain acts are objectively right or wrong, independent of human opinion. According to Richard Boyd, moral realism means that:

1. Moral statements are the sorts of statements which are (or which express propositions which are) true or false (or approximately true, largely false, etc.);
2. The truth or falsity (approximate truth...) of moral statements is largely independent of our moral opinions, theories, etc.;
3. Ordinary canons of moral reasoning—together with ordinary canons of scientific and everyday factual reasoning—constitute, under many circumstances at least, a reliable method for obtaining and improving (approximate) moral knowledge.

Moral Relativism

“In philosophy, moral relativism is the position that moral or ethical propositions do not reflect objective and/or universal moral truths, but instead make claims relative to social, cultural, historical or personal circumstances. Moral relativists hold that no universal standard exists by which to access an ethical proposition's truth; moral subjectivism is thus the opposite of moral absolutism. Relativistic positions often see moral values as applicable only within certain cultural boundaries (cultural relativism) or in the context of individual preferences (moral subjectivism). An extreme relativist position might suggest that judging the moral or ethical judgments or acts of another person or group has no meaning, though most relativists propound a more limited version of the theory.”

Psychological Issues in Metaethics

A second area of metaethics involves the psychological basis of our moral judgments and conduct, particularly understanding what motivates us to be moral. Why do some people attempt to act morally while others do not? There are a myriad number of reasons why some people seek to act morally such as to avoid being punished for an immoral act, to gain praise from one’s parents, superiors and peers, to attain happiness, to be dignified, or to fit in with society.

Egoism and Altruism

“One important area of moral psychology concerns the inherent selfishness of humans. 17th century British philosopher Thomas Hobbes opined that many, if not all, of our actions are
prompted by selfish desires. Even if an action seems selfless, such as donating to charity, there are still selfish causes for this, such as experiencing power over other people. This view is called psychological egoism and maintains that self-oriented interests ultimately motivate all human actions. Closely related to psychological egoism is a view called psychological hedonism which is the view that pleasure is the specific driving force behind all of our actions. 18th century British philosopher Joseph Butler agreed that instinctive selfishness and pleasure prompt much of our conduct. However, Butler argued that we also have an inherent psychological capacity to show benevolence to others. This view is called psychological altruism and maintains that at least some of our actions are motivated by instinctive benevolence.*

Emotion and Reason

Moral psychology involves a dispute concerning the role of reason in motivating moral actions. “18th century British philosopher David Hume argued that moral assessments involve our emotions, and not our reason. According to Hume, we can amass all the reasons we want, but that alone will not constitute a moral assessment. We need a distinctly emotional reaction in order to make a moral pronouncement. Reason might be of service in giving us the relevant data, but, in Hume's words, "reason is, and ought to be, the slave of the passions.” 20th century philosopher, A.J. Ayer, similarly denied that moral assessments are factual descriptions. Ayer opined, although the statement "it is good to donate to charity" may on the surface look as though it is a factual description about charity, it is not. Instead, a moral utterance like this involves two things. First, I (the speaker) I am expressing my personal feelings of approval about charitable donations and I am in essence saying "Hooray for charity!" This is called the emotive element insofar as I am expressing my emotions about some specific behavior. Second, I (the speaker) am trying to get you to donate to charity and am essentially giving the command, "Donate to charity!" This is called the prescriptive element in the sense that I am prescribing some specific behavior.”

18th century German philosopher Immanuel Kant opposed Hume’s emotive theory of ethics and argued that moral assessments are acts of reason. Kant conceded that emotional factors often do influence our conduct. However, in his opinion, true moral action is motivated only by reason when it is free from emotions and desires. Rationalist, Kurt Baier, proposed direct opposition to the emotivist and prescriptivist theories of Ayer and others. Baier focuses more broadly on the reasoning and argumentation process that takes place when making moral choices. “All of our moral choices are, or at least can be, backed by some reason or justification. If I claim that it is wrong to steal someone's car, then I should be able to justify my claim with some kind of argument. For example, I could argue that stealing Smith's car is wrong since this would upset her, violate her ownership rights, or put the thief at risk of getting caught. According to Baier, then, proper moral decision making involves giving the best reasons in support of one course of action versus another.”

Normative Ethics

Normative ethics involves arriving at moral standards that regulate right and wrong conduct. The Golden Rule is a classic example of a normative principle: Do unto others as we would have others do unto us. According to this principle, since we would not want someone to harm us, it
would be morally wrong for us to harm someone else. Using this reasoning, normative ethics maintains that we can theoretically determine whether any possible action is right or wrong. The Golden Rule is an example of a normative theory that establishes a single principle against which we judge all actions. Other normative theories focus on a set of foundational principles, or a set of good character traits.  

The key assumption in normative ethics is that there is only one ultimate criterion of moral conduct, whether it is a single rule or a set of principles. Three strategies will be noted here: (1) virtue theories, (2) duty theories, and (3) consequentialist theories.

**Virtue Theories**

“Normative ethics is based on the belief that morality consists of following precisely defined rules of conduct, such as "don't lie, cheat, kill or steal. Virtue theorists stress the importance of developing good habits of character, such as benevolence. Plato emphasized four virtues called cardinal virtues: wisdom, courage, temperance and justice. Other important virtues are fortitude, generosity, self-respect, good temper, and sincerity. In addition to advocating good habits of character, virtue theorists hold that we should avoid acquiring bad character traits, or vices. Virtue theorists believe that virtuous character traits are developed in one's youth. Adults, therefore, are responsible for instilling virtues in the young.”

**Duty Theories**

Duty theories base morality on specific, foundational principles of obligation. These theories are sometimes called deontological, from the Greek word deon, or duty, in view of the foundational nature of our duty or obligation. They are also sometimes called nonconsequentialist since these principles are obligatory. There are four central duty theories:

1) 17th century German philosopher Samuel Pufendorf classified dozens of duties under three headings: duties to God, duties to oneself, and duties to others. Concerning our duties towards God, he argued that there are two kinds: (a) a theoretical duty to know the existence and nature of God, and (b) a practical duty to both inwardly and outwardly worship God. Concerning duties towards oneself, these are also of two sorts: (a) duties of the soul, which involve developing one's skills and talents, and (b) duties of the body, which involve not harming our bodies, as we might through alcohol or drug addiction or suicide. Concerning our duties towards others, Pufendorf divides these between absolute duties, which are universally binding on people, and conditional duties, which are the result of contracts between people. Absolute duties are of three sorts: (a) avoid wrong doing towards others; (b) treat people as equals, and (c) promote the good of others. Conditional duties involve various types of agreements, the principal one of which is the duty is to keep one's promises.

2) The second duty-based approach to ethics is rights theory. Most generally, a "right" is a justified claim against another person's behavior - such as my right to not be harmed by you. Rights and duties are related in such a way that the rights of one person implies the duties of another person. For example, if I have a right to payment of $10 by Smith, then Smith has a duty to pay me $10. 17th century British philosopher John Locke opined that the laws of nature mandate that we should not harm anyone's life, health, liberty or possessions. For Locke, these are our natural rights, given to us by God. There are four features traditionally associated with moral rights. First, rights are natural insofar as they are not invented or created by governments.
Second, they are *universal* insofar as they do not change from country to country. Third, they are *equal* in the sense that rights are the same for all people. Fourth, they are *inalienable* which means that I cannot hand over my rights to another person.

3) Kant offered a third duty-based theory which emphasized a single principle of duty. Kant believed that we have moral duties to oneself and others, such as developing one's talents, and keeping our promises to others. Kant called his principle of reasoning the "categorical imperative." Kant believed that we should treat people as an end, and never as a means to an end. That is, we should always treat people with dignity, and never use them as mere instruments.

4) The fourth and more recent duty-based theory is that by British philosopher W.D. Ross, which emphasizes apparent or *prima facie* duties. Ross argues that our duties are "part of the fundamental nature of the universe." Ross's list of duties include:

- Fidelity: the duty to keep promises.
- Reparation: the duty to compensate others when we harm them.
- Gratitude: the duty to thank those who help us.
- Justice: the duty to recognize merit.
- Beneficence: the duty to improve the conditions of others.
- Self-improvement: the duty to improve our virtue and intelligence.
- Nonmaleficence: the duty to not injure others.

Ross recognized that situations will arise when we must choose between two conflicting duties. In a classic example, suppose I borrow my neighbor's gun and promise to return it when he asks for it. One day, in a fit of rage, my neighbor pounds on my door and asks for the gun so that he can take vengeance on someone. On the one hand, the duty of fidelity obligates me to return the gun; on the other hand, the duty of nonmaleficence obligates me to avoid injuring others and thus not return the gun. According to Ross, I will intuitively know which of these duties is my *actual* duty, and which is my apparent or *prima facie* duty. In this case, my duty of nonmaleficence emerges as my actual duty and I should not return the gun.”

**Consequentialist Theories**

- *Consequentialism*: An action is morally right if the consequences of that action are more favorable than unfavorable.

It is common for people to determine their moral responsibility by weighing the consequences of their actions. According to consequentialist normative theories, correct moral conduct is determined solely by a cost-benefit analysis of an action's consequences:

Consequentialist normative principles require that we calculate and add up both the good and bad consequences of an action. Second, we then determine whether the total good consequences outweigh the total bad consequences. If the good consequences are greater, then the action is morally proper. If the bad consequences are greater, then the action is morally improper. Consequentialist theories are sometimes called *teleological* theories, from the Greek word *telos*, or end, since the end result of the action is the sole determining factor of its morality.

There are three subdivisions of consequentialism:
• **Ethical Egoism:** an action is morally right if the consequences of that action are more favorable than unfavorable *only to the agent* performing the action.
• **Ethical Altruism:** an action is morally right if the consequences of that action are more favorable than unfavorable *to everyone except the agent*.
• **Utilitarianism:** an action is morally right if the consequences of that action are more favorable than unfavorable *to everyone*.

**Types of Utilitarianism**

Jeremy Bentham presented one of the earliest fully developed systems of utilitarianism. Bentham proposed that we add up the consequences of each action we perform and thereby determine on a case by case basis whether an action is morally right or wrong. This aspect of Bentham's theory is known as *act-utilitarianism*. Second, Bentham also proposed that we tally the pleasure and pain which results from our actions. For Bentham, pleasure and pain are the only consequences that matter in determining whether our conduct is moral. This aspect of Bentham's theory is known as *hedonistic utilitarianism*.

John Stuart Mill introduced a version of utilitarianism that was rule-oriented. According to rule-utilitarianism, a behavioral code or rule is morally right if the consequences of adopting that rule are more favorable than unfavorable to everyone. Unlike act utilitarianism, which weighs the consequences of each particular action, rule-utilitarianism offers a litmus test only for the morality of moral rules, such as "stealing is wrong." Adopting a rule against theft clearly has more favorable consequences than unfavorable consequences for everyone. The same is true for moral rules against lying or murdering. Rule-utilitarianism, then, offers a two-tiered method for judging conduct. A particular action, such as stealing my neighbor's car, is judged wrong since it violates a moral rule against theft. In turn, the rule against theft is morally binding because adopting this rule produces favorable consequences for everyone.

**Applied Ethics**

Applied ethics is the branch of ethics which consists of the analysis of specific, controversial moral issues such as abortion, animal rights, euthanasia, suicide and capital punishment. In recent years applied ethical issues have been subdivided into groups such as medical ethics, business ethics, environmental ethics, and sexual ethics. Generally speaking, two features are necessary for an issue to be considered an "applied ethical issue." First, the issue needs to be controversial in the sense that there are significant groups of people both for and against the issue at hand. The second requirement for in issue to be an applied ethical issue is that it must be a distinctly moral issue. Moral issues concern universally obligatory practices, such as our duty to avoid lying. Frequently, issues of social policy and morality overlap, as with murder which is both socially prohibited and immoral.

**Normative Principles in Applied Ethics**

The following principles are the ones most commonly appealed to in applied ethical discussions:

• **Personal benefit:** acknowledge the extent to which an action produces beneficial consequences for the individual in question.
• **Social benefit:** acknowledge the extent to which an action produces beneficial consequences for society.
Medical Issues in Applied Ethics

Health care professionals are in an unusual position of continually dealing with life and death situations. The field of medical ethics focuses on a range of controversial issues to include: 1) Prenatal issues regarding the morality of surrogate mothering, genetic manipulation of fetuses, the status of unused frozen embryos, and abortion; 2) Patient rights and physician's responsibilities, such as the confidentiality of the patient's records; 3) The AIDS crisis has raised the specific issues of the mandatory screening of all patients for AIDS, and whether physicians can refuse to treat AIDS patients; 4) Medical experimentation on humans and; 5) The morality issues of suicide, the justifiability of suicide intervention, physician assisted suicide, and euthanasia.

