The concept of addiction as disease has a long history

Last week we grappled with the concept of addiction, with the goal of trying to identify those features that characterize an addiction, or a person as addicted, or a substance or activity as addictive.

For the next several weeks, our task is to explore the various models that psychologists and others have developed to aid us in our understanding of addiction. We begin this week with what have come to be known as the **disease models**.

[Before we begin our examination of this topic, let me emphasize that the disease models, though widely accepted and strongly endorsed by many in the field, are just that - *models* - that guide a lot of current research. These models should not be mistaken for scientific "truth;" indeed, as we shall learn, many of the basic tenets of these models are not all that well supported by scientific research.]

Early Formulations of Addiction as Disease

The word "addiction" has existed in the English language for centuries, coming originally from a Latin root meaning "to impose sentence" or "to give over into slavery." The term was usually used to connote a form of self-imposed enslavement, and for many centuries, the widely-held assumption was that addiction was due to weakness of character.

References to addiction as disease appear sporadically in medical literature as far back as the late 1700s. However, most physicians did not subscribe to such a view. Quite the contrary--19th century physicians prescribed narcotic drugs routinely to their patients for virtually every ailment. Opiates like morphine were readily available, since legal controls did not come into being until the early 20th century.

Have you ever heard the phrase "patent medicine"? In the mid and late 1800s, syrups and tonics were sold "over the counter" (to use a modern phrase) as remedies for everything from menstrual cramps to the common cold to tuberculosis to colic in infants, and the most common ingredients were alcohol, opium, morphine and cocaine! Most physicians denied that these substances were addictive, or they argued that only weak-willed and immoral people could get hooked.

Did you know that heroin was developed by the same German pharmaceutical company (Bayer) that manufactured the first form of aspirin? Heroin was hailed for years as a wonder drug, a non-addictive substitute for morphine and opium! Users could order their hypodermic needles through their Sears catalogue!

However, by the end of the 19th century, more and more physicians were beginning to view addiction as a disease, based in large part on a growing awareness of what these potent chemicals could do to the human body.

Moreover, for many, the concept of disease seemed preferable to what many have called the *moral* model, by which users were belittled and condemned for their "sins" of

excessive use and addiction. Physicians began arguing for humane medical treatment rather than punishment.

Also, there was growing awareness that the problems of addiction were not confined to the poor or uneducated or immigrant populations.

The earliest medical portrayals of addiction emphasized exposure and chronic use: the alleged disease was produced by the chemical after years and years of excessive use. Central to the concept of the disease was its impairment of the user's will power, such that along with increasingly severe physical problems there would also be a gradual loss of ability to control consumption, as well as a steady deterioration in one's social functioning. In other words, while the user might have started off using in a willful fashion, at some later point the disease would develop, robbing the person of any voluntary control.

However, the view of addiction as disease did not initially catch on. Instead, by the late 19th century, alcohol and opiate drugs were increasingly demonized--the drugs themselves were seen as the basic cause of addiction and all the personal and social ills that go along with it. The result was the passage of state and federal criminal laws outlawing most psychoactive drugs, as well as the rise of the American temperance movement that culminated in the Prohibition era (1919-1933) when all alcoholic beverages in the U.S. were illegal. Drug addicts and alcoholics were dealt with harshly, and imprisonment was commonplace.

The modern era of disease models can be traced to two sources:

1. Alcoholics Anonymous, a self-help organization that began in 1935 with the proposition that alcoholics were sick and needed help, and
2. The establishment of the Center of Alcohol Studies at Yale Medical School and the hiring of the respected psychiatrist E. M. Jellinek as its director in 1940.

Jellinek is often referred to as the father of the modern disease model of alcoholism. He devoted the rest of his career to the scientific study of the causes, prevention, and treatment of alcoholism. For Jellinek and his colleagues, the critical issue was the addiction to alcohol, for which medical treatment, not punishment, was essential.

