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Examination of Black Death and Public Health Implications for Today

Andrew Scott Warren

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Examination of Black Death and Public Health
Implications for Today

Andrew Scott Warren

B.A., Central Connecticut State University, 1995

A Thesis
Submitted in Partial Fulfillment of the
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at the
University of Connecticut
2001

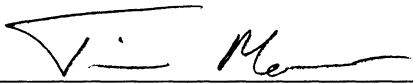
Approval Page

Master of Public Health Thesis


Examination of Black Death and Public
Health Implications for Today


Presented by

Andrew Scott Warren, B.A.

Major Advisor  _____
Timothy F. Morse

Associate Advisor  _____
Marcia Trapé-Cardoso

Associate Advisor  _____
Michael Grey

Associate Advisor  _____
Murry Morgenstern

University of Connecticut

2001

Preface:

As a young boy, I became mesmerized by medieval European castles, fabulous armor suites, ancient arms, noble knights, powerful lords, glamorous ladies and wealthy kings that I read about in numerous literary works. An example of these elements can be found throughout the story of King Arthur, which has been retold in numerous books and movies.

As a man my interest in the subject has not subsided. My focus has now shifted from fairy tales to actual historic record. As an undergraduate student I took many courses that further developed my interest in the subject. In one course I read about a terrible scourge that devastated much of the European population called the Black Death. The topic of the Black Death was mentioned only briefly, however it was enough to stir my interests. At the time I was not able to pursue those interests, however the opportunity did present itself once more in graduate school.

In my spare time I continued reading more books about the Middle Ages, and decided to examine the public health aspects found within medieval society. I realized that the Middle Ages was not the romantic period that was portrayed in so many novels, rather it was a time of great suffering and misery for many people. The Black Death once again emerged as an important event of the time, resulting in my desire to further pursue this topic as a thesis. This thesis is a direct result of years of interest in medieval history and public health.

Acknowledgments:

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I would also like to thank Dr. David Kideckel for his guidance and support during my years at CCSU. Without him I would never have had the courage to pursue my dreams.

My heart felt gratitude and appreciation must go to my loving wife Anna. Without her love, support, patience and dedication, this thesis could never have been written. She is by far the greatest person I have ever known. I will be forever grateful to her for everything she has done.

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Introduction:

The purpose of this work is to examine the intricate web of interactions and consequences that existed during the historical plague epidemic known as the Black Death. It will also explore implications from the past for current public health prevention efforts around the world. I will begin with the medical and epidemiological background outlining the current scientific knowledge regarding plague, and the conditions that led up to the Black Death. I will examine the primary, secondary, and tertiary preventative strategies used to combat epidemic disease, examine the impact of this great mortality on European medieval society, and provide possible explanations as to why the severity of the epidemic was so great. I will then discuss the creation of public health measures during the Black Death, many of which are still practiced today.

Introduction of Black Death into medieval European society created a plethora of public health concerns and consequences that dramatically impacted society as a whole. Arno Karlen, stated the Black Death was the greatest disaster in human history.¹ It is estimated the European continent lost approximately 25 million lives,² and every aspect of medieval life was affected by this dreaded epidemic. History of medicine author Katherine Park theorizes that the beginnings of plague during the Middle Ages crystallized the concern for public health.³

Iago Galdston argues that history of medicine authors must examine cultural factors when writing about medicine.⁴ During the Middle Ages there were numerous

cultural factors, including religious ideology, division of labor, and class structure which had a profound impact on the ability of medieval public health officials to develop strategies against the Black Death.

Medical and Epidemiological Background:

Definition of Plague:

The Centers for Disease Control and Prevention (CDC), Division of Vector-Borne Infectious Diseases, defines plague as an infectious disease of animals and humans caused by the bacterium *Yersinia pestis*.⁵ It was not until 1894 that the organism responsible for plague was discovered. The scientists that are credited with this discovery are Alexandre Yersin and Shibasaburo Kitasato.² *Y. pestis* is part of the Enterobacteriaceae family, which there are 11 named species. Out of these 11 only three are important human pathogens (*Y. pestis*, *Y. pseudotuberculosis* and *Y. enterocolitica*).⁶ This thesis will focus solely on the species of *Y. pestis*.

Forms of Plague:

There are three main forms of plague caused by *Y. pestis*, namely bubonic, septicemic, and pneumonic. Each form is a potentially life threatening condition, if immediate medical assistance is not provided. Two other forms of bubonic plague are ambulatory and hemorrhagic. Ambulatory plague is a mild form of plague that is often fatal, while hemorrhagic plague is a severe form of bubonic plague in which bleeding into the skin occurs.⁷ The three main types of plague will be discussed in greater detail below. More than likely it was a combination of these three forms that existed during the time of the Black Death.