Medical Ethics

Six of the values that commonly apply to medical ethics discussions are:

- Beneficence - a practitioner should act in the best interest of the patient. \( (Salus\ aegroti\ suprema\ lex.) \)
- Non-maleficence - "first, do no harm" \( (primum\ non\ nocere) \).
- Autonomy - the patient has the right to refuse or choose their treatment. \( (Voluntas\ aegroti\ suprema\ lex.) \)
- Justice - concerns the distribution of scarce health resources, and the decision of who gets what treatment (fairness and equality).
- Dignity - the patient has the right to dignity.
- Truthfulness and honesty – the patient has the right to an accurate diagnosis and the provision of appropriate treatment.
Ethical Issues Specific to Chiropractic

Evidence-Based Practice

Historically, the chiropractic profession has been challenged by the medical profession and the general public to prove the efficacy of manipulative therapy. At present, the measurement of patient outcomes and the appropriate use of scientific evidence in clinical decisions are behind the current push towards evidence-based practice.

According to Haldeman, “at least 60 randomized clinical trials have been published on manipulation for neck and back conditions, all suggesting better or equivalent outcomes to comparative treatments. What remains unstudied are common clinical decisions chiropractors confront daily, such as… how does one treatment approach compare to another.”

“For chiropractors and other physicians who treat spinal disorders, the challenge regarding evidentiary practice revolves around the limited availability and quality of evidence from which to make clinical decisions. One of the greatest issues is reflected in the adage “absence of evidence does not equal evidence against”.

Documentation

Primary Functions of Health Care Records

Health care records document the immediate care and treatment of the patient. They allow the physician to gauge daily progress. Records allow other members of your own health care team or other health care providers to have an understanding of the patient’s daily subjective complaints, objective findings, procedures performed, and the patient’s response to therapy.

Records document your services for reimbursement purposes - they should be clear, concise and legible, written in ink and should not be erased or altered. Records are critical for legal purposes, including malpractice claims. Doctor identification on each record is critical especially in the case of multi doctor offices.

Writing in a Medical Record

- Medical writing should be accurate, legible, brief, and clear.
- Never exaggerate, or record information falsely to justify extra treatment.
- Medical writing should be contemporaneous to the patients visit. Evidence from insurance billing fraud cases revealed some unethical chiropractors making up data and writing S.O.A.P. notes before actually examining and treating a patient. In some of these cases, the patients were
personal injury patients who received multiple treatments per week for many months or years and the chiropractors were found to be guilty of fabricating medical information. In other cases, chiropractors wrote S.O.A.P. notes and submitted bills for patients that did not receive treatment.

- Information should be objective and should never contain criticisms of other physicians or of the patient.
- Report information concisely, utilizing short, succinct sentences and standardized abbreviations. Handwriting must be legible and easily read.

**Documentation Strategies**

**Protective Strategies**

Maintain a daily patient sign in sheet. Never allow your receptionist to sign in for the patient and keep a cover over previous patient signatures to ensure confidently.

Have the patient periodically handwrite a list of symptoms and complaints which coincides with the submission of progress reports.

Have the patient periodically hand write, date and sign a progress form which qualifies their status.

Know what is in your forms.

Tailor your patient intake forms to your practice. Read over every form in your office. Forms which contain treatment related historical information at the top of the page and insurance and reimbursement information at the bottom of the page should be separated into two forms. This will reduce inferences that your main concern is reimbursement and not the health and well being of the patient.

Respect the patient’s privacy. For example, intake forms should not include unnecessary personal questions about a patient’s sexual history. Also, history taking and any other discussions of a personal nature should be done in private. Compliance with HIPPA regulations is strongly stressed.

Every condition or complaint identified by the patient should be addressed.

Avoid the use of treatment frequency schedules as these schedules infer a cookie cutter approach to treatment. The frequency of treatment and the type of treatment provided should be dependent upon the patient's diagnosis, documented response to treatment and clinical progress.

Approximately 90 percent of a doctor’s diagnostic impression is derived from information attained during the history taking process. Consequently, the development of accurate and thorough history taking skills is essential. The information derived from the history taking
process allows the doctor to arrive at a working diagnosis, develop short term and long term
goals and a treatment plan, and render appropriate treatment methodologies.

Never use the terms "Omissions and Errors Included" or "Dictated but Not Read" in any of your
documents. This infers a lack of thoroughness and professionalism. Thorough and accurate
record keeping is a standard of care and is mandated by many state chiropractic laws.

Document patient noncompliance with prescribed treatment plans. Also, document dates where
the patient did not keep a scheduled appointment and record an explanation.

Keep patient records forever. The statute of limitations (the law which establishes a timeframe
beyond which a suit cannot be brought) varies from state to state and is subject to a wide range
of judicial interpretation. In some states, the time clock doesn't start running until the injury is
discovered or, in the case of a child, until they reach adulthood.

Record daily patient encounters utilizing S. O. A. P. notations. These notations should be
documented contemporaneous with the patient encounter. Avoid writing all of your patients
daily office notes at one time at the end of the day because recollection can be skewed with the
passage of time.

Case Scenario--During the course of a trial a chiropractor testified that he provided services to a
patient on January 2, 2004. However, evidence is produced which reveals this patient was
actually in another state on vacation on January 2, 2004. What effect would these facts have on
the credibility of the chiropractor? While mistakes can occur, billing for services which were not
provided can result in insurance fraud investigation and manual claims review of all of that
doctor's billing submissions.

**Introduction to S. O. A. P. Notes**

The Gold Standard for daily office notations is the S. O. A. P. note. S. O. A. P. is an acronym,
with each letter representing a section of the patient note. S. stands for subjective complaints; O.
stands for objective findings; A. stands for clinical assessment; and P. stands for treatment plan.

The S. O. A. P. note was introduced by Dr. Lawrence Weed as a method of organizing medical
records.

The S. O. A. P. note records what the physician does to manage the patient’s condition on a daily
basis and is a standardized form of communication. Third party payers make decisions about
reimbursement based on the quality, legibility, and completeness of daily office notations. The
method of writing S. O. A. P. notes helps the physician to organize the thought processes
involved in patient care and offers a structured way of thinking for problem solving. They are
also used for quality assurance and improvement purposes and chronic subjective and objective
improvement, patient response to treatment, and the efficacy of care.

reported in one note can be compared with measurements taken and recorded in the past to
monitor patient progress.
Objective findings which may be found in S. O. A. P. notes may include orthopedic, neurologic, and chiropractic findings. A testing procedure that illicit a positive finding should be noted and re-tested on the next date of treatment.

Information derived from objective testing should be organized under headings, should be written in a clear and concise manner and should list the results of objective measurement procedures performed by the physician.

**Summary of Do's and Don'ts of Record Keeping**

**Do**
- Maintain records in ink.
- Make additions and changes appropriately.
- Identify patient name, date and year of service. Document unusual events.
- Identify the record keeper.
- Record all patient contacts.
- Maintain legibility.
- Maintain a legend for any codes used.
- Maintain records forever.
- Fill in all blanks or make a line through blank spaces.
- Initial all documents rather than scratching out the entire record.
- Customize the forms used.
- Document patient non-compliance.
- Proof-read correspondence and reports.

**Do Not**
- Erase, skip lines, leave spaces, “squeeze in” notes, use correction fluid, or back date or alter.
- Say anything disparaging about the patient.
- Avoid judgmental words.
- Ever enter data prematurely.
- Avoid ambiguous words.
- Criticize other providers.
- Use two different pens on the same day’s entry.
- Alter records.
- Use computer generated notes unless individualized.
How Long Should You Keep Records?

As a general rule of thumb, maintain patient records forever. Also, be knowledgeable of the statute of limitations for your particular state. Most states have statutes of limitation of 3 - 7 years. This means that a malpractice claim must be made within 3-7 years after the date of the negligent act. There is an exception which applies to a negligent act against a child. A person that claims to have been a victim of a negligent act while they were a child must bring suit within one year after their 18\textsuperscript{th} birthday.

Patient Consent for Treatment

Consent is compliance in or approval of what is done or proposed by another.\textsuperscript{104} Consent falls into two categories; Informed Consent and Implied Consent.

Informed Consent

Informed consent involves a verbal interaction between the doctor and patient. Essential elements of informed consent include discussion of the patient’s condition, identification and explanation of proposed treatment, warning of the risks or consequences of treatment, disclosure of alternative treatment options and their risks and the probability of success or failure of the proposed treatment. Informed consent should be discussed with the patient before care begins. Having the patient sign a written consent form is a prudent risk management strategy.

"Where there is risk of significant harm from the treatment proposed, this risk must be disclosed, understood, and accepted by the patient. Such informed consent is required for ethical and legal reasons. The best record of consent is one that is objectively documented, such as, a witness’s written consent or videotape."\textsuperscript{105}

The 1984 case of Mason v. Forgie involved the concept of informed consent. The court of New Brunswick awarded Hayden Mason a judgment against Dr. Forgie, DC for more than $200,000 for failing to obtain Hayden Mason's informed consent and failing to advise the patient before initiating treatment of the risks of treatment, particularly the risk of stroke. Hayden Mason was provided a cervical manipulation and suffered a stroke before leaving the doctor's office. While the court found that Dr. Forgie was not negligent in using excessive force or with respect to his
examination of the patient, he was found negligent in not advising the patient of the risk of stroke.\textsuperscript{106}

Advise the patient of the risks of treatment and the risks of leaving their condition untreated. Be familiar with statistics regarding unfavorable treatment results. For example, in the Mason v. Forgie case, Scott Haldeman, M.D., D.C. opined that the odds of a patient suffering a stroke due to a cervical manipulation are one stroke per one million manipulations.\textsuperscript{107} Document your discussion of the risks of treatment with the patient and their decision to receive or not receive treatment. If the patient refuses to follow the doctor’s treatment recommendations have them sign a notation acknowledging their refusal.

\textbf{Implied Consent}

This form of consent is granted by the patient's voluntary presentation for treatment. Implied consent occurs on each visit to the doctor's office. In general, implied consent takes place after informed consent with the patient having full knowledge of the proposed care plan and the treatment methods to be employed.

The prudent physician should never breach the doctor--patient relationship contract by exceeding the consent given by the patient. Patients can limit the scope of consent given for treatment. Consent limitations expressed by the patient become an integral part of the contract for services. For example, a patient can instruct their treating chiropractor not to adjust their lumbar spine. The subsequent performance of a lumbar adjustment would be a breach of contract and could trigger a malpractice claim. The unauthorized touching of another is actionable in itself as a battery. The commission of a battery can result in both civil and criminal causes of action.

\textbf{Doctor-Patient Confidentiality}

The concept of "doctor-patient confidentiality" derives from English Common Law and is based on ethical principles. It is different from "doctor-patient privilege," which is a legal concept. Both, however, are called upon in legal matters to establish the extent by which ethical duties of confidentiality apply to legal privilege. Legal privilege involves the right to withhold evidence from discovery and the right to refrain from disclosing information gained within the context of the doctor-patient relationship.

The Hippocratic Oath includes the promise that "Whatever, in connection with my professional service, or not in connection with it, I see or hear, in the life of men, which ought not to be spoken of abroad, I will not divulge, as reckoning that all such should be kept secret." \textsuperscript{108}

Patient confidentiality stems from the special relationship created when a prospective patient seeks the advice, care, and/or treatment of a physician. It is based upon the general principle that
individuals seeking medical help or advice should not be hindered or inhibited by fear that their medical concerns or conditions will be disclosed to others. Patients entrust personal knowledge of themselves to their physicians, which creates an uneven relationship in that the vulnerability is one-sided. There is generally an expectation that physicians will hold that special knowledge in confidence and use it exclusively for the benefit of the patient.

Confidentiality covers all medical records as well as communications between patient and doctor, and it generally includes communications between the patient and other professional staff working with the doctor.

The duty of confidentiality continues even after patients discontinue receiving treatment from their doctors. Once doctors are under a duty of confidentiality, they cannot divulge any medical information about their patients to third persons without patient consent.

