**HC1-b&d: Health Care Philosophies**

**Holistic Perspective**

|  |  |  |  |
| --- | --- | --- | --- |
| **Health Perspective** | **Explanation** | **Advantages** | **Disadvantages** |
| **Example: Complementary Medicine** | Combining traditional and western medicine | Combining medical approaches to treat patients | Some methods unproven, and are being forgotten |
| **Traditional Medicine** |  |  |  |
| **Alternative Medicine** |  |  |  |
| **Western Medicine** |  |  |  |
| **Chiropractic** |  |  |  |
| **Naturopathy** |  |  |  |
| **Homeopathy** |  |  |  |
| **Herbology** |  |  |  |
| **Dietary supplements** |  |  |  |
| **Acupuncture** |  |  |  |
| **Massage Therapy** |  |  |  |
| **Aromatherapy** |  |  |  |
| **Reflexology** |  |  |  |
| **Iridology** |  |  |  |
| **Tai Chi** |  |  |  |
| **Yoga** |  |  |  |
| **Placebo Studies** |  |  |  |
| **Home Birthing** |  |  |  |
| **Blood Transfusions** |  |  |  |
| **Organ Donations** |  |  |  |
| **Autopsies** |  |  |  |
| **Refusal of Treatment** |  |  |  |
| **Euthanasia** |  |  |  |

**HEALTH PERSPECTIVES:**

**Complementary medicine** is alternative medicine used together with conventional medical treatment, in a belief not confirmed using the scientific method that it "complements" (improves the efficacy of) the treatment. CAM is the abbreviation for complementary and alternative medicine. Integrative medicine (or integrative health) is the combination of the practices and methods of alternative medicine with conventional medicine.

**Traditional medicine** (also known as **indigenous** medicine) comprises knowledge systems that developed over generations within various societies before the era of modern medicine. The World Health Organization (WHO) defines traditional medicine as:

"Traditional medicine is the sum total of the knowledge, skills, and practices based on the theories, beliefs, and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness."

In some Asian and African countries, up to 80% of the population relies on traditional medicine for their primary health care needs. When adopted outside of its traditional culture, traditional medicine is often called complementary and alternative medicine.

The WHO also notes, though, that "inappropriate use of traditional medicines or practices can have negative or dangerous effects" and that "further research is needed to ascertain the efficacy and safety" of several of the practices and medicinal plants used by traditional medicine systems. Core disciplines which study traditional medicine include herbalism, ethno medicine, ethno botany, and medical anthropology.

Traditional medicine may include formalized aspects of folk medicine, i.e. longstanding remedies passed on and practiced by lay people. Practices known as traditional medicines include Ayurveda, Siddha medicine, Unani, ancient Iranian medicine, Irani, Islamic medicine, traditional Vietnamese medicine, traditional Chinese medicine, traditional Korean medicine, acupuncture, Muti, Ifá, traditional African medicine, and many other forms of healing practices.

**Alternative medicine** is any practice that is put forward as having the healing effects of medicine, but does not originate from evidence gathered using the scientific method, is not part of biomedicine or is contradicted by scientific evidence or established science. It consists of a wide range of health care practices, products and therapies, ranging from being biologically plausible but not well tested, to being directly contradicted by evidence and science, or even harmful or toxic. Examples include new and traditional medicine practices such as homeopathy, naturopathy, chiropractic, energy medicine, various forms of acupuncture, traditional Chinese medicine, Ayurvedic medicine, and Christian faith healing. The treatments are those that are not part of the science-based healthcare system, and are not clearly backed by scientific evidence.

Alternative medical diagnoses and treatments are not included as science-based treatments that are taught in medical schools, and are not used in medical practice where treatments are based on what is established using the scientific method. Regulation and licensing of alternative medicine and health care providers varies from country to country, and state to state.

**"Western medicine"** is a term sometimes used to describe evidence-based medicine, which, for various historical reasons, emerged from "Western" civilization (i.e. countries originally populated by or settled by Europeans), though it is now practiced throughout the world. It involves the use of pharmacologically active agents or physical interventions to treat or suppress symptoms or pathophysiologic processes of diseases or conditions. Additionally the epistemological virtues of particular aspects of clinical trial methodology have been examined, mostly notably the special place that is given to randomization, the notion of a blind experiment and the use of a placebo control.

Limitations of western medicine include dealing with: fiber myalgia, chronic pain, lower back pain, cancer, who gets an organ transplant, long waiting lists, creating superbugs, less strengthening of natural immunity, and potential awful side effects.

