

# **A Balance Sheet Healthcare Model to Lower Costs**

**Winifred D. Scott**

**California State University San Bernardino**

*This paper develops a Balance Sheet Healthcare Model, by innovatively combining aspects of two separate disciplines, accounting and healthcare, as a way to lower healthcare costs. The trend of increasing annual prices for medical services, drugs, and insurance premiums plus medical plans with higher deductibles for their employees (PriceWaterhouseCoopers, 2019) are expected to continue. The Balance Sheet Healthcare Model presents a way of thinking about financial assets and liabilities superimposed on the human body, the influence of individual consumption choices, and predicts the resulting effect on health equity and healthcare costs.*

*Keywords: balance sheet, healthcare costs, chronic diseases, choice of consumption, health equity*

## **INTRODUCTION**

The balance sheet is one of the fundamental financial accounting reports produced by corporations to present a snapshot of its current wealth position at a specific moment in time. In accounting, assets are the resources owned or controlled by the corporation with the expectation that the assets will provide future benefits to the owners. In the Healthcare Model, assets are the organs within the human body. The balance sheet reflects the accounting equation (total assets equal total liabilities plus shareholders' equity) where the shareholders' equity represents the net value or net wealth position of the shareholders (owners). The accounting equation, mathematically, must stay in balance as the accountant measures and records economic transactions and activities. Accounting models of decision-making and generally accepted accounting principles refer to generating, using and analyzing information that is both relevant and reliable to reflect the value of shareholders' equity on the balance sheet. Consistent with principles of health promotion and prevention, the Healthcare Model also takes the long-term view of increasing health equity value, which includes the physical and mental wellbeing of the owners (Grabowski, Aagaard-Hansen, Williang and Jensen, 2017). Long-term views of relevant information often influence future decisions about the maintenance and life span of assets and ultimately, the value of shareholders' equity or the value of health equity.

This paper develops a Balance Sheet Healthcare Model that considers the connectedness of relevant and reliable information about how the intelligent body naturally functions, the connectedness of the organs within the body, and how health-related choices affect the body's health equity, for better or worse. Just as a corporation's balance sheet presents a snapshot of the shareholders' current wealth position on a specific date, the Balance Sheet Healthcare Model presents a snapshot of the owner's health equity as well. The higher the health equity, the fewer the diseased symptoms exemplified by the organs, which leads to increasing physical and mental wellbeing, and ultimately, lower healthcare costs. The

desire to help lower healthcare costs is the motivation for developing this Balance Sheet Healthcare Model.

## THE PROBLEM

Driving the increasing cost of healthcare is that many more people are getting sicker, which increases the demand for more prescription drugs and other treatments, for longer periods of time. Nearly 70 percent of American patients take at least one prescription drug, and more than 50 percent take two drugs, and 20 percent of patients are on five or more prescription medications (MayoClinic, 2013). A growing number of employers are offering their employees a family-plan health coverage with relatively higher insurance premiums and higher deductibles (Mathews, Wall Street Journal 2018). Such health coverage plans force families to pay higher out of pocket costs for health insurance and prescription drugs. Based on survey data, Dahlmaher, Lucas, and Zelaya (2018) find that nearly 28% of U.S. adults suffer from chronic pain. The treatments of physical and mental conditions stemming from the chronic pain have an increasing effect on healthcare costs.

The United States is spending \$3.15 trillion annually for health care expenditures in just managing (not curing) the symptoms for people with chronic non-infectious diseases (CDC, 2019). PwC's Health Research Institute (2019) projects a 6 percent increase in 2020 medical costs compared to the past two years.

Chronic non-infectious disease is when symptoms persist for three months or longer, usually years. The four (out of fifty) most common chronic diseases, according to Healthline.com (2019), are cardiovascular, cancer, chronic respiratory, and diabetes diseases. Furthermore, there are more than 100 types of cancer (WebMD 2019). In 2017, health agencies, such as the Center for Disease Control and Prevention (CDC) and the World Health Organization (WHO), expect the number of people suffering from chronic non-infectious diseases and related healthcare costs to continue to increase. The growing burden of chronic non-infectious diseases is a worldwide problem (WHO, 2018). Throughout this paper, the terms chronic non-infectious disease(s) and chronic disease(s) are used interchangeably.

An underlying problem of increasing healthcare costs is the faster-than-expected growth of chronic non-infectious diseases in both adults and children. Chronic non-infectious disease symptoms usually increase after a person reaches 50 years of age (CDC, 2019). As persons over 50 actually live longer, the quality of life also becomes a concern. In the U.S., six in ten adults have one chronic disease and four in ten adults have two or more chronic diseases (CDC, 2019). Among the youth, chronic non-infectious disease symptoms increased from 12.8% in 1994 to 26.6% in 2006 (Focus for Health 2018; PRB 2011). Today, about one in four or 25% of children in the United States, from ages 2 to 8 years, have chronic health conditions such as asthma, obesity, and attention-deficit disorder (Van, Gortmaker & Perrin 2010; Focus for Health 2012). People are getting sicker at a younger age (WHO, 2018). The length of time managing physical and mental conditions stemming from the chronic diseases have an increasing effect on healthcare costs.

In the accounting profession, continuous efforts to develop and improve generally accepted accounting principles have been underway since the 1930's and continue to this day. Similarly, the western medical profession has made continuous efforts to develop and improve practices over time. For examples, tonsillectomies are no longer considered routine surgery for individuals complaining of a severe sore throat; and infectious diseases are no longer the leading cause of child mortality, which has declined from 61.6% to 2% (Guyer, Freedman, Strobino, & Sondik, 2000). Further, the leading causes of death have shifted from acute infectious diseases to chronic non-infectious diseases. Now, the growing trend in chronic diseases have employers ready to abandon what they have been doing, and to look for alternative ways to address the issues of increasing drug prices and healthcare costs (PwC 2019). A long-term strategy is needed to help combat and offset the trend of rising healthcare costs.

