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Reactions to Avian Influenza

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Abstract

The goal of this project was to research the history of medical rhetoric in American society to develop a basis for American reactions towards the potential Avian Influenza epidemic as represented in the media. This study focused on ideas surrounding "framing disease" and developed four factors within this framing: medical authority, public health authority, uncertainty, and blaming. Cholera, typhoid, the 1918 influenza, and AIDS were all researched in order to develop a discussion of American perceptions of Avian Influenza.

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1. Introduction

Throughout American history, there have been many large events that have affected social responses to medicine and disease. An example of this can be found in epidemics. Just the high number of people who contract and are affected by the disease causes large changes. These include public health reforms, changes in disease perception, and in America, many changes in social acceptance of physicians.

For the purpose of this work, there are two main groups of people who interact in regards to medicine and disease. These include medical experts, or biologists and physicians, and the public, or lay-people. These two sets each initially frame diseases and epidemics in different ways. In the context of this study, "framing disease" is used as defined by Charles Rosenberg in *Explaining Epidemics*: "In some ways disease does not exist until we say it does, by perceiving, naming and responding to it" (305). Scientists typically frame a disease based on its transmittance to others, its symptoms, and the death rate involved. However, a large part of their framing is also based on social response from lay definitions. The lay public initially frames disease according to social aspects, yet they also depend upon scientific or biological definitions of disease. Discrimination, avoidance, and stereotyping form a part of lay-citizens', physicians', and researchers' framing of disease just as much as do scientific discoveries of the disease's interaction with the body.

These describe how diseases currently are framed in society. In the past diseases have been framed in different ways. Part of this difference surrounds the status of the two parties in relationship to each other. Before the late nineteenth century, medicine and doctors did not have the authority they have today. The public may have taken the treatments offered, but only as a last resort. Also up until the nineteenth century many in the public viewed disease as being a punishment from God and as an individual occurrence, "supernaturalism", although different individuals had the same symptoms (Tesh 17).

Despite describing scientists and the public as two very separate forums, these two groups actually frame diseases based on the same facts or ideas, and off of each

other. They also contain a great deal of overlap: much of scientists' interpretations are socially based and much of the public's interpretations are based on the biomedical transmittance of the disease.

Much of a physician's job is based on social aspects and how society expects them to act. Members of society, despite possibly not knowing the biological aspects of disease, frame disease based on their interpretations and upon what definitions are given by physicians. They then create a social definition and reaction, which physicians must be aware of in order to provide the greatest benefit to their patient (Rosenberg, "Epidemics", 316).

In describing the epidemics in America, it is important to understand how these two groups interact, as well as how they provide different explanations for similar facts or symptoms. These features are not only evident during epidemics in America, but throughout its history. However, epidemics bring about a more concentrated and clear outlook on the interactions between these two groups in society. It is also interesting to note how epidemics are framed, because often the social or public frame comes first. This is because the epidemic is new to everyone and scientists cannot answer all, or many, of the questions coming from the public. Therefore the public will define the disease based on their own observations, and medicine defines it later.

Under this examination of epidemics and the interactions between physicians and the lay-public fall a number of variables or factors within the overall framework of "framing disease" that will be used in this paper to describe and explain the epidemics in American history. These consist of medical authority, public health authority, uncertainty, and blaming or borders. Each of these factors changes depending on the time period in American history being analyzed. By changing, they have changed how Americans frame disease.

Medical authority is the status of doctors and those working in the medical field in the view of the public. In America, medical authority was non-existent before the mid 19th century. In 1830, Americans called a doctor as a last resort, in many cases the treatments were harder on the patient than the symptoms (Rosenberg, "Cholera", 66). Once the germ theory was developed in the late 1800s and scientists began researching

bacteria and methods of disease transmittance, the view of medicine in America began to lift to place doctors on a pedestal of knowledge.

Today most Americans are dependent upon medicine and science. Many may not realize this fact, yet it comprises a large part of our lifestyles. We quickly run to the medicine cabinet for any small aches or pains. However, in 1832 at the start of the first cholera pandemic, doctors were struggling to survive in the profession (Rosenberg, "Cholera", 65). This factor quickly changed during cholera and by the third cholera epidemic studies had been done to show that the best "cure" for cholera was to stay sanitary and to create better public health laws and living areas.

The germ theory had been developed by the arrival of typhoid fever in the United States in 1898. Scientists had gained a huge amount of authority since 1860. They were researching the agents that caused disease, and finding ways to help the body fight them. During this pandemic and the Spanish Influenza epidemic in 1918, medical authority grew to its current status. The public looks to scientists and medicine for answers, instead of trying to find them on their own.

Although medical professionals are still held in high regard in society today, this is quickly changing texture. Now many in society feel skepticism towards medicine, one reasonf or this is as new diseases appear they are also becoming more resistant to our current medication (Garrett, "Plague", 8). This produces a gap where there is an acknowledged disease, but with no possible treatments. This has been a particular problem with AIDS, SARS, and now Avian Influenza.

Public health authority is the second main factor used in this analysis. It is important to separate this from medical authority. Public health is a very different area of study and specifically looks at the general public and how to prevent disease on a population level. However, physicians focus more on an individual level of disease. The authority of public health has greatly fluctuated since it was recognized in America. Interestingly, America had one of the first public health organizations and quickly set the example for other cities and nations with regards to having and maintaining a strong public health system in the late 1800's and early 1900's.

However, like medical authority public health authority did not exist before the third cholera epidemic in America in 1866. There were few people on any type of public health board in any city, and those that were did not necessarily know anything about public health or its importance at that time. Just before the third cholera epidemic, New York City created a Board of Health (Rosenberg, "Cholera", 186). This board was given almost free reign in attempting to lessen the affects of the epidemic in the public. In just three decades America went from having no public health system, to having one that could dictate laws and actions.

This strong public health system continued for quite some time. However, since the start of the AIDS epidemic and scientific discoveries which have led to assumptions that medicine is much more individualized than previously thought, public health authority has fallen. Public health authorities can no longer dictate how physicians should act, or create more general laws for the safety of the public (Garrett, "Betrayal", 274). They can only suggest changes in behavioral practices, i.e. washing hands after seeing a patient.

The third main factor incorporated into this analysis of American perceptions of epidemics is that of uncertainty. In this context, uncertainty in society describes the way citizens and scientists think and feel about medicine and each other in regards to safety concerns. Not only safety from the disease, but also concern over being safe from other citizens in the community or other nations. Uncertainty also describes confusion felt in regards to disease aspects such as symptoms, treat-ability, and virulence. Many times, particularly during pandemics, uncertainty increases in the public forum. This uncertainty can evolve from ineffective communication between scientists and the public, fear of severe symptoms, lack of knowledge or understanding about a disease, and lack of knowledge or understanding about a culture or country where a disease may have appeared to originate. The uncertainty analyzed here describes general views and concerns held towards medicine. Uncertainty is also discussed in terms of scientists and doctors and that which is felt amongst them during epidemics.

As the previous two factors have changed throughout American history, so has uncertainty. Uncertainty has been highly dependent on education and how society views

risks. During cholera it was much more common for people to die of disease than it is today. It was not the dying that frightened the public in as much as it was the severity and onslaught of the symptoms (Rosenberg, "Cholera", 66). The uncertainty felt mainly revolved around how a person could avoid contracting the disease, not towards physicians. Today, Americans expect not to die from disease and instead to be treated and healed. Current uncertainty in the public is now focused towards medicine and their ability to fulfill the duties the public has assigned them. Uncertainty is also currently felt towards molecular medicine and the biological aspects of disease as a new era in medicine. People remain reluctant to believe in things they cannot see.

Uncertainty in the public felt towards science and medicine and their capabilities to find a cure is amplified during pandemics. During the start of a pandemic, when the disease is new to everyone involved, this uncertainty is very evident in the media, such as journalism. Although science by nature works with uncertainty, this is not always noticed by the public until a serious issue is raised (Kehr 3).

Along with uncertainty in the public, there is also some controversy between different groups of scientists and professionals. This controversy always exists, but is much more noticeable during a pandemic. One reason for this is how journalists represent science in the news. Some journalists will pit scientists with opposing solutions or answers against each other (Stocking 23). This produces more uncertainty in the eyes of the public towards medicine. They do not know which side to believe.

Another aspect of uncertainty during a pandemic is the idea previously mentioned regarding how the disease is framed. At the start of recognition of a pandemic today, the public looks to scientists for answers. However, scientists are looking for these answers at the same time. Scientists attempt to answer the questions, but different groups have opposing answers which produces an appearance of controversy to the public and policy makers. This controversy along with incomplete or unclear answers also lends to the uncertainty that brews in society. More recent pandemics, such as AIDS and SARS, have made the uncertainty and controversy surrounding communications between the public and professionals grow to become a common attribute to any new disease or treatment that is presented.

Uncertainty is a main way in how diseases start to be framed in society. People do not know where the symptoms are coming from, how the disease is contracted, and how to protect themselves from it, yet they have acknowledged the existence of the disease. Often the symptoms are very different from more common diseases, which is a part of the distress found in society. Sometimes they are very severe as in cholera with people dying within the same day they contracted the disease (Rosenberg, "Cholera", 67). However, sometimes the initial symptoms are barely visible although the patient is still able to pass the disease on to others. This was a problem with AIDS when it first developed. The uncertainty in regards to the questions raised leads people to look for answers which furthers the framing of the disease.

The final major factor of framing disease and medicine in the United States has been creating borders and blaming others for the disease. This factor stems from both medical authority and uncertainty. Medical experts may identify the existence of a new disease or pandemic in a part of the world, and then the public becomes uncertain about this new disease and how it could affect them. Finally, the public often segregates those who were known to have first contracted the disease, which produces blaming and borders.

When creating a physical or mental barrier between society and the disease, the public feels safer, although they may not be. These segregations can lead to quarantining of the people inflicted with the disease. By blaming the ones with the disease, healthy citizens are able to distance themselves from the sick and in their minds put themselves at ease. When people attempt to protect themselves, they also avoid the group of people that the disease first inflicted. Cholera only affected the slums and the poor, AIDS was in homosexuals and drug users, SARS came from Asia: each of these was the way in which society segregated the initial people infected with the disease. However, in many pandemics, the disease quickly spreads outside of the initial group affected, if it had even inflicted that group in the first place.

One other aspect of blaming/borders in America is that the nation's borders become more physical during an epidemic. A general feeling of invasion and that the disease did not originate in this country exists. This brings about the ethical problem of

whether or not to close borders or who should be allowed entrance. In many cases, those attempting to immigrate to America were screened for whatever pandemic was occurring at the time. This has been repetitive and occurred during cholera, typhoid, and AIDS.

This idea of borders and blaming continues to be one of the strongest factors of framing epidemics today. They are typically named due to their assumed point of origin, and in society some citizens are still shunned due to race or class because of various pandemics in history. Borders become stronger, and a sense of invasion prevails.

This project uses the idea of framing disease and the four elements described, medical authority, public health authority, uncertainty, and blaming, to analyze the epidemics of cholera, typhoid, the 1918 influenza, and AIDS in America. This leads into a more thorough analysis of the current situation and views in terms of the Avian Influenza and its possible breakout into a deadly pandemic.

The following chapter gives a broad overview of medicine and disease in American history. This includes how people framed diseases, how the public viewed scientists, and how risks were understood, among other important topics that are not necessarily included with the later discussion of pandemics.

Following Chapter 2, I move into my discussion of pandemics. The purpose of discussing pandemics in America is to show how they emphasized the points made in Chapter 2 of how diseases were framed. This starts with Cholera in 1832 which continued until 1866. Then I move to a discussion on Typhoid Fever which began in the late 1890's. The third pandemic considered is a very important one to this work: the 1918 Influenza (i.e. Spanish Flu). The final pandemic discussed is AIDS which moves right up to today. Each of these pandemics is important in representing one or more of the four factors discussed as part of framing pandemics.