Bubonic Plague:

Humans that become infected typically begin to develop symptoms within two to six days. These symptoms include fever, chills, weakness, headache, nausea, and an intense pain in one anatomical region of lymph nodes either simultaneously, after a few hours, or the next day. Inflamed lymph nodes are commonly referred to as buboes, occurring in 95% of patients. Individuals also present low blood pressure in the range of 100/60mmHg, due to vasodilation (increase in the caliber of their blood vessels). Their pulse rate increases in the range of 110 to 140 beats per minute.⁸ Along with these symptoms individuals may also experience a high fever of 102-105° F. Individuals may experience bruising of the skin and internal bleeding, that may lead to death.⁹ Without proper medical intervention the mortality rate is around 50%.¹⁰

Septicaemic Plague:

In a small percentage of cases patients develop septicemic plague. This form of the disease occurs when the bacteria multiplies in the bloodstream, and causes an overwhelming infection resulting in hypotension, delirium, seizures in children, shock and hemorrhagic phenomena. People that develop septicemic plague occasionally do so without a bubo. If left untreated this type of plague is “invariably fatal”.¹⁰

Pneumonic Plague:

While the first two types of plague are spread through the bite of a flea, the pneumonic form is spread from person to person when droplets of secretions containing the bacteria are sprayed into the air by the infected carrier coughing or sneezing. This

form of plague is the least common, however it has an almost 100% mortality rate if left untreated. Pneumonic plague can develop in a patient with bubonic plague when the bacterium spreads to the lungs from the infected lymph nodes via the blood stream. Individuals whose lungs are infected with pneumonic plague have within their pharyngeal sputum vast quantities of plague bacilli, which is then released into the air and inhaled by others.⁸

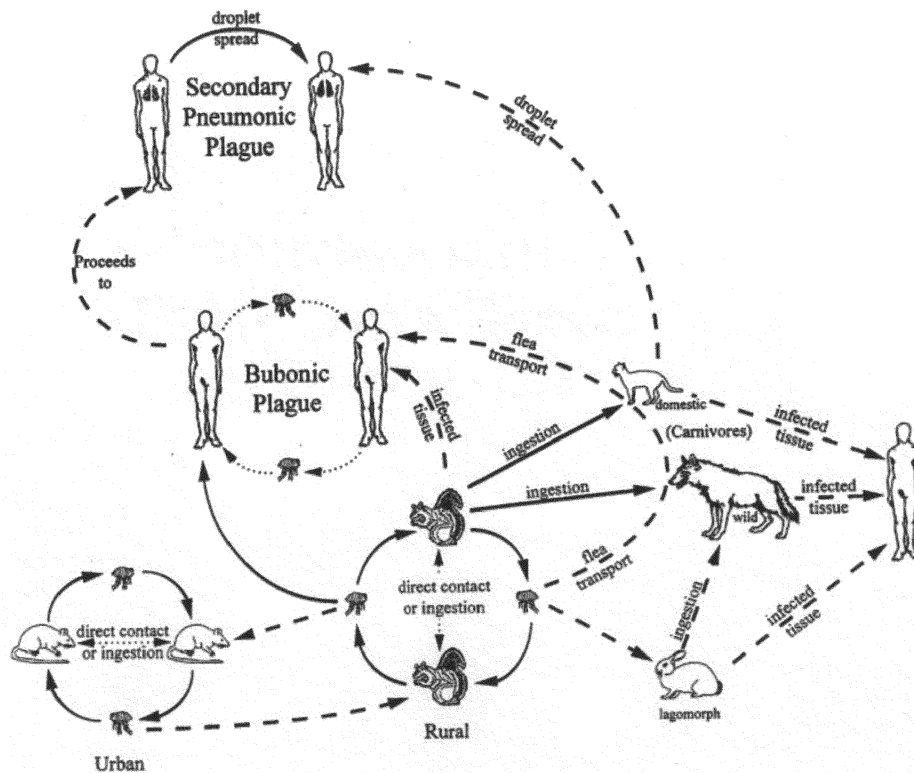
Symptoms include severe pneumonia accompanied by high fever, dyspnea (shortness of breath), and often hemoptysis (coughing up blood). Incubation period for infected individuals is 1-3 days. After the onset of respiratory symptoms, individuals that do not receive medical treatment after eighteen hours are unlikely to survive.¹¹ With proper medical treatment patients have a 90-95% survival rate.⁸