How can employers, employees, and others lower healthcare costs?

## THE HEALTHCARE MODEL

What action can be taken (individually and in aggregate) to lower our chronic non-infectious disease symptoms underlying increasing healthcare costs? This study proposes an innovative Balance Sheet Healthcare Model as a long-term strategic tool or policy to help combat and offset the trend of rising healthcare costs. The Balance Sheet Healthcare Model proposes a viable option for individuals to make decisions and to act in ways that decrease the need of using medical deductions, various tests, and prescription medications (a savings), to help facilitate the complex disease management system, and thereby, lower healthcare costs from an accounting point of view. The Balance Sheet Healthcare Model is an alternative way of thinking how food consumption choices affect the efficient functioning of the body's organs, the connectedness of the assets, leading to a sustainable and substantial owner's net health equity, which in turn, lowers healthcare costs.

This Healthcare Model presents an accounting way to perceive organs of the human body like assets on the balance sheet, chronic symptoms as liabilities, allowing a snap shot of the owner's net health equity. This paper discusses the importance of how lifestyle food consumption decisions can positively affect the owner's health equity of both adults and the youth. As in business, the ultimate goal is to maximize owner(s)' equity. The Balance Sheet Healthcare Model makes the following assumptions:

1. Each individual (age 5 and above) is accountable for their own assets. Age 5 is arbitrary. The individual needs to be old enough to nutritiously choose between a candy bar and an apple.
2. Each individual, young and old, can actively participate to lower the cost of healthcare.
3. Chronic non-infectious diseases generally cannot be prevented by vaccines or cured by chemically-based prescription medication, nor do they just disappear; else the diseases would no longer be chronic.
4. No person wants to look forward to a life of painful or debilitating days.
5. The body's intelligent response to its environment is always to survive.

This Model offers and encourages individual strategic decision-making that has the potential benefits of sustainable health, which in turn lowers the need of medical treatments, thus, increasing the owner's net health equity. A large health equity implies lower healthcare costs and higher enjoyment of life with fewer or no chronic disease symptoms.

### Contribution & Limitation

This paper contributes to the literature by offering an innovative Balance Sheet Healthcare Model that offers the benefits of improved health and lower healthcare costs. This paper presents a simple model focusing only on financial accounting's balance sheet report and food consumption choices. On the accounting side, this simple model does not explicitly integrate the complexities of the income statement or other financial reports. On the healthcare side, the simple model does not fully integrate other important choices, such as sleep and exercise, that also have a positive influence on the owner's net health equity. The simplicity of this model should facilitate understanding and future testing of this model. Making food consumption choices is the most critical decision among factors that affect the health of the body. Having one or more chronic diseases affecting multiple assets (or body organs) requires a complex disease management system (PwC 2019) that health agencies appear to be struggling to control.

This paper shows how accounting information qualities and elements of the balance sheet are superimposed on the human body to express, reveal, or compare similar functions or qualities that hold true for both the balance sheet and the human body. While the model is not tested here, some decision implications are hypothesized that relate to both accounting and the body's intelligent response to survive are discussed. The Balance Sheet Healthcare Model, as a matter of policy, suggests (a) lower healthcare costs for the individual, and in aggregate, and (b) an enjoyable quality of life for the youth and (aging) adults.

## The Balance Sheet

The balance sheet has two sides, a left and a right, that must balance. The balance sheet reflects the value of assets owned by the company listed on the left side. On the right side, the value of liabilities and obligations due are listed plus shareholders' equity. Shareholders' equity reflects the difference between assets and liabilities, that is, the wealth owned by the owners of the company. In financial accounting, assets are classified as either short-term or long-term and are listed in the order of liquidity depending upon the expected time to deplete or use up the assets. Liabilities are debts owed to others. Liabilities includes obligations and are usually classified as short-term. Liabilities may be long-term depending upon the expected time to settle the debts or fulfill the obligations. The accounting equation (assets equal liabilities plus shareholders' equity) is fundamental.

Similar to the accounting equation, the owner's net health equity equals assets minus liabilities. The owner is born with long-term assets, the organs of the human body, which are expected to last a lifetime. The assets are of significant value that reflect the health of the organs. See Table 1 for the balance sheet used in the Healthcare Model applied to the human body. Liabilities, listed on the right side, reflect reoccurring medical treatments, doctor visits, and prescription drugs plus existing disease symptoms. With chronic diseases, most liabilities are long term. Individuals have the obligation to properly care for their organs (assumption # 1), else various liabilities, such as depression, aches and pain, excessive inflammation, excess weight, surgery, and multiple prescribed medications may occur for years. The greater the liabilities, the smaller the owner's health equity.

**TABLE 1**  
**FINANCIAL ACCOUNTING BALANCE SHEET HEALTHCARE MODEL**

ASSETS		LIABILITIES	
Controller organ system		Prescription medications for chronic illnesses	
Transit Circulatory System		Risk of getting side effect problems from prescription medications.	
Respiratory system		<i>Various Symptoms:</i> Excessive Fat storage, insomnia, constant fatigue	
Digestive system		Aches & pain, discomfort, itchiness, difficulty breathing, lumps, tumors, etc.	
Utilization system		Constipation, diarrhea, acid reflux, depression, anxiety and mood disorders	
Reproduction system		<b>Total Liabilities Obligations</b>	<b>\$\$</b>
Elimination System		<b>NET OWNER'S HEALTH EQUITY</b>	
Organs Systems Gross Total	Total value is significantly high		
less Acidic Organ Permanent Impairments		<b>Total Owner's Health Equity</b>	<b>\$\$</b>
<b>TOTAL ASSETS</b>	<b>\$\$\$\$</b>	<b>TOTAL LIABILITIES &amp; OWNER'S HEALTH EQUITY</b>	<b>\$\$\$\$</b>