Key Points

- There is no duty of confidentiality owed unless a bona-fide doctor-patient relationship exists or existed.
- The scope of the duty of doctor-patient confidentiality, as well as the existence of a doctor-patient legal privilege, varies from state to state. No federal law governs doctor-patient confidentiality or privilege.
- Generally, confidential information is information that is garnered by a doctor, as a result of a doctor's communications with or examination of a patient.
- The duty of confidentiality is not absolute. Doctors may divulge or disclose personal information, against the patient's will, under very limited circumstances. For example, the contract that an individual establishes with their insurance company allows the insurance company to request medical information from the patient’s doctor for reimbursement purposes.

The Doctor-Patient Relationship

There must be a bona fide "doctor-patient relationship" between individuals and a physician before any duty of confidentiality is created. Generally speaking, individuals must voluntarily seek advice or treatment from the doctor, and have an expectation that the communication will be held in confidence. This expectation of confidentiality does not need to be expressed. It is implied from the circumstances.

“If individuals meet a doctor at a party, and in the course of "small-talk"conversation, they ask the doctor for an opinion regarding a medical question that relates to them, the doctor's advice would most likely not be considered confidential as no doctor-patient relationship was established, and no duty is owed. However, the prudent and ethical doctor would be wise to avoid diagnosing an individual’s condition in this type of social setting.

In the case of an independent medical examination, there is generally no physician-patient relationship and no duty of confidentiality is owed to the patients. This is because the examinee did not seek the physician's advice or treatment, and the relationship is at arm's-length.

Health Insurance Portability and Accountability Act (HIPAA)

The Health Insurance Portability and Accountability Act, known as HIPAA was passed by Congress in 1996. The goals of the legislative act were fourfold; 1) to make health insurance
portable anywhere in the country; 2) to make patient information private and secure 3) to reduce health care fraud and abuse; and 4) to reduce health care costs.

Good Samaritan

Good Samaritan laws in the United States are laws that protect people from being sued who choose to aid others who are injured or ill. They are intended to reduce bystanders' hesitation to assist, for fear of being sued or prosecuted for unintentional injury or wrongful death. The name Good Samaritan refers to a parable told by Jesus in the New Testament (Luke 10:29-37). Good Samaritan laws provide a defense against torts over the activity of attempted rescue. These laws do not constitute a duty to help someone in need. In the United States the details of Good Samaritan laws in various jurisdictions vary, including who is protected from liability and in what circumstances. Not all jurisdictions provide protection to laypersons, in those cases only protecting trained personnel.

General Guidelines

1. Unless a caretaker relationship (such as a parent-child or doctor-patient relationship) exists prior to the illness or injury, or the "Good Samaritan" is responsible for the existence of the illness or injury, no person is required to give aid of any sort to a victim.

2. Any first aid provided must not be in exchange for any reward or financial compensation. As a result; medical professionals are typically not protected by Good Samaritan laws when performing first aid in connection with their employment.

3. If aid begins, the responder must not leave the scene until:

   - it is necessary to call for needed medical assistance.
   - somebody of equal or higher ability can take over.
   - continuing to give aid is unsafe (this can be as simple as a lack of adequate protection against potential diseases, such as vinyl, latex, or nitrile gloves to protect against blood-borne pathogens) — a responder can never be forced to put himself or herself in danger to aid another person.

4. The responder is not legally liable for the death, disfigurement or disability of the victim as long as the responder acted rationally, in good faith, and in accordance with his level of training. 110

Physician Insurance Fraud

It has been reported by a number of authoritative sources that insurance fraud constitutes an estimated $100-billion-a-year problem. The United States Government Accountability Office (GAO) estimates that $1 out of every $7 spent on Medicare is lost to fraud and abuse and that in 1998 alone, Medicare lost nearly $12 billion to fraudulent or unnecessary claims. 111
Insurance Physician Fraud Perspectives

- Nearly one of three physicians say it's necessary to game the health care system to provide high quality medical care. *Journal of the American Medical Association* (2000)[112]
- More than one of three physicians says patients have asked physicians to deceive third-party payers to help the patients obtain coverage for medical services in the last year. *Journal of the American Medical Association* (2000)[113]
- One of 10 physicians has reported medical signs or symptoms a patient didn't have in order to help the patient secure coverage for needed treatment or services in the last year. *Journal of the American Medical Association* (2000)[114]

Types of Insurance Fraud and Abuse

The most common type of health insurance fraud is false claim schemes. The goal in these schemes is to obtain undeserved payment for a claim or series of claims.[115] Such schemes include any of the following when done deliberately for financial gain:

- Billing for services, procedures, and/or supplies that were not provided.
- Misrepresentation of what was provided; when it was provided; the condition or diagnosis; the charges involved; and/or the identity of the provider recipient.
- Providing unnecessary services or ordering unnecessary tests.[116]

Other illegal procedures include:

- Charging for a service that was not performed.
- Unbundling of claims: Billing separately for procedures that normally are covered by a single fee. An example would be a podiatrist who operates on three toes and submits claims for three separate operations.
- Double billing: Charging more than once for the same service.
- Up coding: Charging for a more complex service than was performed. This usually involves billing for longer or more complex office visits (for example, charging for a comprehensive visit when the patient was seen only briefly), but it also can involve charging for a more complex procedure than was performed or for more expensive equipment than was delivered. Medicare documentation guidelines describe what the various levels of service should involve.[117]
- Miscoding: Using a code number that does not apply to the procedure.
- Kickbacks: Receiving payment or other benefit for making a referral. Indirect kickbacks can involve overpayment for something of value. For example, a supplier whose business depends on physician referrals may pay excessive rent to physicians who own the premises and refer patients. Another example would be a mobile testing service that performs diagnostic tests in a doctor's office. Kickbacks can distort medical decision-making, cause over utilization, increase costs, and result in unfair competition by freezing out competitors who are unwilling to pay kickbacks. They can also adversely affect the quality of patient care by encouraging physicians to order services or recommend supplies based on profit rather than the patients' best medical interests. In 2000, the Office of the Inspector General issued a fraud alert warning against kickbacks disguised as rental payments.[118]
Excessive or Inappropriate Testing

Many standard tests can be useful in some situations but not in others. The key question in judging whether a diagnostic test is necessary is whether the results will influence the management of the patient. Billing for inappropriate tests—both standard and nonstandard—appears to be much more common among chiropractors and joint chiropractic/medical practices than among other health-care providers. The commonly abused tests include:

- Computerized inclinometry: Inclinometry is a procedure that measures joint flexibility. Inclinometer testing may be useful if precise range-of-motion measurements are needed for a disability evaluation, but routine or repeated measurements "to gauge a patient's progress" are not appropriate.\(^{119}\)
- Nerve conduction studies: These tests can provide valuable information about the status of nerve function in various degenerative diseases and in some cases of injury.\(^{120}\) However, "personal injury mills" often use them inappropriately "to "follow the progress" of their patients.
- Surface electromyography: This test, which measures the electrical activity of muscles, can be useful for analyzing certain types of performance in the workplace. However, some chiropractors claim that the test enables them to screen patients for "subluxations" and to follow their progress. This usage is invalid.\(^{121}\)
- Thermography: Thermographic devices portray small temperature differences between sides of the body as images. Chiropractors who use thermography typically claim that it can detect nerve impingements or "nerve irritation" and is useful for monitoring the effect of chiropractic adjustments on subluxations. These uses are not appropriate.\(^{122}\)

Ethical Decision Making Methodologies for the Doctor of Chiropractic

Recognize an Ethical Issue

1. Is there something wrong personally, interpersonally, or socially? Could the conflict, the situation, or the decision be damaging to people or to the community?
2. Does the issue go beyond legal or institutional concerns? What does it do to people, who have dignity, rights, and hopes for a better life together?

Get the Facts

3. What are the relevant facts of the case? What facts are unknown?
4. What individuals and groups have an important stake in the outcome? Do some have a greater stake because they have a special need or because we have special obligations to them?
5. What are the options for acting? Have all the relevant persons and groups been consulted? If you showed your list of options to someone you respect, what would that person say?

Evaluate Alternative Actions From Various Ethical Perspectives

6. Which option will produce the most good and do the least harm?
   - Utilitarian Approach: The ethical action is the one that will produce the greatest balance of benefits over harms.
7. Even if not everyone gets all they want, will everyone's rights and dignity still be respected?
   - Rights Approach: The ethical action is the one that most dutifully respects the rights of all affected.
8. Which option is fair to all stakeholders?

   **Fairness or Justice Approach:** The ethical action is the one that treats people equally, or if unequally, that treats people proportionately and fairly.

9. Which option would help all participate more fully in the life we share as a family, community, society?

   **Common Good Approach:** The ethical action is the one that contributes most to the achievement of a quality common life together.

10. Would you want to become the sort of person who acts this way (e.g., a person of courage or compassion)?

   **Virtue Approach:** The ethical action is the one that embodies the habits and values of humans at their best.

**Make a Decision and Test It**

11. Considering all these perspectives, which of the options is the right or best thing for me to do?

12. If you told someone you respect why you chose this option, what would that person say? If you had to explain your decision on television, would you be comfortable doing so?

**Act, Then Reflect on the Decision Later**

13. Implement your decision. How did it turn out for all concerned? If you had it to do over again, what would you do differently?123

References:

**Part 3. Pain Management**

Since the chiropractic profession’s genesis in 1895, Doctors of Chiropractic have played a vital role in the diagnosis and treatment of pain. Emphasis has been placed on the etiology of pain syndromes, how the body reacts to pain, how different chiropractic treatment methodologies ameliorate or eliminate pain, and how alternative treatments can be used to relieve many painful conditions. In addition to chiropractic treatment, pain management generally benefits from a multidisciplinary approach that includes pharmacologic measures (to include analgesics such as non steroidal anti inflammatory medicines), pain modifiers (such as tricyclic antidepressants or anticonvulsants), non-pharmacologic measures (such as physical therapy and physical exercise), and psychological measures (such as biofeedback and cognitive therapy).

The purpose of this continuing education seminar is to broaden the Doctor of Chiropractic’s knowledge base regarding the nature of pain, pain theories and the physiological and non physiological aspects of pain. Additionally, the course information is intended to enhance the reader's diagnostic abilities relative to pain syndromes and to provide an overview of chiropractic and alternative pain management methodologies.
Pain Perspectives

The International Association for the Study of Pain (IASP) defines pain as:
“An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”. Pain is always subjective. Each individual learns the application of the word through experiences related to injury in early life. Accordingly, pain is that experience we associate with actual or potential tissue damage. It is unquestionably a sensation in a part or parts of the body, but it is also always unpleasant and therefore also an emotional experience. Many people report pain in the absence of tissue damage or any likely pathophysiological cause. Typically, this happens for psychological reasons. There is usually no way to distinguish their experience from that due to tissue damage if we take the subjective report. If they regard their experience as pain and if they report it in the same ways as pain caused by tissue damage, it should be accepted as pain. This definition avoids tying pain to the stimulus. Activity induced in the nociceptor and nociceptive pathways by a noxious stimulus is not pain, which is always a psychological state, even though we may well appreciate that pain most often has a proximate physical cause.\(^\text{124}\)

“Clinically, pain is whatever the person says he or she is experiencing whenever he or she says it occurs”\(^\text{125}\)

"Pain is a category of complex experiences, not a single sensation produced by a single stimulus"
- Ronald Melzack and Patrick Wall\(^\text{126}\)

“Pain is the result of nociception; activity in the nervous system that results from the stimulation of nociceptors. This nociception activity is carried to the brain via the spinal cord, and conveys information, without conscious awareness, about damage to body tissues. Pain is the conscious experience of sensorial information and a feeling of unpleasantness that can manifest as a result of nociception. As a part of the body's defense system, pain triggers mental and physical behavior that seek to end the painful experience. It is also a feedback system that promotes learning, making repetition of the painful situation less likely. The nociceptive system may transmit signals that trigger the sensation of pain, it is a critical component of the body's ability to react to damaging stimuli and it is part of a rapid-warning relay instructing diverse organs and principally the central nervous system to initiate reactions for minimizing injury.” \(^\text{127}\)

Pain Statistics

- In the USA, 23.3 million surgical procedures are performed each year, and most, if not all, result in some form of pain\(^\text{128,129,130}\)
- Pain in persons with cancer also remains a significant problem, with studies suggesting that as many as 30% to 40% of cancer patients and 70% to 80% of cancer patients undergoing therapy or in the end stages of life have unrelieved pain\(^{131,132,133,134,135,136}\)
The Mayday Fund survey noted that pain is a part of life for many Americans, with 46% of respondents reporting pain at some time in their lives.\(^{137}\)

It has been estimated that 9% of the US adult population suffers from moderate to severe chronic nonmalignant pain.\(^{138}\)

**Pain Definitions**

**Allodynia**

Pain due to a stimulus that does not normally provoke pain. The term allodynia was originally introduced to distinguish hyperalgesia from hyperesthesia, the conditions seen in patients with lesions of the nervous system where touch, light pressure, or moderate cold or warmth evoke pain when applied to apparently normal skin. Allo means "other" in Greek and is a common prefix for medical conditions that diverge from the expected. Odynia is derived from the Greek word "odune" or "odyne," which is used in "coccydynia" and is similar in meaning to the root from which we derive words with -algia or -algesia in them. The term allodynia applies to conditions which may give rise to sensitization of the skin, e.g., sunburn, inflammation, trauma. Allodynia involves a change in the quality of a sensation, whether tactile, thermal, or of any other sort.\(^{139}\)

**Analgesia**

Absence of pain in response to stimulation which would normally be painful.\(^{140}\)

**Anesthesia Dolorosa**

Pain in an area or region which is anesthetic.\(^{141}\)

**Breakthrough Pain**

Moderate to severe pain that lasts 12 hours or more per day is referred to as persistent pain. Medical physicians will often prescribe a longer-acting medication that will help to alleviate persistent pain for up to 12 hours or more. Unfortunately, up to 86% of patients already receiving longer-acting pain medication also experience sudden flare-ups of pain that "break through" the medication they are taking.\(^{142}\) This is called "breakthrough pain," or "BTP."