Jellinek's Contribution

In a series of published papers in the 1940s, Jellinek laid out his view of alcoholism. He introduced a stage model, by which he meant that drinkers progressed through a series of ever-more-serious stages: a *pre-alcoholic* phase of increased consumption, to a *prodromal* phase marked by blackouts and other serious symptoms, to the *crucial* phase characterized by increasing loss of control and more serious disruption of day-to-day functioning, to the final *chronic* phase marked by daily drinking, irresistible cravings, and severe (and eventually fatal) physical and psychological deterioration.

Jellinek actually described many forms of problem drinking and was explicit in stating that only the "gamma" and "delta" forms were to be considered true diseases, in which

addiction to alcohol, with its underlying pathophysiology (changes in cellular metabolism leading to tolerance and withdrawal) and its hallmark symptom, loss of control, was key. However, because he emphasized the progressive stages and how easy it was to “slide” from one to the next, he believed that it was necessary for physicians to pay careful attention to all forms of problem drinking.

Unfortunately, Jellinek's distinction between alcoholism-as-disease and other forms and earlier stages of problem drinking has been mostly ignored or forgotten; hence, the current "epidemic." Jellinek estimated 500,000 alcoholics in 1950, while recent estimates go as high as 15-20 million!

It is important to note that the work of Jellinek and his colleagues was largely based on studies of a small, select group of alcoholics attending AA. Thus, critics have suggested that his "discoveries" have only limited relevance, since his subjects were mostly white males in their 50s who had been drinking heavily for years.

By the 1950s, largely due to the work of Jellinek, alcoholism-as-disease became the official position of the American Medical Association.

The disease models of addiction contain several assumptions

Core Assumptions

Despite various *models*, one can also speak of the disease *model* (singular) in the sense that there are some common core assumptions:

- There are discrete diagnosable conditions with characteristic symptoms, thus making it possible to reliably distinguish between those who are addicted and those who are not
- Among the many distinctive symptoms, tolerance and withdrawal are basic, showing that addiction is physical, that something has changed in the tissues of the body and how the body responds to the psychoactive chemical
- Loss of control is the defining observable pathology; many people might engage in various activities excessively, but only those who have lost the capacity for voluntary control are truly addicted
- Addiction is progressive -- it steadily worsens over time, it is chronic, incurable and irreversible, but it can be controlled by total lifetime abstinence
- Addiction requires specialized medical treatment

How Many Disease Models Are There?

Beyond the core assumptions listed above, it is possible to distinguish several variations. One major issue that divides the model builders is whether the disease precedes or comes after involvement with the addictive substance (or activity):

Exposure model: The exposure model holds that the disease is acquired as the result of prolonged and excessive exposure. This was Jellinek's position. This is also sometimes referred to as the "brain injury" position, based on the belief that the disease occurs as the result of damage to the brain caused by excessive and/or prolonged alcohol or drug use.

Susceptibility model: The susceptibility model holds that people have the disease, or are in some way vulnerable or susceptible to it, before they are ever exposed. The major emphasis here is that some people are born with a predisposition due to heredity, though some would argue that the predisposition could also result from some form of early childhood experience.

Disease as Metaphor

Another divisive issue is whether the disease is primarily physical, or psychological (or even spiritual). Most contemporary scholars and researchers in the addictions field stress the importance of biology: genetics, brain chemistry, etc. For them, the term "disease" is literal -- it must be based on some underlying pathology in the body.

However, there is also a tradition, dating back to Sigmund Freud and psychoanalysis, of viewing addiction as a psychological disease (or disorder), a disease of the mind rather than the body, where the term "disease" is no longer used literally.

And for Alcoholics Anonymous (and all the other related Twelve Step self-help groups like Narcotics Anonymous and Gamblers Anonymous and Overeaters Anonymous, etc.), the term "disease" is used very much as a metaphor, as a means of combating the moral condemnation of addicts. AA refers to alcoholism as a *spiritual* disease, and recovery depends more on one's willingness to submit to a "higher power" than on any formal medical treatment.

[Despite this spiritual emphasis, however, many in AA over the years have also spoken extensively about alcoholism as a disease of the body. Dr. Bill, one of the founders of AA, was the first to propose that alcoholics have an actual allergy to alcohol, which inevitably leads them to their loss of control over drinking. In contemporary America, AA and the medical community are usually -- though not always -- closely allied.]

