I. Theory

The term most frequently used to describe the approach to health care delivery in the United States is conventional medicine. Conventional medicine is a medical model of evidence-based practices for diagnosing and treating disease. Conventional medicine is practiced by individuals who hold degrees as medical doctors (MD’s), doctors of osteopathy (DO’s), nurse practitioners, registered nurses and by allied health professionals such as physical therapists, psychologists, and physician assistants.

Alternative medical systems are built upon theories and practices that are independent of the conventional medical approach.

Two of the most popular alternative medical systems are Traditional Chinese Medicine (TCM) and India’s Ayurvedic Medicine. TCM is based on the concept of Chi (energy or life force) which is believed to run through all of nature. Some TCM treatment strategies include acupuncture, acupressure, and Chinese herbs. Each of these treatment modalities are used to correct life-force (or Chi) imbalances that are thought to be the cause of specific health problems which can manifest in a particular organ system. Other commonly used TCM treatment strategies to balance Chi include Qi Gong (pronounced “chee gung”) and Tai Chi, which are two Chinese movement strategies (Micozzi, 2014).

Ayurveda comprises ancient Indian healing techniques that are based generally on the classification of three predominant body types known as Doshas. Ayurvedic philosophy posits that mental, emotional, and physical qualities of an individual can be classified into one of the Doshas. Doshas are energies that make up every individual and which perform different physiological functions in the body. Each person has all three Doshas, but usually one or two dominate. Various Dosha proportions determine one’s physiological and personality traits, as well as general likes and dislikes (Singh, 2010). The 3 Dosha types are:

**Vata Dosha** -- Energy that controls bodily functions associated with motion, including blood circulation, breathing, blinking, and your heartbeat.
- In balance: There is creativity and vitality
- Out of balance: Can produce fear and anxiety

**Pitta Dosha** -- Energy that controls the body's metabolic systems, including digestion, absorption, nutrition, and your body's temperature
- In balance: Leads to contentment and intelligence
- Out of balance: Can cause ulcers and anger

**Kapha Dosha** -- Energy that controls growth in the body. It supplies water to all body parts, moisturizes the skin, and maintains the immune system.
- In balance: Expressed as love and forgiveness.
- Out of balance: Can lead to insecurity and envy
Overall, the sum of qualities possessed by an individual are often representative of one or two of the body types and each is associated with specific disease as well as health-promoting treatment strategies.

*Ayurvedic recommendations for diet and lifestyle regimens differ among the three body types.*

Ayurvedic medicine emphasizes treating the mind, body, and spirit as the way to promote wellness. Controlled breathing is one factor. Other elements of treatment can include diet, exercise, meditation, herbal medicine, and massage (Micozzi, 2014).

A third example of an alternative system of healing is Homeopathic Medicine. This system employs the use of natural, un-synthesized, herbal remedies that are derived from plants, minerals, and other natural substances. Classical homeopathic treatment is based on the use of minute quantities of natural remedies that in larger doses produce effects similar to those of the disease being treated. Homeopaths define the underlying principle for this matching process as the “law of similars,” which is similar to the principle of immunizations (Micozzi, 2014). The quality of the patient–provider relationship is well-recognized as having a key role in therapeutic outcomes irrespective of treatment effects (Bann, Sirois, & Walsh, 2010).

Some basic philosophies of complementary & alternative medicine (CAM) include:

- **Prevention is key to good health.** Taking steps to better your health before you get sick is the best way to keep yourself healthy.

- **Your body has the ability to heal itself.** Alternative medicine practitioners see themselves as facilitators. To them, your body does the healing work, and treatment encourages your natural healing processes.

- **Learning and healing go hand in hand.** Alternative medicine practitioners see themselves as teachers and mentors who offer guidance. To the practitioner, the one who is ill does the healing.

- **Holistic care.** The focus is on treating the patient as a whole person — recognizing that physical health, mental well-being, relationships and spiritual needs are interconnected and play a part in overall health (Barrett, Marchand, Scheder, Plane, Maberry, Appelbaum, ... & Rabago, 2004).

### II. Features

Important concepts of complementary and alternative medicine (CAM):

*Complimentary medicine is used together with conventional medicine.*

*Alternative medicine is used in place of conventional medicine.*
While some scientific evidence exists regarding some CAM therapies, for most there are key questions that are yet to be answered through well-designed scientific studies—questions such as whether these therapies are safe and whether they work for the diseases or medical conditions for which they are used.