The fourth chapter discusses Avian Influenza. It covers the four factors and how Americans are framing disease today. In order to study this, current newspaper articles were used primarily from the New York Times. Also, a number of primary sources were used to help in this discussion.

I then conclude this work with some ideas of what could possibly come in the future, after or during an epidemic in America. This discussion stems from the research

done on past pandemics and what happened in society during and after them. The different ideas presented also come from current questions in society about the future and what may or may not happen.

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2: Brief Overview of Medicine and the Public in American History

The purpose of this chapter is to describe the trends in American history within framing disease as described in the introduction. This chapter provides an overview of medicine, public health, and general views in society. The more specific time periods examined are those surrounding the epidemics, or between them. One idea presented is the thoughts on disease causation which opens this chapter. These are extremely important in demonstrating the basis upon how decisions were made and what decisions or assumptions were made during pandemics in American history. These major decisions were based upon the way in which Americans viewed disease causation, and therefore upon how they framed disease.

Historians have now classified many pandemics throughout early history such as the Black Death and other plagues. However, during that time the idea of disease was mainly believed to have a religious cause (Tesh 17). If a person was sick, it was not seen as a part of science and that it could be cured. It was seen as a punishment from the gods. Science, or medicine, as a study of diseases, did not exist as we know it today.

There were three other common theories of disease causation, aside from religious reasons, before the time of the first cholera epidemic in America in 1832. Sylvia Tesh discusses them in depth in her work, Hidden Arguments: the contagion theory, the miasma theory, and the personal behavior theory (15). The two most widely believed during this time period were the personal behavior theory and the supernatural theory. This based the idea of medicine and disease on the individual and excluded any notion of public health. The contagion theory is continued in the public today. It is the idea that people can acquire the disease from each other. The idea of quarantines developed from this theory (Tesh 11). Although those in society felt that disease was caused due to personal behavior they still avoided the sick, particularly during epidemics.

The miasma theory of disease differed greatly from the other three (Tesh 25). This theory described disease as evolving from filth and other unclean areas. This theory is an important one to discuss. In 1832 it still affected actions in the government and medical profession. People in the cities called for the streets to be cleaned – trash was

piled next to houses, no one could remember when they had seen the actual roads beneath the waste, and the water was very unclean with long walks to pumps (Rosenberg, "Cholera", 17). By 1866, the state government of New York had taken action and created a public health board for New York City where they immediately began cleaning and removing waste. This board was partially formed as a by-product of the belief in the miasma theory.

There were a number of other aspects of disease and medicine before the cholera epidemics that were very different from how disease and medicine is seen today. These revolve around the four factors presented in the Introduction. One prevalent aspect was in how doctors were viewed by members of society. Medical authority did not compete as a factor in framing disease in society as it does in later periods.

A strong example of common feelings during this time period towards physicians was demonstrated in an article in the Adams Sentinel in Gettysburg on June 9, 1819: "Her case like most others which the doctors can make nothing of, was decided to be a *nervous* one, for the real meaning of that term I take to be only, that physicians do not understand what it is." This woman suffered from being "overly sensitive" to storms. It is clearly stated that "like most other" cases, doctors "can make nothing of" it. This demonstrates a lack of faith in physicians' abilities to diagnose a patient in a manner different from the general public.

Another example occurred in the Republican Compiler on March 30, 1825: "We will leave the doctors to explain if they please, the nature, curability, and accidental possibilities of her disease; but we were judges of the effects, like them, and can probably judge better than they of the means and perfection of her cure." This story was written by the Sisters of Visitation of the B. V. Mary in D.C. The patient was a sister who became very sick and was bedridden. Physicians had come and could not help her so her sisters prayed for her and the priest gave her communion. She instantly felt better and rose soon after. Here the supernatural theory presented by Tesh is quite evident. In this case, the Sisters felt God had cured one of them. They also felt that they knew much more than the physicians that had come to see her. This received quite a large article in print as well.

Stories like these are among the ones that encouraged the public to believe that sickness was an act of God and was also cured by Him. Many citizens assumed that they could do just as well as the physicians, and although they did call upon a doctor when sick, many did it out of habit and did not believe the doctor would actually be able to diagnose and cure the patient.

An aspect of medicine that followed from this at this time was the importance of alternative medicine in society. Whether it was respected is a different matter, yet there were many peddlers who made and sold their own concoctions as remedies for various symptoms. In many cases, these peddlers were just as respected as physicians at this time.

Another interesting story from the "Hagerstown Mail", detailed below, demonstrates how there were many who decided to create concoctions they called medicines or cures who were not doctors or physicians and sold them in cities or on the streets:

> "I, Elizabeth McCormick, now upwards of 80 years old, residing one mile West of Loudon, do certify, that I had the Rheumatism Pains for upwards of twenty years, and tried a great many Doctors & a great many medicines without benefit; at length I prevailed on my son Ger, to go and get me some of Samuel R. Smith's cure – he brought me 3 bottles, and although my son laughed at me for thinking I should ever be cured, I do declare, that since I have taken it, I am as free from pain, as I ever was in my life." (McCormick 3)

This served as both an article and an ad in the paper. McCormick had attempted to take some benefit from physicians and medicine, yet it did not work for her. So she turned to alternative medicine and a local seller. This article also placed medicine on a lower tier in society as the previous articles demonstrated.

There were few medical schools in the early 1800s, and the diplomas they gave did not hold a strong significance. Most doctors did not receive any clinical training while in school, and there were no prerequisites to attend, which included no requirement of a high school education (Rosenberg, "Cholera", 68). In addition, many counterfeit diplomas were made that could be purchased if you wished to become a physician.

Overall, before 1830, physicians were used and looked towards for help, yet it was generally believed that true help would be difficult to find. Not much was known

about the profession, and there were many frauds who claimed to be doctors or who had fake certificates. God was still generally seen as the cause and cure of disease. These were the views that were brought into the first Cholera epidemic in 1832.

During the 34 year time period of the Cholera epidemics in America, 1832, 1849, and 1866, medicine and views of disease changed dramatically in comparison to the much slower pace of change before this time. In the first epidemic, Americans treated medicine in the same manner they had in the past as previously described. Quarantines were issued and doctors treated reluctant patients. But by the third epidemic, New York had taken the drastic step to create a Board of Health (Rosenberg, "Cholera", 192). This board was given tremendous power and set the stage for public health for the world. They cleaned the streets and stressed the importance of personal hygiene.

Due to the changes in medicine seen during the cholera epidemics, a new idea of medical authority developed in the years between the final cholera epidemic and the typhoid epidemic beginning in 1898. Many citizens began to respect doctors and those working in the field. However, because of this change and the idea of contagions, other problems developed. During typhoid the main complaints or concerns in society were not held towards doctors as it was in cholera, but instead focused upon immigrants and new ways of avoiding contracting diseases. The idea of borders became the more evident issue rather than the uncertainty and dislike towards physicians. This shift in societal concerns and uncertainty shows just how much changed in the 30 years between these two epidemics. These ideas are developed further in the next chapter.

Another aspect of framing disease before and during the cholera epidemics includes ideas of disease causation. The general views remained individual in terms of disease causation. Those in poorer areas along with immigrants were still segregated in society. Members of the upper class still felt they were above being able to be infected. These epidemics will be discussed further in the following chapter as well.

The main ideas at this time of the causes of disease included the "miasma" and "supernatural" theories as described by Tesh. The miasma theory was particularly present in cities such as New York during the cholera epidemics and the years following. Even during the typhoid epidemic this theory was still popular and helped greatly in

public health measures and laws regarding street cleaning and sewage systems (Leavitt 42). During the 30 years between cholera and typhoid the "supernatural" theory mainly dissipated.

The theory that took the place of both of these was the "germ" or "contagion" theory (Tesh 8). This was developed during the 1880's in Europe. Many young American physicians chose to study in Germany in order to learn more about this theory and the new research areas developing in order to bring about new treatments of disease and to study new ideas of disease causation (Leavitt 40). This theory describes diseases as being spread by "germs" or microorganisms that can only be seen with a microscope. This idea was beginning to form during the cholera epidemics, but did not take root until the late 19th century. Many older physicians did not want to believe in something that they could not see.

Despite the opposition, this theory held. With this theory many discoveries were made in medicine and science. Where medicine and the ideas of disease causation had remained fairly steady, they changed drastically in the 30 years between the two epidemics. Scientists now had a systematic way to research diseases. They began to understand how to take samples from diseased patients and what samples to take. They began to learn that they could culture bacteria and from there slowly started to develop medicines to counteract specific diseases.

These specific methods of research, along with clear communications to the public through the media, were how the medical community began to have their own authority and place in society. By the typhoid epidemic the public had come to accept science and scientific research in an understanding that what they were doing was for the public's general benefit.

There were a number of important occurrences during the typhoid epidemic, which are described in more detail in the following chapter. One was the continuation of public health practices in the cities, with hygiene being of particular importance. Doctors also had begun to have a stronger influence on views in the public. Uncertainty during this epidemic towards the disease seemed much lower than that felt during the initial cholera epidemic. However, uncertainty began to grow in terms of uncertainty towards

those who had the disease and the idea of healthy carriers which was first developed at this time.

In the years after typhoid, American hospitals and medical schools began a transformation. This transformation followed the examples set by German and French institutions: labs and practical experience were introduced (Barry 80 73). This was essential to physicians moving through school, before this many never actually interacted with a patient before graduation.

However, very few schools were reformed during this time. Only a small handful received enough funding to open up a research lab. Many others unfortunately still followed the older lines of teaching with no admissions requirements, which included a college degree, no medical laboratories, and no clinical experience (Barry 70).

Despite the large remnants of a dying era of medicine, the public continued to place more respect towards the profession. Newspapers reported current research studies and the leaders in research in the medical profession were well-known and respected in society (Barry 80).

By 1918, disease was seen as something that could not always be avoided due to the spread of bacteria. Despite this, it also was seen as something treatable. Now treatments were being made for specific diseases and problems. Examples included anti-toxins for some bacteria which worked to prevent infection.

This idea of treating someone who was sick by removing the bacteria from the body was new and had powerful affects on the health of the public. Scientists were developing anti-toxins in response to rattlesnake bites, and others towards specific bacteria. The vaccine for smallpox was found in the use of cowpox. Many other examples exist of ways in which disease began to be treated successfully in the early 1900s.

These treatments and research now moved into the area of "preventability." Although spreading was seen as unavoidable with the idea of bacteria, people were beginning to understand that they could help prevent it in themselves with good hygiene. Not only could disease be treated successfully, but it could be prevented on a large scale by the use of anti-toxins and vaccines (Barry). This opened up an entirely new field for

scientists and physicians to research. The public was also aware of this opening and became enthralled in science and by doing so became a large factor in the raising of medical authority during this time period.

As mentioned, some of the old thoughts did linger during this time, such as the religious theme, but many were dissipating and believed by fewer and fewer each year. Blood-letting was still fairly common, as well as some traditional methods of treatment such as camphor and mercury. By this time, though, almost all citizens and physicians believed in the germ theory as the causation of disease.

There was a very short time period between the end of the typhoid epidemic and the beginning of another epidemic. During this time more medicines and their interactions with disease was researched and developed. This research continued through the 1918 influenza pandemic. World War I was happening during this time and provided a great source of patients for more in-depth medical research. The public's thoughts of medicine and medical professionals were the same as that which had started to develop around the time of the typhoid epidemic. However, at this time no antivirals had been created, nor did anyone know what a virus was.