**Chiropractic** is a form of alternative medicine that emphasizes diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system, especially the spine, under the belief that these disorders affect general health via the nervous system. Many chiropractors reject being characterized as complementary and alternative medicine (CAM). It is a healthcare profession, and although chiropractors have many similarities to primary care providers, they are more similar to a medical specialty like dentistry or podiatry. The main chiropractic treatment technique involves manual therapy, especially manipulation of the spine, other joints, and soft tissues; treatment may also include exercises and health and lifestyle counseling. Traditional chiropractic assumes that a vertebral subluxation or spinal joint dysfunction interferes with the body's function and its innate intelligence. A large number of chiropractors want to separate themselves from the traditional vitalistic concept of innate intelligence.

Many studies of treatments used by chiropractors have been conducted, with conflicting results. Systematic reviews of this research have not found evidence that chiropractic manipulation is effective, with the possible exception for the treatment of back pain. A critical evaluation found that collectively, spinal manipulation was ineffective for any condition. A Cochrane review found very low to moderate evidence that spinal manipulation therapy was no more effective than inert interventions, sham SMT or as an adjunct therapy for acute low back pain. Spinal manipulation may be cost-effective for sub-acute or chronic low back pain but the results for acute low back pain were insufficient. The efficacy and cost-effectiveness of maintenance chiropractic care are unknown. The evidence suggests that spinal manipulation therapy is safe but the rate of adverse events is unknown as there is under-reporting. It is frequently associated with mild to moderate adverse effects, with serious or fatal complications in rare cases. There is controversy surrounding the level of risk of stroke from cervical manipulation. It has been suggested that the relationship is causative, but this is disputed by many chiropractors, who believe the association between chiropractic therapy and vertebrobasilar artery stroke is unproven.

Chiropractic is well established in the U.S., Canada and Australia. It overlaps with other manual-therapy professions, including massage therapy, osteopathy, and physical therapy. Back and neck pain are the specialties of chiropractic but many chiropractors treat ailments other than musculoskeletal issues. Most who seek chiropractic care do so for low back pain.

D.D. Palmer founded chiropractic in the 1890s, and his son B.J. Palmer helped to expand it in the early 20th century. It has two main groups: "straights", now the minority, emphasize vitalism, innate intelligence and spinal adjustments, and consider vertebral subluxations to be the cause of all disease; "mixers", the majority, are more open to mainstream views and conventional medical techniques, such as exercise, massage, and ice therapy. Throughout its history, chiropractic has been controversial. For most of its existence it has been at odds with mainstream medicine, sustained by pseudoscientific ideas such as subluxation and innate intelligence that are not based on solid science. Despite the general consensus of public health professionals regarding the benefits of vaccination, among chiropractors there are significant disagreements over the subject, which has led to negative impacts on both public vaccination and mainstream acceptance of chiropractic. The American Medical Association called chiropractic an "unscientific cult" in 1966 and boycotted it until losing an antitrust case in 1987. Chiropractic has had a strong political base and sustained demand for services; in recent decades, it has gained more legitimacy and greater acceptance among medical physicians and health plans in the U.S., and evidence-based medicine has been used to review research studies and generate practice guidelines. The practice remains at a crossroads between science and ideological dogma.

**Herbalism ("herbology" or "herbal medicine")** is use of plants for medicinal purposes, and the study of such use. Plants have been the basis for medical treatments through much of human history, and such traditional medicine is still widely practiced today. Modern medicine recognizes herbalism as a form of alternative medicine, as the practice of herbalism is not strictly based on evidence gathered using the scientific method. Modern medicine, does, however, make use of many plant-derived compounds as the basis for evidence-tested pharmaceutical drugs, and phytotherapy works to apply modern standards of effectiveness testing to herbs and medicines that are derived from natural sources. The scope of herbal medicine is sometimes extended to include fungal and bee products, as well as minerals, shells and certain animal parts. The World Health Organization (WHO) estimates that 80 percent of the population of Asian and African countries presently use herbal medicine for some aspect of primary health care. Pharmaceuticals are prohibitively expensive for most of the world's population, half of which lives on less than $2 U.S. per day.[8] In comparison, herbal medicines can be grown from seed or gathered from nature for little or no cost.