Conceptual qualities, in both the accounting world and the healthcare world, such as consistency, reliability, and predictability have the same general implications across time, about information, about

behavior, yet neither world is an exact science. In both worlds, the owner(s) wants to consistently predict favorable future outcomes. Yet, there are differences. An accountant's way of thinking about "soap and water" as it relates to the company's balance sheet conjures words such as transparent accurate reporting & clean unbiased information and avoid accounting scandals like Enron. In the healthcare world, the thinking about "soap and water" has become more hygienic over time. For example, today, surgeons will consistently scrub-in prior to surgery. Yet in 1847, Dr. Semmelweis was first ridiculed by his peers before being praised (posthumously) for recommending hand washing prior to obstetrical surgery (Semmelweis.org 2019). The benefits of washing of hands prior to surgery after working on cadavers was not always practiced; it took time for western medicine to evolve. The Balance Sheet Healthcare Model hypothesize that people's thinking, understanding and level of awareness of the body's consistent, instinctive, and intelligent response to its environment, may take time to develop, also.

### **The Assets**

It is significant to understand that the organs within the body are designed to be lifetime assets. As in a business, the owner of total assets is responsible for keeping the organs well maintained for smooth pain-free operating activities. The organs are connected through the energy of fluids that flows and circulates throughout the body about three times per minute. The fluids carry nourishment and oxygen to the cells (blood) and brings away waste products from the cells (lymphatic fluid), from head to toe. Scientists say that the average human body has over 30 trillion cells, each with their unique and special functions, that work in harmony to carry out all the basic functions necessary for us to live (Zimmer, 2013). Scientists say that cells in the body are constantly dying, and new ones are being made simultaneously (Healthline, 2018). There are over 200 types of cells with different structures, sizes, shapes, and functions (i.e., brain cells, heart cells, skin cells). Each organ is made up of millions of cells. For example, the heart and liver are estimated to contain 2 billion cells and 10 billion cells, respectively (Bianconi, Piovesan, et al., 2013). Blood and lymphatic fluids are called intracellular fluids. Intracellular fluids bring nourishment to the cells and eradicate cellular waste. Keeping the organs well maintained is an important responsibility that is often overlooked or taken for granted.

As in business, keeping the equipment well maintained is an important responsibility. For example, failure to perform a machine's required oil change will result in more severe problems in the near future. Similarly, if the organs of the body are not well maintained, then the intercellular fluids become sluggish in eradicating cellular waste, and problems will begin to occur. These problems or symptoms may seem small and annoying at first. It may start with a cough, the body's intelligent response to dehydration (the need to drink water) or the need to remove some kind of waste (mucus) from the bronchial tubes. Persistent coughing may indicate that the lungs are having difficulty eradicating the waste. Consequently, most medical doctors would recommend cough medicine to stop the persistent coughs, to treat the symptom. A cough suppressant would merely force the intelligent body to respond by finding another method of removing or encapsulating the waste. Over time, this waste may turn into fat or a cyst or may become inflamed or ooze out through the skin. The point here is that the owner has an obligation to provide favorable conditions that facilitate cellular waste elimination. Throughout the body, failure to eliminate waste often causes excessive wear and tear on the organs or rot, decreasing the efficiency of that organ, which may infect surrounding organs or produce more severe symptoms. Thus, such failure leads to various problematic symptoms that increase total liabilities and the cost of healthcare management, while decreasing owner's health equity.

Organs within the human body are grouped into systems with similar functions as opposed to being classified into current and noncurrent asset categories. The Balance Sheet Healthcare Model classifies organs of the human body into systems similar to that of the American Medical Association, yet some are different. Because some organs perform multiple functions, an organ may be categorized into more than one system. For example, the mouth is categorized as part of the respiratory system and the digestive system. An understanding of how the organs are inherently designed to function is crucial in understanding the connectedness of the body's organs (or assets) and health. The organ systems are listed in Table 2.

**TABLE 2**  
**ORGAN SYSTEMS**

<ul style="list-style-type: none"> <li>• The Control System involves the brain, nerves, and heart. <ul style="list-style-type: none"> <li>○ The brain controls our thoughts, memory and speech, movement of the arms and legs, and the function of many organs within our body. The central nervous system (CNS) is composed of the brain and spinal cord.</li> <li>○ The brain sends and receives signals to/from the whole body via the central spinal cord, which controls things like our muscles and breathing.</li> <li>○ The heart regulates the pumping of blood and lymphatic fluid throughout the body.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Transit Circulatory System involves the blood and lymphatic system <ul style="list-style-type: none"> <li>○ Blood carries oxygen and cell nourishments to the lungs and to the millions of cells in the body.</li> <li>○ The lymphatic system transports lymph, a fluid containing infection-fighting white blood cells, throughout the body. The lymphatic system runs parallel to the blood vessels carrying cell waste and toxins from the cells to eliminate from the body.</li> <li>○ Blood vessels and heart</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Respiratory system involves the mouth, nose, trachea, lungs, and skin. <ul style="list-style-type: none"> <li>○ The mouth and nose affect our ability to breathe in and out.</li> <li>○ The trachea allows the passage of air to the lungs from the mouth and nose.</li> <li>○ Lungs take in the fresh oxygen (inhale) and discards carbon dioxide (exhale).</li> <li>○ The cells of the skin allow heat perspiration to be released from the body, prevents loss of essential body fluids, and prevents the penetration of toxic substances.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Digestive system involves the mouth, esophagus, stomach, and small and large intestines. <ul style="list-style-type: none"> <li>○ The mouth allows us to consume food and drinks as they travel down our esophagus to our stomach for digestion.</li> <li>○ Following the stomach is the small intestine. The small intestine is the part of the intestines where 90% of the digestion and absorption of food occurs, the other 10% taking place in the stomach and large intestine. The main function of the small intestine is the absorption of nutrients and minerals from food.</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Utilization system involves the thyroid, kidney, liver, spleen, storage of fat, blood, lymphatic, and adrenal glands. <ul style="list-style-type: none"> <li>○ The thyroid gland produces hormones that regulate the body's metabolic rate as well as heart and digestive function, muscle control, brain development, mood and bone maintenance.</li> <li>○ Kidneys act like a filter to remove wastes and extra fluid from your body. Kidneys filter about 200 quarts of blood each day to make about 1 to 2 quarts of urine.</li> <li>○ The liver filters the blood coming from the digestive tract, before passing it to the rest of the body. With the help of vitamin K, the liver produces proteins that are important in blood clotting and breaks down old or damaged blood cells. The liver plays a central role in all metabolic processes in the body that breaks down fats and produce energy.</li> <li>○ The spleen filters blood and helps the body fight infections as it is part of the immune system.</li> <li>○ Adrenal glands are two glands that sit on top of your kidneys that produces hormones that are vital to life, such as cortisol (which helps regulate metabolism and helps your body respond to stress) and aldosterone (which helps control blood pressure)</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• Reproduction system involves the uterus, ovaries, vagina, penis, balls prostate</li> </ul>