In patients who have moderate to severe pain, two components are usually present: persistent pain (lasting 12 or more hours/day) and breakthrough pain (BTP), a transitory flare up of pain of moderate to severe intensity occurring on a background of otherwise controlled pain.\(^{143,144,145}\) In one survey, patients experienced an average of 4 episodes of BTP per day.\(^{146}\) Based on the results from this same survey, the onset of BTP is often sudden, reaches maximal intensity within 3 minutes, and lasts for a median duration of 30 minutes.\(^{147}\)

There are 3 types of breakthrough pain - spontaneous, incident, and end-of-dose failure. The etiology of BTP may be related to a disease or condition, or to its treatment.
Breakthrough pain has been further defined as a transitory exacerbation of moderate to severe pain occurring in patients against a background of persistent pain otherwise controlled with chronic opioid therapy.\(^{148}\)

Breakthrough pain strikes quickly and without warning in many cases.\(^ {149}\) Untreated breakthrough pain can decrease a patient's quality of life by negatively affecting their mood and interactions with others, and by limiting their activities of daily living.\(^ {150}\)

Medications that are typically prescribed for persistent pain are called "longer-acting," "sustained-release," or "around-the-clock" medicine. Some examples of longer-acting medicines are pills that are taken every 8 to 12 hours or a skin patch that is worn for several days. Conversely, medicines required for breakthrough pain are called "shorter-acting," "supplemental," or "rescue" medicines.

In the assessment of pain and in the development of a diagnosis and treatment plan, it is important to understand the following characteristics regarding breakthrough pain:

- Episodes of breakthrough pain may either be spontaneous, occurring without a precipitated event, or precipitated; initiated by a volitional or non-volitional event. The etiology of breakthrough pain can be related to a disease or condition, or to its treatment. Episodic pain is also known as breakthrough pain.
- Chronic pain can be one or two types: persistent pain, which is continuous pain, and breakthrough pain, or incident pain.
- Breakthrough pain is called that because it "breaks through" a regular pain medicine schedule.
- Breakthrough pain may be different for each person and it is often unpredictable.
- Breakthrough pain typically has a rapid onset, can last up to an hour.
- The quality of breakthrough pain may feel very much like persistent pain, except that it is more severe.
- Breakthrough pain is generally a result of the same cause, or source, as persistent pain.
- In 1994, the Agency for Healthcare Research and Quality (AHCPR) defined breakthrough pain as "intermittent exacerbations of pain that can occur spontaneously or in relation to specific activity". The Agency for Healthcare Research and Quality (AHCPR) guidelines do not contain
specific recommendations for assessing breakthrough pain and/or selecting and analgesic or analgesic does of medication to treat breakthrough pain.

- Movement-related pain is often referred to as "incident" pain. Incident pain, or movement-related pain, can occur as a result of coughing, swallowing, positional changes, and activity.
- Breakthrough pain could be related to: a direct relationship between a tumor progression, such as bone metastasis, or nerve compression in the cancer patient, or as a result of a treatment modality, such as a prostatectomy or mastectomy, or a variety of disorders, such as arthritis.
- Currently, there is not an independently validated assessment tool available to evaluate breakthrough pain.cheduled

**Causalgia**
A syndrome of sustained burning pain, allodynia, and hyperpathia after a traumatic nerve lesion, often combined with vasomotor dysfunction and later trophic changes.

**Central Pain**
Pain initiated or caused by a primary lesion or dysfunction in the central nervous system.

**Dysesthesia**
An unpleasant abnormal sensation, whether spontaneous or evoked. Special cases of dysesthesia include hyperalgesia and allodynia.

**Hyperalgesia**
An increased response to a stimulus which is normally painful. Hyperalgesia reflects increased pain on suprathreshold stimulation. For pain evoked by stimuli that usually are not painful, the term allodynia is preferred, while hyperalgesia is more appropriately used for cases with an increased response at a normal threshold, or at an increased threshold, e.g., in patients with neuropathy. Current evidence suggests that hyperalgesia is a consequence of perturbation of the nociceptive system with peripheral or central sensitization, or both.

**Hyperesthesia**
Increased sensitivity to stimulation. Hyperesthesia may refer to various modes of cutaneous sensibility including touch and thermal sensation without pain, as well as to pain. The word is used to indicate both diminished threshold to any stimulus and an increased response to stimuli that are normally recognized.

**Hyperpathia**
A painful syndrome characterized by an abnormally painful reaction to a stimulus, especially a repetitive stimulus, as well as an increased threshold. It may occur with allodynia, hyperesthesia, hyperalgesia, or dysesthesia. Faulty identification and localization of the stimulus, radiating sensation, and after-sensation may be present, and the pain is often explosive in character.

**Hypoalgesia**
Diminished pain in response to a normally painful stimulus. Hypoalgesia refers only to the occurrence of relatively less pain in response to stimulation that produces pain.
Hypoesthesia
Decreased sensitivity to stimulation that is normally painful.  

Neuralgia
Pain in the distribution of a nerve or nerves.

Nociception

“Pain refers to the subjective sensation that accompanies damage or near-damage to tissues. Pain can also occur in the absence of tissue damage if the systems of nociception are not functioning properly. Nociception is the physiological event that accompanies pain and refers to the system that carries signals of damage and pain from the tissues.”

Transmission of Nociception to the Central Nervous System

Nociceptive information reaches the central nervous system two ways via the neospinothalamic tract for "fast spontaneous pain"; and by way of the paleospinothalamic tract for "slow increasing pain"

Neospinothalamic Tract

Fast spontaneous pain travels via type Aδ fibers to terminate on the dorsal horn of the spinal cord where they synapse with the dendrites of the neospinothalamic tract. The axons of these neurons travel up the spine to the brain and cross the midline through the anterior white commissure, passing upwards in the contralateral anterolateral columns. These fibers terminate on the ventrobasal complex of the thalamus and synapse with the dendrites of the somatosensory cortex. Fast pain is felt within a tenth of a second of application of the pain stimulus and is a sharp, acute, prickling pain felt in response to mechanical and thermal stimulation.

Paleospinothalamic Tract

Slow pain is transmitted via slower type C fibers to laminae II and III of the dorsal horns, together known as the substantia gelatinosa. Impulses are then transmitted to nerve fibers that terminate in lamina V, also in the dorsal horn, synapsing with neurons that join fibers from the fast pathway, crossing to the opposite side via the anterior white commissure, and traveling upwards through the anterolateral pathway. These neurons terminate throughout the brain stem, with one tenth of the fibers stopping in the thalamus and the rest stopping in the medulla, pons and periaqueductal grey of the midbrain tectum. Slow pain is stimulated by chemical stimulation, is poorly localized and is described as an aching, throbbing or burning pain.
Effects in the Central Nervous System

When nociceptors are stimulated they transmit signals through sensory neurons in the spinal cord. These neurons release the excitatory neurotransmitter glutamate at their synapses. If the signals are sent to the reticular formation and thalamus, the sensation of pain enters consciousness in a dull, poorly localized manner. From the thalamus, the signal can travel to the somatosensory cortex in the cerebrum when the pain is experienced as localized and having more specific qualities. Nociception can also cause generalized autonomic responses before or without reaching consciousness to cause pallor, bradycardia, hypotension, lightheadedness, nausea and fainting.163

Nociceptors

Nociceptors are free nerve endings whose cell bodies are found outside of the spinal column in the dorsal root ganglia. Nociceptors can detect mechanical, thermal, and chemical stimuli, and are found in the skin and on internal structures such as the periosteum or joint surfaces.

The body’s pain receptors are:

- Mechanical: capable of detecting a stretch gone too far.
- Thermal: receptors capable of detecting extreme heat or cold.
- Chemical: receptors that can detect body products released during trauma or inflammation. (Lactic acid, for example, causes muscle pain after heavy exercise.)

Deep internal surfaces are only weakly supplied with pain receptors and will propagate sensations of chronic, aching pain if tissue damage in these areas occurs. Nociceptors do not adapt to stimuli. In some conditions, excitation of pain fibers becomes greater as the pain stimulus continues, leading to hyperalgesia.

Noxious Stimulus

A noxious stimulus is one which is damaging to normal tissues.

Pain Threshold

Is the least stimulus intensity at which a subject perceives pain. Pain threshold is really the experience of the patient, whereas the intensity measured is an external event. In psychophysics, thresholds are defined as the level at which 50% of stimuli are recognized. In that case, the pain threshold would be the level at which 50% of stimuli would be recognized as painful. The stimulus is not pain and cannot be a measure of pain.164

Peripheral Neuropathic Pain

Pain initiated or caused by a primary lesion or dysfunction in the peripheral nervous system.
Pain Theories

The Specificity Theory Of Pain

In 1644, French philosopher, mathematician and scientist, René Descartes proposed a theory of pain that survived until the mid-1960s. Descartes postulated that the human body was a form of machine and therefore, could be studied like other mechanical entities. According to Descartes’ classic thoughts regarding pain, if a person cut their finger a half-inch in length, it would hurt twice as much as if they had cut it a quarter of an inch in length. In Descartes' model, pain traveled in a single direction. Under Descartes’ influence, the scientific search for how pain was conducted culminated in what has come to be known as the specificity theory. This theory posits that pain is a simple system where an input of one kind travels along special nerves for that kind of input, terminating in specific areas of the brain which are receptive to that input. The input which went in was thought to be what was felt by the brain. This belief resulted in the use of various inappropriate kinds of therapy, including the cutting of nerve pathways to try and abolish chronic pain.  

“Descartes theory proposed that the intensity of pain is directly related to the amount of associated tissue injury. For instance, pricking one’s finger with a needle would produce minimal pain, whereas cutting one’s hand with a knife would cause more tissue injury and be more painful. This theory - the “specificity theory” - is generally accurate when applied to certain types of injuries and the acute pain associated with them. But chronic pain is often quite different, though no less severe, and a more extensive and up to date scientific understanding of pain is required to treat it. Unfortunately, many practicing doctors still try to extend the specificity theory to chronic pain cases. This approach is probably not valid when studying or treating chronic back pain. The theory assumes that if surgery or medication can eliminate the alleged "cause" of the pain, then the chronic pain will disappear. This is very often not true for chronic pain. If doctors continue to apply the specificity theory to a patient's chronic pain problem, the patient is at risk for receiving unnecessary and ineffective diagnostic procedures, drugs and surgical treatment as the search for the patient's "source of chronic back pain" presses on.”