Many of the pharmaceuticals currently available to physicians have a long history of use as herbal remedies, including opium, aspirin, digitalis, and quinine. According to the World Health Organization, approximately 25% of modern drugs used in the United States have been derived from plants. At least 7,000 medical compounds in the modern pharmacopoeia are derived from plants. Among the 120 active compounds currently isolated from the higher plants and widely used in modern medicine today, 80 percent show a positive correlation between their modern therapeutic use and the traditional use of the plants from which they are derived. In a 2010 survey of the most common 1000 plant-derived compounds, only 156 had clinical trials published. Preclinical studies (tissue-culture and animal studies) were reported for about one-half of the plant products, while 12% of the plants, although available in the Western market, had "no substantial studies" of their properties. Strong evidence was found that 5 were toxic or allergenic, so that their use ought to be discouraged or forbidden. Nine plants had considerable evidence of therapeutic effect. The U.S. National Center for Complementary and Alternative Medicine of the National Institutes of Health funds clinical trials of the effectiveness of herbal medicines and provides “fact sheets” summarizing the effectiveness and side effects of many plant-derived preparations.

**Naturopathy, or naturopathic medicine**, is a form of alternative medicine based on a belief in vitalism, which posits that a special energy called "vital energy" or "vital force" guides bodily processes such as metabolism, reproduction, growth, and adaptation. Naturopathy favors a holistic approach with non-invasive treatment and generally avoids the use of surgery and drugs. Practitioners of naturopathy often prefer methods of treatment that are not compatible with evidence-based medicine, and in doing so, reject the tenets of biomedicine and modern science.

The term "naturopathy" is derived from Latin and Greek, and literally translates as "nature disease". Modern naturopathy grew out of the Natural Cure movement of Europe. The term was coined in 1895 by John Scheel and popularized by Benedict Lust, the "father of U.S. naturopathy". Beginning in the 1970s, there was a revival of interest in the United States and Canada, in conjunction with the holistic health movement. Today, naturopathy is primarily practiced in the United States and Canada. Naturopathy comprises many different treatment modalities, including nutritional and herbal medicine, lifestyle advice, counseling, flower essence, homeopathy and remedial massage.

Much of the ideology and methodological underpinnings of naturopathy are in conflict with the paradigm of evidence-based medicine. According to the American Cancer Society, "scientific evidence does not support claims that naturopathic medicine can cure cancer or any other disease, since virtually no studies on naturopathy as a whole have been published."

Naturopaths aim to prevent illness through stress reduction and changes to diet and lifestyle, often rejecting the methods of evidence based medicine. Naturopaths do not generally recommend vaccines and antibiotics, based in part on the early views that shaped the profession, and they may provide alternative remedies even in cases where evidence-based medicine has been shown effective.

**Homeopathy** is a system of alternative medicine created in 1796 by Samuel Hahnemann based on his doctrine of “like cures like”: a substance that prevents the symptoms of a disease in healthy people will cure similar symptoms in sick people. Homeopathy is considered a pseudoscience, and its remedies have been found to be no more effective than placebos.

Diseases have spiritual, as well as physical causes. Hahnemann believed the underlying causes of disease were phenomena that he termed miasms, and that homeopathic remedies addressed these. Medicines may cure symptoms, but the underlying imputed miasm still remains, and deep-seated ailments can be corrected only by removing the deeper disturbance of the vital force. The remedies are prepared by repeatedly diluting a chosen substance in alcohol or distilled water, Claims: dilution increases potency.

The postulated mechanisms of action of homeopathic remedies are both scientifically implausible and not physically possible. Although some clinical trials produce positive results, systematic reviews reveal that this is because of chance, flawed research methods, and reporting bias. Continued homeopathic practice, despite the evidence that it does not work, has been criticized as unethical because it increases the suffering of patients by discouraging the use of real medicine, with the World Health Organization warning against using homeopathy to try to treat severe diseases such as HIV and malaria. The continued practice, despite a lack of evidence of efficacy, has led to homeopathy being characterized within the scientific and medical communities as nonsense, quackery, or a sham.

The British House of Commons Science and Technology Committee has stated: "In our view, the systematic reviews and meta-analyses conclusively demonstrate that homeopathic products perform no better than placebos.

Acupuncture is the stimulation of specific acupoints along the skin of the body involving various methods such as penetration by thin needles or the application of heat, pressure, or laser light. Traditional acupuncture involves needle insertion, moxibustion, and cupping therapy. It is a form of complementary and alternative medicine and a key component of traditional Chinese medicine (TCM). According to TCM, stimulating specific acupuncture points corrects imbalances in the flow of qi through channels known as meridians. Acupuncture aims to treat a range of conditions, though is most commonly used for pain relief.