Mode of Transmission:

Plague is a zoonotic infection found primarily within rodent populations and is transmitted to individual members by flea bites or by ingesting contaminated animal tissue. There are approximately 200 mammalian species in 73 genera that are known to be naturally infected with *Y. pestis*.¹² Throughout the world, the urban and domestic rats *Rattus rattus* and *Rattus norvegicus* are known for being the common reservoirs of plague bacillus.⁸ An efficient and common vector historically responsible for bubonic plague transmission today is the oriental rat flea, *Xenopsylla cheopis*. There are more than 31 species of flea that are known to serve as vectors for *Y. pestis*.¹²

The infection cycle begins when an infected rodent is bitten by a flea that drinks the rodent's contaminated blood, then jumps off and bites another uninfected rodent, thus infecting the new rodent. This type of transmission is called sylvatic plague. Rodent populations that have stable cycles of sylvatic plague are referred to as enzootic. However there can be cycles that are epidemic in proportion and these are known as epizootic.¹³

A rat can support three to five fleas. *Rattus rattus* will typically die within five days of becoming infected. After the infected rodent dies, plague filled fleas have been known to last 80 days.¹⁴ When plague becomes epizootic in an area the result can be entire rodent populations becoming wiped out. At this point the plague-carrying fleas seek out new hosts, and it is at this point that people become involved. People play no role in the natural cycle of the disease. Humans may come into contact with infected fleas from their domestic dog or cat, or by exposure to an infected animal's body fluids. Direct person-to-person contact can only occur if an infected person develops pneumonic plague. Studies have also found that pneumonic plague can be transmitted to humans via a domestic cat. The illustration below graphically depicts the method of transmission.¹²

Fig. I: Transmission of Plague

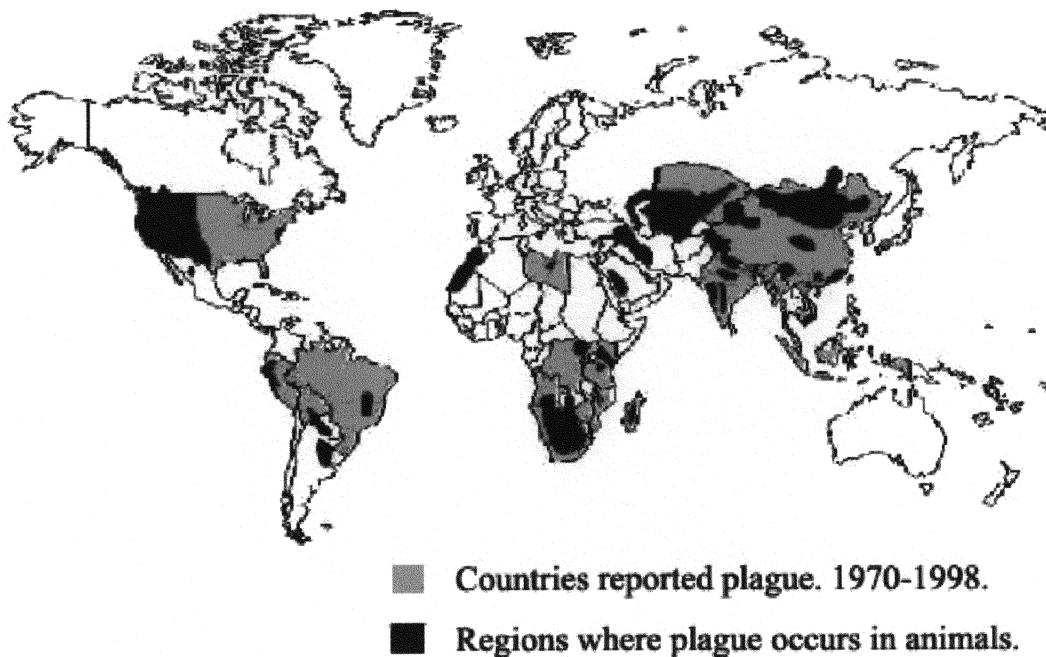
Rats and fleas are important in the life cycle of plague. Rats are far more common than most people believe. Rats can produce up to twelve litters a year. High numbers of rats affect countries around the world. In the Southern Deccan and the Mahratta districts of India, an outbreak of rat plague occurred in 1881. The situation was so severe that people were actually paid bounties for delivering dead rats. In all some 12,000,000 rats were exterminated. Between 1904 and 1907, the United States Public Health service killed more than 800,000 rats in an effort to combat plague in San Francisco. In another plague outbreak in New Orleans between 1914 and 1915, a total of 550,000 rats were destroyed. Rats can be found almost anywhere, including on mass-transit vehicles. In the early part of the last century the steamship Minnehaha was