Please note that all of this discussion is totally separate from an issue about which there is no serious argument: heavy consumption of alcohol or drugs, excessive involvement in risky sexual behaviors, overeating and obesity, are all unquestionably linked to a variety of other clearly recognized diseases (cirrhosis of the liver, AIDS, heart disease, STDs, diabetes, etc.). The issue we are addressing here is not whether addiction can *lead to* some other disease but whether *addiction itself* is a disease.

Establishing the Boundaries

One last issue that divides the various disease models involves boundaries. If addiction is a disease, then like any disease it should be possible to clearly delineate its boundaries so that we can easily determine whether someone has the disease or doesn't have the disease. Ideally, there should even be a specific test for it (just as you can be

tested for diabetes or a bacterial infection). Look back at the first of the core assumptions listed at the top of this page.

As we saw, Jellinek clearly distinguished alcohol addiction, the "real" disease, from all other forms of problem drinking, and for him, the loss of control defined the boundary. If someone could effectively stop or cut down, then that person, no matter how much he drank, did not have the disease.

In its initial form, AA also made loss of control the central issue. Indeed, the very first step to recovery in AA is to admit that one is "powerless" over alcohol.

As we saw last week, the Diagnostic and Statistical Manual (DSM) includes two similar criteria (using more than intended and inability to stop or cut down) in its definition of *substance dependence* (but since only 3 of 7 characteristics are required for the diagnosis, these two criteria are not critical).

But DSM also includes a category of s*ubstance abuse*, the pathological use of alcohol (or other drug) characterized by significant social or occupational problems, use under dangerous conditions (for example, driving under the influence), continued use even when one knows that it is causing problems, etc. Is this also a disease? And if so, is it the same disease, or a different disease? Does it involve addiction?

And what about the binge drinking of college students? Many view that as a serious problem on college campuses today, but is it also a disease? The same disease? An addiction?

How about someone going through a painful divorce who starts drinking too much? Disease? Addiction?

Some statistics show the number of alcoholics in treatment increasing twenty-fold between 1942 and 1976. Some articles today report 15 to 20 million alcoholics in the United States, which represents between 5 and 10 percent of the adult population! However, such estimates depend on how these terms are defined: narrow, tight definitions lead to much lower estimates, whereas broader, more all-inclusive definitions lead to much higher estimates. Since the disease models are often associated with efforts to arouse public interest (a topic we will return to in Week 8), there has been a tendency to rely on more all-inclusive definitions so as to generate much more alarming statistics.

How should we evaluate the disease models of addiction?

To carry out our critical analysis of the disease models in an organized fashion, we can refer to pages 42-50 of Thombs's chapter, which he divides into a discussion of the following key assumptions of the disease models:

- Loss of control
- Progressive disease
- Chronic disease
- Denial

For each of these important areas, can you find any logical flaws, any ways in which these assumptions seem to violate "common sense"? What empirical evidence is there to either support or contradict these assumptions?

(Among other major areas of critical discussions, there is also a heated controversy around what has come to be known as "controlled drinking," and the question of whether alcoholics can moderate their own drinking over time or overcome their drinking problems without any "expert" help. We will address this in more detail when we come to Week 5 to look at behavioral models of addiction.)

It is also possible, as Thombs points out, to evaluate the disease models in terms of their strengths, to ask whether these models are of any real value to people. He presents as a strength the fact that the disease models have helped to rescue us from the moral model with its emphasis on punishment. However, some actually see this as a weakness, believing that people need to be held accountable for their actions and that no one should be able to hide behind a "disease" or use it as an excuse.

Thombs also regards as a strength the emphasis on total abstinence, which he believes is usually the best position to take in working with addicts. However, others have suggested that the emphasis on abstinence turns away a lot of addicts who are unwilling to commit to it as a goal, and since total abstinence is hard to achieve, it might become a prescription for failure.