After the 1918 Influenza pandemic, many other diseases also caused widespread infection and death. However, none of these were on a truly epidemic scale. Many of these were "conquered", mainly in the United States. One example is small pox, although this disease caused many deaths, it was a constant menace and not a new one which came and went such as the other epidemics. Scientists found a vaccine for this in cow pox, and by 1955, as far as we know, it was removed as a human disease. Another example is polio, this disease also affected huge numbers, particularly after Spanish Influenza until the mid 1900s. The development of a polio vaccine was a huge advancement in medicine and science.

Along with these important "conquests" in science, there were a number of epidemic scares that never grew into an epidemic as devastating as those preceding them. These were instrumental in how the public continued to believe in the importance of medicine and its benefits. Although these viruses were not as virulent or deadly in the first place, this was not realized in the public. It is important to note what happened

during them in order to realize the thoughts and views held in the public by the time of AIDS in the early 1980s.

These epidemic scares included three different influenza mini-epidemics. The first was in 1957 and was termed "Asian Flu." This flu spread quickly as with the Spanish Influenza in 1918. However, the disease was recognized much faster in the public and measures were taken to prevent it. A vaccine was also developed which was used in the UK to help prevent its spread (1957: British). Overall an estimated 100,000 deaths occurred worldwide, which was very mild in comparison to the pandemic in 1918.

The second flu scare was in 1968. This "Hong Kong Flu" was more severe than the Asian Flu in 1957 and also was first recognized in Asia. A count of about 400,000 deaths worldwide was attributed to this minor epidemic (1957: British). Once again, compared to the millions that died in 1918 this number is quite small. Yet it still caused a great deal of fear in society.

The final flu scare before the next major epidemic of AIDS, the "Swine Flu", occurred in 1976. This flu virus made the jump from pigs to humans, hence the name, at Fort Dix, New Jersey. Two men died within 24 hours, and when the virus was isolated there was an uproar in medical society as well as in the public. The virus that was isolated was thought to have been the same one as that which caused the Spanish Influenza epidemic in 1918. However, this never spread outside of Fort Dix and only a little over 200 soldiers were affected. But before this was realized, President Ford had already signed a statement requiring the inoculation of every American against this virus: this caused a huge amount of controversy. This was revoked once it was realized that this more virulent strain of influenza died out and did not spread.

The first two scares were considered conquests in medicine because the epidemic was mainly contained. However, the third was an example of a virus that began in America. Most likely because of this, large measures were taken in order to prevent its spread and severity including the requirement of inoculation. When this virus did not actually spread, the American public was quite upset. This idea of being forced to do something, and then it not actually happening was brought into the start of the AIDS epidemic. The government was leery to act due to the problems that came with the

Swine Flu. This presented a large part of the problems that developed during the start of AIDS.

The next chapter discusses three main epidemics in American history and how medical authority, public health authority, uncertainty, and blaming fit within the framing of these diseases. After this, there is a more thorough discussion of AIDS and how it relates to the bird flu today.

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3: Pandemics in America: A Rhetorical Analysis

Cholera, typhoid, the Spanish Flu, and AIDS all brought disease and death to the United States. Millions died, and many more contracted these diseases. Each had its own characteristics, and certain ideas and changes in societal views developed during each of them. This chapter moves through the first three epidemics and discusses the elements of framing them during the main years of the disease's existence in America.

The four factors described with each pandemic are those described in the previous chapter: medical authority, public health authority, uncertainty, and borders or blaming. Each of these had a very different relationship in each pandemic. Some were a more prevalent concern in certain pandemics than in others. One factor that stands out throughout the pandemics is that of uncertainty.

With the initial onslaught of each of these pandemics, levels of uncertainty were high. Scientists and doctors recognized new symptoms, yet it took time before they could understand all of the symptoms. Also, much of the beginning of these pandemics was uncertain for them in that they did not know how to treat the new disease and what information they were giving citizens was guess-work at best. Lay-people were extremely uncertain as well. They saw their countrymen dying and sick and did not know why, or how they could contract the disease, or what they could do for themselves if they did become sick.

Cholera began in 1832, with another wave in 1849 and another in 1866. It spread through the slums of Europe and reached America through its ports (Rosenberg, "Cholera", 6). This pandemic is an integral part of this study. During this 34 year time span huge changes were made in science in understanding disease. Within this period a strong "before and after" can be seen where the "before" categorizes all of science and medicine and religion before 1830 in not only the United States but also on a global scale. The "after" develops the first steps towards where medicine stands in society today. In 1832, mercury was still thought to help with treating cholera and there was no thought to the idea that the disease was communicable. By 1866 small public health boards had been put in place to clean the cities and their water supplies. Measures were

also being taken to encourage the public to understand that the disease spread from person to person.

The next pandemic to reach America was typhoid which affected a large number of people from 1898 to 1911 (Typhoid). By this time the germ theory had been developed and medicine was moving very quickly in its ability to treat diseases. However, this disease had carriers, people who never had symptoms yet still spread the disease (Looking Forward). This produced a great deal of concern in the public because this made it impossible to know who had the disease or who could spread it. This produced controversy over human rights and if people should be forced to be tested if suspected of spreading the disease (Looking Forward). This epidemic was chosen for this study because it once again affected a large number of Americans, and it is situated in a time where medicine was expanding and changing in its research. During this epidemic those working in medicine and health related fields were forced to look at what they did and how they worked in regards to moral and ethical issues raised by society.

In 1918, the Spanish Flu spread through America. Half a million people died, with a total of 22 million worldwide (Davis 26). One factor that helped to spread this virus in America was the encampments of infantry preparing to go overseas to fight in WWI (Crosby). The camps were overcrowded and the hospitals had little room. Those with less severe symptoms remained outside of the hospital area to spread it to others. The Spanish Flu was chosen for this study because the final chapter of this work deals with the Avian Influenza Virus. These two are related not only by the disease and symptoms involved, but also the situations the United States was involved in at the time. The Spanish Flu developed during the First World War and at that time most Americans heard much more about the war than the flu. Today we are in another war, and the headlines are about the war and not about the disease once again.

Over the next 60 years, America experienced a period of rest from major pandemics. There were a few more minor influenza pandemics starting in Asia, discussed in the previous chapter, but these were mild in comparison to the 1918 influenza strain. This period encouraged the public to place a higher faith in the medical profession.

Cholera: 1832 through1866

A very large majority of the deaths at New York, by the cholera, have been of persons of the most dissolute habits - prostitutes and confirmed drunkards, or others much stinted as to the ordinary comforts of life, *crammed* together in small and filthy houses, cellars, &c. (Niles 2).

The three main cholera epidemics of the 19th century in America were in 1832, 1849, and 1866. Throughout this 34 year time period huge changes were made in both scientific and common thought and practice in dealing with diseases and treatments. Medical practices had not evolved for hundreds of years before this, and suddenly by the third bout of cholera fundamental thoughts developed on a global scale.

Today we know that cholera is spread through feces. The first symptoms of cholera include diarrhea, vomiting, and cramps. Due to the diarrhea and vomiting, the patient becomes dehydrated which often brings about cyanosis which produces a blue face, cold and dark extremities, and puckered skin (Rosenberg, "Cholera"). Death can come within a day and sometimes within a few hours of the first symptoms. Cholera still exists in many areas of the globe where water system sanitation levels are low.

In 1831 Americans started to hear news of a cholera epidemic spreading through Europe. The idea of cholera was not new, but its location was. Before 1831, cholera was primarily localized in the Far East and did not pose a threat to Americans. However, the news of cholera in Europe was of much greater concern. Due to the high amount of transportation across the Atlantic, it seemed to be only a matter of time before it came to America.

The first known case of cholera in the United States was reported on June 14, 1832 in Whitehall, New York (Rosenberg, "Cholera", 23). From here it spread throughout the rest of the state. The first case appeared in New York City on June 26, 1832 from the immigrant boats from Europe.

When the first cases of cholera were beginning to appear, the United States had almost no public health system. The public did not approve of medicine and did not place them on a higher level of authority as they have today. However, by the end of the third cholera pandemic this had changed dramatically. In London, John Snow had saved many lives by discovering that cholera was spread through unclean water systems

(Frerichs). Doctors in Europe were introducing the importance of the ideas of infectious diseases. At this time citizens began to look at scientists and doctors in a new light, and they began to place a higher level of responsibility on doctors. With this the idea of medical authority began to shift to start becoming as we see it today, with a select few knowing a large amount of medical knowledge and the majority being either ignorant or unable to access this information.

One example of how cholera and medicine was viewed in 1832 can be demonstrated by a reaction to an announcement by New York's Medical Society. This announcement came on July 2, 1832 and stated that nine cases of cholera had been reported at various facilities and that only one of these cases had survived. Society's response was to claim that the Medical Society was a private organization and had "no authority to make statements affecting the welfare of the entire city" (Rosenberg, "Cholera", 27).

This public response was based on an official report of cases, not opinions or ideas. Yet society refused to believe the announcement, and instead replied that the Medical Society had no right to say things such as this. At that point in time the Medical Society in New York was placed there mainly for political purposes and did not do anything to help society as a center of public health would today.

In response to cholera, physicians frequently disagreed in 1832 as to a method of treatment. Some suggested massive amounts of mercury and calomel. Others preferred bleeding or laudanum. Tobacco smoke enemas, electric shocks, and saline solution injected into veins were versions of much more drastic measures for treatment (Rosenberg, "Cholera", 67). All of these treatments were only for the beginning symptoms of painless diarrhea. Physicians had no way in which to cure a patient once they had reached a critical point in the disease.

From the extreme treatments alone, it is easy to see why many patients with cholera refused to see a doctor and why the doctors were generally avoided. Most of these things leave the body in shock and it can take a long time to recover, if the body is able to recover. Currently many of these treatments are seen as toxic to humans, particularly mercury and calomel.

Also, as mentioned, none of the physicians agreed on one method of treatment during the first cholera pandemic. They were essentially on the same level as the citizens in regards to what they knew about cholera. With disagreements over treatments, the uncertainty felt in the public towards medicine was amplified at this time.

A further reason for the disrespect of physicians during this epidemic was due to their actions during the epidemic. Many fled from disease areas, others would not see patients at night, and still others were attempting to profit through the expense of others (Rosenberg, "Cholera", 70).

These actions, among others, provided a strong basis for the distrust and disrespect felt by the public towards physicians during the 1832 epidemic. It appeared on many occasions that the doctors did not know anything more than the patient about the disease or possible treatments. It took 30 years for physicians to begin to actually learn about cholera and to be able to help the patients with it.

In 1832, uncertainty was a major issue which formed partly from the distrust Americans felt towards doctors. Physicians were also very uncertain at this time and were caught completely unawares. They were not ready for what came off the boats from Europe. Much of this was due to the lack of understanding of transmission of disease. Many doctors were still under the assumption, like the populace, that sickness and death was an act of God. When members of the population outside of the lower class became sick, the population became more uncertain and frightened in respect to their views on cholera.

Another uncertainty factor at this time was that of the symptoms of cholera. It appeared unpredictable and physicians only felt that they had some idea as to how to treat the first symptoms. They did not know how to treat a patient after they moved past the first diarrhea stage. When they did treat, very few physicians agreed on a treatment. The general uncertainty felt by physicians surrounded the symptoms of cholera and methods of treatment.

In 1832 the public's feelings of uncertainty focused on the epidemic. As with physicians, they were unsure of the symptoms and the best way (if any) to treat them. Along with these similar ideas, they also felt uncertainty towards each other. They now

regarded those living in poor areas, or those who were deemed "immoral," and recent immigrants as being spreaders of disease (see quote on p. 25). The public felt that the disease was an act of God, but they still understood somewhat that it was transmissible. They were not aware of how they could receive the disease or how they would know they had it.