fumigated against rats, and crews removed over 1,700 dead bodies. In an eight-year period in London some 572,000 rats were killed on London docks, including rats from aboard ships. An urban meat-packing plant in Chicago annually killed 4,000 to 9,000 rats. On a 1,200 acre Georgia rice plantation a total of 30,000 rats were killed within two seasons. On another nearby plantation over 17,000 were killed on a mere 400 acres.¹⁵ The preceding figures represent the inherent difficulties in combating plague and other diseases caused by animals, especially rodents.

Geographic Distribution:

Currently plague outbreaks still occur in cities and rural communities throughout the world. The map below shows the current distribution of plague.¹¹

Fig II: World Distribution of Plague-1998



According to the World Health Organization there was a total of 18,739 reported cases of plague between 1980-1994, with 1,853 deaths reported. In the United States in particular there were 229 cases of plague and 33 reported deaths. The following table shows the number of cases and deaths for all countries.¹⁶

Table I:

Reported cases of plague in humans, by country-1980-1994			
Continent	Country	No. of cases	No. of deaths
Africa	Angola	27	4
	Botswana	173	12
	Kenya	49	10
	Libya	8	0
	Madagascar	1,390	302
	Malawi	9	0
	Mozambique	216	3
	South Africa	19	1
	Tanzania	4,964	419
	Uganda	660	48
	Zaire	2,242	513
	Zambia	1	1
	Zimbabwe	397	1
	Sub-Total	10,155	1,344
America	Bolivia	189	27
	Brazil	700	9
	Ecuador	83	3
	Peru	1,722	112
	United States	229	33
	Sub-Total	2,923	184
Asia	China	252	76
	India	876	54
	Kazakhstan	10	4
	Mongolia	59	19
	Myanmar	1,160	14
	Vietnam	3,304	158
	Sub-Total	5,661	325
World Total		18,739	1,853

Plague Today:

According to the WHO there are between 1,000 to 3,000 cases of plague every year.¹⁷ Plague continues to be a thorn in the side of humanity, but with an early diagnosis, modern medications, education and updated control measures the chances of death should be near zero. The reality is that people still die, for plague is also a disease that reflects the health and vitality of a nation. Plague is more likely to strike communities that are lacking proper sanitation, are overcrowded, and have an abundance of rodents.¹⁸ However, death from plague may reflect poor preparedness to recognize early symptoms and signs of the disease. The frequency of deaths among the US cases was 14.4%. In contrast, in Brazil for example the frequency of deaths was 1.2% among the cases of plague.¹⁶ The CDC writes, “a plague outbreak has come to represent an indictment of social, environmental and political changes in the modern world”.¹⁸

In the last two decades plague has been on the rise throughout much of the world, and is called a re-emerging disease. The last major outbreak of pneumonic plague occurred in India in 1994¹, and serves as a reminder that the public health community cannot become too complacent in regards to plague. The following is an examination of the outbreak and the social consequences that were a direct result of the outbreak, and reminiscent of the Black Death. It is also important to look at plague

from a more global perspective and to see how the outbreak in India affects the lives of people around the world.

In 1994, India had an outbreak of both bubonic and pneumonic plague that caused widespread panic among the population¹⁹, since these were the first reported cases in India since 1966.²⁰ News of pneumonic plague spread quickly among residents in the city of Surat. Frightened residents from the city fled by the thousands to neighboring towns and cities, where plague was later reported.¹⁹ There were 693 suspected plague cases with positive test results for antibodies to *Y. pestis* that were reported to the World Health Organization (WHO). Nationwide there were 156 deaths due to plague.²¹ China, fearful of its own possible epidemic made Ethiopian Flight ET670 stop at Dhaka rather than Bombay, and when the plane finally landed in China it was met by quarantine officers who were sent to screen for plague.²²

India is a country that possess a particular challenge to public health prevention efforts. The reason for this has to do with a strong religious belief system, which frowns upon the killing of any animals, even rats. India is no stranger to plague, and between World War I and World War II the country lost approximately two million Hindus.²³ In developing public health prevention programs, leaders in society need to be aware of local beliefs and customs that may have an impact on successful implementation of a program.