Acupuncture has been the subject of active scientific research, both in regard to its basis and therapeutic effectiveness, since the late 20th century. Any evidence on the effectiveness of acupuncture is "variable and inconsistent" for all conditions. An overview of high-quality Cochrane reviews suggested that acupuncture may alleviate some but not all kinds of pain, while a systematic review of systematic reviews found little evidence that acupuncture is an effective treatment for reducing pain. Although minimally invasive, the puncturing of the skin with acupuncture needles poses problems when designing trials that adequately control for placebo effects. Some of the research results suggest acupuncture can alleviate pain but others consistently suggest that acupuncture's effects are mainly due to placebo. A systematic review of systematic reviews highlighted recent high-quality randomized controlled trials which found that for reducing pain, real acupuncture was no better than sham acupuncture. It remains unclear whether acupuncture reduces pain independent of a psychological impact of the needling ritual.

Acupuncture is generally safe when done using clean technique and single use needles. When properly delivered, it has a low rate of mostly minor adverse effects. Between 2000 and 2009, at least ninety-five cases of serious adverse events, including five deaths, were reported to have resulted from acupuncture. Many of the serious events were reported from developed countries and many were due to malpractice. Since serious adverse events continue to be reported, it is recommended that acupuncturists be trained sufficiently to reduce the risk. A meta-analysis found that acupuncture for chronic low back pain was cost-effective as a complement to standard care, but not as a substitute for standard care except in cases where comorbid depression presented, while a systematic review found insufficient evidence for the cost-effectiveness of acupuncture in the treatment of chronic low back pain.

Scientific investigation has not found any histological or physiological evidence for traditional Chinese concepts such as qi, meridians, and acupuncture points, and some contemporary practitioners use acupuncture without following the traditional Chinese approach and have abandoned the concepts of qi and meridians as pseudoscientific. TCM is largely pseudoscience, with no valid mechanism of action for the majority of its treatments. Acupuncture is currently used widely throughout China and many other countries, including the United States.

**MassageTherapy** is the manipulation of superficial and deeper layers of muscle and connective tissue using various techniques, to enhance function, aid in the healing process, decrease muscle reflex activity, inhibit motor-neuron excitability, promote relaxation and well-being. Massage involves working and acting on the body with pressure – structured, unstructured, stationary, or moving – tension, motion, or vibration, done manually or with mechanical aids. Target tissues may include muscles, tendons, ligaments, fascia, skin, joints, or other connective tissue, as well as lymphatic vessels, or organs of the gastrointestinal system. Massage can be applied with the hands, fingers, elbows, knees, forearm, or feet.

The main professionals that provide therapeutic massage are massage therapists, athletic trainers, physical therapists and practitioners of many traditional Chinese and other eastern medicines. Massage practitioners work in a variety of medical settings and may travel to private residences or businesses. Contraindications to massage include deep vein thrombosis, bleeding disorders or taking blood thinners such as Warfarin, damaged blood vessels, weakened bones from cancer, osteoporosis, or fractures, bruising, and fever. Anyone suffering from these conditions should not use massage therapy.

**Aromatherapy** is a form of alternative medicine that uses volatile plant materials, known as essential oils, and other aromatic compounds for the purpose of altering a person's mind, mood, cognitive function or health. Other stated uses include pain and anxiety reduction, enhancement of energy and short-term memory, relaxation, hair loss prevention, and reduction of eczema-induced itching.

Two basic mechanisms are offered to explain the purported effects. One is the influence of aroma on the brain, especially the limbic system through the olfactory system. The other is the direct pharmacological effects of the essential oils. While precise knowledge of the synergy between the body and aromatic oils is often claimed by aromatherapists, the efficacy of aromatherapy remains unproven. However, some preliminary clinical studies of aromatherapy in combination with other techniques show positive effects. Aromatherapy does not cure conditions, but it is suggested that it helps the body to find a natural way to cure itself and improve immune response.

Some essential oils such as tea tree have demonstrated anti-microbial effects, but there is still a lack of clinical evidence demonstrating efficacy against bacterial, fungal, or viral infections. Evidence for the efficacy of aromatherapy in treating medical conditions remains poor, with a particular lack of studies employing rigorous methodology, but some evidence exists that essential oils may have great therapeutic potential.

**Reflexology, or zone therapy**, is an alternative medicine involving the physical act of applying pressure to the feet, hands, or ears with specific thumb, finger, and hand techniques without the use of oil or lotion. It is based on what reflexologists claim to be a system of zones and reflex areas that they say reflect an image of the body on the feet and hands, with the premise that such work affects a physical change to the body. The Reflexology Association of Canada defines reflexology as:

"A natural healing art based on the principle that there are reflexes in the feet, hands and ears and their referral areas within zone related areas, which correspond to every part, gland and organ of the body. Through application of pressure on these reflexes without the use of tools, crèmes or lotions, the feet being the primary area of application, reflexology relieves tension, improves circulation and helps promote the natural function of the related areas of the body."