This quote describes both the uncertainty of the symptoms along with who it was generally assumed would become sick: "Many are carried off in half the time; and, what is most alarming, the respectable part of the community, who last year were considered almost exempt, are now most frequently attacked by the disease" ("Extract of a letter" 1). This is another example of how it was viewed when the "wrong" people became sick: "It is remarkable that so fearful an attack of disease should have been made in so proverbially healthy a place as Portsmouth" (Frederick 2).

Just before the arrival of the third cholera pandemic in 1866, doctors started to look over to Europe and see the sanitation measures that had been taken to clean the cities. They recognized how much this could improve welfare and health. In New York, a Metropolitan Sanitary District and Board of Health was created in February. The board of health was put in place to "oversee its [New York's] sanitary condition" and consisted of four physicians along with six other political individuals (Rosenberg, "Cholera", 191).

The importance of this board was immense. The powers given to it were very extensive which showed how important public health had become by this time. With the imminent epidemic planned to arrive in a few months, this board executed their powers efficiently and managed to complete many tasks by the time the first cases were reported. They organized street cleaning, and included many citizens to help with this process.

They also were now aware of how cholera was spread between people. John Snow of London found this by discontinuing use of a common water pump in the city which greatly slowed the spread of the disease (Frerichs). Citizens began to look at doctors in a new way. The citizens saw that the doctors' reports and studies were done using strong and accurate methods, and that they had worked hard to achieve what they now knew. However, this was still just the beginning, many remained unsure of physicians and their research.

By 1866, the uncertainties felt by both doctors and citizens now focused more on the new theories of disease being developed and less on the actual epidemic. Doctors were well aware of the signs of cholera from the first symptoms through the last. They also had agreed upon a sound method of treatment of giving the patient plenty of fluids and keeping them warm. The uncertainty towards the epidemic had dissipated, although it had risen in other medical areas. Now the uncertainty resided in how diseases should be studied in a general sense. For example a few physicians spoke highly of the developing germ theory, yet many still did not believe in it. The general public did not want to believe in the germ theory as well because many of them still, even in 1866, wanted to believe that God and personal behavior were the forces behind the spreading of disease.

The creation of health boards, along with citizens volunteering to help with clean-ups, showed just how far medicine came over these 34 years. It went from being distrusted and avoided to being respected and in charge of the public's health.

During all three epidemics there were many cases of the fourth factor in framing epidemics of blaming and borders. Although the disease did move out of the slums, throughout the 34 years of epidemics the general population still shunned those who lived there and assumed that they brought the disease upon themselves. New immigrants were also highly distrusted and shunned. Due to the epidemic many of them had trouble finding jobs because none were available which lowered their chance of survival even more:

> ". . . but N. York, . . . , as from being the receptacle of a chief part of the emigrants from Europe – 7,000 and upwards arrived in that city last month, many of whom were altogether destitute of present means of subsistence – and the stoppage of business has prevented such employments as some would have obtained, under different circumstances." (Niles 2)

When ships came in with immigrants from Europe, an official would ride out to them and check to see if there were any reports of cholera (Rosenberg, "Cholera", 19). If so, the immigrants were then forced to stay in a hospital set up on the pier for this purpose. This acted as a quarantine until it was determined that they could leave.

Many city or slum areas were also sectioned off as quarantines in the later epidemics once it was accepted that cholera was transmissible from person to person.

"The disease now seems scattered about the city, but was raging most fearfully about the famous "Five Points" – which is the very sink of human degradation" (Niles 2).

The cholera epidemics had huge affects on not only American society, but the rest of the world as well. It changed the way the medical profession was viewed, along with changing the ideas of uncertainty. Disease was not understood in 1832 and the public did not know what it meant to be clean and in good health. By 1866, the public had come to understand the importance of city sanitation and quarantining the sick. The uncertainty changed from not understanding the symptoms or who was susceptible, to not understanding where medicine the new direction medicine was undertaking. The ideas in 1832 about disease transmission and germ theory that were scoffed and disbelieved had started the transition in 1866 to becoming common thought.

The cholera epidemics provided an extreme situation where change could rapidly occur. This was what was needed at this time for medicine in order for it to begin to change. This set up the research that began to appear in regards to medicine and communicable diseases. In the 30 years after the final cholera epidemic many large steps were taken in increasing medical research because of what had changed during the epidemics. These changes are what provided the basis for how Typhoid was framed and viewed by society.

Typhoid

The typhoid epidemic provided a channel for continued change in the medical profession and society in terms of knowledge and views about medicine. The years between the final cholera epidemic and typhoid contained a great deal of research and new findings. A main development from this era was the "germ theory"(Tesh 8). During the cholera epidemics the idea of transmittance of disease between people was developed, but not widely believed. The germ theory brought about an actual definition for how these diseases were spread, and greatly changed common thought towards disease causation.

Medical authority began to increase during this epidemic. The view switched from the general feeling that the public knew more than the doctors, to the doctors being

almost all-knowing in the area of medicine. These changes are what brought about a very different focus during the typhoid epidemic and how those who became sick were viewed in society.

Due to the move from the belief in the supernatural being the cause and cure of diseases, many no longer felt that those who practiced "sinful" activities were more susceptible to diseases. This may have still been an underlying view, yet others came to the surface during the typhoid epidemic.

This epidemic began slowly in the United States in 1898 and continued through the early 1910s. Thousands contracted the disease each year, and a large proportion died from it. Antibiotics had not been developed yet, or many of these deaths could have been prevented. An aspect of typhoid that proved to have a large impact on society and public health was that healthy carriers existed. Healthy carriers are people who had the disease, possibly a mild form where they did not recognize the symptoms as typhoid, and went on to heal, yet continued to have the typhoid bacillus bacteria in their stool for the rest of their lives. With unsanitary conditions at the time, this meant that these carriers could spread typhoid to a huge number of people. It was found that one person infected at least 80 others with the disease, with 30 of these dying from it (Leavitt 121).

The uncertainty felt in this epidemic mainly revolved around the existence of these carriers. This included both scientists and the public. Scientists only discovered their existence in 1906 with Mary Mallon (Leavitt 6). These medical experts did not know what carriers were and learned about them at the same time as the public. As with cholera, large uncertainties and concerns developed when physicians were attempting to learn about the disease at the same time as the public.

Scientists were mainly uncertain in regards to who these carriers were, how contagious they were based on their employment, and how many typhoid cases went on to become carriers. They had a difficult time deciphering these facts and in the end were largely unsuccessful in finding and tracking the carriers. Through a study completed during the time, it was found that about 5% of all typhoid cases went on to become carriers (Leavitt 49). One example of what a large number this represents was in the year 1909 there were about 3,500 typhoid cases in New York City. Five percent of this equals

about 175 new carriers every year in New York City alone (Leavitt 50). From this number, researchers and those in charge of public health were lucky to find and track a few of these cases (Leavitt 50).

This large number of cases produced concern in the medical society, particularly in regards in attempts to remove the disease from the cities. With so many carriers transmitting typhoid to new patients, it was almost impossible to stop the disease without some form of treatment.

The uncertainty in the public felt towards these carriers was extremely high. There was no way of knowing if a person was a typhoid carrier without testing their stool for the typhoid bacillus bacteria. This produced more distrust in society towards each other. This was particularly prevalent in the food industries where typhoid was more easily spread through unclean conditions in the work place. One example used by Leavitt describes a dairyman who was a typhoid carrier and managed to contaminate an entire supply of milk (51). This produced an increase in infections in Manhattan and the Bronx and the dairyman was found to be a carrier through further examination of the situation (Leavitt 51). Due to this case a large distrust of milk and milk suppliers developed.

Because the public believed in medicine and the authority it had to make strong decisions, the people had to focus their concerns on other ways to place the blame or fault on someone or something. During this typhoid epidemic in America, the public's main focus was in the area of blaming and borders which followed the uncertainty felt. This was particularly aimed at immigrants who came in to America already thin and sickly and who took time to adjust to the robustness of American society at the time.

The most common idea or name heard in regards to the American typhoid epidemic is Mary Mallon, or Typhoid Mary. The treatment of this woman, as many others have noted, exemplifies the views and ideas of scientists and society at the time of the epidemic. The key ideas that her life represents include the newfound authority of medicine, uncertainty towards healthy typhoid carriers, and the blaming of immigrants.

Mary Mallon was a middle-aged Irish immigrant woman making a living by cooking for various wealthy families in New York and surrounding areas. Typhoid outbreaks in the families followed her in her travels as their cook. After a severe

outbreak with one prominent family where six of the eleven people in the vacation home became sick, a private investigator was hired (Kraut 98). George Soper had already become a well-known epidemiologist who could trace the source of the typhoid outbreaks. He found Mary at a new location where she had already infected the family who hired her (Kraut 98). Through a series of encounters, and finally placing the task on Dr. Josephine Baker, Mary was physically restrained and forcibly taken to Willard Parker Hospital where she was kept in isolation (Kraut 99).

Mary was kept in isolation (moved to a different hospital) for almost three years before she contested her captivity. She was then released with the stipulation that she would not cook for anyone but herself again. She was found five years later after infecting 20 women at New York's Sloane Hospital for Women through cooking in the kitchen (Kraut 101). When found here, she was once again taken into custody and for the rest of her life was forced to remain on North Brother's Island (Kraut 101). Throughout her times in isolation she gave stool, blood, and urine samples frequently, up to 3 times a week, to the physicians working on her case (Kraut 99).

During Mary's brief release in 1909 there was a very different feeling in the public towards her than what developed later on with her recapture. The media played up her plight and focused on her capture and captivity by the Board of Health (Leavitt 126). They used the injustices against her as an American citizen to help build Mary's case when she went to court. One of the reasons she was released was because she had the public's support (Leavitt 144).

This support changed dramatically when Mary was found to have inflicted 20 new typhoid cases. Now Mary had become a "menace" to society and the public no longer was on her side (Leavitt 150). By being against her, the public now increased the power of the New York's Board of Health. Citizens in New York no longer had a problem with the testing and finding of carriers in general and did not object to the Board of Health in this research (Leavitt 151).

This medical authority allowed the New York's Board of Health to keep Mary in custody for her life because she could transmit this disease as a carrier. There were many instances of carriers similar to hers that were not held in captivity or forced to give

samples. Although the health boards attempted to locate the other cases of typhoid carriers, they neither had the funds nor the time in order to do this thoroughly. However, they were permitted by the government to keep this one patient in captivity for the rest of her life.

The public also did not raise strong arguments for Mary's case. This is also indicative of the trust they were beginning to place in medicine and science and the research they were doing. By being on the side of medicine, the public recognized and gave them authority to make their own decisions.

Many other reasons have been suggested and discussed in regards to Mary's case and why she was forced to stay under supervision. One is the fact that she was an immigrant. Many in society still mistrusted Irish immigrants, although this was fading out to focus more on other newcomers. Mary was also very strong-willed and did not particularly fit the role of a common woman in that society. She was not married, and many felt that she carried herself in a "man-like" way (Leavitt 100). She also was a member of the lower class.

Although many carriers fell into the "poor, immigrant, female" character, they were viewed differently than Mary (Leavitt 100). Due to Mary's actions when she was permitted to leave isolation she automatically received a negative status from scientists and the public. She acted in a way in which she became a "public health menace" (Leavitt 70). The public believed scientists when they described what a healthy typhoid carrier was and the implications of this in society. From this belief and Mary's actions as a cook, they assumed that she should be kept in isolation because she demonstrated little or no respect for those she was infecting.