The United States began a review of its own public health measures to control plague after the Indian outbreak began. The CDC implemented a new enhanced surveillance system to support existing regulations concerning reported plague. This new surveillance system had two major components. The first component had to do with information dissemination and education and the second had to do with intensified active and passive surveillance to identify and treat suspected plague cases and their contacts.

Trade routes are especially important in the spread of plague and other epidemic diseases, in both modern society and in past history. Trade routes have always been ideal for the transmission of disease from one locale to the next. This was clearly evident during the Black Death²⁴, but what is of great importance today is the rate of speed in which a disease spreads. The importance of the Indian outbreak is to show that in the modern era a disease could be in India one day and then be in the United States the next. Plague now has the potential to spread around the world in a matter of days, thanks to the achievement of flight and other high-speed transportation systems. It is important that countries have adequate control measures to deal with a potential outbreak.

Madagascar is another country that has seen a sharp rise in the number of plague cases reported annually. Brought to the island in 1898 by steamboats from India, the disease has since thrived. By the 1950s the government had put into place several control measures over the years that controlled plague, including vaccination

campaigns, improved housing and public hygiene. From 1950 to 1989 the average number of plague cases were between 20 to 50. From 1980-1994 there were 1,390 (average of 99 cases per year) suspected cases and 302 deaths. In 1996 there were 1,644 suspected cases reported and in 1997 there were over 2,500 suspected cases. The French Ministry of Cooperation and the World Bank give financial support to the country in order to educate the population and improve public hygiene. Since 1996, the government has made greater efforts to help the population. The sharp rise in suspected cases in 1996 and 1997 may have been the result of this effort, though it is not entirely clear.²⁵

One reason for this sharp rise in cases is the general breakdown of traditional public health measures. Madagascar has also reported the first case of naturally occurring antibiotic-resistant strain of *Y. pestis*.²⁶ More virulent strains of the bacteria could potentially pose a problem for health officials everywhere. According the WHO chart presented earlier, approximately 14% of all reported cases of plague in Africa between 1980-1994 were from Madagascar.

Plague in the United States:

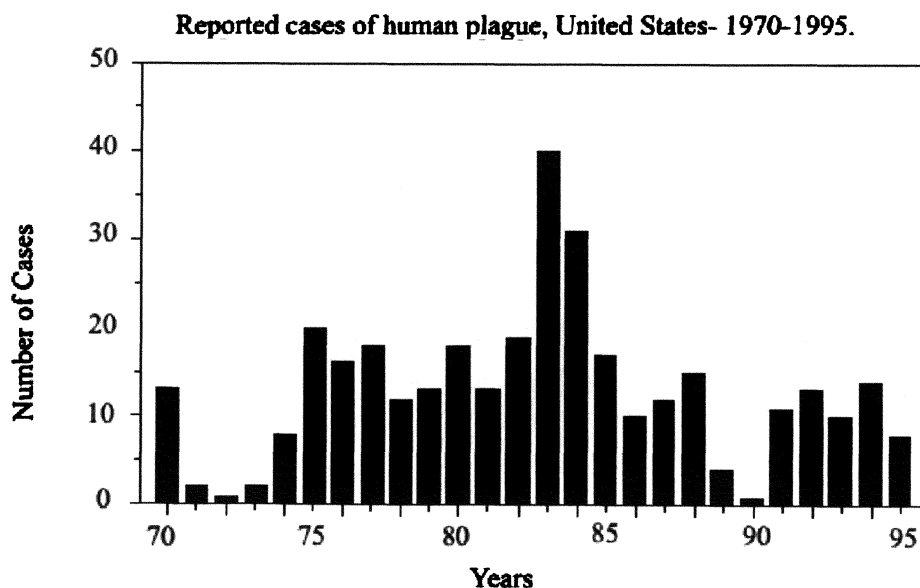
The first reported cases of plague occurred in the United States in 1900, in the Chinatown section of San Francisco. Following the calamity of the 1907 earthquake there were a total of 187 reported cases, of which 87 were fatal. The United States has also reported plague outbreaks in New Orleans in 1914, Florida in 1920, and Los Angeles in 1924.²³ The Los Angeles epidemic of 1924 was the last epidemic to have

occurred in an urban setting, and to have involved pneumonic spread among people.¹²

Plague has since spread out across large sections of the southwest portion of the United States. Today, plague is mostly a rural disease found primarily among prairie dogs.