Reflexologists posit that the blockage of an energy field, invisible life force, or Qi, can prevent healing. Another tenet of reflexology is the belief that practitioners can relieve stress and pain in other parts of the body through the manipulation of the feet. One claimed explanation is that the pressure received in the feet may send signals that 'balance' the nervous system or release chemicals such as endorphins that reduce stress and pain. These hypotheses are rejected by the general medical community, who cite a lack of scientific evidence and the well-tested germ theory of disease.

Reflexology's claim to manipulate energy (Qi) has been highly controversial, as there is no scientific evidence for the existence of life energy (Qi), 'energy balance', 'crystalline structures,' or 'pathways' in the body

A 2009 systematic review of randomized controlled trials concludes that

"The best evidence available to date does not demonstrate convincingly that reflexology is an effective treatment for any medical condition."

There is no consensus among reflexologists on how reflexology is supposed to work; a unifying theme is the idea that areas on the foot correspond to areas of the body, and that by manipulating these one can improve health through one's qi. Reflexologists divide the body into ten equal vertical zones, five on the right and five on the left. Concerns have been raised by medical professionals that treating potentially serious illnesses with reflexology, which has no proven efficacy, could delay the seeking of appropriate medical treatment.

**Iridology (also known as iridodiagnosis or iridiagnosis**) is an alternative medicine technique whose proponents claim that patterns, colors, and other characteristics of the iris can be examined to determine information about a patient's systemic health. Practitioners match their observations to iris charts, which divide the iris into zones that correspond to specific parts of the human body. Iridologists see the eyes as "windows" into the body's state of health.

Iridologists believe they can use the charts to distinguish between healthy systems and organs in the body and those that are overactive, inflamed, or distressed. Iridologists believe this information demonstrates a patient's susceptibility towards certain illnesses, reflects past medical problems, or predicts later health problems.

As opposed to evidence-based medicine, Iridology is not supported by quality research studies and is widely considered pseudoscience. Iris texture is a phenotypical feature which develops during gestation and remains without significant change after birth. The stability of iris structures is the foundation of the biometric technology which uses iris recognition for identification purposes.

In 1979, Bernard Jensen, a leading American iridologist and two other iridology proponents failed to establish the basis of their practice when they examined photographs of the eyes of 143 patients in an attempt to determine which ones had kidney impairments. Of the patients, forty-eight had been diagnosed with kidney disease, and the rest had normal kidney function. Based on their analysis of the patient's irises, the three iridologists could not detect which patients had kidney disease and which did not.

**T'ai chi or tai chi** in English usage, is an internal Chinese martial art practised for both its defense training and its health benefits. It is also typically practised for a variety of other personal reasons: its hard and soft martial art technique, demonstration competitions, and longevity. T'ai chi's health training and meditation techniques concentrate on relieving the physical effects of stress on the body and mind.

T'ai chi has been reported as being useful in treating a number of ailments, and is supported by a number of associations, including the National Parkinson Foundation and Diabetes Australia. However, medical evidence of effectiveness was lacking and in recent years research has been undertaken to address this.

A comprehensive overview of all the existing systematic reviews of t'ai chi ch'uan's health effects, found that as of 2011, "the evidence is conclusively or tentatively positive for fall prevention, general healthcare in older people, improving balance and enhancing psychological health"; the overview's authors thus recommended t'ai chi ch'uan to older people for its various physical and psychological benefits. There was no conclusive evidence of benefit for any of the other conditions researched, including Parkinson's disease, diabetes, cancer and arthritis.

Yoga as exercise or alternative medicine is a modern phenomenon which has been influenced by the ancient Indian practice of hatha yoga. It involves holding stretches as a kind of low-impact physical exercise, and is often used for therapeutic purposes. Yoga in this sense often occurs in a class and may involve meditation, imagery, breath work and music.

Both the meditative and the exercise components of hatha yoga have been researched for both specific and non-specific health benefits. Hatha yoga has been studied as an intervention for many conditions, including back pain, stress, and depression. In general, it can help improve quality of life, but does not treat disease.

A survey released in December 2008 by the US National Center for Complementary and Alternative Medicine found that hatha yoga was the sixth most commonly used alternative therapy in the United States during 2007, with 6.1 percent of the population participating.

Yoga is a core component of the Mindfulness-based stress reduction (MBSR) program. Drawing from recent research on the mental and physical benefits of practicing yoga, positive psychologists have begun to look deeper into the possibilities of utilizing yoga to improve life for people even in the absence of disease.