- The ovaries produce and release eggs into the female reproductive tract at the midpoint of each menstrual cycle. They also produce the female hormones estrogen and progesterone.
  - The uterus nurtures the fertilized ovum that develops into the fetus and holding it till the baby is mature enough for birth.
  - The vagina receives the penis during sexual intercourse and also serves as a conduit for menstrual flow from the uterus. During childbirth, the baby passes through the vagina (birth canal).
  - The penis is the male sex organ and acts as a conduit for urine to leave the body.
  - The prostate gland is a male reproductive organ whose main function is to secrete prostate fluid, one of the components of semen. The muscles of the prostate gland also help propel this seminal fluid into the urethra during ejaculation.
  - The testicles are housed in the scrotum just behind the penis. The testicles are the male gonads — the primary male reproductive organs. The testicles produce sperm and secrete hormones, primarily testosterone.
- Elimination System involves the lymphatic glands, liver, small and large intestines, urethra, and anus.
    - The major function of the large intestine is to absorb water from the remaining indigestible food matter and transmit the useless waste material from the body.
    - Urethra - The muscular structure in the urethra helps hold urine inside the body until it's released. The urethra is the tube that carries urine from the bladder to outside of the body. In males, it has the additional function of ejaculating semen when the man reaches orgasm.
    - The anus is the last part of the digestive tract. It is a 2-inch long canal consisting of the pelvic floor muscles and the two anal sphincters (internal and external).
    - The liver also detoxifies chemicals and metabolizes drugs. As it does so, the liver secretes bile that ends up back in the intestines.
    - The lymphatic system is a network of tissues and organs that help rid the body of toxins, waste and other unwanted materials.

The Control System consist of the brain, nerves, and heart. These three powerful separate yet connected organs function automatically to keep an individual alive, thinking, feeling, and moving. Transit Circulatory system involves the blood and lymphatic system that circulate three times per minute throughout the entire body nourishing trillions of cells from head to toe. Drinking lots of water increases the effectiveness of this system. The Respiratory system involves the mouth, nose, trachea, lungs, and skin as the body systematically and automatically inhales oxygen and exhales carbon dioxide. Breathing is one of those activities that we should not have to think about. If the act of inhaling captures our brain's immediate focus, it is because something is wrong; purposeful action is required to stay alive. The Digestive system involves the mouth, esophagus, stomach, and small and large intestines. The choice of food consumption effects the efficiency of the digestive and utilization systems. For example, depending on what and how much is consumed, a person may experience a strong immediate negative reaction by vomiting or a slow delayed negative reaction indicated by constipation. The Utilization system involves the thyroid, kidney, liver, spleen, storage of fat, blood, lymphatic glands, and the adrenal glands. Good working order of these organs help all the other body systems to automatically function more efficiently. The functioning of the organ systems is designed to happen automatically and should not require conscious action by the individual owner.

The choice of consumption often influences the efficiency of the reproduction system. For the life of the body to extend beyond itself often depends on the efficiency of the Reproduction system, which involves the uterus, ovaries, and vagina for women and the penis, testicles and prostate organs for men.

The Elimination System involves the lymphatic glands, liver, kidneys, small and large intestines, skin, urethra, and anus. The organs within the elimination system function like “soap and water”

internally because it helps keep things clean by removing and eliminating the waste. The choice of consumption greatly affects the efficiency of the elimination system. Elimination problems bring a new meaning to the saying 'my cup runneth over', while constipation is at the opposite end of the spectrum. If need be, in desperation, the intelligent body may seek to excrete waste from other openings or encapsulate waste (i.e., cyst) in order to survive, depending on the increasing severity of the inefficiency as a result of individual consumption choices (wise or unwise). This Healthcare Model highlights that a key behavior to increasing Owner's Health Equity is to keep the elimination system clean and fully functioning.

It is the responsibility of the owner to keep all organs (assets) well maintained, that is, healthy, fully functioning and pain-free.

### **The Liabilities & Owner's Health Equity**

The liabilities in the Balance Sheet Healthcare Model reflect many unwelcomed symptoms of chronic illnesses such as aches, pains, depression, anxiety and mood disorders, desire for prescription medications, excessive fat storage, obesity, tooth decay, insomnia, constant fatigue, discomfort, itchiness, rash, difficulty breathing, abnormal lumps, hospitalization, constipation, diarrhea, gas, bloating, headaches, acid reflux, tingling in hands or feet, blurry vision, extreme thirst, irregular heartbeat, blood in urine, tremors, cysts, tumors, stiff joints, etc. or any combination of symptoms. An individual can have a single symptom or multiple symptoms. Different combinations of symptoms are assigned different medical disease names. Check with your medical doctor for appropriate diagnosis. The ultimate goal of the Healthcare Model for every individual is to maximize owner's health equity by being free of symptoms and of prescription drugs used to treat the symptoms, and thus, achieve lower healthcare costs.