In United States, there have been 341 cases of plague in humans that have been reported to the CDC between 1970-1995 (an average of 13 cases per year). Of these 80% occurred in the southwestern states of New Mexico, Arizona, and Colorado. The CDC was able to determine the mode of transmission for 284 cases. The overwhelming majority had been bitten by a flea (n=222; 78%), while a smaller number had direct contact with infected animals (n=56; 20%), and even a smaller number developed plague from inhalation of infectious droplets or other airborne materials from infected animals (n=7;2%). The following table represents the number of cases per year.¹¹

Fig. III: U.S. Plague Cases



Since 1977, the fatality rate for the United States has been around 14% (1 in 7).²⁷ Before 1977 no cases of cat-transmitted plague were reported. Since then, 18 human cases have occurred, with 28% of these patients developing primary pneumonic plague. Around 25% of cat-related transmissions have occurred in veterinarians or their assistants.¹² Plague must also be considered an occupational risk factor for those workers engaged in high risk occupations, including laboratory personnel who work with viable *Y. pestis*, individuals who work with wild rodents or their fleas in areas in which plague is enzootic or epizootic, and individuals who provide veterinary assistance to domestic animals, especially cats, in areas where plague is enzootic.¹¹

Treatment:

Advances in modern medicine have made possible the treatment of plague. The primary weapon used to fight plague is the medication streptomycin (30mg/kg/d). Other effective medications include tetracycline (20 to 30 mg/kg/d, given intravenously, in four divided doses), chloramphenicol (75 to 100 mg/kg/d, given intravenously, in four divided doses) or sulfonamides are also effective. The optimal duration of treatment is not known. A sufficient period appears to be 5 to 7 days for streptomycin, 10 to 14 days for tetracycline and 10 days for chloramphenicol.²⁸

People that exhibit signs of plague need to seek immediate medical treatment. For those people with uncomplicated infections there is no danger to others, however patients that show signs of coughing or pneumonia need to be placed in strict quarantine

until treated. Infectious plague materials should always be handled with extreme care, and the laboratory should be informed about suspected cases.²⁹

Primary Prevention:

A primary means of prevention for plague is available through vaccination. Alexandre Yersin first developed a vaccine for plague, after he discovered the link between plague and rats during the 1894 Hong Kong epidemic.¹² Since 1896, killed bacteria have been used in plague vaccines. Today, an inactivated preparation is the only vaccine that is licensed for use in the United States. Live vaccines have been produced, however the safety and efficacy have not been tested. For this reason no live commercially available vaccines are available on the market.¹¹

The current vaccine is only recommended for those who are working directly with the organism, persons engaged in aerosol experiments and persons engaged in field operations where enzootic plague is known and preventing exposure to rodents and fleas is not possible. Routine vaccination of children is also not recommended.²⁹

In the past the plague vaccine was associated with a high degree of side effects (greater than 25% of inoculations). By reducing the dosage, side effects have been considerably reduced (8-10% of inoculations). Side effects typically include erythema, induration, tenderness and edema at the site of injection, however these reactions usually disappear within 48 hours. More serious side effects include malaise, lymphadenopathy, fever and rarely, anaphylaxis, tachycardia, urticaria, or hypotension.

Current recommendations are to give an initial dose of 1.0ml IM (intramuscularly) followed by a second dose of 0.2ml 1-3 months later, and a third 3-6 months later. Following the three doses, a booster dose of 0.1ml is given at 6, 12 and 18 months, and then every 1-2 years. The above-mentioned symptoms will increase in severity over time.³⁰ Individuals that are involved with an outbreak are warned that the vaccine will not protect them due to the length of time required to develop effective immunity.³¹

Plague is a disease that may never be eradicated, due to the complexity of its life cycle, including the number and variety of potential animal and vector hosts involved. Both the United States and the former USSR tried to eliminate plague in a particular geographic area by killing the major plague carriers that lived in the area. The United States did not have great success in eradicating plague; however the Soviets had slightly better success. The eradication of plague in these areas was expensive and labor-intensive, further demonstrating the difficulty in removing plague from the environment.¹²

In the United States plague continues to be a problem for people living in areas where plague is enzootic. The primary weapon to fight plague ought to be prevention. Most cases of plague in the western United States are caused when rodent plague is epizootic near their homes. In areas where plague is enzootic people should not need vaccination if they take certain measures. Measures recommended by the Advisory Committee on Immunization Practices (ACIP) include:

- A). Eliminating sources of food and shelter for rodents near homes.
- B). Modifying homes to prevent access.
- C). Treating domestic dogs and cats weekly with appropriate insecticides.
- D). Avoiding direct contact with sick or dead rodents.
- E). Handling severely ill cats with extreme caution (these animals should be examined by a veterinarian).