A Logical Analysis of the Disease Model Assumptions

The Allergy Concept: One of the oldest and most enduring biological theories emphasized by proponents of disease models involves the concept of allergy. This view has a very appealing simplicity, easy enough for anyone to understand. Usually applied to alcoholism, the argument is that alcoholics are born with a biologically-based abnormality that operates like an allergy to alcohol. Ingestion of alcohol will inevitably lead to the loss of control and chronic progressive deterioration that characterize the disease.

But one might ask how an allergy could lead to alcoholic drinking -- isn't it more likely that it would lead a person to conclude that he shouldn't drink? Do you have any allergies? I suspect many of you do, and what do people with allergies typically do? They avoid whatever triggers the allergy!

Tolerance and Withdrawal: The disease models put a lot of emphasis on tolerance and withdrawal because these are viewed as proof that there is something abnormal about addicts at the cellular level. But even if there are cellular or metabolic changes, this does not fully explain addiction.

For example, have you ever used narcotics? Most people of course say no, but in fact many of us have used narcotics -- not street drugs like heroin but prescription narcotics like codeine (included in Tylenol 3), demerol, percodan/percosette, morphine, etc., used to help relieve the pain of injury or surgery. And the evidence is clear: even though many pain and post-surgery patients who take narcotics for a few weeks do begin to

develop some tolerance, and even though they might experience some unpleasant withdrawal when they stop the drugs, less than one percent of these patients ever become addicted!

A more recent example is the drug Oxycontin, which has in fact been linked to a fairly high number of fairly severe addictions throughout the U.S. -- in some areas, the numbers exceed the number of heroin addicts. However, there, too, the pattern is clear: although the risk of addiction seems higher than for other narcotics, most users do not become addicted.

[It is for this reason that DSM-V might make significant changes to its conception of dependence/addiction, to distinguish between those whose tolerance and withdrawal occur merely as “side-effects” to these prescription medications, often (though not always) easily overcome.]

Regarding the relationship between withdrawal and alcohol addiction, even in long term heavy drinkers withdrawal reactions are very variable. Moreover, how can withdrawal explain addiction? Despite the misery of withdrawal, many alcoholics, heroin addicts, etc, begin using again, which defies common sense. Moreover, they often "pick up" again weeks, or even months or years, after they have completed their withdrawal. Apparently, there must be something more to addiction than just the cellular changes.

[One way that disease theorists try to get around these logical problems is to emphasize another "symptom": **denial**. Because the addict denies to himself that he has a problem, he will continue to use, despite the agony of withdrawal, despite the allergic sensitivity. But it's hard to see how denial, as an obviously mental process, can be explained by genetics, molecular biology, or neuroscience. Moreover, as Thombs points out, denial is not so much a symptom as it is an understandable way that alcoholics and addicts respond to the incessant criticism and rejection society subjects them to.]

A critical analysis of the disease models of addiction involves many considerations. We can evaluate the models as a matter of logic and we can evaluate them on the basis of empirical evidence produced by scientific research. Remember what I said at the outset of this Lesson, no model has a monopoly on truth, so keep your critical eyes open. Next week, we will delve more deeply into a look at current research in genetics and biology that some believe is beginning to provide scientific support for the key assumption of the disease models, that there is some underlying pathology.

[For those of you who are so inclined, you might want to take a few minutes to view the web site of Stanton Peele, Ph.D., probably the most vocal critic in the world of the disease models of addiction. Go to http://www.peele.net/]

For now, however, let's think about what we've learned in terms of the considerations we identified last week as the formal attributes of a good theory or model:

- Clarity: are the disease models clear, well-articulated, easy to understand?
- Comprehensiveness: do the disease models deal with all, or at least most, of the major issues?

- Explicitness: do the disease models use precise definitions in a way that allows for reliable measurement of key variables?
- Parsimony: do the disease models provide a simple way to understand addiction?
- Ability to generate useful research findings: in next week's lesson, we will be looking much more closely at contemporary theory and research aimed at elucidating the possible role of biological factors in addiction, so we will defer this analysis until we have a chance to look at the scientific evidence