Liabilities may be classified as either short-term or long-term in the Healthcare Model. Short-term liabilities are symptoms that last three months or less, are not persistent, and will quickly go away. The common cold and chicken pox are examples of short-term liabilities. The related decrease in owner's equity is temporary. Long-term liabilities are symptoms that stubbornly persist longer than three months, sometimes for many years indicating a chronic non-infectious illness. How significant is the liability? As the length of time of each chronic symptom exists, the magnitude of the liability increases affecting the organ, which increases the intensity of the discomfort, aches and pains. As total liabilities increase, the smaller Owner's Health Equity becomes. Chronic discomforting symptoms are usually accompanied with reoccurring prescription medications. As the number of reoccurring prescription medications increases and as the frequency of the dosage increases, the more total liabilities increase, and the smaller Owner's Health Equity becomes.

A small Owner's Health Equity indicates an unhealthy owner with increasing healthcare costs. A large Owner's Net Equity indicates a healthy owner, who pays less in healthcare costs than an unhealthy owner. A healthy owner incurs healthcare cost savings due to fewer medical doctor visits, fewer laboratory tests and therapies, and less frequent medical co-payments.

The location of the discomfort matters as to the medical diagnosis and disease name. For example, bronchitis refers to excessive inflammation of bronchial tubes in the lungs, while arthritis refers to excessive inflammation of the joints. Inflammation is the body's attempt to heal itself. Excessive inflammation indicates the body is working overtime to heal itself, which eventually leads to inefficiencies of the organs. The location and severity of the discomfort also matters as to the diagnosis and disease name (the level of pain 1 – 10, or stage of cancer 1 – 4, or difficulty of performing normal functions such as breathing -- from asthma to chronic obstructive pulmonary disease). Also, the disease may be named after a doctor who discovered important features of a disease as in Parkinson's disease, named after James Parkinson in 1817. The Balance Sheet Healthcare Model does not focus on the medical diagnosis or disease names, rather the Model focuses on the symptoms and the cause of the symptoms.

The prevalence of chronic non-infectious diseases has become a national (and global) health policy concern. How many chronic noninfectious diseases exist? Healthline.com lists over 50 noninfectious chronic diseases (Cirino 2018). According to Benaroya Research Institute (BRI) of Virginia Mason (2019), there are approximately 80 different types of autoimmune diseases. Many of the non-infectious



chronic diseases are also listed to as autoimmune diseases (i.e., cancer, arthritis, heart disease, liver disease). Autoimmune diseases affect 1 out of 15 Americans with an estimated medical cost of \$100 billion a year, according to BRI (2019). The immune system is designed to protect the body against infection. However, the autoimmune disease is when the body's immune system mistakenly attacks its own healthy tissue. It affects many different organs and can vary greatly among the individuals. Although the causes of autoimmune diseases are not fully understood (Medline Plus), scientists are searching for a cure. Autoimmune diseases affect approximately 8% of the population, and 78% of whom are women, for some unknown reason (Fairweather and Rose 2004). According to MedlinePlus.com, since several autoimmune diseases have similar symptoms, the correct diagnosis becomes challenging for the healthcare provider.

In the Healthcare Model, the focus is on symptoms, not the names of various diseases.

## AN ALTERNATIVE WAY OF THINKING

### One Disease

Alternative medical practices exist beyond traditional western medicine. For example, different schools of thought about medical practices include traditional Chinese medicine and India's Ayurvedic medicine, of which, both have been around for thousands of years. In contrast, western medicine has been developing over the last few centuries along with computer technological advancements and chemically-induced pharmaceutical innovations. Although western medicine has many benefits, its structured thinking is so compartmentalized and focus on separately specialized ways of thinking as to their approach to health, that they do not fully embrace the connectedness of the human body. For example, in his book *Gut-Mind Connection* (2016) Dr. Mayer states that western medicine has not fully realized just now how deep the connection between the brain and gut really is. Dr. Emeran Mayer is the executive director of the Oppenheimer Center for Neurobiology of Stress and Resilience at UCLA. Furthermore, while western medicine labels hundreds of different disease names, an alternative perspective is taken in the Balance Sheet Healthcare Model. The Balance Sheet Healthcare Model assumes that there is only one disease, acidosis, and assumes that chronic symptoms reflect the body's intelligent-survival-healing response to its internal environment.

The severity of chronic symptoms is influenced by the owner's choices of food consumption. The Model hypothesizes that (not tested in this paper) if the owner's choices of food consumption are aligned with minimizing the acidic internal environment conditions within the body (from head to toe), then fewer and/or less severe chronic symptoms will exist. The fewer the chronic symptoms, the fewer the liabilities, resulting in a higher owner's net health equity. A high measure of owner's net health equity indicates good mental and physical health, thus lowering the cost of healthcare and the need for prescription medications.

This Balance Sheet Healthcare Model, integrates the teachings of Professor Arnold Ehret (1866-1922) described in his book "The Mucusless Diet Healing System". There is only one disease, obstruction or the inefficient *elimination of waste* from the body. Constipation or inefficient elimination of waste from the body can occur at the cellular level, organ level, as well as the whole body. This single disease concept (constipation) is based upon the condition of the blood and lymph fluids and the body's ability or inability to eliminate waste. According to Professor Ehret, for healing to occur, the body must be able to eliminate waste, foreign matter and mucus.