The ACIP also recommends precautions for those people who engage in outdoor activities in areas where plague is enzootic, including:

- A). Avoid handling sick or dead animals.
- B). Avoid rodent nests and burrows.
- C). Use insect repellants containing N, N-diethyl-m-toluamide (DEET) on skin and repellents or appropriate insecticide on clothing.
- D). Treat pets with appropriate insecticides.
- E). Wear gloves when handling dead animals (such as for hunters).¹¹

An important component in plague prevention in the United States is a good surveillance system. Plague is one of only three diseases that is internationally reported. All suspected cases of plague must, by law, be reported to state health departments, which will then notify the CDC. Those cases that are then confirmed by laboratory analysis are then reported to the World Health Organization (WHO) by the CDC.³¹

Historical Background Prior to Black Death:

Among historians there appears to be some disagreement as to the earliest record of plague epidemics. Some believe that the Bible provides the first evidence of the disease. In the Bible, 1 Samuel 6.4, there is a reference to a great dying among the Philistines, which might have been plague.²³ The reference refers to God punishing the Philistines with 'emerods'(grave boils). The reason why the Philistines were being punished was because they had stolen the ark. As they moved from city to city with the ark, they were continually punished by God with emerods. When the Philistines returned home with the ark, God continued to punish the population by inflicting them with boils. As people in the population continued to perish, the Philistines asked what they needed to do to stop the dying. The response was to send the ark back with five golden emerods and five golden mice, according to the number of Gods worshiped by the Philistines. If this was indeed plague, then it was here that the association with rodents began, about 1000-900 BC.² Another reference to rodents and pestilence comes from depictions of the Greek god Apollo, who either sent pestilence down upon a population or he would save the population. In these depictions Apollo is typically represented in the company of mice.²³

The first well-documented outbreak of plague caused by *Y. pestis* in Europe occurred in the Eastern Roman Empire, during the reign of Justinian, in AD 541-44. It appears the disease was brought to Europe by black rats aboard ships that were traveling from India or central Africa. During the height of this pandemic Constantinople had lost nearly 10,000 inhabitants a day.¹⁴

It is estimated that over the next two centuries an additional fourteen epidemics arose in Europe claiming approximately 40,000,000 lives. Some European towns and villages were totally abandoned, population in other areas fell sharply and trade with neighbors decreased significantly.³² Consequences resulting from the decrease in the population included the inability to mount sufficient defenses against an enemy. In the seventh century the Moslem armies were able to conquer the area of the Mediterranean basin. The area of Spain was taken over and occupied for some 800 years. Countries to the north experienced an increase in their population at the expense of their southern neighbors.¹⁴

The first pandemic was extremely difficult for the European population of the time. By the time plague vanished in 767 AD³², Europe had lost approximately half of its population and city life had virtually ended.¹ Dr. James H. Leavesley wrote, “The disease faded but not before cities had decayed, administration floundered and, perhaps most important of all, skills (including literacy) were lost, features which became the hallmark of the Dark Ages”.³³ Even today no one is quite sure why the first pandemic ended.¹

For nearly six hundred years following the first pandemic the European population was free from the devastating effects of plague,³² however plague would once again make its way to Europe. The first epidemic of the second pandemic, known today as the Black Death, reached the shores of Europe in 1347.³⁴ While the Black

Death finally ended in 1352, *Y.pestis* would remain in Europe for hundreds of years.

The Black Death and later epidemics will be discussed in the next section.

The Black Death:

The phrase “Black Death” has enjoyed widespread usage in discussing the first plague epidemic of the second pandemic. In reality the phrase was never actually used during the first epidemic, instead being referred to as the Great Dying. It would be some 200 years after the Great Dying that the phrase Black Death would first be used.¹ In the remainder of this thesis I will continue to use the popular phrase “Black Death” to discuss the first epidemic.

Beginning of the Pandemic:

The first major outbreak of plague appeared in central Asia in the 1330s, and spread to China, India, and the Middle East.¹ Mortality records for China indicate the population had gone from a population of approximately 123 million in 1200 to 65 million by 1393, due to plague and the famine that followed.³⁵ It is believed that *Y. pestis* was able to spread throughout the region, and ultimately to Europe, via caravan routes.¹²

Outbreaks of the plague were recorded in 1346 in Astrakahn and Saray, caravan stations on the lower Volga River. It is highly likely that the disease first erupted among marmots, large rodents native to central Asia whose fur was an important article of trade. Trappers coming across dead or dying animals collected their furs, delighted to find such an abundant supply. They sold the furs to dealers who resold them to buyers from the west. When bales of fur were opened in Astrakhan and Saray the hungry fleas jumped from the fur seeking the first blood meal they could find. From