**Integrative medicine is the term that has evolved through the process of integrating complementary treatments with conventional care.**

Conventional medical doctors are learning more about complementary and alternative medicine because they recognize that many people try some kind of alternative treatment. Many health care institutions have begun integrating therapies that aren't part of mainstream medicine into their treatment programs. A number of medical schools now include education on nontraditional techniques in their curriculum. As complementary and alternative therapies prove effective, they're being combined more often with conventional care (Barrett, et al, 2004).

*An individual is practicing integrative medicine when they choose to add a complementary treatment to an existing conventional treatment.*

An example would be an individual who decided to take an omega-3 fatty acid supplement to help keep their heart healthy in addition to statins that were prescribed by their doctor to reduce cholesterol. Peregoy, Clarke, Jones, et al. (2014) noted that the most common complementary health approaches used by U.S. adults were non-vitamin, non-mineral dietary supplements (17.9%), practitioner-based chiropractic or osteopathic manipulation (8.5%), yoga with deep breathing or meditation (8.4%), and massage therapy (6.8%). Previous research demonstrated that regional differences exist in the use of complementary health approaches among adults in the United States (Barnes, Bloom, & Nahin, 2008) and that the regional differences persist across a wide range of complementary health approaches. Environmental and cultural factors unique to towns, regions, and economic factors have long been linked to differences in health behaviors and general health measures in the U.S. population (Hartley, 2004).

*Patients must be encouraged to talk with their nurse or doctor before combining complementary and alternative treatments with conventional treatments to avoid potential negative consequences.*

**III. Major Categories:**

To make sense of the many therapies available, it might help to look at them in the broad categories that the National Institutes of Health (NIH), National Center for Complementary and Alternative Medicine (NCCHI), uses for classification. Some treatment systems may use techniques from more than one category. For example, traditional Chinese medicine uses several types of complementary and alternative medicine. Some techniques may fit in more than one category. For example, acupressure could fit either in the category of manipulation
and touch or in the category of energy therapies. Indicated below are some of the broad categories of complementary and alternative medicine.

a) Nutrition / Dietary:

Staying nutritionally fortified is one positive way for individuals to take control of their lives and well-being. Optimal nutrition allows the body to function at its best. Maintaining optimal nutrition can provide several benefits for people living with cancer, including:

- Support immune function
- Preserve lean body mass
- Rebuild body tissue
- Decrease risk of infection
- Improve strength and increase energy
- Improve tolerance to treatment
- Decrease recuperative time following treatment
- Improve quality of life

Good nutrition is essential to increase the likelihood that cancer treatment is uninterrupted. The body needs more nutrition than normal during cancer treatment, because of the nutritional requirements of repair from surgery, radiation therapy and/or chemotherapy. If an individual receiving cancer treatment is unable to consume adequate nutrition, the body will draw upon what it has stored—fat and protein—which can lead to weight loss and malnutrition (Caro, Laviano, & Pichard, 2007).

According to the National Cancer Institute, about one-third of all cancer deaths are related to malnutrition. Therefore, it is important to give the body a constant supply of nutrients to use as fuel during the cancer treatment and the healing process. In a study by Ferrucci, McCorkle, Smith, Stein, & Cartmel (2009) 827 cancer survivors were surveyed and 573 (69.3%) reported using dietary supplements after their cancer diagnosis. Female gender [odds ratio (OR) = 1.72, 95% confidence interval (CI) = 1.25–2.36] and higher-education levels (OR = 5.44, 95% CI = 2.98–9.93) were significantly associated with supplement use. Common reasons for using dietary supplements included “something they could do to help themselves” (56.2%) and “to boost their immune system” (51.1%). Most survivors (82.4%) informed their physician of their supplement use.