If the body has difficulty eliminating waste, foreign matter or mucus, then the organs over time, become overly-saturated with waste, which leads to symptoms of chronic non-infectious diseases. This over-saturation precedes the dis-ease of the organs. Over time, the organs develop unwanted symptoms that may manifests as pain, excessive inflammation and/or infections of various organ systems. The concept of 'only one disease' has been adopted by several naturopathic practitioners in the United States. Many western medical practitioners recognize the importance of regular elimination of waste matter, although they believe in the existence of multiple diseases. The elimination of waste is either efficient

(healthy) or inefficient (unhealthy). Inefficient elimination of waste makes the internal environment acidic. Inefficient elimination of waste creates liabilities and decreases the owner's net health equity.

Chronic disease symptoms thrive in a toxic acidic body, a state of acidosis. Acidosis is when the body fluids contain too much acid. For example, acidosis occurs when the kidneys and lungs fail to keep the body's pH in balance, ideally around 7.4. The blood acidity can be diagnosed through blood tests and measured by determining its pH. A pH below 7.10 means the blood is more acidic and can lead to numerous serious health issues such as kidney failure and respiratory failure. Acidity is a sign of dis-ease that manifests itself in various ways across owners. Dis-ease simply means that the body is not at ease. A pH 7.45 or higher is known as alkalosis, although rare, may also cause problems. Chronic diseases cannot thrive in a non-toxic, non-acidic body; a state of alkalinity, a pH between 7.1 and 7.4. Below are terms used interchangeably:

Terms that lead to decreasing Owner's Health Equity	Terms that lead to increasing Owner's Health Equity
Mucus or mucus forming	Mucusless
Acid	Non-acid
Acidic	Alkaline
Toxic	Non-toxic
pH below 7.1	pH between 7.1 and 7.4
Unwanted symptoms	Healing
Acidosis	Alkalinity
Obstructed	Not obstructed
Constipation	

According to Professor Ehret, the name of any dis-ease is not important. Dr. Sebi says the same thing. What is important is to avoid consuming mucus-forming foods and to have efficient waste elimination. Mucus-forming foods initially obstruct the transit circulation system from functioning efficiently, hindering efficient waste elimination at the cellular level and the body as a whole. Mucus-forming foods hinders the efficiency of the digestive and utilization systems. If the owner continues to consume mucus-forming foods, then the severity of chronic non-infectious disease symptoms will persist.

Mucus is a natural slippery and stringy fluid substance that is essential for body function. Mucus acts as a protective and moisturizing layer to keep critical organs from drying out (Stoppler, 2020; Marcin, 2017). The body is healthy when the mucus is thin and unnoticeable. However, in an unhealthy body, mucus becomes excessively thick and sticky, as from the common cold. Excessive mucus indicates toxicity of the blood, and that elimination is problematic. It seems reasonable to infer that all organ systems may be infected to one degree or another because the toxic blood circulates the whole body three times per minute. Further, as the excessive chronic mucus builds up, the inefficiency of elimination develops one or more chronic dis-ease symptoms (such as pain), which increases liabilities and decreases owner's net health equity.

**Body Is Intelligent**

The Balance Sheet Healthcare Model assumes that the human body is intelligent, and naturally and instinctively responds to its environment to survive. A symptom is the body's intelligent natural response to the acidic environment adapting, sometimes painfully, to survive. A constant state of acidosis weakens the body's immune system and diminishes the body's ability to fight off infections and diseases. Analogous to a malfunctioning robot, the heavily over-saturated acidic blood is making the cells go haywire and gives the appearance that the body's immune system is attacking its own healthy cells and tissue as purported by western medical theories (CDC, Healthline 2019). Western medicine lists more

than 100 different names of autoimmune diseases (AARDA 2020). Doctors are not sure what causes the immune-system to attack its healthy cells (NIH 2019; MedlinePlus 2019). Nonetheless, doctors diagnose and treat autoimmune disorder symptoms with prescription drugs. (I do not have formal medical training to prove this, but it just seems logical that humans could not have survived for thousands of years with the body continuing to attack itself and survive, mistakenly or not.) This self-attack thinking assumes that the body is not intelligent. The Healthcare Model does not subscribe to the phenomenon of the body's autoimmune system mistakenly attacking itself.

To survive, the body automatically responds with adrenalin if a dog unexpectedly starts barking as it runs toward you. To survive, the body automatically responds by coughing if an obstacle gets stuck in the throat. To survive, the body automatically responds by clotting the blood if the skin is cut. To survive, the intelligent body seeks alternative ways to eliminate or store waste when the normal pathway is blocked, at the cellular level.

Inflammation is body's intelligent natural response to survive, to heal itself. Inflammation is a natural defense mechanism of the body, an attempt at self-protection to remove harmful stimuli and to begin the healing process. Chronic (excessive) inflammation can become painful and weakens the body's assets. The owner should consider the cause of the excess inflammation. The owner should act to help the body's natural process to heal through the foods we choose to consume.

### **Choice of Consumption**

The decisions about choice of consumption is very important in the Balance Sheet Healthcare Model. The choice of consumption mostly refers to daily dietary choices of mucus-free food as a lifestyle way of eating. Balance Sheet Healthcare Model recommends a mucus-free, non-acidic, way of eating that embodies fresh fruit and fresh vegetables. The consumption of fruits and green-leafy vegetables are mucus-free foods that increases the body's ability to eliminate the accumulation of waste and obstructions deposited in tissues of the body. The Balance Sheet Healthcare Model promotes drinking lots of water, not sodas or other sugar-loaded drinks. Water plays a vital role in maintaining the health of all major organ systems shown in Table 2. The choice of consumption also includes decisions of getting plenty of sleep, exercise, meditation, and sunshine. Professor Ehret says 'Give the body a clean blood stream and it will function harmoniously as Nature intended it should.'