A **dietary supplement** is intended to provide nutrients that may otherwise not be consumed in sufficient quantities.

Supplements as generally understood include vitamins, minerals, fiber, fatty acids, or amino acids, among other substances. U.S. authorities define dietary supplements as foods, while elsewhere they may be classified as drugs or other products.

There are more than 50,000 dietary supplements available. More than half of the U.S. adult population (53% - 55%) consumes dietary supplements with most common ones being multivitamins.

These products are not intended to prevent or treat any disease and in some circumstances are dangerous, according to the U.S. National Institutes of Health. For those who fail to consume a balanced diet, the agency says that certain supplements "may have value."

Most supplements should be avoided, and usually people should not eat micronutrients except people with clearly shown deficiency because many are a waste of money. Some vitamins are fat soluble so they are not absorbed unless eaten with lipids. Most excess vitamins are eliminated by the body, making expensive urine. People should first consult a doctor before taking supplements. An exception is vitamin D, which is recommended in Nordic countries due to weak sunlight.

**Placebo-controlled studies** are a way of testing a medical therapy in which, in addition to a group of subjects that receives the treatment to be evaluated, a separate control group receives a sham "placebo" treatment which is specifically designed to have no real effect. Placebos are most commonly used in blinded trials, where subjects do not know whether they are receiving real or placebo treatment. Often, there is also a further "natural history" group that does not receive any treatment at all.

The purpose of the placebo group is to account for the placebo effect, that is, effects from treatment that do not depend on the treatment itself. Such factors include knowing one is receiving a treatment, attention from health care professionals, and the expectations of a treatment's effectiveness by those running the research study. Without a placebo group to compare against, it is not possible to know whether the treatment itself had any effect.

Patients frequently show improvement even when given a sham or "fake" treatment. Such intentionally inert placebo treatments can take many forms, such as a pill containing only sugar, a surgery where nothing efficacious is actually done (just an incision and sometimes some minor touching or handling of the underlying structures), or a medical device (such as an ultrasound machine) that is not actually turned on. Also, due to the body's natural healing ability and statistical effects such as regression to the mean, many patients will get better even when given no treatment at all. Thus, the relevant question when assessing a treatment is not "does the treatment work?" but "does the treatment work better than a placebo treatment or no treatment at all?" As one early clinical trial researcher wrote, "the first object of a therapeutic trial is to discover whether the patients who receive the treatment under investigation are cured more rapidly, more completely or more frequently, than they would have been without it." More broadly, the aim of a clinical trial is to determine what treatments, delivered in what circumstances, to which patients, in what conditions, are the most effective.

Therefore, the use of placebos is a standard control component of most clinical trials, which attempt to make some sort of quantitative assessment of the efficacy of medicinal drugs or treatments. Such a test or clinical trial is called a placebo-controlled study, and its control is of the negative type. A study, whose control is a previously tested treatment, rather than no treatment, is called a positive-control study, because its control is of the positive type.

Government regulatory agencies approve new drugs only after tests establish not only that patients respond to them, but also that their effect is greater than that of a placebo (by way of affecting more patients, by affecting responders more strongly, or both). As a result, "placebo-controlled studies often are designed in such a way that disadvantages the placebo condition"

**Home birthing** in developed countries is attended or an unattended childbirth in a non-clinical setting, typically using natural childbirth methods, that takes place in a residence rather than in a hospital or a birth center, and usually attended by a midwife or lay attendant with experience in managing home births. Home birth was, until the advent of modern medicine, the de facto method of delivery. Since the beginning of the 20th century, home birth rates have drastically fallen in most developed countries, generally to less than 1% of all births. Infant and mother mortality rates have also dropped drastically over the same time period.

Women with access to high-quality medical care may choose home birth because they prefer the intimacy of a home and family-centered experience or desire to avoid a medically-centered experience typical of a hospital. Professionals attending home births can be obstetricians, certified or uncertified midwives, and doulas. In developing countries, where women may not be able to afford medical care or it may not be accessible to them, a home birth may be the only option available, and the woman may or may not be assisted by a professional attendant of any kind.

Multiple studies have been performed concerning the safety of home births for both the child and the mother; as standard practices, licensing requirements, and access to emergency hospital care differs between regions it can be difficult to compare studies across national borders. A 2014 US survey of medical studies found that perinatal mortality rates were triple that of hospital births, and a US nation-wide study over 13 million births on a 3-year span (2007-2010) found that births at home were roughly 10 times as likely to be stillborn (14 times in first-born babies) and almost four times as likely to have neonatal seizures or serious neurological dysfunction when compared to babies born in hospitals, while a 2007 UK survey found that perinatal mortality rates were only slightly higher in that country than planned hospital births for low-risk pregnancies. Both baby's and mother's higher mortalities are associated with the inability to timely assist mothers with emergency procedures in case of complications during labour.