b) Dietary supplements and herbal remedies / biologically based therapies

Biologically based therapies employ substances such as herbs, foods, and vitamins to promote healing or affect change in health symptoms and/or functioning. Examples of biologically based therapies include therapeutic doses of vitamins, special diets, and herbal products.
Macrobiotics is a term for a special diet that adheres to the ancient principle of balance in which TCM is based. Macrobiotic diets include specific dietary and lifestyle regimens. The dietary component of macrobiotics emphasizes the use of whole, unprocessed foods such as whole grains, legumes, vegetables, fruits, nuts, and seeds. This special diet avoids meat, dairy, certain vegetables, and processed foods. The system of macrobiotics also emphasizes the maintenance of a balanced lifestyle that considers the importance of such factors as physical activity and mental outlook (Cassileth & Deng, 2004). Megavitamin therapy is another example of a biologically based therapy employing large doses of vitamins – sometimes up to hundreds of pills a day – or intravenous infusions of high-dose vitamins, which are used to treat disease. In megavitamin therapy, the use of vitamins is in doses that exceed the Recommended Daily Allowance (RDA), sometimes up to 10 times greater than the RDA dose. Both megavitamin and megadose therapies are often used preventatively based on the belief that intake of certain vitamins and minerals in amounts greater than the RDA approves may reduce the risk of developing some diseases but there is currently no evidence that indicates there is effectiveness against cancer (Velicer & Ulrich, 2008).

Dietary supplements and herbal remedies can cause side effects and can interact with other prescribed medications.

c) Healing Systems:
Healing systems are complete sets of theories and practices. A system isn't just a single practice or remedy — such as massage — but many different practices that all center on a philosophy or lifestyle, such as the power of nature or the presence of energy in your body. Many healing systems developed long before the conventional medicine that's commonly used in the United States. Examples of complementary and alternative medicine healing systems include:

- **Ayurveda.** This form of medicine, which originated in India more than 5,000 years ago, emphasizes a unique cure per individual circumstances. It incorporates treatments including yoga, meditation, massage, diet and herbs.

- **Homeopathy.** This treatment uses minute doses of a substance that causes symptoms to stimulate the body's self-healing response. Homeopathy is based on the idea that "like cures like." The theory is that a homeopathic remedy will stimulate the body using very tiny amounts of a substance. If this substance were given in large amounts, it would cause illness. Homeopathy is believed to trigger the natural healing process.

- **Naturopathy.** This type of treatment focuses on noninvasive treatments to help your body do its own healing. Naturopaths draw on many forms of complementary and alternative medicine, including massage, acupuncture, herbal remedies, exercise and lifestyle counseling.

- **Ancient medicines.** These complementary and alternative medicine treatments include Chinese, Asian, Pacific Islander, American Indian and Tibetan practices.
d) Mind-body connections:
Mind-body techniques strengthen the communication between the mind and the body. Complementary and alternative medicine practitioners say these two systems must be in harmony for you to stay healthy. Mind-body interventions are based on the notion that physical health is influenced by the mind. Mind-body interventions employ various techniques designed to enhance the mind’s capacity to affect physiological symptoms and functions (Anderson, & Taylor, 2011). Meditation and prayer are two widely used mind-body intervention strategies. Other types of mind-body interventions include imagery (use of imagination to visualize goals, relaxing situations) to promote relaxation and healing; biofeedback (employs an electronic device to monitor heart rate, blood pressure, muscle tension, and other parameters via the use of visual or audio feedback, which assists with the conscious control of these physiologic functions); yoga (the practice of physical postures, breathing techniques, meditation, and cleansing techniques); and Tai Chi (slow, mindful movement consisting of a sequence of postures that move smoothly from one to another).

e) Manipulation and touch
Manipulative and body-based methods are based on touching and/or manipulation or movement of one or more parts of the body. Massage therapy is an example of one such method that encompasses a wide variety of techniques that utilize hand manipulation of soft tissue. Massage therapy modalities are aimed at releasing tension in muscles and improving circulation or lymphatic flow. Chiropractic is a system of healing and health maintenance that uses manipulation of the spine, called adjustment, to correct medical conditions and promote health (Anderson, & Taylor, 2011).