As an Irish immigrant, Mary did experience some segregation. However, immigrants in general were segregated and shunned during this epidemic. By this point all immigrants entering the United States were required to undergo a physical and if they were found to have typhoid bacillus bacteria they were kept in quarantine until it was cleared (Leavitt).

As briefly stated in the introduction, medical authority and public health authority greatly increased during and after the cholera epidemics. This was demonstrated during

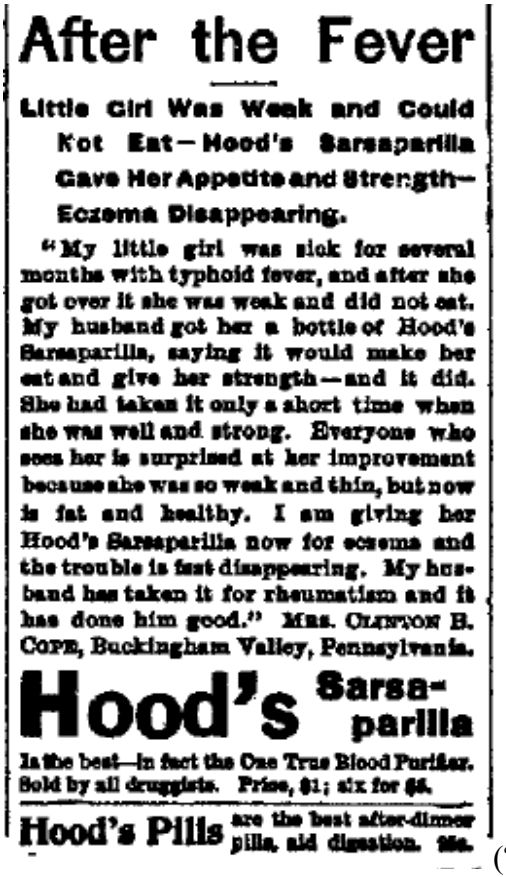
the typhoid epidemic in the media through journalism. One example of how doctors were now portrayed in a positive manner is detailed below:

> Frank, being the more unfortunate of the two, was stricken with typhoid fever about a year ago, and was brought home a very sick boy, but under the skillful treatment of Dr. George P. Weaver and the tender care of his father and mother, he soon recovered. (Gettysburg 3)

Another example of the increased number of patients using physicians as a resource was located in the Gettysburg Compiler. This example also demonstrates a decline in the belief in the supernatural theory because it specifically states that the diseae is not confined to one area:

> The disease is not confined to any one section, but is general all over the city, though up to this time the West End has developed the most cases. Every doctor in York has a share of the work, the range being two to twenty-four cases. (Gettysburg 2)

Public health authority was also very prevalent in newspapers at the time. This mainly could be found in the form of advertisements for certain cleansers or items similar to vitamins today that were meant to increase a person's vigor and stamina. These were early forms of public health campaigns used to increase personal hygiene in the public in hopes of decreasing the spread of disease. One example is an advertisement for "Hood's Sarsaparilla" which was sold in a bottle to treat various illnesses:



After the Fever

Little Girl Was Weak and Could Not Eat—Hood's Sarsaparilla Gave Her Appetite and Strength—Eczema Disappearing.

"My little girl was sick for several months with typhoid fever, and after she got over it she was weak and did not eat. My husband got her a bottle of Hood's Sarsaparilla, saying it would make her eat and give her strength—and it did. She had taken it only a short time when she was well and strong. Everyone who sees her is surprised at her improvement because she was so weak and thin, but now is fat and healthy. I am giving her Hood's Sarsaparilla now for eczema and the trouble is fast disappearing. My husband has taken it for rheumatism and it has done him good." Mrs. Clinton B. Cope, Buckingham Valley, Pennsylvania.

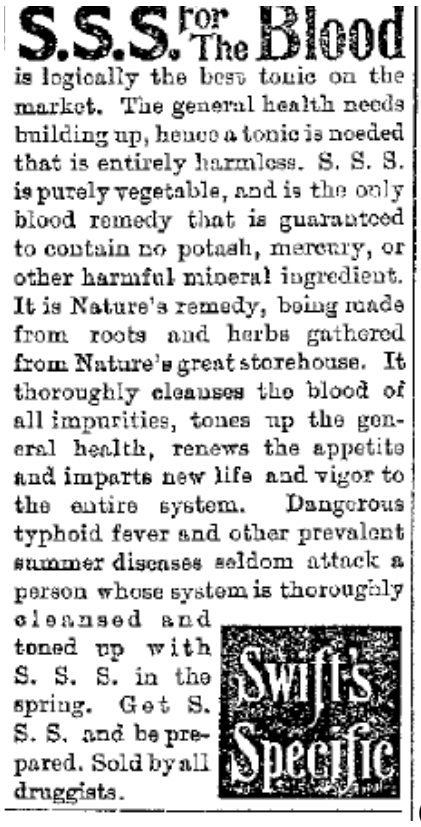
Hood's Sarsaparilla

Is the best—in fact the One True Blood Purifier. Sold by all druggists. Price, $1; six for $5.

Hood's Pills are the best after-dinner pills, aid digestion. 25c.

("After the Fever" 3)

Although this is meant to help, many of these medications were in the form of street vendors or apothecaries. Another, more vitamin-like example was very similar to this and meant to be healthy:



("S.S.S." 4)

A final example of the key importance during this epidemic being public health is an example of an ad for a water purifier. It is specifically advertised for use in cleaning your water to prevent typhoid fever:

("Steam and Hot Water" 2)

These three examples demonstrated ways in which public health campaigns had affected the local market for products that could reduce the amount of bacteria in ingestible items. The vitamins were thought to help, although at this point this was not a known fact. However, citizens did begin to become aware of the importance of how to stay healthy due to an increased authority in public health.

The actions during the typhoid epidemic, both on the sides of the public and medical experts demonstrated the huge differences in beliefs between cholera and typhoid in America. The view of medicine in the eyes of the public became almost opposite of what it had been. Now society trusted doctors and physicians. They trusted their methods and were more willing to give samples in the name of research. The blaming and borders had moved away from the idea of segregating the "immoral" characters of the Five Points in New York City, to monitoring immigrants more closely.

Although there are not many years between the end of the typhoid epidemic and the start of the 1918 Spanish Flu, it is important to include both in this discussion. Typhoid brought about medical authority and the NY Board of Health had immense

power. The 1918 Flu brings some new issues mainly revolving around its outbreak during the First World War.

The 1918 Influenza

There are few people today who have not heard something about the 1918 Influenza epidemic that rocked the globe during World War I. The years before and after this virus brought about further immense changes in medicine and medical authority.

The Influenza first made its appearance in the United States in Haskell, Kansas in 1917. At this time there was only one physician, Loring Miner, who noticed how unusual and severe the symptoms were (Barry 92). Many developed complications such as pneumonia and died, and a large proportion of the town became sick with the disease spreading very rapidly. At this time the physician reported these unique qualities and the severity of the situation to the government, yet no measures were taken at that time to even recognize this report (Barry 92).

From Haskell, the influenza strain spread to the army camps nearby. Thousands upon thousands of men were cramped into these camps. Many slept in tents, even in the winter, with little clothing and less than perfect eating conditions. Thousands became bedridden with this virus when it arrived. However, unlike in Haskell, few died who contracted the disease. Most recovered, but by recovering, they were still able to spread the disease to others.

From America, this virus found its way into French and English camps and finally to Germany. From here it moved into Spain and Italy. The spread in Spain and the large number who developed the disease there gave this influenza its common name: Spanish Flu. This completed the first wave of the influenza pandemic with milder cases and affects mainly interfering with army progression. These were small affects in the scheme of things at the time.

A main difference between this influenza pandemic and the typhoid epidemic only ten years before was the focus of many of the people in society. World War I was in the media every day and Americans were very intent on its progress. America entered the war right before the outbreak of the virus in 1917. The draft was implemented and

amongst the thousands going to fight or in camps in America, there were also thousands of nurses, physicians and Red Cross workers helping. Almost every person in the United States wanted to be a part of this war, and if they were not helping in some way they still were aware of what was happening oversees.

This focus on the war placed medicine and the prevention of disease on a back burner for many. The second wave of the Influenza virus was not wholly unanticipated, yet America was still not prepared. A handful of scientists had worked to study it and to bring about ways to prevent it. However, most physicians and citizens were not aware of the danger. After the brief scare of the first wave people quickly forgot about it to focus on the war.

The virus all but disappeared for a few months after this first wave. Many scientists believed that this meant it was gone. The influenza had been mild with few casualties and besides slowing down the German front there appeared to be little harm done. However, few realized the possibility that the virus could come back.

When the virus came back to America in the 2nd wave it received the term "Spanish Influenza" (Barry 179). This came about because the first wave of the virus had passed through not only the armies in Europe, but also through the citizens of Spain. In many other countries the virus had only been strongly evident in army camps preparing for war where there were huge numbers of people crammed into small areas. But in Spain, a country not preparing for war, the disease reached the public and spread rapidly. Although this was still a mild form, Americans had heard of it in regards to the fact that it attacked the public.

The second wave began to hit in mid-1918. It first presented itself in various locations, particularly in Europe. It stayed in those locations, but what was disturbing to scientists and the public was how lethal this virus had become. The way in which people died was equally alarming.

This influenza brought about a complication in many who contracted the disease which was considered to be pneumonia by physicians working with the patients. However, this pneumonia was different from any that had been seen before. The symptoms were more drastic, with blood coming out of some patients' noses and ears,

and when cadavers were examined fluids would pour out of the body cavity. Now we know one reason for why some who became sick with influenza developed these symptoms: their immune systems overreacted and, in essence, killed them.

Because this started in Europe, America was slow to pick up on the dangers. Not until the leading medical experts in America traveled to Camp Devens did the alarm sound for the United States. Camp Devens was located northwest of Boston and at the time was meant to hold 36,000 men. Right before the influenza hit this camp there were 45,000 men living there with the hospital only able to accommodate 1,200 of these (Barry 186).

The first case with severe symptoms in this camp occurred on September 7, 1918 (Barry 186). Over the next week hundreds more cases, diagnosed incorrectly as meningitis and pneumonia, were brought to the hospital in the camp. Finally, the doctors classified the symptoms and the epidemic spread of the disease as influenza. However, by now this recognition came too late. Those sick before had not been quarantined and had traveled to various locations. By the end of September, "19.6 percent of the entire camp was on sick report, and almost 75 percent of those on sick report had been hospitalized" (Barry 187).

Now the leading experts of American medicine and the men who pushed laboratory research in medical schools were called in to examine this new disease. All of them were shocked and stunned (Barry #). Many of them had studied all around the world and were as up-to-date on medicine across the globe as they could be at the time. Their immediate reaction was one of fear: the fear that they had found something in which they had no hope of defeating.

This wave affected not only those in army camps as with the first wave, but spread quickly to the public and citizens cramped in cities around ports. Camp Devens in Massachusetts was only one of the many spots that erupted with this epidemic at the same time. Philadelphia was also hit hard through their Navy Yard which at the time was the largest in the world and supported 35,000 workers (Barry 197).

There are a few items to note in regards to the response to influenza and its media coverage. When President Wilson decided to bring America into World War I in 1917,

he also decided to bring about a much more rigorous approach to controlling American views. Laws were put in place where people could not speak out against America or against the war. There were to be no disloyal or hard feelings felt in this country. Wilson wanted a unified nation when he entered the war, and he got it.

The problem with this proved lethal when the influenza broke out in 1918. It was deemed that writing about the disease and the fact that it was in the country would hurt the overall morale of the people. This slowed reaction times to the disease and made it so people were unaware of ways in which they could help prevent receiving it or even know that it was on its way. Of course this spread by word of mouth, but these consisted of rumors of what the disease could do and no one knew how to avoid it.