**Blood transfusion** is generally the process of receiving blood products into one's circulation intravenously. Transfusions are used for various medical conditions to replace lost components of the blood. Early transfusions used whole blood, but modern medical practice commonly uses only components of the blood, such as red blood cells, white blood cells, plasma, clotting factors, and platelets.

Units of packed red blood cells are typically only recommended when either a patient's hemoglobin level falls below 10 g/dL or hematocrit falls below 30%; recently, this 'trigger' level has been decreased to 7-8 g/dL, as a more restrictive strategy has been shown to have better patient outcomes. This is in part due to the increasing evidence that there are cases where patients have worse outcomes when transfused. One may consider transfusion for people with symptoms of cardiovascular disease such as chest pain or shortness of breath. Globally around 85 million units of red blood cells are transfused in a given year

Objections to blood transfusions may arise for personal, medical, or religious reasons. For example, Jehovah's Witnesses object to blood transfusion primarily on religious grounds—they believe that blood is sacred, as the Bible says "abstain from blood" (Acts 15:28,29). They have also highlighted complications associated with transfusion.

**Organ donation** is the donation of biological tissue or an organ of the human body, from a living or dead person to a living recipient in need of a transplantation. Transplantable organs and tissues are removed in a surgical procedure following a determination, based on the donor's medical and social history, of which are suitable for transplantation. While views of organ donation are positive there is a large gap between the numbers of registered donors compared to those awaiting organ donations on a global level.

Certain groups, like the Roma (gypsies), oppose organ donation on religious grounds, but most of the world's religions support donation as a charitable act of great benefit to the community.[40] Issues surrounding patient autonomy, living wills, and guardianship make it nearly impossible for involuntary organ donation to occur.

The primary issues surrounding the morality of organ donation are semantical in nature. The debate over the definitions of life, death, human, and body is ongoing. For example, whether or not a brain-dead patient ought to be kept artificially animate in order to preserve organs for procurement is an ongoing problem in clinical bioethics. In addition, some have argued that organ donation constitutes an act of self-harm, even when an organ is donated willingly.

Further, the use of cloning to produce organs with an identical genotype to the recipient has issues all its own. Cloning is still a controversial topic, especially considering the possibility for an entire person to be brought into being with the express purpose of being destroyed for organ procurement. While the benefit of such a cloned organ would be a zero-percent chance of transplant rejection, the ethical issues involved with creating and killing a clone may outweigh these benefits. However, it may be possible in the future to use cloned stem-cells to grow a new organ without creating a new human being.

A relatively new field of transplantation has reinvigorated the debate. Xenotransplantation, or the transfer of animal (usually pig) organs into human bodies, promises to eliminate many of the ethical issues, while creating many of its own. While xenotransplantation promises to increase the supply of organs considerably, the threat of organ transplant rejection and the risk of xenozoonosis (animal diseases becoming human diseases), coupled with general anathema to the idea, decreases the functionality of the technique. Some animal rights groups oppose the sacrifice of an animal for organ donation and have launched campaigns to ban them.

the moral status of "black market organ donation" relies upon the ends, rather than the means. In so far as those who donate organs are often impoverished[citation needed] and those who can afford black market organs are typically well-off, it would appear that there is an imbalance in the trade. In many cases, those in need of organs are put on waiting lists for legal organs for indeterminate lengths of time — many die while still on a waiting list.

Organ donation is fast becoming an important bioethical issue from a social perspective as well. While most first-world nations have a legal system of oversight for organ transplantation, the fact remains that demand far outstrips supply. Consequently, there has arisen a black market trend often referred to as transplant tourism.[citation needed] The issues are weighty and controversial. On the one hand are those who contend that those who can afford to buy organs are exploiting those who are desperate enough to sell their organs. Many suggest this can result in a growing inequality of status between the rich and the poor. On the other hand are those who contend that the desperate should be allowed to sell their organs and that preventing them from doing so is merely contributing to their status as being impoverished.

**An autopsy — also known as a post-mortem examination, necropsy (particularly as to non-human bodies), autopsia cadaverum, or obduction** — is a highly specialized surgical procedure that consists of a thorough examination of a corpse to determine the cause and manner of death and to evaluate any disease or injury that may be present. It is usually performed by a specialized medical doctor called a pathologist.