Professor Ehret claims that all other foods, without exception, are mucus and acid-forming, and therefore are harmful. This includes meat (unless eaten fresh and raw), dairy, processed foods, sugar, foods with sugar, soda and other sugary drinks. White rice, white flour, and white sugar are the worse consumption choices. For the meat lovers who say we need protein, think about this: cows, horses, apes, gorillas and elephants grow big and strong and they do not eat meat. These strong animals get their protein from vegetation. Owners can go straight to the source and get their protein from vegetation as well. As internal organs become clogged with mucus, painful or inflamed symptoms may manifest. Symptoms of chronic pain and chronic (excessive) inflammation have an increasing effect on total liabilities and lowers the owner's net health equity.

Decision-making about appropriate food consumption choices is very important in the Healthcare Model. In essence, "excess mucus" is the foundational cause of all disease.

### **DISCUSSION – OWNER'S CHOICE**

The Balance Sheet Healthcare Model incorporates the basic format of the balance sheet. It is a way of thinking about the human body superimposed on a company's assets, liabilities, and the resulting effect on owner's equity about ones' health. Western medical doctors do not know how to cure these non-infectious chronic diseases, else the diseases would no longer be chronic. Stop and think about this. Medical doctors offer treatments, such as prescription pills, to lessen the discomfort of various liability symptoms, not cures. Since most medical doctors are not providing cures, then owners can look forward to being in poor health for the rest of his/her life with chronic infectious disease(s), as a patient for life, in discomfort for life, and on medications for life. Also, the streams of healthcare cash payments to medical

doctors, pharmaceutical companies and for other medical treatments will be for life. Then there are the complications from the drugs' side-effects that often require additional medical treatments. The goal of the Balance Sheet Healthcare Model is to minimize or eliminate the number of chronic symptoms, to minimize liabilities in order to increase the owner's net health equity and achieve lower healthcare costs.

If an owner feels dissatisfied with his/her ongoing chronic symptoms and lifetime pharmaceutical medications, then a change in food consumption choices and beverages should prove beneficial. For these owners who choose to look forward to being in good health, will more likely make lifestyle consumption choices to minimize existing liabilities towards zero and realize healthcare savings.

There are a lot of sick people in the U.S. and globally (Journal Mayo Clinic Proceedings, 2013). Researchers say that antibiotics, antidepressants, and painkilling opioids are the most commonly prescribed drugs. Prescription drugs are mucus-forming and have a decreasing effect on the owner's health equity.

While the idea of eating healthy is not new, the Balance Sheet Healthcare Model presents a new way of understanding the intelligent body from an accountant's perspective; a novel way to understand how individuals can improve their health while decreasing healthcare costs. Healthy eating means no eating of meats, no processed foods, no sugar, and no dairy, no GMOs, no pesticides, and preferably an abundance of organically grown fruits and vegetables. Even if the owner does not stick to the lifestyle eating 100% of the time, the owner will still lower the level of toxicity in the blood and increase the owner's net health equity, but at a slower rate. The name of any disease is not important. What is important is that your cells, tissues, and organs are not constipated; that your intercellular fluid (blood and lymph) is alkaline, non-toxic.

What we choose to consume matters. Lifestyle consumption decisions should be based on relevant and reliable information to develop long-term strategies that maximizes owner's health equity.

When a healthy body needs less medical treatment, the cost of healthcare decreases. A healthier body will experience fewer chronic symptoms and less extra fat. Owners are recommended to choose a lifestyle of consuming mucusless foods – organically grown fresh fruit, green leafy vegetables and other vegetables, seeds, and nuts; and to drink plenty of water. The Balance Sheet Healthcare Model predicts that consuming mucus-less foods will boost the immune system, help preserve the efficiency of assets (organ systems), promote efficient elimination of waste, decrease long-term liabilities (symptoms), and increase the owner's net health equity (quality of life).

## **SUMMARY**

This is the first study to present a Balance Sheet Healthcare Model. The Model presents a way of understanding how individual choices of consumption, feeding our bodies, influence the internal environment of the body in which non-infectious chronic diseases may thrive. Persistent obstruction of cellular waste (constipation) creates toxic acidic fluids and inefficient, sometimes painful, functioning of the organ assets. Elimination is key to having a smooth operation without symptoms of chronic dis-eases. The Model presents an accounting balance sheet perspective of the body's highly valuable lifetime organs, as a way caring for and enjoying non-toxic sustainable health. This Balance Sheet Healthcare Model presents a long-term strategy to help combat and offset the trend of rising healthcare costs and to improve the overall quality of life.