Problems With The Specificity Theory And Chronic Pain

Up until the introduction of the gate control theory of pain in 1965, the specificity theory had been the dominant idea in the study of pain. One of the first doctors to question its validity was Dr. Henry Beecher. Dr. Beecher began his investigation into relationships between subjective psychological states and objective drug responses during his work with severely wounded soldiers in World War II. Beecher’s clinical observations proved that the specificity theory was inadequate to explain chronic pain. He observed that only one out of five soldiers carried into a combat hospital...
complained of enough pain to require morphine. When Dr. Beecher returned to his practice in the United States after the war, he noticed that trauma patients with wounds similar to those of the soldiers he had treated were much more likely to require morphine to control their pain. In fact, one out of three civilian patients required morphine for pain from these wounds. Dr. Beecher concluded that there was no direct relationship between the severity of the wound and the intensity of pain. Dr. Beecher believed the meaning attached to the injuries in the two groups explained the different levels of pain. To the soldier, the wound meant surviving the battlefield and returning home. Alternatively, the injured civilian often faced major surgery and a resulting loss of income, diminishment of activities, and many other negative consequences.167

Another finding that discredited the specificity theory was that of phantom limb pain. Patients who undergo the amputation of a limb may continue to report sensations or chronic pain that seems to come from the limb that has been amputated. This may include feeling that the limb is still there, or it may be a sensation of chronic pain. Clearly, these sensations cannot actually come from the limb since it has been removed. The specificity theory cannot account for these findings since there is no ongoing tissue injury in the amputated limb, which would mean that there should be no chronic pain.168

"The specificity theory cannot explain how hypnosis can be used for anesthesia during surgery. Under hypnosis, certain people can evidently undergo significant tissue damage from surgery without experiencing intense pain. This would support the notion that one’s mental state or frame of mind can override the specificity theory. Similar examples of severe pain or chronic pain following relatively minor injuries can also be furnished.” 169

Upon final analysis, the specificity theory was clearly erroneous because it implied that if there was no specific, identifiable injury to account for the pain then it could not exist. Therefore, patients who did complain of pain in those circumstances were often mistakenly diagnosed as being mentally ill.

The Gate Control Theory Of Pain

Ronald Melzack and Patrick Wall introduced the gate control theory of pain in 1965. The gate control theory is based on several propositions:

- The transmission of impulses from the body into the central nervous system is “gated” (altered, changed, modulated) in the spinal cord.
- Gating is affected by the degree of activity in the large diameter and the small diameter nerve fibers. Impulses along the larger fibers tends to block pain transmission (close the gates) and more activity in the smaller fibers tends to facilitate transmission (open the gates).
- This gating mechanism in the spinal cord is affected by descending impulses from the brain.
- Large fibers may activate specific cognitive processes in the brain, which then influence the gate by descending impulse transmission.
- When the pain output to the brain reaches a certain level it activates the action system and the individual in pain takes an action to alleviate the pain.170
Melzack and Wall theorized that the perception of physical pain is not a direct result of activation of pain receptor neurons, but instead is modulated by the interaction between different neurons. Melzack utilized these scientific and clinical observations to explain how pain is multidimensional and not just something that happens to the body, as Descartes’ mechanistic view of pain suggested. Melzack and Wall further proposed that pain is ‘gated’ or modulated by past experiences. They suggested that once the noxious agent that triggered the pain had ‘opened the pain gate’; other factors may contribute to the perpetuation of pain. Although their work drew on Descartes’ theory, they went further to claim that the brain and central nervous system played integral and active parts in receiving, modulating and transmitting pain impulses. As a result of their research, a bodily function for pain was proposed and chemical and surgical treatment methodologies were developed to help alleviate, or even completely remove patient complaints of pain.171

The Physiology of the Gate Control Theory

Afferent pain-receptive nerves are responsible for bringing pain signals to the brain. These nerves are comprised of two kinds of fibers. The first fiber is a fast, thick, and myelinated "Aδ" fiber that carries messages quickly with intense pain. The second is a small, unmyelinated, slow "C" fiber that carries the longer-term throbbing and chronic pain signals. Large-diameter Aβ fibers are nonnociceptive (do not transmit pain stimuli) and inhibit the effects of firing by Aδ and C fibers. The peripheral nervous system has centers which regulate pain stimuli. Areas in the dorsal horn of the spinal cord that are involved in receiving pain stimuli from Aδ and C fibers, called laminae, also receive input from Aβ fibers. The nonnociceptive fibers indirectly inhibit the effects of the pain fibers, ‘closing a gate’ to the transmission of their stimuli. In other parts of the laminae, pain fibers also inhibit the effects of nonnociceptive fibers, ‘opening the gate’.172

An inhibitory connection may exist with Aβ and C fibers, which may form a synapse on the same projection neuron. The same neurons may also form synapses with an inhibitory interneuron that also synapses on the projection neuron, reducing the chance that the latter will fire and transmit pain stimuli to the brain. The C fiber's synapse would inhibit the inhibitory interneuron, indirectly increasing the projection neuron's chance of firing. The Aβ fiber, on the other hand, forms an excitatory connection with the inhibitory interneuron, thus decreasing the projection neuron's chance of firing (like the C fiber, the Aβ fiber also has an excitatory connection on the projection neuron itself). Therefore, depending on the relative rates of firing of C and Aβ fibers, the firing of the nonnociceptive fiber may inhibit the firing of the projection neuron and the transmission of pain stimuli.173

The gate control theory explains how stimulus that activates only nonnociceptive nerves can inhibit pain. The pain seems to be lessened when the area is rubbed because activation of nonnociceptive fibers inhibits the firing of nociceptive ones in the laminae. In transcutaneous electrical stimulation (TENS), nonnociceptive fibers are selectively stimulated with electrodes in order to produce this effect and thereby lessen pain.174

One area of the brain involved in the reduction of pain sensation is the periaqueductal gray matter that surrounds the third ventricle and the cerebral aqueduct of the ventricular system.
Stimulation of this area produces analgesia by activating descending pathways that directly and indirectly inhibit nociceptors in the laminae of the spinal cord. It also activates opioid receptors, which are contained in parts of the spinal cord.\textsuperscript{175}

Afferent pathways interfere with each other constructively, so that the brain can control the degree of pain that is perceived, based on which pain stimuli are to be ignored to pursue potential gains. The brain determines which stimuli are best to ignore over time. Thus, the brain controls the perception of pain directly, and can be trained to turn off or lessen pain signals. This understanding led Melzack to point out that pain is in the brain and he opined that the brain should be the focus of the future of pain research.

The Gate Control Model. Large-diameter afferent fibers (L) stimulate the substantia gelatinosa (SG) and the transmission cells (T) in lamina 4. The SG cells reduce the membrane potential of afferent terminals, thus producing presynaptic inhibition. Small-diameter afferent fibers (S) also stimulate the transmission cells but inhibit SG cells and thus turn off the existing presynaptic inhibition.\textsuperscript{176}
Melzack illustrated his theory with Descartes' well-known picture "Boy with Foot in Fire" seen below. The treatment of pain by surgical transection of peripheral nerves and/or spinal cord was derived from this theory.

![Descartes Model of Pain](image)

**Descartes' Boy with Foot in Fire.**

According to Melzack and Wall’s gate control theory, large fiber afferents modulate the pain transmission of the small nociceptive fibers through a gateway. The substantia gelatinosa in the dorsal horn of the spinal cord was the proposed location of the gate that modulated the synaptic transmission of nerve impulses from peripheral fibers to central cells (refer to the figure below). This theory predated the advent of transcutaneous electrical nerve stimulation and spinal cord stimulation to modulate the transmission of pain in the spinal cord. Other methods of modulation include psychology and hypnosis. 177

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**Melzack’s Neuromatrix Theory**

In the 1990s, Melzack introduced a theory involving the integration of three separate pathways in the brain, with a concept called the “neurosignature”. He proposed that a large number of interconnected neurons, called a “neuromatrix”, exist in everyone. This neuromatrix analyzes...
the sensory information and gives perception of sensation. The neurosignature then comes into play and tells the brain that the perceptions of sensation are from the “self”, in other words the neurosignature tells the brain that your arm is YOUR arm and not someone else’s. Although his work is continually updated and revised, it continues to influence the research and management of pain.\textsuperscript{178}

Melzack’s neuromatrix theory of pain posits that pain is a multidimensional experience produced by characteristic "neurosignature" patterns of nerve impulses that are generated by a widely distributed neural network -- the "body-self neuromatrix" -- in the brain. It is a parallel and serial process that can be thought of as an expansion of the central control processes in the original gate control theory. The central control processes would encompass cognitive-evaluative, motivational-affective, and sensory-discriminative systems.\textsuperscript{179}

Multiple factors act on the neuromatrix and contribute to the output "neurosignature." These factors include sensory inputs; visual and other sensory inputs that influence cognitive interpretation; phasic and tonic cognitive and emotional inputs; intrinsic neural inhibitory modulation; and the activity of the stress-regulation system (endocrine, autonomic, immune, and opioid systems). Pain may be triggered by sensory inputs, but may also be generated independently of them. Therefore, pain could be produced by the output of a widely distributed neural network in the brain, rather than directly by nociceptive stimuli.\textsuperscript{180}

An example Dr. Melzack gave of the central process of pain is phantom limb pain in patients with spinal cord transection. In this scenario, the pathway for pain transmission has been severed, yet the patient feels pain in the insensate limb. He also presented the case of a woman who had the congenital absence of both legs and an arm, and felt phantom limb pain in the missing limbs. Phantom limb pain is commonly experienced by quadriplegics who have lost large portions of the spinal cord and cannot possibly be receiving any messages from it. This phenomenon is explained by Melzack’s notion of the body-self neuro-matrix. The sensation of a foot that is burning, for instance, has become separated from the foot that is still attached to a useless leg dangling into space - the disconnection actually frees the neurological part of the matrix to "invent" a body. Different parts of the brain then perceive the whole body in different ways, and these are more free to clash if real signals from a real body are not disciplining them all with a common external experience.\textsuperscript{181}

At present, pain theorists continue to explore the genetic, endocrine, and immune systems, all of which may contribute to the neuromatrix. Pain theorists have offered explanations of pain that entail both physiological and psychological components. The neuromatrix theory is still evolving and the brain functions and mechanisms in this theory need to continue to be further explored and scrutinized.\textsuperscript{182}

\textbf{Pain Theory Experimentation}

Research records indicate that pain experimentation was performed on dogs that were raised in confined environments. When the dogs were released, they were excited, constantly ran around, and required several attempts to learn to avoid pain. When a pain stimulus such as a pinch was
introduced, the animals did not take action to avoid the stimulus immediately. This finding seemed to demonstrate that pain is understood and avoided only by experience. Consequently, these experimental observations led to the thought that aversion to pain is not inherent or automatic, and the organism has no way to know what will cause repeated pain without a repeated experience.\footnote{183}

### Advantages of the Gate Control Theory

Prior to Melzack and Wall’s gate control theory, neurochemistry theorists had not taken into account the brain in the discussion of pain. Based upon the classic theory of pain proposed by René Descartes, pain was thought to be simply a direct response to a stimulus. This one-way ‘alarm system’ pain-pleasure theory was incapable of offering a scientific explanation for phantom limb pain where the pain signal is in fact impossible to receive in the absence of a neurological pain pathway. Conversely, the gate control theory in general, and the neuromatrix theory in particular, provide an explanation for the phantom limb pain phenomenon. Unlike the specificity theory of pain, the gate control theory allows for the dynamic role of the brain in the pain process. Psychological aspects of pain are now seen as integral parts of the process and not just reactions to pain. This has opened the way for psychological approaches to be used for pain treatment and management. Simplistic treatments such as cutting nerve pathways (which often made the pain worse) have been replaced by more realistic and efficacious treatment methodologies.

### Consequences of Melzack’s Work

In his paper The Tragedy of Needless Pain, Melzack further asserts that "pain is a fundamental human experience, and requires an integrative understanding of that whole experience, and every choice we have made, that has formed our own "gates". He frames the choice to deal with pain or ignore it as moral: if the brain can control pain, we who know that must make use of that capacity, and in turn take control of pain on a species level - only by doing so can we achieve control of the larger causes of all of the pain that humans cause each other by carelessness, hatred, and failures of empathy - which might extend beyond humans."\footnote{184}

Melzack's work has led to advancements in the assessment of pain. Melzack was a professor at McGill University and thus the name of his McGill Pain Questionnaire. According to Melzack pain is an entirely personal experience, and therefore it is difficult to accurately measure. Melzack's McGill Pain Questionnaire asks a number of directed questions to assess and categorize the experience of pain. Melzack collected approximately 200 words used pain by his patients to describe pain. A "burning pain" for instance, can be described as "hot" or even "searing". "Throbbing" becomes "palpitating". Some describe sensory aspects of pain, and others, such as "excruciating", describe emotional experiences. More intense pain generally requires more words to describe. A patient, in the questionnaire, picks one of 20 words to describe their pain, and assign it a point on a scale. Melzack’s work was the first to actually qualify and define types of pain - something impossible prior to the gate control theory. An advantage of this was to make it easier to determine the difference between organic pain and non-organic pain - the latter being entirely treatable by psychological means.\footnote{185}
Types of Physiological Pain

- **Cutaneous pain**: Caused by injury to the skin or superficial tissues. The pain-detecting neurons are just below the skin where there is a high concentration of nerve endings. The pain is localized and short-term. Examples: paper cut, first-degree burn, exterior wound.