Some religions including Judaism and Islam usually discourage the performing of autopsies on their adherents. They outright object, because bodily intrusion violates beliefs about the sanctity of keeping the human body complete. Organizations such as Zaka in Israel and Misaskim in the USA generally guide families how to ensure that an unnecessary autopsy is not made.

**Refusal of medical assistance** is the term for when a patient refuses any or all parts of medical treatment. Informed refusal is linked to the informed consent process, as a patient has a right to consent, but also may choose to refuse.

The individual needs to be in possession of the relevant facts as well as of his reasoning faculties, such as not being intellectually disabled or mentally ill and without an impairment of judgment at the time of refusing. Such impairments might include illness, intoxication, drunkenness, using drugs, insufficient sleep, and other health problems. In cases where an individual is considered unable to give informed refusal, another person (guardian) may be authorized to give consent on their behalf. The pregnant patient represents a specific dilemma in the field of informed refusal as her action may result in harm or death to the fetus. Ethicists disagree on how to handle this situation.

Christian Science is a set of beliefs and practices including that sickness is an illusion that can be corrected by prayer alone, believing that reality is purely spiritual and the material world an illusion. This includes the view that disease is a mental rather than physical disorder, that there is no death, and that the sick should be treated, not by medicine, but by a form of prayer that seeks to correct the beliefs responsible for the illusion of ill health.

The church does not require that Christian Scientists avoid all medicine – adherents use dentists, optometrists, obstetricians, physicians for broken bones, and vaccination when required by law – but maintains that Christian Science prayer is most effective when not combined with medical care. The avoidance of medical treatment was blamed for the deaths of several adherents and their children; parents and others were prosecuted for manslaughter or neglect and in a few cases convicted.

**Euthanasia** refers to the practice of intentionally ending a life in order to relieve pain and suffering. In some countries there is a divisive public controversy over the moral, ethical, and legal issues of euthanasia. Those who are against euthanasia may argue for the sanctity of life, while proponents of euthanasia rights emphasize alleviating suffering, bodily integrity, self-determination, and personal autonomy. Jurisdictions where euthanasia or assisted suicide is legal include the Netherlands, Belgium, Luxembourg, Switzerland, Estonia, Albania, the US states of Washington, Oregon and Montana, and, starting in 2015, the Canadian Province of Quebec.

The difficulty of justifying euthanasia when faced with the notion of the subject's "right to life". Euthanasia may be classified according to whether a person gives informed consent into three types: voluntary, non-voluntary and involuntary.

There is a debate within the medical and bioethics literature about whether or not the non-voluntary (and by extension, involuntary) killing of patients can be regarded as euthanasia, irrespective of intent or the patient's circumstances. However, others see consent as essential: Euthanasia has to be voluntary, and that "involuntary euthanasia is, as such, a great wrong".

When the patient brings about his or her own death with the assistance of a physician, the term assisted suicide is often used instead. Assisted suicide is legal in Switzerland and the U.S. states of Oregon, Washington and Montana. The "right to die" is often understood to mean that a person with a terminal illness should be allowed to commit suicide or assisted suicide or to decline life-prolonging treatment, where a disease would otherwise prolong their suffering to an identical result. The question of who, if anyone, should be empowered to make these decisions is often central to debate. The right to die is sometimes associated with the idea that one's body and one's life are one's own, to dispose of as one sees fit. However, a legitimate state interest in preventing irrational suicides is sometimes argued. A debate exists within bioethics over whether the right to die is universal, only applies under certain circumstances—such as terminal illness, or if it exists at all.

Hinduism accepts the right to die for those who are tormented by terminal diseases or those who have no desire, ambition or no responsibilities remaining; and allows death through the non-violent practice of fasting to the point of starvation (Prayopavesa). Jainism has a similar practice named Santhara. Other religious views on suicide vary in their tolerance, and include denial of the right as well as condemnation of the act. In the Catholic faith, suicide is considered a grave sin. Japanese health insurance will even pay out to families of suicides because it is a traditionally honorable way to die.

Withholding or withdrawing life-sustaining treatments with patient consent (voluntary) is almost unanimously considered, at least in the United States, to be legal. The use of pain medication in order to relieve suffering, even if it hastens death, has been held as legal in several court decisions.

Some governments around the world have legalized voluntary euthanasia but generally it remains as a criminal homicide. In the Netherlands and Belgium, where euthanasia has been legalized, it still remains homicide although it is not prosecuted and not punishable if the perpetrator (the doctor) meets certain legal exceptions.