## REFERENCES

- AARDA. (2020). *Autoimmune Disease List. The American Autoimmune Related Diseases Association (AARDA)*. Retrieved January 1, 2020, from <https://www.aarda.org/diseaselist/>
- Benaroya Research Institute (BRI) Of Virginia Mason. (2019). *An Organization Devoted to Finding Causes and Cures for Autoimmune Diseases*. Retrieved July 22, 2019, from <https://www.Benaroyaresearch.Org/What-Is-Bri/Disease-Information/Autoimmune-Diseases>.
- Bianconi, E., Piovesan, A., Facchin, F., Beraudi, A., Casadei, R., Frabetti, F., . . . & Canaider, S. (2013). An Estimation of the Number of Cells in The Human Body. *Annals of Human Biology*, p.40. Doi: 10.3109/03014460.2013.807878.
- CDC. (2019). *Health and Economic Costs of Chronic Diseases*. Retrieved July 14, 2019, from <https://www.cdc.gov/Chronicdisease/About/Costs/Index.Htm#Ref1>
- CDC's National Center for Chronic Disease Prevention and Health Promotion. (2019). *Chronic diseases in America*. Retrieved December 27, 2019, from <https://www.cdc.gov/chronicdisease/pdf/infographics/chronic-disease-H.pdf>
- Cirino, E. (2018, June 13). *Most Common Communicable Diseases*. Retrieved July 20, 2019, from <https://www.healthline.com/health/non-communicable-diseases-list>
- Dahlhamer J., Lucas, J., Zelaya, C., Nahin, R., Mackey, S., DeBar, L., . . . & Helmick, C. (2016). Prevalence of Chronic Pain and High-Impact Chronic Pain Among Adults — United States. *Mmwr Morb Mortal Wkly Rep* 2018, 67(36), 1001–1006. Doi: <http://dx.doi.org/10.15585/mmwr.mm6736a2external> Icon
- Dr. Sebi. (2016, September 2). Eat to Live. Retrieved June 2018, from <https://www.youtube.com/watch?v=CHJHH9hubao&t=2833s>
- Ehret, A. (1924). *Prof. Arnold Ehret's Mucusless-Diet Healing System* (9th ed.). Los Angeles, Cal.: Ehret Literature Pub.
- Fairweather, D., & Rose, N. (2004, November). Women and Autoimmune Diseases. *Emerging Infectious Diseases*, 10(11). Retrieved from [www.cdc.gov/Eid/cdc.gov/Chronicdisease/About/Costs/Index.Htm](http://www.cdc.gov/Eid/cdc.gov/Chronicdisease/About/Costs/Index.Htm)
- Focus for Health. (2018). *Chronic Illness and The State of Our Children's Health*. Retrieved November 25, 2018, and July 27, 2019, from <https://www.focusforhealth.org/Chronic-Illnesses-And-The-State-Of-Our-Childrens-Health/>
- Grabowski, D., Aagaard-Hansen, J., Willaing, I., & Jensen, B. B. (2017). Principled Promotion of Health: Implementing Five Guiding Health Promotion Principles for Research-Based Prevention and Management of Diabetes. *Societies*, 7(2), 10.
- Guyer, B., Freedman, M., Strobino, D.M., & Sondik, E. J. (2000, December). Infectious Diseases Such as Diphtheria, Measles, Pneumonia and Influenza, And Scarlet Fever. Annual Summary of Vital Statistics: Trends in The Health of Americans During The 20th Century. *Pediatrics*, 106(6), 1307-1317. Doi: 10.1542/Peds.106.6.1307. Retrieved December 17, 2018, from <https://pubmed.ncbi.nlm.nih.gov/11099582/>
- Healthline. (2018). *How Many Cells Are in the Human Body?* Fast Facts. Retrieved December, from <https://www.healthline.com/Health/Number-Of-Cells-In-Body>
- Marcin, A. (2017). *7 Ways to Get Rid of Phlegm: Home Remedies, Antibiotics, and More*. Retrieved January 18, 2020, from <https://www.healthline.com/Health/Cold-Flu/How-To-Get-Rid-Of-Phlegm>
- Mathews, A. W. (2018, October 3). Employer-Provided Health Insurance Approaches \$20,000 A Year. *Wall Street Journal*.
- Mayer, E. (2016). *Gut and Mind Connection: How The Hidden Conversation Within Our Bodies Impacts Our Mood, Our Choices and Our Overall Health*. Harper Collins publisher.

- Mayo Clinic Proceedings, Journal. (2013). *Nearly 7-In-10 Americans Take Prescription Drugs*. Mayo Clinic, Olmsted Medical Center Finds. Retrieved July 20, 2019, from <https://Newsnetwork.MayoClinic.Org/Discussion/Nearly-7-In-10-Americans-Take-Prescription-Drugs-Mayo-Clinic-Olmsted-Medical-Center-Find/>
- Medline Plus. (2019). *Autoimmune Diseases*. U.S. National Library of Medicine, Medline Plus. Retrieved July 22, 2019, from <https://Medlineplus.Gov/Autoimmunediseases.Html> MedlinePlus Is the National Institutes of Health's Web Site for Patients and Their Families.
- MedlinePlus. (2019). *Autoimmune Disorders*. U.S. National Library of Medicine. Retrieved December 28, 2019, from <https://medlineplus.gov/ency/article/000816.htm>
- NIH, National Institute of Health. (2019). *Autoimmune Diseases*. Retrieved December 28, 2019, from <https://www.niams.NIH.gov/health-topics/autoimmune-diseases#tab-causes>.
- PRB, Population Reference Bureau. (2011, September). *Chronic Diseases Do Affect Youth*. Retrieved June 27, 2019, from <https://www.prb.org/Youth-And-Chronic-Diseases/>
- PwC JUNE 2019. (2020). *Medical Cost Trend: behind the numbers*. Retrieved December 23, 2019, from <https://www.pwc.com/us/en/industries/health-industries/assets/pwc-hri-behind-the-numbers-2020.pdf>
- Semmelweis Society International. (2019). *The Semmelweis Reflex Or "Semmelweis Effect" Is A Metaphor for The Reflex-Like Tendency to Reject New Evidence or New Knowledge Because It Contradicts Established Norms, Beliefs or Paradigms*. Retrieved June 30, 2019, from <Http://Semmelweis.Org/About/Dr-Semmelweis-Biography/>
- Stoppler, M. C. (2020). *What is Mucus?* Retrieved 1/18/2020 from [https://www.MedicineNet.Com/What\\_Is\\_Mucus/Article.Htm#What\\_Is\\_Mucus](https://www.MedicineNet.Com/What_Is_Mucus/Article.Htm#What_Is_Mucus)
- Van Cleave, J., Gortmaker, S. L., & Perrin, J. M. (2010) Dynamics of obesity and chronic health conditions among children and youth. *J. Am. Med. Assoc.*, 303(7), 623-630. Retrieved from <https://www.cdc.gov/healthyschools/chronicconditions.htm>
- World Health Organization. (2018). *Nutrition*. Retrieved November 23, 2019, from [http://www.WHO.Int/Nutrition/Topics/2\\_Background/En/many](http://www.WHO.Int/Nutrition/Topics/2_Background/En/many)
- Zimmer, C. S. (2013, October). *How Many Cells Are in Your Body?* Retrieved December 17, 2018, from <https://www.nationalgeographic.com/Science/Phenomena/2013/10/23/How-Many-Cells-Are-In-Your-Body/>