- **Somatic pain**: Comes from ligaments, tendons, bones, blood vessels and nerves. There are few somatic pain receptors in these areas, so the pain is a dull pain of longer duration. Examples: sprains, and fractured bones.

- **Visceral pain**: Visceral neurons are within body organs and cavities. Pain receptors in these areas are very diffuse, so pain is felt as an ache over a longer period of time. Visceral pain is difficult to localize, and is often called "referred pain." This means the sensation is unrelated to the injury site. For example, myocardial ischemia can be felt in the upper chest, or as an ache in the left shoulder, arm or hand.

- **Phantom Limb Pain**: The sensation of pain from a limb that has been amputated, or where a person no longer feels physical pain signals (i.e., quadriplegic).

- **Neuropathic Pain**: Caused by injury or disease of the nerve tissue. This can disrupt the sensory nerves from transmitting correct information to the thalamus.

Comparison of Nociceptive and Neuropathic Pain

**Nociceptive Pain**

Nociceptive pain results from tissue damage. Intact neurons report damage, and pain is experienced. Nociceptive pain can be subdivided into somatic and visceral pain. Nociceptive pain can be experienced as sharp, dull, or aching. There may be radiation of the pain, especially visceral pain, but it will not be in a direct nerve distribution. For example, gallbladder pain can radiate to the scapula. Nociceptive pain is generally responsive to NSAIDs (nonsteroidal anti-inflammatory drugs) and opioids. Conditions associated with inflammation, bone pain, and joint disease are particularly responsive to NSAIDs.

**Neuropathic Pain**

Neuropathic pain may occur when there is either damage to or dysfunction of nerves in the peripheral or central nervous system. Examples of neuropathic pain include diabetic neuropathy and trigeminal neuralgia. Neuropathic pain frequently coexists with nociceptive pain. Examples include trauma that damages both tissue and nerves, such as severe burns that burn skin as well as damage nerve endings and a lumbar disc herniation that results in tissue pain along the distribution of the sciatic nerve.

Neuropathic pain is often described as having a burning or electrical quality. It may feel like a shock or lightning bolt. Sometimes stimuli that usually do not cause pain, such as light touch,
may elicit a paroxysm of pain. A light stroke of the cheek that results in the sudden pain of trigeminal neuralgia is an example of this type of pain. Sometimes patients do not describe the sensation as being "painful" but rather as feeling unpleasant, strange or tingly. This feeling is called a dysesthesia.

Neuropathic pain in the peripheral nervous system frequently follows a nerve distribution. This distribution may replicate a particular nerve, as in sciatic pain or trigeminal neuralgia, or may represent the distribution of terminal nerve endings, as in the stocking-glove distribution of peripheral neuropathies.

Neuropathic pain is relatively resistant to NSAIDs and opioids, although they may be helpful in certain cases. The other major classes of medications that are prescribed for neuropathic pain include tricyclic antidepressants, anticonvulsants, and sodium channel blockers.

Analysis of Somatic, Visceral and Neuropathic Pain
Somatic, visceral and neuropathic pain can all be either acute or chronic in nature. Somatic, visceral, and neuropathic pain can all be felt at the same time or singly and at different times. Most cancer patients experience both somatic and visceral pain. Only about 15-20% of all cancer patients report neuropathic pain. The different types of pain respond differently to the various pain management therapies. Somatic and visceral pain are both easier to manage than neuropathic pain.

Somatic Pain
Somatic pain is caused by the activation of pain receptors in either the cutaneous musculoskeletal tissues. When it occurs in the musculoskeletal tissues, it is called deep somatic pain. Common causes of somatic cancer pain include metastasis in the bone (an example of deep somatic pain) and postsurgical pain from a surgical incision (an example of surface pain). Deep somatic pain is usually described as dull or aching but localized. Surface somatic pain is usually sharper and may have a burning or pricking quality.

Visceral Pain
Visceral pain is caused by activation of pain receptors resulting from infiltration, compression, extension, or stretching of the thoracic, abdominal, or pelvic viscera. Common causes of visceral pain include pancreatic cancer and metastases in the abdomen. Visceral pain is not well localized and is usually described as pressure-like, deep squeezing.

Neuropathic Pain
Neuropathic pain is caused by injury to the nervous system either as a result of a tumor compressing nerves or the spinal cord, or cancer actually infiltrating the nerves or spinal cord. It also results from chemical damage to the nervous system that may be caused by cancer treatment (chemotherapy, radiation, surgery). This type of pain is severe and usually described as burning or tingling. Tumors that lie close to neural structures are believed to cause the most severe pain that cancer patients feel.
Acute versus Chronic Pain

**Acute Pain**
Acute pain begins suddenly and is usually sharp in quality. It serves as a warning of disease or a threat to the body. Acute pain might be caused by a traumatic event or its etiology and onset can be insidious in nature. Acute pain might be mild and last just a moment, or several days, increasing in intensity over time (subacute pain), or it can occur intermittently. Acute pain can also be severe and last for weeks or months. In most cases, acute pain does not last longer than three months, and it disappears when the underlying cause of pain has been treated or has healed.

The longer acute pain persists the more susceptible it is to other influences and developing into a chronic pain problem. These influences include such things as the ongoing pain signal input to the nervous system even without tissue damage, the increased potential for physical deconditioning, and psychological manifestations of depression and anxiety.

**Chronic Pain**
Chronic pain is defined as pain lasting for more than 3 months. It is much more subjective and not as easily described as acute pain. Chronic pain persists despite the fact that the injury has healed. Pain signals remain active in the nervous system for weeks, months, or years. Physical effects include increased muscle toneity, decreased ranges of motion, lethargy, and changes in appetite. Emotional effects include depression, anger, anxiety, and fear of re-injury. Common chronic pain complaints include:

- Headache
- Low back pain
- Cancer pain
- Arthritis pain
- Neurogenic pain
- Psychogenic pain

Chronic pain might have originated with an initial trauma/injury or infection, or there might be an ongoing cause of pain. However, some people suffer chronic pain in the absence of any past injury or evidence of body damage.

Effectively treating chronic pain poses a great challenge for physicians. This kind of pain usually affects a person's life in many ways. It can change someone’s personality, ability to function, and quality of life.
Types of Chronic Pain Scenarios

There are two different types of chronic pain scenarios - chronic pain due to an identifiable pain generator (e.g. an injury), and chronic pain with no identifiable pain generator (e.g. the injury has healed).

Chronic pain due to an identifiable pain generator
This type of chronic pain is due to a clearly identifiable cause. Certain structural spine conditions (for example, degenerative disc disease, spinal stenosis and spondylolisthesis) can cause ongoing pain until successfully treated. These conditions are due to a diagnosable anatomical problem.

Chronic pain with no identifiable pain generator
This type of pain continues beyond the point of tissue healing and there is no clearly identifiable pain generator that explains the pain. It is often termed “chronic benign pain”. Pain can set up a pathway in the nervous system and, in some cases, this becomes the problem in and of itself. In chronic pain the dysfuctioning nervous system sends a pain signal even though there is no ongoing tissue damage.

The term “chronic pain” is generally used to describe pain that lasts more than three months, or beyond the point of tissue healing. Chronic pain is usually less directly related to identifiable tissue damage and structural problems. Examples of chronic pain are: chronic back pain without a clearly determined cause, failed back surgery syndrome, and fibromyalgia.

Causes of Pain By Region

Visceral pain sensation is often referred by the CNS to a dermatome region which is be far away from the originating organ. These correlate to the position of the organ in the embryo. Examples of this include the heart which originates in the neck, thus producing the classical neck and arm pain experienced during acute cardiac pain.

Head and Neck
Jaw - Temporal arteritis, trauma.
Ear - otitis media, otitis externa, trauma.
Eye - glaucoma, trauma.
Head - migraine, tension headache, cluster headache, cancer, cerebral aneurysm, sinusitis, meningitis.
Neck pain – myocardial infarction, trauma.

Thorax
Back - cancer, trauma.
Breast - premenstrual, cancer, trauma.
Chest – Myocardial infarction, pancreatitis, hiatal hernia, aortic dissection, pulmonary embolism, Costochondritis.
Shoulder - cholecystitis.

**Abdomen**
Left and right upper quadrant - peptic ulcer disease, gastroenteritis, hepatitis, pancreatitis, cholecystitis, abdominal aortic aneurysm, gastric cancer.
Left and right lower quadrant - appendicitis, ulcerative colitis, Crohn's disease, ectopic pregnancy, endometriosis, pelvic inflammatory disease, diverticulitis, urolithiasis, pyelonephritis, cancer.

**Back**
Back - Muscle strain, cancer, spinal disc herniation, degenerative disc disease, coccydynia.

**Limbs**
Arm - myocardial infarction (classically the left arm, sometimes bilateral).
Leg - deep vein thrombosis, peripheral vascular disease (claudication), musculoskeletal, spinal disc herniation, sciatica.

**Joints**
Classically small joints - osteoarthritis (common in the elderly), rheumatoid arthritis, systemic lupus erythematosus, gout, pseudogout/tarsal/carpal tunnel syndrome.
Classically large joints (hip, knee) - osteoarthritis (common in the elderly), septic arthritis, hemarthrosis, trauma.
Other - psoriatic arthritis, Reiter's syndrome.

**Genotype and Pain**
Pain may be experienced differently depending on genotype (i.e., genetic background). A study by Liem et al. suggests that redheads are more susceptible to thermal pain. However, another study suggests that redheads—who have a non-functional melanocortin-1 receptor (MC1R) gene—are less sensitive to pain from electric shock.

Gene SCN9A has been identified as a major factor in the development of the pain-perception systems within the body. A rare genetic mutation in this area causes non-functional development of certain sodium channels in the nervous system, which prevents the brain from receiving messages of physical damage. People having this disorder are completely ignorant to pain, and can perform without pain various kinds of self mutilation or damage. In the families studied, this has ranged from biting of the person's own tongue leading to damage, to death from injuries due to a failure to have learned limits on injury through experience of pain. The same gene also appears to mediate a form of hyper-sensitivity to pain, with other mutations seeming to be "at the root of paroxysmal extreme pain disorder".

**Pain Assessment**
Assessment of the patient experiencing pain is the cornerstone to optimal pain management. Pain assessment should include a history, physical examination, and a review of the results of pertinent laboratory and other ancillary diagnostic testing procedures. Initial evaluation of the pain complaint should include characteristics such as: intensity; character; frequency (or pattern, or both); location; duration; and precipitating and relieving factors. The mnemonic PPQRST may
be helpful to follow: palliative, provocative, quality, region (or radiation), severity and temporal pattern of pain.

**The Wilda Approach To Pain Assessment**

Pain assessment should be ongoing (occurring at regular intervals), individualized, and documented so that all involved in the patient's care understand the pain problem. Using the WILDA approach ensures that the 5 key components to a pain assessment are incorporated into the process.

**W-Words to describe the pain**

Pain assessment usually begins with an open-ended inquiry: “Tell me about your pain.” This allows the patient to tell his or her story, including the aspects of the pain experience that are most problematic. It is imperative that the clinician listens closely to the patient’s words to describe their pain. It has been said that upwards of 90% of a diagnosis is derived from the patient’s history.

A patient's statement, “I have pain,” is not descriptive enough to inform a health care professional about pain type. Asking patients to describe their pain using words will guide clinicians to the appropriate interventions for specific pain types. Patients may have more than one type of pain. The following questions should be asked of patients:

What does your pain feel like?
Because various pain types are described using different words, what words would you use to describe the pain you are having?

*Neuropathic pain.* This type of pain can be described as burning, shooting, tingling, radiating, lancinating, or numbness. Sometimes patients say that their pain is like a fire or an electrical jolt. This type of pain can be due to nerve disorders; nerve involvement by a tumor pressing on cervical, brachial, or lumbosacral plexi; postherpetic neuralgia; or peripheral neuropathies secondary to treatment (chemotherapy, radiation fibrosis).

*Somatic pain.* Described as achy, throbbing, or dull, somatic pain is typically well localized. Somatic pain accompanies arthritis, bone or spine metastases, low back pain, and orthopedic procedures.