It took a while before newspapers eventually began publishing articles listing deaths and locations of where the virus was sprouting. By this point the damage had been done. And still, these publications did not include anything of the drastic symptoms or of the sorrows and personal aspects of the epidemic.

This was an aspect that this epidemic brought about in large numbers: disease was not personal. Doctors and nurses treated or examined thousands of patients every day. Relatives would come in to army hospitals begging nurses to look at their son/husband/brother – as a result nurses were not permitted to accept bribes. Anyone making an attempt to bribe a nurse or doctor was removed from the hospital. There was no "individual" with this pandemic. Citizens were dying by the hundreds, and people began to expect to die if they contracted the disease.

Another important aspect of this influenza epidemic was the significance the symptoms had on the uncertainty many in the public felt. Although many died from the usual very young and very old categories, an unprecedented number of young men and women died at their prime between the ages of 20 and 35. This was devastating to the community. Many children lost parents, and many pregnant women died. The symptoms exhibited by this age group were the most severe – many dying within a few days with lungs full of blood and fluids. We now know the reason for this, as mentioned before: their immune systems overreacted to the viral infection.

These severe symptoms were frightening – no one, including the greatest American physicians, had ever seen anything like it before. And there was nothing they could do for the patients. Many patients also turned very dark blue, almost black, because of a lack of oxygen intake in their fluid-filled lungs. This was called cyanosis, and because of the color many were claiming that this was the Black Death and there were rumors in the public that the plague was back.

Despite the inability of scientists to find a cure, the public seemed to have kept their faith in them throughout this epidemic. Perhaps this was because doctors and nurses were dying as well, and many stepped up to help others in fighting off this disease. Unlike in cholera, physicians were not running away from disease sources. They understood that they could not avoid this disease, and so instead chose to help those coming in to the hospitals by the hundreds.

Due to the war, the beginning of this pandemic seemed to be for the most part in the back of people's minds instead of in the front as the previous two pandemics were. When it first appeared in America this was not widely publicized and instead an effort was made to keep it out of newspapers in order to keep American morale high. When the pandemic came back to America in 1918, it was much more widely known that it existed, but was still unpublicized despite the very high number of citizens who became sick. By this pandemic, citizens had gained a much greater respect for physicians and those in the medical field. The overall attitude during the time of this pandemic seemed to be almost one of acceptance that the disease was there and there was nothing that could be done to prevent it.

Conclusion

After this pandemic, there were a number of pandemic scares which led up to the beginning of the AIDS epidemic in the early 1980s. During the years between the 1918 epidemic and AIDS, medical authority continued on its upward climb in regards to the respect recognized in society towards the profession. Research of diseases and how to cure or treat them grew exponentially. Some "miracles" were achieved including the discovery of the polio vaccine and the elimination of small pox in the population. These were two very large advances in medicine and greatly affected how citizens felt. These

high views of medicine pushed aside the importance of public health though and this actually started to decline in respect in the public. The importance of assessing public health versus medicine and medical authority seemed to become mixed and a fine line could no longer be drawn. The influence of medicine grew, whereas public health was pushed back.

These are the views that were brought into the AIDS epidemic in the early 1980s. This epidemic is then what has set the stage for how Americans are interpreting the presence of Avian Influenza in Asia.

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4. Avian Influenza

The previous two chapters were used in order to show pandemics' affects on society and medicine and how large changes can occur in beliefs within a culture during or because of them. America is now moving into another epidemic. As with AIDS, some consider it a scare, others impending doom. Once again the disease seems to have sprouted and retreated as with the 1918 influenza, but the question remains – will it come back?

Fear, betrayal, distrust, accusations, borders – all of these are common themes displayed in the media today. Many of these revolve around diseases and health issues. As AIDS has continued to be a deadly disease in many nations across the globe, views within the public are beginning to change in regards to framing disease along with the factors presented in this paper. In particular, fear of dying from infectious disease was very rare in the United States in the middle of the 20th century until the appearance and acknowledgement of AIDS. The fear of dying was centered on chronic diseases such as cancer and heart disease which tend to occur later in life and not affect the younger population as much. Now disease in younger generations and once-considered healthy individuals with the strongest immune systems will no longer be spared if one of the epidemics becomes widespread.

AIDS and SARS

The most recent pandemic that has integrated itself into American society and the human race on a global scale is AIDS (Acquired Immuno Deficiency Syndrome). The virus that has caused this was first isolated in 1983, but it was not classified as HIV (human immunodeficiency virus) until 1986 (Hays 432). Since it began to be widely recognized with a more rapid spread in the early 1980s, millions have not only contracted this disease but have also died.

When this virus was discovered, and the complication that came with it in the development of AIDS, a great deal of new research was beginning. Scientists were only beginning to understand the immune system and discover how it works within the body.

However, the scientific aspect of HIV and AIDS only formed a small part of the uncertainties and societal issues that developed in response to this disease.

The Swine flu greatly affected how AIDS was originally viewed when physicians began to recognize AIDS as a new disease. This developed with the notice of a trend in patients' symptoms with cases of secondary affects of AIDS such as Kaposi's Sarcoma (KS) and a severe pneumonia called *pneumocystis carinii* pneumonia (PCP) (Bayer 131). As the idea of AIDS as a disease that caused these other diseases formed, members in the community felt that this could be just another scare as with the 1976 Swine flu.

Science had "conquered" many diseases before the start of the AIDS epidemic, polio and small pox completely, and was developing vaccines for many more. Many, including politicians and scientists as well as lay-persons, felt that science was at the stage where epidemic disease was a thing of the past.

The confidence the public had for science to find a cure quickly was large. They assumed that AIDS would not spread anymore than it already had. This confidence has been broken down over the past two decades and now the relationship between lay-people and the medical profession has changed. Citizens are still respectful of medicine, but now they are also skeptical of anything new announced.

Due to the disbelief in the existence of AIDS as a severe epidemic it took a few years for it to be noticed how wide the affects went. However, once this was noticed, fear started brewing in society. This fear mainly focused around the aspect of "blaming". This blaming reflected much of the areas of blaming that were discussed in previous chapters.

One group of individuals that was specifically blamed was the homosexual male community. When AIDS surfaced first within the gay community, discrimination soared. For many who had previously been against homosexuals, now they felt that this was something condoning gays, punishing them for their differences.

This blaming of homosexuals and distrust in that they might have AIDS can still be found in society today. Even with the advances in medicine which proved that there were no differences between most individuals and their susceptibility to different

diseases, doctors still wondered if there was some way in which gay men were susceptible and the rest of the population was not.

Another group greatly blamed was Haitians. During the 1980s and 1990s huge numbers of Haitians were fleeing Haiti to come to the United States. In 1983, the CDC in the United States placed Haitians in a high-risk group for AIDS (Markel 161). As with immigrants in previous epidemics, Americans shunned Haitians. In 1986 a bill was passed that banned admittance to any immigrant who tested positive for HIV/AIDS. This stayed in affect until 1991 (Markel 145). During this time every immigrant to the United States was forced to be tested for HIV. This was the first time immigrants were actually banned because they had a disease.

Through the course of the AIDS pandemic many large changes have occurred in the United States. The start of the AIDS pandemic came at a time when the immune system was being presented as a new thing within the body. Now, scientists were proposing a system in the body that fought off these germs and destroyed them. However, AIDS weakens and destroys the immune system. This was the first disease that scientists interacted with which could actually change the body's DNA and lower white blood cell counts. This follows a similar pattern as in previous epidemics – scientists do not understand the disease on a scientific level and therefore the public does not. This produces uncertainty in the public.

The continued existence of AIDS as a pandemic in society, currently a large problem in many African nations, without a vaccine or a successful method of treatment has produced some large affects on the views many in the public feel towards medicine. The authority of medicine has changed, people are not as confident in medicine and science as they once were.

This change from complete confidence that medicine could conquer every disease, to now current thoughts of questioning faith in medicine has greatly affected how medicine is presented in the media. Skepticism is one common theme currently presented in the discussions of medical discoveries.

The next pandemic, or expected pandemic, that appeared after AIDS was Severe Acute Respiratory Syndrome, or SARS, in 2003. This syndrome appeared first in China

and after observing the affects it had on the respiratory system and its lethality, health experts were expecting the worst. This was relayed to society through the media. Fear quickly spread and even in America people in some cities were wearing face masks in order to prevent breathing in the virus.

Although it never evolved into a global epidemic, it demonstrated how much AIDS had affected Americans' views of medicine, public health, borders, and the uncertainty surrounding health. By the time of SARS, more and more people were choosing to use alternative medicine in addition to or instead of going to M.D.'s for assistance. In many of these cases, the M.D. could not help the patient because a cure had not been found, or the M.D. could not decipher the patients' symptoms.

SARS has played a crucial role in how Americans are now framing the potential Avian Influenza epidemic. Many feel that this flu virus will not evolve to become a dangerous epidemic mainly because SARS did not. They think these are all threats, without evidence.

Part of this has added to the declining faith in medicine and science which has occurred for a number of reasons. One of them surrounds the diseases that have become resistant to current pharmaceuticals and therefore untreatable by what is considered today as conventional methods. Antibiotics, for example, no longer can treat the same diseases they could 50 years ago because the bacteria have evolved into drug-resistant strains. This has become a particular issue for hospitals, one of which patients are aware of when (or if) they go. Another reason for a decrease in the belief in medicine surrounds the new diseases that appear to be sprouting that we have no previous experience with or possible ideas for treatments. Once again, scientists are learning and attempting to frame the disease at the same time as the public. This leads to a period where the public has many questions, but science does not have answers. Another possible reason of this lack of trust revolves around citizens' change in views of themselves. We have become dependent on medicine and assume there will be a pill to take care of any problem when this is not actually the case. When a cure does not exist, people are scared and disappointed.

Despite the decline of medical authority, or because of, public health authority has actually grown since the start of the AIDS epidemic. With AIDS, America has seen some of the strongest public health campaigns in the world. This includes campaigns that have come about in the past few years in regards to what are considered unhealthy lifestyles such as smoking. However, public health has not regained its powers with regulating medicine and medical practices. If strong measures of disinfecting are not used in locations such as hospitals, then outbreaks of resistant-bacteria can occur. This has happened quite frequently within the past ten years, and Garret associates a common cause as a lack of concern of personal hygiene in physicians and nurses ("Betrayal" 250). Without laws to mandate disinfecting, it is up to individuals to do this.

The impacts of AIDS and SARS in society have been very strong and have set the stage for the perceptions with the potential avian influenza epidemic. As we will see, views during this time of the four factors in framing disease presented in this work have been very prominent in the media. The ways in which they are presented in regards to this epidemic reflect the general views within the public in regards to medicine and science in general. This discussion begins with some general facts that have been presented by scientists and then moves into descriptions of how each of the four factors are currently presented in respect to this epidemic.

Bird Flu

Deadly Avian Influenza strains have been documented in the world for over 20 years. In the years 1983-1987 there were a series of four different outbreaks of one avian influenza strain in the United States. These were severe and millions of birds were slaughtered in order to prevent further spread. In 1997, the bird flu resurfaced in Hong Kong as a different lethal strain. In 2003, it spread again in the United States through Connecticut.

Despite these frequent outbreaks of lethal bird flu strains, to the best of our knowledge they did not pass any species barriers. This means that they were a concern in the public, but only as far as the price of chicken and issues with exporting. None of these strains had crossed into pigs or humans.