f) Energy therapies
Some complementary and alternative medicine practitioners believe an invisible energy force flows through your body, and when this energy flow is blocked or unbalanced you can become sick. Different traditions call this energy by different names, such as chi, prana, and life force. Unblocking or re-balancing your energy force is the goal of these therapies, and each claims to accomplish that goal differently. Proponents of acupuncture, for instance, say that the insertion of needles into points along energy pathways in your body restores your natural energy. Energy therapies employ the concept of energy fields that are considered to be surrounding and penetrating the human body. Practitioners aim to balance patients’ energy fields to promote and restore health, and to relieve symptoms such as pain. These techniques are carried out by practitioners who use their own energy field (termed “biofield”) to affect change in their patients’ human energy fields. By way of energy transfer and manipulation of the patient’s human energy field, practitioners can unblock and re-balance the patient’s energy field and thereby promote his or her overall well being. Examples of energy therapies include Reiki and Qi Gong. Reiki is based on the belief that everyone has access to an unlimited supply of “life force energy” to improve health and enhance the quality of life. A simple technique to learn, a Reiki practitioner typically lays his or her hands on a patient (Reiki can also be done without physical contact) to move energy through the affected parts of the energy field and charge
them with positive energy. Qi Qong, a TCM energy therapy, is usually defined as “cultivation of the Chi.” It is a system involving energy movement-based exercises that are used to balance energy, and are ultimately understood to halt and reverse diseases. Qi Qong combines focused concentration with simple movements and balanced breathing in a controlled way (Anderson, & Taylor, 2011).

Other energy therapies include:
- Therapeutic touch
- Magnet therapy
- Polarity therapy
- Light therapy

**IV. Alternative Modalities for Cancer Care:**

Emerging literature depicts a dramatic rise in CAM use by individuals who’ve been diagnosed with a cancer (Yates, Mustian, Morrow, Gillies, Padmanaban, Atkins, ... & Colman, 2005). Yates, et al, 2005 found that of the patients surveyed, 91% reported using at least one form of CAM. The most widely used forms of CAM were prayer, relaxation and exercise. CAM users tended to be female chemotherapy patients with at least a high school education. Of the patients using CAM, 57% discussed the use of at least one of these therapies with their oncologist or primary care physician. The most frequent CAM modalities discussed with at least one physician were diets, massage, and herbal medicine (Mijares, 2014). According to Cassileth & Vickers (2005), prevalence of CAM use found that alternative medicine use in the United States has increased dramatically and outnumbers visits to primary care physicians by more than 60% (Cassileth & Vickers, 2005, and Mijares, 2014).

The 10 most commonly used CAM therapies include:
- The use of prayer specifically for one’s own health (43%).
- Prayer by others for one’s own health (24.4%).
- Natural products (18.9%).
- Deep breathing exercises (11.6%).
- Participation in prayer group for one’s own health (9.6%).
- Meditation (7.6%).
- Chiropractic care (7.5%).
- Yoga (5.1%).
- Massage (5.0%).
- Diet-based therapies (3.5%) (Yates, et al, 2005)

Although CAM was found to be utilized by people of all backgrounds, overall, findings suggest that most patients who use CAM continue to utilize conventional medicine. However, studies of CAM use have shown that they often do not tell their traditional medicine-based providers about their CAM use (Yates, et al, 2005). It is becoming increasingly important for primary care physicians and other health care practitioners to take proactive steps to understand and probe
for the use of CAM by their patients to improve patient safety by eliminating potential adverse reactions between CAM and conventional medical approaches. Understanding this disconnect and facilitating better communication between patients and their physician about CAM use and the coordination of CAM with traditional medical regimens may fall within the nursing domain and/or other allied health professionals (Fontaine, 2000, and Cassileth & Vickers, 2005)

Is there evidence about complementary and alternative treatments?

The U.S. government has established a National Center for Complementary and Integrative Health (NCCIH) to help guide the public in making wise choices when it comes to complementary and alternative treatments. NCCIH is a branch of the NIH the Federal Government's lead agency for scientific research on CAM. NCCIH's mission is to explore CAM practices using rigorous scientific methods and build an evidence base for the safety and effectiveness of these practices. NCCIH is dedicated to exploring complementary and alternative healing practices in the context of rigorous science, training CAM researchers, and disseminating authoritative information to the public and professionals. NCCIH funds studies on a variety of CAM treatments. Examples of diseases and conditions for which CAM therapies are studied include cancer, cardiovascular disease, neurological disorders, and osteoarthritis. Some of these studies involve partnerships with other components of NIH. Institutions outside the Federal Government are conducting studies as well. Content on integrative healthcare and complementary and alternative medicine is being taught in hundreds of educational programs across the country. Nursing, medical, osteopathic, chiropractic, acupuncture, naturopathic, and other programs are finding creative and innovative ways to include these approaches in new models of education and practice (Mendard, et al, 2015).