*Visceral pain.* Pain described as squeezing, pressure, cramping, distention, dull, deep, and stretching is visceral in origin. Visceral pain is manifested in patients after abdominal or thoracic surgery. It also occurs secondary to liver metastases or bowel or venous obstruction.

**I- Intensity of the pain**

The ability to quantify the intensity of pain is essential when caring for persons with acute and chronic pain. Though no scale is suitable for all patients, Many physicians use a 0 to 10 scale for clinical assessment of pain intensity in adult patients. Standardization may promote collaboration.
and consistency among caregivers in multiple settings—inpatient, outpatient, and home care environments. Using a pain scale with 0 being no pain and 10 being the worst pain imaginable, a numerical value can be assigned to the patient's perceived intensity of pain. Asking patients to rate their present pain, their pain after an intervention, and their pain over the past 24 hours will enable health care providers to see if the pain is worsening or improving. Also, inquiring about the pain level acceptable to the patient will help clinicians understand the patient's goal of therapy.

The Wong/Baker Faces Rating Scale is a visual representation of the numerical scale. Although the faces scale was developed for use in pediatric patients, it has also proven useful with elderly patients and patients with language barriers. Patients will be asked to rate their pain on a scale of zero - 10, where zero = no pain, 5 = moderate pain and 10 = the worst pain possible. Other patients, such as young children, those who do not speak English and those who are cognitively impaired may use the "faces" scale to describe their level of pain.

<table>
<thead>
<tr>
<th>Verbal Description Scale</th>
<th>0 No pain</th>
<th>1,2 Mild pain</th>
<th>3,4 Moderate pain</th>
<th>5,6 Moderate pain</th>
<th>7,8 Severe Pain</th>
<th>9,10 Worst Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wong-Baker Facial Grimace Scale</td>
<td>Alert, smiling</td>
<td>No humor, serious, flat</td>
<td>Furrowed brow, pursed lips, breath holding</td>
<td>Wrinkled nose, rapid breathing</td>
<td>Slow blink, open mouth</td>
<td>Eyes closed, moaning, crying</td>
</tr>
<tr>
<td>Activity Tolerance Scale</td>
<td>No pain</td>
<td>Pain can be ignored</td>
<td>Interferes with tasks</td>
<td>Interferes with concentration</td>
<td>Interferes with basic needs</td>
<td>Bed rest required</td>
</tr>
</tbody>
</table>
**L- Location of the pain**

Most patients have two or more sites of pain. Therefore, it is important to ask patients, “Where is your pain?” or “Do you have pain in more than one area?” Having the patient point to the painful area can be more specific and help to determine interventions.

Localization is not always accurate in defining the problematic area. Some pain sensations may be diffuse or referred. Referred pain, usually happening in visceral disease, occurs when sensory fibers from the viscera enter the same segment of the spinal cord as somatic nerves i.e. those from superficial tissues. The sensory nerve from the viscus stimulates the closely associated nerve in the spinal cord and the pain perceived at the sensorial area of the brain is perceived as originating in the area supplied by the somatic nerve. An example is the left shoulder pain associated with heart damage.\(^{194}\)

**D- Duration of the pain**

The duration of a patient’s complaints of pain is often clinically significant. For example, fleeting or short duration of pain is rarely serious. Conversely, pain over a long duration of time can negatively impact a patient’s functional status thereby perpetuating the pain.

**A- Aggravating/Alleviating Factors**

Asking the patient to describe the factors that aggravate or alleviate the pain will help plan interventions. A typical question might be, “What makes the pain better or worse?” Other factors (movement, physical therapy, activity, intravenous sticks or blood draws, mental anguish, depression, sadness, bad news) may intensify the pain.

Other things to include in the pain assessment are the presence of contributing symptoms or side effects associated with pain and its treatment. These include nausea, vomiting, constipation, sleepiness, confusion, urinary retention, and weakness. Inquiring about the presence or absence of changes in appetite, activity, relationships, sexual functioning, irritability, sleep, anxiety, anger, and ability to concentrate will help the clinician understand the pain experience in each individual.

**Qualifying Pain Utilizing the PQRST Method**

P = provocation / palliation : What were you doing when the pain started? What caused it? What makes it better? worse? What seems to trigger it? Does it seem to be getting better, or getting worse, or does it remain the same? What relieves it? What makes the problem worse?

R = region / radiation: Where is the pain located? Does the pain radiate? Where does it radiate?

S = severity scale: How severe is the pain on a scale of 0 - 10, zero being no pain at all and 10 being the worst pain ever? Does it interfere with activities? How bad is it when it's at its worst? Does it force you to sit down, lie down? How long does an episode last?

T = timing: When did the pain start? How long did it last? How often does it occur? Is it sudden or gradual? What were you doing when you first experienced or noticed it? How often do you experience it: hourly? daily? weekly? monthly? When do you usually experience it: daytime? night? in the early morning? Are you ever awakened by it? Does it lead to anything else? Is it accompanied by other signs and symptoms? Does it ever occur before, during or after meals? Does it occur seasonally?

Diagnostic Testing Procedures

There is no way to tell how much pain a person has. No test can measure the intensity of pain, no imaging device can show pain, and no instrument can locate pain precisely. Sometimes, as in the case of headaches, physicians find that the best aid to diagnosis is the patient's own description of the type, duration, and location of pain. Defining pain as sharp or dull, constant or intermittent, burning or aching may give the best clues to the cause of pain. These descriptions are part of what is called the pain history, taken by the physician during the preliminary examination of a patient with pain. However, as Doctors of Chiropractic we do have a number of diagnostic testing procedures at our disposal to include:

- Plain film radiographs
- Full spine, plain film radiographs
- Plain film radiographs: Stress films
- Videofluoroscopy / Cineradiography
- Plain film radiographs with contrast: myelography and discography
- Tomography
- Computerized tomography
- Magnetic resonance imaging
- Ultrasound/sonograms/echography
- Radionuclide scanning: bone scan
- Thermography
- Electrocardiogram
- Angiography
- Current Perception Threshold (CPT)
- Electroencephalography (EEG)
- Surface Electromyography (SEMG)
- Electromyography (EMG)
- Nerve Conduction Velocity (NCV)
- Somatosensory Evoked Potentials (SSEP)
• Brain Stem Auditory Evoked Potential
• Visual Evoked Potential

Overview of Frequently Utilized Diagnostic Procedures

Plain Film Radiographs

• Provide information regarding skeletal integrity, misalignment, components of vertebral subluxation and the dynamics of spinal motion.
• Conventional plain film radiography is the most widely utilized skeletal imaging method.
• X-ray image contrast is derived from the five radiographic densities - air, fat, water, bone, and metal.
• There is an absolute necessity of having a minimum of two views perpendicular to each other. These should be supplemented with additional projections, such as oblique, angulated, or stress studies, as clinically indicated.
• A routine cervical series of X-rays involves three views: A-P lower cervical, A-P open mouth cervical, and lateral cervical. A Davis series also includes obliques, flexion, and extension views and is considered the gold standard in cases of cervical whiplash.
• A routine thoracic series of X-rays involves two views: A-P thoracic and lateral thoracic.
• A routine lumbar or lumbosacral series of X-rays involves two to three views: A-P lumbar and lateral lumbar. A lateral L5-S1 spot shot is often elected.

Applications:
• Useful in the detection of skeletal abnormalities such as neoplasms, traumatic injury, infection, and anomalies.
• Provides information as to what additional imaging modality may be indicated or contraindicated.
• Allows for comparison of changes of a disease process over time.

Advantages:
• Inexpensive and accessible.
• Provides excellent anatomical detail.

Disadvantages:
• Exposure of radiosensitive tissues such as the thyroid gland and gonads to ionizing radiation.
• Diagnostic sensitivity is limited.
• 30% to 50% loss of bone density and a lesion size of 1 to 5 cm is often necessary before a lesion is visible on X-ray. A patient may have extensive histologic disease and have a normal appearing radiograph. The time interval from when a disease process manifests clinically until it becomes visible radiographically is the radiographic latent period. This period can be quite long.
• Soft tissue depiction is limited.
Magnetic Resonance Imaging

Magnetic resonance imaging provides clear images of disc deterioration, pathologies of the spinal cord, spinal stenosis, herniated discs, spinal tumors, and abnormalities in nerves and ligaments. Contrast dye may be injected to highlight problematic areas.

Applications:
- Widely utilized for the differential diagnosis of both pathological and acute lesions.
- In recent times, MRI has replaced CT as the gold standard in the evaluation of cervical, thoracic, and lumbar disc disease.
- No other imaging modality defines the anatomical relationship of the intervertebral disc and the content of the spinal canal as accurately as MRI.
- Unparalleled evaluation of spinal cord injury has been obtained with MRI.
- Only imaging modality which can visualize ligamentous tears, bone contusions, spinal hematomas, and spinal contusions.
- Used to detect vertebral fractures; however, CT is considered better at identifying neural arch fracture and the presence of bone fragments within the spinal canal.
- Spinal cord or nerve root injury because of its superior spatial and contrast resolution.
- Evaluation of bone hemorrhage and bone marrow edema.
- Infection of soft tissue and bone.
- MRI provides the most sensitive imaging modality in the detection of osseous metastatic disease in the spine. The initial MRI findings of vertebral metastasis usually affect the marrow adjacent to the posterior cortical margin. The remaining portion of the vertebral body, pedicles, and the rest of the neural arch may be involved secondarily as the neoplastic process spreads throughout the intravertebral venous system. The replacement of normal fatty marrow within the vertebral body is often seen with MRI in the absence of gross morphological alterations.
- Definitive diagnosis of multiple sclerosis. MRI is the first and only imaging modality that allows direct visualization of the central nervous system plaques that characterize MS. Recently, the use of contrast has made it possible to distinguish between acute inflammation and fresh plaques in areas of chronic involvement.
- Soft tissue injury to virtually every joint of the body.

Computerized Tomography

Computerized tomography is an x-ray that utilizes computer technology and can be enhanced with contrast dye. It is used to show abnormalities in bones and soft tissue. CT scan can be used for patients who are unable to tolerate MRI.

Applications:
- Most commonly used in conjunction with plain film X-ray findings.
- Traumatic lesions of the musculoskeletal system, particularly of complex anatomical structures, flat bones, vertebrae, pelvis, ankle, wrist, and shoulder.
The use of CT is indicated when radiographs are equivocal or when suspected clinical findings are not substantiated by the present plain film study.

In instances of comminuted fractures, CT provides information concerning the location of bony fragments.

CT is the imaging modality of choice for visualization of calcified lesions of periosteum or soft tissues.

Infection of discitis and osteomyelitis, are well visualized.

In the evaluation of soft tissue neoplasm, CT best evaluates the osseous characteristics and calcified regions of a neoplasm. Able to detect bony changes of neoplasm earlier than X-ray; however, nuclear medicine scans are far more superior concerning early detection.

Best suited for detailed assessment of bony cortex, bony expansion, periosteal reaction, or subtle fracture.

Used in the assessment of congenital malformations of neural arch and facet asymmetry.

Accurate assessment of the extent of degenerative joint disease, particularly in cases of spinal canal and lateral recess stenosis secondary to degenerative bony hypertrophy of endplates and facets and ligamentous hypertrophy of the posterior longitudinal ligament and ligamentum flavum.

Evaluation for disc herniation or injury in communities where MRI is not available or when a patient is not candidate for MRI evaluation.

MRI has replaced CT scanning as the imaging modality of choice for disc herniations in any region of the spine.

### Comparison of CT Scanning and MRI

<table>
<thead>
<tr>
<th></th>
<th>CT</th>
<th>MRI</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accurate for evaluation of bone cortex, bony expansion, perioseal reaction, fractures, and subtle bone fractures particularly of the neural arch.</td>
<td>Accurate for evaluation of soft tissue injury, spinal cord injury, trauma of bone marrow, and bone fractures.</td>
</tr>
<tr>
<td>2</td>
<td>Used to evaluate neoplasms of bone. Best demonstrates the osseous characteristics and calcified regions of soft tissue neoplastic processes.</td>
<td>Used to evaluate neoplasms of soft tissue, spinal cord, bone marrow, and bone. Provides early detection of vertebral metastatic disease.</td>
</tr>
<tr>
<td>3</td>
<td>Accurate in determining spinal canal and lateral recess stenosis as a result of degenerative hypertrophy of</td>
<td>The gold standard in the evaluation of intervertebral disc disease. No other imaging modality defines the anatomical</td>
</tr>
<tr>
<td></td>
<td>vertebral endplates and facets and congenitally short pedicles.</td>
<td>relationship of the intervertebral disc and the content of the spinal canal as accurately.</td>
</tr>
<tr>
<td>---</td>
<td>-------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>5.</td>
<td>Does not adequately visualize the spinal cord for assessment of pathology.</td>
<td>Visualizes plaques and demyelination of the central nervous system.</td>
</tr>
</tbody>
</table>

**Electrodiagnostic Tests**

**Electrodiagnostic procedures** include electromyography (EMG), nerve conduction studies, and evoked potential (EP) studies. Information from EMG can help physicians tell precisely which muscles or nerves are affected by weakness or pain. Thin needles are inserted in muscles and a physician can see or listen to electrical signals displayed on an EMG machine. With nerve conduction studies the doctor uses two sets of electrodes (similar to those used during an electrocardiogram) that are placed on the skin over the muscles. The first set gives the patient a mild shock that stimulates the nerve that runs to that muscle. The second set of electrodes is used to make a recording of the nerve's electrical signals, and from this information the doctor can determine if there is nerve damage.