It was not until January 2004 when officials began to realize that the H5N1 Avian Influenza strain had crossed into humans in rare occurrences. This was the beginning of large issues and concerns that have been raised within the past three years in regards to this virus. The potential for this virus to become a large epidemic is a concern that health experts from world health organizations have frequently expressed to the public through newspapers. With encouragement from public health experts, many levels of governments along with more local schools and companies have all developed a "plan" for what will happen if this virus were to become a global epidemic. Despite these plans, there are still many questions in society. Many of these questions point towards the Swine Flu scare in 1987 and the more recent SARS scare in 2003.

The development of this virus and how it was covered in the media in newspapers is the main point of this study. A compilation of over 200 articles in the NYTimes was analyzed in order to develop the arguments presented. Some key resources were also used in "Betrayal of Trust" by Laurie Garrett, "The Gospel of Germs" by Nancy Tomes, "The Monster at Our Door" by Mike Davis, among a few others. Within this framing, viewpoints are examined from medical experts, public health experts, and public citizens. Also, the four factors of medical authority, public health authority, uncertainty, and blaming or borders are developed in detail. Throughout this chapter, "avian influenza" this referrs to the H5N1 strain that has mutated in order to be transmissible from birds to humans under close contact.

What is it?

Influenza is a disease that has plagued humans for centuries. It is typically understood as the common cold, although not all colds are caused by the influenza virus. Influenza itself is a disease originating in bird species, and the strains that have developed in humans, including the mild ones, have all been transferred at some point in history from birds to humans. The influenza virus has very high rates of mutation which is a main reason why it is such a problematic disease. New vaccines need to be created every year, and only the three that are predicted to be the most common are made.

Influenza also can easily mutate into a more virulent and deadly strain which can pass between humans faster than it does now. The last time this happened on a major global epidemic scale was in 1918 in the form of the 1918 Influenza, or Spanish Flu. There are also ways in which this can almost be encouraged to happen. In 1918 armies were kept in close quarters and training camps housed many more men than they should. This created a melting pot of all of the diseases the men had along with creating a very easy pathway for mutation and spreading. Once the 1918 flu mutated into its deadly form, the spread of the disease was almost impossible to stop. With better travel, and men moving across oceans quickly, the disease traveled with them. The incubation period of a few days also affected the spread in that patients would not be aware that they were spreading the disease.

This mutation and spread is exactly what is a concern to health professionals today in regards to avian influenza. The virus currently cannot spread from human-to-human, only bird-to-human. However, there is a chance that it will mutate in order to spread from human-to-human. If this were to occur, there is also a possibility that it can mutate into a very virulent form which would cause widespread infection with a large majority of the global population contracting the virus and experiencing symptoms.

Fear

The fear exhibited by large world health organizations is strongly represented in newspaper articles throughout the existence of this avian influenza strain. The way in which the media has presented Avian Influenza has greatly led to an increase in the uncertainty in society and medicine in the past three years. It is seen as the "unknown", and there are many questions being posed in which no one knows the answers. No time frame exists for when this disease could possibly mutate, and there is no definite that it will mutate, or that it will be dangerous to human health when it does. Uncertainty also revolves around the fact that there are opposing sides. Some claim that this potential Avian Influenza virus is just another scare like that of SARS. Some feel that the current American government is using scare tactics in order to gain dependence from citizens,

and therefore some citizens feel that this new possible epidemic is another scare like the terrorist threats.

However, many scientists and those in academia believe that this virus will eventually mutate, and that what is being said now is not to "just" scare the public, but to educate them in order to provide a warning. Yet, even with this common agreement, there is much uncertainty in the scientific field as well in regards to this virus. This is clearly represented in newspaper articles. Scientists claimed that they did not know the answer as of yet, and even that they might never know the answer: "But little is known about how quickly an avian virus can develop the ability to pass easily from person to person" (Bradsher Sep 28 2004). Even quotes saying that they were surprised by what was happening led to showing this uncertainty to the public: "The finding is 'extraordinary because domestic cats are generally considered to be resistant to disease from influenza A virus infection.'"(Altman Sep 3 2004).

The titles alone of many articles are enough to produce uncertainty and fear in society: "Thais Infected with Bird Flu; Virus Spreads", "Human Spread, a First, is Suspected in Bird Flu in Vietnam", "As Bird Flu Spreads, Global Health Weaknesses Are Exposed", "Health Experts Worry Over Return of Bird Flu in Asia", and "Bird Flu is Back, Raising Fear of Spread Among Humans" (all Altman & Bradsher Jan through Aug 2004). Even within the past few months titles remain uncertain: "Another Death in Indonesia Deepens Fears of Bird Flu's Spread", "Mystery Deepens on Possible Avian Flu Case in China in 2003", "Probing the Mysterious Migration of Swans Suspected in Spread of Avian Flu", and "Scary Birds are Back, This Time With Flu" (all McNeil May through Sep 2006).

Each article repeatedly uses the same series of information in a paragraph about half-way into the article which represents this uncertainty and fear:

> "Many influenza experts and health officials fear a worst-case occurrence in which a person becomes infected with both an avian influenza virus and a human one. Under such a circumstance, the viruses might swap genes, creating a new virus that could cause an epidemic all over the planet much like that of the so-called Spanish flu of 1918-1919, which killed 675,000 people in the United States alone and more than 20 million around the world." (Altman Sep 3 2004)

> "Human-to-human transmission of a new strain of influenza has long ranked at or near the top of nightmares for public health experts, who warn that it could in theory cause a pandemic killing millions of people worldwide." (Bradsher Sep 28 2004)

Throughout the articles analyzed this was a common theme. This demonstrated repeatedly to audiences that "experts" were afraid of an outbreak. To many, this translated as that they should also be afraid of the possibility and work to prevent such an occurrence.

It is also important to note that they discuss the "worst-case" scenario. In many cases of unknown possibilities the worst-case scenario is represented in discussion. Although some medical and public health experts believe this is a definite and not worst-case scenario, it is represented as this in media articles. More fear develops in society by continuing to display the worst-case scenario of this potential epidemic.

Although this strain of Avian Flu still runs rampant in Indonesian flocks, with some human cases, it has not been reported nearly as frequently as it was when this flu first appeared in humans in 2004. There is still some worry in society, but this is quickly leaving for more skepticism towards the possibility that this virus will ever mutate to become a human pandemic. This skepticism leads into the more factors to discuss in the framing of this disease: current medical and public health authority.

Medical authority

The authority that American citizens have placed in medicine has changed quite a bit over the past 20 years since the beginning of the AIDS epidemic. There are many factors that have played a role in this change, and not all of them involve epidemics, some have come about through other means. As mentioned in the previous chapter, AIDS was the first epidemic in many years that appeared to frighten and confuse scientists. This shocked society as well as medicine, and this began the start of a decline of faith in practical medicine. An example of this is the continued rise of alternative medicine in response to the decrease of patients using physicians.

Despite this decline of faith, most citizens still have a high respect for medicine and it appears that the main change has been that citizens will at least listen to what

science claims, yet they may choose not to believe it or will be skeptical about the findings. Whereas fifty years ago citizens did not require proof or evidence to believe what science told them, now the public wants to see the implications of the finding initially and how it could potentially help them. This makes it more difficult for physicians and scientists to prove themselves to society, and now they need to consider ethical implications before taking on an experiment.

Although it seems like a slight difference, this is a very important one to medicine. It may not be recognized as a lowering of confidence in medicine, but in the past it was not necessary for physicians or researchers to gain permission before beginning a project. One reason this interest in ethical aspects of research developed is the Tuskegee experiment completed in Tuskegee, Alabama. This experiment studied syphilis in African American men and lasted for almost 70 years. This study analyzed the symptoms of these men, and even when penicillin was recognized as a cure for the disease they were not treated. Once this fact was realized in society, science had to find a way to justify their research.

The importance of justifying research before it is completed has had many affects on medical research, including stopping some projects because of bans on the use of certain cells. Medical researchers are upset by this, and the public is concerned with ethical issues. This emphasizes to medicine the importance of examining potential public reactions to ethical questions. It is also demonstrating that the public wants to be included in medical research decisions as they are included in political elections and other laws. It also raises questions in the public about things such as: How much does science need to know? When have they gone too far?

Another factor that has changed medical authority is the pharmaceutical industry and medicine. Many antibiotics have become less and less useful as time passes and microbes mutate to become resistant. There are now at least two species of bacteria that cause infections in surgery patients that are resistant to every antibiotic in existence today (Garrett, “Betrayal” 273). Also, there have been a number of medicines that have been recalled in the past few years due to extreme side-effects that were either not evident before the medicine was made available to the public, or were known and not shared.

This has come to produce distrust in new pharmaceuticals and what type of reaction a person might have from taking them.

Public health authority

On the other hand, public health has actually become a growing field in America and around the globe in response to AIDS. Public health workers have actually taken large health issues and created highly effective campaigns in order to educate citizens about diseases or unhealthy habits. This has created an awareness in society of public health and what it can do for them.

The "experts" discussed in articles in regards to Avian Flu are ones working for public health organizations. While medicine has come to be seen as an individualized area of practice, public health has stayed where it started as looking out for the health of the nation. This is an important difference and citizens realize this.

Although public health is not where it was when it began in the United States in 1866, it has grown to be much more respected within the past decade. The main difference between 1866 and today is that public health authorities can only make recommendations for laws and protocols of how to prevent disease causation, whereas in 1866 they actually created the laws and were able to enforce them.

In regards to avian influenza and other recent pandemics, public health has played a large role in the media. Every article analyzed included some mention of "public health experts", the "World Health Organization [WHO]", "health officials", and "health organizations." These articles also included scientists and physicians, but these professionals were working for or in conjunction with a public health organization and not on an individual basis.

The relationships of medicine and public health and how they interact with society have been a main area of study for many researchers today. These two factors and how they have changed and are currently changing are an important idea to acknowledge in today's society. The government's reaction to this is important as well and will have a large affect on what will happen over the next few years in terms of creating changes in these areas.

Uncertainty

The third factor in explaining epidemics and framing disease is that of uncertainty. Within the articles analyzed this factor is very evident. However, it is interesting to note how this factor develops. The uncertainty expressed mainly represents uncertainty within the medical field as to the outcomes of the situation.

An example of a recent article demonstrating uncertainty in the form of arguments amongst scientists is "A Pandemic is Worrisome but 'Unlikely'" by Elisabeth Rosenthal (28 Mar 2006). This article is very controversial. The main subject is Dr. Jeremy Farrar, a physician working in Vietnam who has seen a number of Avian flu patients. The statements Rosenthal uses as quotes specifically plants Farrar against other experts around the globe. One example, "'For years, they have been telling us it's going to happen – and it hasn't'", and another example, "He points out that the only prior pandemic with a devastating death toll was in 1918, and he says that may have been 'a unique biological event'", show how Rosenthal uses Farrar to go against other experts (28 Mar 2006).

However, within this Rosenthal also represents uncertainty within Farrar's quotes about his beliefs: "'It's terrifying if it happens, but it is very, very unlikely, I think – and it is difficult to balance those facts'", but later on he recommends that something should still be done now, "But if disaster happens, he says: 'People will look back and say: 'This was a nasty virus that you knew could sometimes infect other species. Why didn't you do something?''" (Rosenthal 28 Mar 2006). The first quote describes how Farrar feels that a pandemic is unlikely, yet the second one which ends the article goes back to say that something should be done now despite the unlikelihood of an outbreak.

In addition, almost every article had a similar quote to this: "Its apparent direct transmission from chickens to humans raises a welter of questions about the future course of the disease and whether it could erupt into a pandemic that sweeps the globe" (Gargan 1997). Although this was an early article during the pandemic, this theme continued throughout.