**Myelography**

Myelography is used to examine the spinal canal and cord. Contrast dye is injected into the cerebrospinal fluid to outline the spinal cord and nerve roots, thus allowing abnormal disc conditions or bone spurs to be visualized with x-ray or CT scan. Spinal tap involves drawing a sample of cerebrospinal fluid and analyzing it for elevated pressure, infection, bleeding, or tumor.

**Bone Scan**

Bone scan locates problems (e.g., fracture, osteoporosis) in the vertebrae. A radioactive tracer is injected into the patient and after several hours, x-ray will reveal bone undergoing rapid changes where large amounts of tracer accumulate.
Analysis of Back Pain

Incidence and Prevalence
“In the United States, back pain is reported to occur at least once in 85% of adults below the age of 50. Nearly all of them will have at least one recurrence. It is the second most common illness-related reason given for a missed workday and the most common cause of disability. Work-related back injury is the number one occupational hazard.”

Risk Factors Include:

- **Aging** produces wear and tear on the spine that may result in conditions (e.g., disc degeneration, spinal stenosis) that produce neck and back pain.
- A **previous back injury** puts one at risk for another injury.
- Physically demanding **occupations** that require repetitive bending and lifting have a high incidence of back injury (e.g., construction worker, caregiver).
- **Sedentary lifestyle** (i.e., not exercising regularly or engaging in physical recreation).
- **Being overweight** can increase stress on the lower back.
- **Poor posture and** poor body mechanics when lifting and carrying heavy loads are risk factors.
- **Sports** that involve twisting the back, such as baseball and golf, can result in an acute back injury or worsen an existing back injury.
- **Joint and/or bone disease** (e.g., osteoporosis, arthritis) and **infectious disease** (e.g., spinal meningitis) can lead to degeneration, inflammation, and compression.

Causes of Back Pain include:

- **Vertebral subluxations.**
  - **Overuse or underuse of the back** is by far the most common cause of back pain that manifests as tightening or spasm of the muscles that connect to the spine. Inflammation and swelling often occur in the joints and ligaments, especially in the cervical and lumbar regions, as people age.
  - **A herniated disc** which results from a tearing of the annulus fibrosus of the disc and extrusion of the nucleus pulposus causing nerve root compression.
  - “Ninety percent of disc herniations occur in the lower two lumbar vertebrae.”
  - **Spinal stenosis**, narrowing of the spine, can cause spinal cord irritation and injury. Conditions that cause spinal stenosis include infection, tumors, trauma, herniated disc, arthritis, thickening
of ligaments, growth of bone spurs, and disc degeneration. Spinal stenosis most commonly occurs in older individuals as a result of vertebral degeneration.

- **Radiculopathy** occurs when something rubs or presses against a nerve, creating irritation or inflammation. Radiculopathy can result from a herniated disc, bone spur, tumor growing into the nerves, and vertebral fracture, and many other conditions. **Sciatica** is an example of an extremely painful radiculopathy that involves inflammation of the largest nerve in the body, the sciatic nerve. Pain is experienced along the large sciatic nerve, from the lower back down through the buttocks and along the back of the leg.

- A **spinal tumor** that originates in the spine (primary tumor) or spreads to the spine from another part of the body (metastatic tumor) can compress the spine or nerve roots and cause significant pain.

- An **infection** that develops in the vertebrae (e.g., vertebral osteomyelitis), the discs, the meninges (e.g., spinal meningitis), or the cerebrospinal fluid can compress the spinal cord and result in serious neurological deterioration, if it is not diagnosed and treated immediately.

- **Facet joint degeneration can cause substantial low back pain.** As facet joints degenerate, they may not align correctly, and the cartilage and fluid that lubricates the joints may deteriorate.

- **Bone and joint diseases** (e.g., osteoporosis, ankylosing spondylitis, osteoarthritis) can cause degeneration, inflammation, and spinal nerve compression.

## Multidisciplinary Approaches To Pain Management

### Medical Approach

**Medications**

- Acetaminophen and ibuprofen are most commonly recommended for pain relief.
- To relieve acute back pain, anti-inflammatory drugs (e.g., Celebrex), non-narcotic pain relievers (e.g., Tramadol), muscle relaxants (e.g., Flexeril), and narcotic pain relievers may be prescribed.
- An oral steroid (e.g., prednisone) is sometimes prescribed for acute episodes of low back pain. Patients are started on a high dose that is gradually reduced over 5 or 6 days. Serious side effects associated with steroid use include bone loss, impaired wound healing, and headache.
- Chronic back pain caused by nerve root damage is sometimes treated with tricyclic antidepressants, such as amitriptyline (e.g., Elavil) and nortriptyline (e.g., Pamelor), for numbness, burning, aching, throbbing, or stabbing pains that shoot down the limbs. Side effects include drowsiness, dry mouth, and constipation.
- Anticonvulsant drugs, such as gabapentin (Neurontin), may alleviate pain caused by nerve degeneration and persistent leg pain after surgery. Side effects include drowsiness, dizziness, fatigue, and impaired motor coordination.

**Injections**

- Steroid injections can significantly decrease inflammation and pain caused by spinal stenosis, disc herniation, and degenerative disc disease. A steroid is injected directly into the membrane
that surrounds the nerve roots (dura). Selective nerve root block (SNRB) uses a steroid with anesthetic.

**Surgery**
- Surgery may be indicated for progressive or severe neurological dysfunction—such as muscle weakness, spinal cord compression, or bowel, bladder, or sexual dysfunction—and for cases of pain that is not easily relieved. Also, implanted pumps deliver a constant rate of pain-relieving medication to the spinal area. Surgically implanted spinal cord stimulators modulate the pain response, so the patient experiences less pain.

**Physical Therapy Approach**
- Physical Therapy
  The goals of physical therapy are to decrease pain, increase function, restore normal movement, and prevent recurrences.

**Physical Therapy Modalities**

**Cryotherapy**
Is commonly used to alleviate the pain of acute musculoskeletal injuries.

**Effects of Cryotherapy**
- anesthesia (numbness)
- antispasmodic
- vasoconstriction reduces edema formation
- increased blood pressure, decreased pulse rate and respiration.

**Heat Modalities**

**Effects:**
- Analgesic, Antispasmodic, increases connective tissue elasticity.
- Vasodilator: Lowers blood pressure and increases blood and lymph flow which increases:
  - phagocyte, leukocyte production
  - edema formation (in acute phase/up to 72 hours)
  - Pulse, perspiration, respiration and metabolic rate all increase

**Indication:** Sub-acute and chronic musculoskeletal conditions; sprains, strains, muscle spasms, back aches, myositis, tendinitis, bursitis, arthritis.

**Contraindications include:** Acute injuries and/or musculoskeletal conditions, cardiovascular disease, active tuberculosis, encapsulated swellings, diabetes mellitus.
Electrotherapy

Melzack and Wall’s gate control theory of pain control suggests that nerve fibers carrying pain messages (C fibers) pass through the same segment of the spinal cord as those stimulated by electricity (known as A fibers). It has been shown that the transmission of impulses along C fibers is slower than along A fibers. Therefore, overloading A fibers with electrotherapy would block the “gate” so the pain transmitted through the C fibers could not reach the brain.

Low frequency electromagnetic energy (<1000 Hz) is used to produce electrical stimulating currents which are used in electrotherapy. Two basic types of electrical current are used: alternating current/A.C. and direct current/D.C.

I. A/C. comes in may forms, the two types most commonly used are:
   Sinusoidal (symmetrical)
   Faradic (asymmetrical)

A/C can be used to stimulate:
1. sensory nerves for pain modulation and/or
2. neuromuscular elements in innervated muscles to produce electrokinetic effects: muscle contraction, muscle fatigue/relaxation, stretching fibrotic tissue, increased blood and lymph flow, decongestion and, detoxification.

II. Direct current (unidirectional) comes in two basic forms: galvanic and pulsed D.C.
   Galvanic (waveless)
   Pulsed (interrupted, shaped)

Direct current produces a mixture of electrokinetic and electrochemical effects. Galvanic current is used primarily for its electrochemical effects and is the only form of current suitable for iontophoresis. Pulsed square wave D.C. can be used to stimulate innervated and denervated muscle to produce electrokinetic effects (and is useful in electrodiagnosis). Hi-volt D.C. has little electrochemical effects and is primarily used to stimulate sensory nerves for pain modulation and to stimulate neuromuscular elements of innervated muscle for electrokinetic effects.

TENS (Transcutaneous Electrical Nerve Stimulation)

A procedure where an electrical current is passed across the skin. Generally, the term is reserved for small portable electrical units that patient's wear to control pain. The portable unit is designed to provide sensory stimulation without motor stimulation. Afferent nerve fibers differ from efferent nerve fibers in length of refractory accommodation to stimuli, threshold of firing, and response to different wave forms. The wave forms of a TENS unit are interrupted or pulsed. Most units have a wave that alternates and is a variation of the faradic or square wave.
Electrode placement should be on the same dermatome as the patient's perception of pain, preferably over or proximal to the site of pain. In the presence of radiation, electrodes may be placed over the major nerve pathways.

**Application**

TENS is intended for symptomatic relief of a large number of painful syndromes. This would include the relief of chronic and intractable pain syndromes or cases where analgesic drugs would be contraindicated. Like all electrical stimulation, this procedure should be used with caution in undiagnosed pain syndromes where etiology has not been firmly established.

**Massage**

Massage therapy increases circulation to the affected area. There are several techniques and devices used in massage therapy.

**Exercise**

Exercise can correct current back problems, help prevent new ones, and relieve back pain, particularly after an injury. Proper exercise strengthens back muscles that support the spine and strengthens the abdomen, arms, and legs, reducing strain on the back. Exercise also strengthens bones and reduces the risk of falls and injuries.

**Chiropractic Approach**

Chiropractic management should be an integral part of care plans for most patients suffering from acute and chronic musculoskeletal pain syndromes. Chiropractic pain management strategies encompass a wide range of spinal manipulative treatment procedures as well as the use of physiotherapy modalities. Relatively speaking, chiropractic treatment methodologies carry fewer adverse effects compared to drug therapy and hospitalization.

According to Steven G. Yeoman's, “a single chiropractic adjustment produces both sensory and motor effects as well as sympathetic nervous system effects.”

The sensory and motor effects of a chiropractic manipulation include:
- increased joint ROM in all 3 planes and reduction of pain.
- increased skin pain tolerance level.
- increased paraspinal muscle pressure pain tolerance.
- reduced muscle electrical activity and tension.

Sympathetic nervous system effects of a chiropractic manipulation include:
- increased blood flow and distal skin temperature.
- blood pressure reduction.

Blood chemistry changes after a chiropractic manipulation include:
- increased secretion of melatonin.
Non-Medication Treatments for Pain

The following methods have been shown to help enhance the effect of pain medication.

**Acupuncture**
An acupuncturist inserts hair-thin needles under the skin, which remain in place for 15 to 30 minutes. The needles cause little or no pain. Pain relief may result from the release of endorphins, the body's intrinsic painkillers.

**Deep Breathing** - A common reaction to pain is to tense the muscles. Slow, deep breathing can be used to relax muscles and relieve pain.

**Relaxation** - Relaxation videos may be borrowed from the Education Department (ext. 6195) during your stay.

**Progressive Muscle Relaxation** - Alternatively tensing and relaxing muscle groups.

**Imagery** - Imagining peaceful places. See, touch, feel, smell and taste everything in your imagination.

**Distraction** - Any activity that takes your mind off of pain. Examples include reading a book, listening to music, watching television or doing crafts.

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