Another article which exemplified this controversy within the "expert" category of uncertainty is titled, "Vaccine Alone Won't Stem Avian Flu, Experts Warn" (Altman & Bradsher 8 Aug 2005). There are even two lines in a row that contradict each other: "Some [medical experts] advocate inoculation as soon as possible. 'Why not?' said Dr. William Schaffner.", and "But others suggested that it would be better to wait for evidence that the A(H5N1) strain had started spreading efficiently from person to person" (Altman & Bradsher 8 Aug 2005). This is a direct controversy between two different sides, and this is an issue that could potentially have a large affect on the global population depending on the time period that people receive the vaccine.

Much of the uncertainty in these articles reflected the uncertainty in medicine in regards to questions raised over the disease. These questions still remain unanswered as far as when the disease could become a human transmitted one which could lead to a global epidemic. Skepticism in society has arisen out of these questions. Here, science cannot determine a definitive answer, yet the public still expects one.

Blaming and borders

In the articles examined, blaming and borders prevailed just as much, if not more than the uncertainty described in the previous section. This also proved to be a large aspect in how Americans are framing avian influenza and how they perceive the facts represented by scientists. The main aspect to this "blaming and borders" surrounded the location in which the disease first appeared, Asia.

This analysis is focused on how Americans are placing blame and setting borders, through articles in the New York Times. One common feature, which was represented as fact, was that almost all of the titles about the bird flu contained Asia or an Asian country: "Spread of Bird Flu in Asia Worries Officials", "Thais Infected With Bird Flu, Virus Spreads", and "W.H.O. Official Says Deadly Pandemic Is Likely if the Asian Bird Flu Spreads Among People" (Altman & Bradsher). Although the location of the disease is important to include in the title, it brings about the idea of blaming in America.

One factor that leads to blaming of other countries is how the disease is named. In general journalists used "Avian Influenza", "Bird Flu", or variations on that theme.

However, in certain cases they included Asia in the name. This is a very important difference. By including Asia in the name, readers will associate the disease more with the location it originated, and less with what the disease is.

An example of this was a title mentioned previously: "W.H.O. Official Says Deadly Pandemic Is Likely if the Asian Bird Flu Spreads Among People". This title specifically designates the bird flu as Asian. Another article places more blame: "China Reports 2 New Outbreaks of Asian Flu" (Yardley, J. 31 Jan 2004). When originally looking at it, it appears as if it is a possible spelling mistake, yet there were no editorial corrections with the article. The difference between "Asian" and "Avian" is one letter. However, this was the only article to do this and it did not appear to become repetitive.

Also, from SARS the year previous to the onset of Avian influenza, Americans had developed a discrimination against Asian countries in a way similar to what is being represented throughout these articles. Asia is represented as the center for these devastating respiratory diseases, and in many articles is also represented as not being concerned enough with controlling or containing the diseases. This second representation is what produces a discrimination felt by American citizens towards Asia.

Many articles represent some of the Asian countries, particularly China, as being unconcerned for the welfare of the rest of the world by not reporting or recognizing the fact that the disease had spread in their country. One example of this, "Dead falcon in Hong Kong found to be infected with bird flu", by Keith Bradsher repeatedly states that China is denying the existence of the disease there.

> A spokesman in Beijing for the W.H.O., said that he agency had asked the Ministry of Health there a few days ago about the disease in China but had not received a reply… Hong Kong has had a half-dozen outbreaks of flu in local birds since 1997… The recurrence of the disease here has fanned suspicions that it is present in southern China, although Chinese officials have denied that. (Bradsher 22 Jan 2004).

The final sentence was also the final statement of the article, clearly saying that China most likely has this bird flu strain but that they are refusing to announce this.

The initial outbreak in Thailand was framed in the same way. In the article, "Thais Infected With Bird Flu; Virus Spreads", by Bradsher and Altman, the Thais

announced that bird flu had arrived in Thailand. However, in the beginning of the article a quote blames Thailand for not announcing this sooner:

> The Thai government's spokesman said the outbreak had been concealed for 'a few weeks' to avoid panic. The concealment also allowed Thailand's politically powerful chicken industry to keep up exports until word leaked late this week, although officials said they had ensured none of the exported meat was infected. (Bradsher & Altman 24 Jan 2004)

Once again an Asian nation, the second in one week, was represented as unconcerned with the rest of the world or selfish with maintaining their economy while risking the spread to other countries.

Further in this article there are more statements of blaming Asian countries for hurting others by denying the existence of the disease in their country: "The Thai government has vehemently denied for the last week that there was any avian influenza in Thailand, insisting that it was bird cholera", "China has continued to deny, that it has any cases of bird flu" (Bradsher & Altman 24 Jan 2004). This article specifically places blame on these countries as well: "A top influenza virologist at the C.D.C. in Atlanta, said health officials hoped that the spread that had resulted from delays in reporting bird flu cases would *serve as a lesson* about the risks of the disease to international health" (Bradsher & Altman 24 Jan 2004).

The other aspect of this factor, "borders", is also very prevalent within these articles. Borders have been created which include import/export regulations, laws regarding travel between farms, and concerns regarding travel between countries. One of the first borders that is placed during a food animal epidemic regards the importing and exporting of that animal. This is a relatively easy regulation for countries because it is one country disallowing the entrance of a product from another country.

Quarantines, sometimes voluntary, demonstrate a typical initial governmental (local or federal) reaction to an influenza outbreak. There have been various strains of virulent avian influenzas that have induced quarantines on the farms where they originated. One example of this occurred in the United States in 1984, another in 1997, and yet another more recently in 2003 in Texas. Each time thousands to millions of chickens die or are culled in order to prevent spreading of the disease. In late December,

1983 the Department of Agriculture in the United States banned movement of all poultry or hatching eggs out of specified areas in Pennsylvania and New Jersey (UPI 13 Dec 1983). Bans like this one are common during a food animal infectious disease outbreak.

Bans are also common between countries, not just within them. During the avian influenza outbreak in Texas in 2003, a number of countries placed embargoes on their imports of Texas poultry. These included Mexico, Russia, Japan, Cuba, and governments from the European Union (Romero 16 May 2003).

These bans on importing or exporting of poultry take a significant toll on the economy of the area. This was a particular problem in Thailand, Vietnam, and a few other Asian countries during the start of the Avian Influenza H5N1 outbreak with the transmittance to humans. The borders created between countries may have helped the country that was protected behind the border, yet the country the border was keeping out did not fair as well. When the victim happened to be poorer countries such as Thailand and Vietnam that have hundreds of small suppliers and farmers, the economy is impossible to keep going in those areas of the country. If all of their birds are dying, which supplies all of their income, they experience many difficulties in trying to remain afloat. This is where issues are noticed with the barrier example discussed earlier of countries not reporting cases of bird flu in humans or in their birds in order to maintain trade.

Overall, the blaming and borders occurring with the avian influenza virus are very prominent in the United States. American citizens first look to blame the location and people who first contracted the disease. Barriers are immediately erected as a form of protection, although the actual protection from spreading the virus is negotiable. This factor of framing disease was very prevalent in previous American epidemics, and continues today.

Conclusion

Over the past three years, the current course of the Avian Influenza virus, a number of aspects have been developed within the idea of "framing epidemics" and framing disease. The idea of "public health" has come to be a more evident one in

society as diseases are brewing that affect the public, and not just individuals. America has come to join in with recognizing the potential issues that could occur if epidemics are not recognized as a public threat.

Within this analysis of the four main factors of medical authority, public health authority, uncertainty and blaming, all of them played a significant role during this pandemic. Unlike other pandemics in history such as cholera or typhoid, each factor forms a major part of our everyday lives. Another interesting aspect with each of the factors playing equal roles is that each of the factors also has a large role. Each newspaper article tended to incorporate some aspect of each of the four factors.

Thus far, avian influenza has been recognized as a disease, and therefore framed as one. The four factors discussed all make up a part of that recognition. Medicine and public health authorities reported on the disease cases, and the public learned about avian influenza. When answers were not to be found, uncertainty arose over unanswered expectations from the public. This uncertainty in America has affected how avian influenza is now viewed – with both fear and skepticism. This fear and skepticism plays just as large a role in framing the disease as does medicine and science. Blaming and borders also developed in order to bring about some sense of security against the disease and the fear that came about.

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6. Conclusion

This study was completed as a way in which to demonstrate the different factors that affect how Americans frame disease, in the past and present. Understanding how diseases become framed in society forms a pivotal part of how both medical and lay attitudes are formed about diseases. In order to explain scientific findings to the public, medicine needs to understand how the public will react. The public also therefore needs to know something about science and follow trends. Public health is like medicine in this respect and has to understand how the public will react to campaigns in order to make them successful.

The four factors presented each have played a major role in American history. Epidemics have shaped how Americans look at medicine, science, and disease. During the cholera epidemics, medicine was not regulated, there was no public health system, and moral or religion formed the main framing of the disease. Today, it is quite different with most defining a disease based on medical and scientific explanations of the reactions the disease has within the body.

Cholera in America saw the beginning of a new era of medicine. This began with the discovery that the agent that caused cholera was spread through unclean water systems. From here the area of public health was created in order to create policies and campaigns to help remedy the hygienic issues in American cities.

By the time of typhoid the "germ" theory was generally accepted in medical and lay-beliefs and microbes could be researched. Scientists began to identify bacteria with individual diseases and to develop treatments more specific to each disease. They also identified anti-toxins which worked against the bacteria. Typhoid saw the development of ethical questions in relation to science with Mary Mallon as a healthy carrier of typhoid. Questions surrounding medical authority in terms of isolating healthy citizens were raised.

The 1918 influenza saw a time of impersonalized treatment of patients due to the enormous number who had the disease. Fear was high during this time as well, particularly within medicine as to the attempt to define reasons for why young, healthy individuals appeared most likely to die. The occurrence of this epidemic during WWI

was important in greatly increasing the speed of mutation and then spread of the disease across the globe.

Many scientific "miracles" after this epidemic had lay-citizens placing medicine in a position of high authority. This trust was important in the initial onslaught of AIDS. Even with the large amount of blaming during the beginning of this epidemic, the trust in lay beliefs for science to find an answer or a cure was very high. As a cure has yet to be found, this trust has begun to fall and now skepticism is replacing this.

As we have come into a time period of uncertainty surrounding a new disease and potential epidemic, a general feeling of skepticism on a number of fronts is evident. This includes uncertainty in the validity of scientific research, uncertainty with the potential help this research actually has to people, uncertainty in other countries abilities to prevent spread, and uncertainty in the disease itself. Regardless of the outcome of this epidemic, large affects will occur within factors of framing disease in lay and medical beliefs.

An interesting factor of this analysis was that of blaming and borders. It has remained a constant throughout American history. This is an automatic human reaction to an invader. Although this "invader" is not a foreign army, microbes can be just as deadly. Blaming creates a sense of security that the disease originated in another country and creates a mental border or barrier. Initially, blaming in America was against the large number of immigrants to this country in the mid-1800s. Today, blaming has broadened to encompass entire countries or regions which can extend down to discriminations against immigrants from that country.

This is an extremely important factor in framing epidemics and in presenting public health regulations and policies. Officials and experts need to be very careful in their descriptions in order to ensure a non-existent level of blaming within them against a specific group. If this blaming occurs to any extent, citizens (both lay and medical experts) increase the intensity and may take these statements as fact.

Along with this factor, all four factors need to be examined in relation to framing diseases today in order to successfully combat them. Potential reactions from lay-citizens, medical experts, government officials, and public health experts all need to be studied in order to produce public health campaigns, policies, and treatments.

In regards to Avian Influenza, many questions can be raised as to the future. What if the epidemic does enter the worst-case scenario recognized by the media, how will people react? What if it never evolves, how will people react to the next potential epidemic? These are all important questions that need to be addressed by experts who are also assessing the current situation of the disease. If not addressed, we may not be prepared for the outcome.

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