Saray the disease traveled down the Don River to Kaffa, a major port on the Black Sea with a large rat population, a perfect breeding ground for the plague bacillus.³⁶

The city of Kaffa by 1346 had already endured a three year siege by the khan of the Kipchak Tartars, and the introduction of plague only worsened the situation. The beginnings of the siege forced a group of Genoese merchants to take shelter in the city. As plague entered the region, Tatar troops became the accidental targets of plague. Large numbers of the army lost their lives forcing the khan to flee the area. Before he left he took some of the dead bodies that had piled up and catapulted them over the city walls. City residents quickly took the bodies and out of the city and dumped them into the sea, however plague had found its way into the city.¹

The departure of the Tartars made it possible for the Genoese sailors to leave Kaffa. From here the sailors made their way to ports along the Mediterranean.² When they landed in Genoa they brought with them rats and plague. A writer of the day, Gabriel De Mussis, noted that plague never broke out aboard the ship, but plague appeared within a day or two after the ship had docked.³⁷ Genoese authorities reacted to the outbreak, but it was too late. By the spring of 1348, *Y. pestis* had spread throughout Sicily and the mainland.³⁸

Mortality Figures:

Mortality figures began to rise as plague spread throughout Europe. During the plague years (1346-1352) morbidity and mortality were exceedingly high. It is believed

that in 1346 the continent of Europe, northern Africa and nearer parts of the Middle East had a total population of roughly 100 million.³⁶ Agents for Pope Clement estimated the number of deaths to be approximately 24 million during the Black Death, and an additional 20 million by the end of the 14th century.³⁹ The European continent was especially hard hit, where almost 20 million had perished.³⁶ These figures are only estimates, for we will never be able to have a complete and accurate count of the number of lives lost. Most historians agree however agree that 20-30 million is an appropriate number.⁴⁰

The number of people that died every day in medieval Europe was unbelievable: 400 in Avignon; 800 in Paris; for Pisa 500; Vienna 600; and Givry, France, 1,500. London went from a pre-plague population of around 60,000 inhabitants to a population of approximately 25,000 by the time the epidemic ended.⁴⁰ The overall loss of life in many communities was staggering as the following examples demonstrate: Avignon, 60,000; Marseilles lost two-thirds of the population; Florence 100,000 (by 1348); Basle 14,000; Strasburg 16,000; Vienna 40,000; Paris 50,000.⁴¹

One of the hardest hit regions of this time was England. Even after the Black Death, England suffered greatly from the plague. From 1361-1480 England had a national, regional or London plague epidemic occurring in cycles of 2 to 5 years. These epidemics have been estimated to have had a mortality rate of 10 to 15%, with a few having a rate of 5%. The figures listed above during the Black Death for London seem unbelievable, but it would happen to London again between 1664-1665. During this

period London lost over 70,000 inhabitants, out of a population of 460,000.²⁴ During that summer plague claimed roughly 3,000 residents a day. The devastation finally ended for England in 1666.⁴⁰

Pre-existing Conditions:

Prior to 1347, Europe was mainly a feudal state that could be characterized as an agrarian society. Surpluses in agricultural production were made possible by technological advancements, including the horse collar, heavy plow, windmills and the waterwheel. These technological breakthroughs helped to enable European society to develop large-scale cities and towns.

Unfortunately this gradual development soon faced setbacks since it depended so much on a favorable environment. The beginning of the 14th century was a period of climatic changes that brought to Europe wet winters and rainy summers, resulting in the destruction of crops all over Europe. An extremely cold and wet period began in 1309, and resulted in the worst decade of famine ever seen in Europe. In many towns and cities starvation was responsible for the loss of 10 to 15 percent of the population. Crops all over Europe were failing and livestock epidemics depleted herds. People were resigned to eating cats and dogs.¹ Despite the advances in technology the climatic changes made it impossible to feed the ever-growing population. Overwhelming famines occurred on several occasions leading up to the time of the Black Death.

Poverty and misery resulted as most towns became overcrowded. Between 500-1500 A.D. the landscape of European cities consisted of poorly constructed homes built within the confines of a walled city. As these cities grew larger issues of sanitation began to emerge. It was not uncommon for the medieval man or woman to walk down the street and have had to walk through human waste, decaying animals, stagnating water, garbage and food scraps.⁴² It is not impossible to imagine that rats would have been drawn to such a place, and with them their fleas.

Countries and states were severely strained, drained by debts that occurred from the costly crusades. Wars as well as civil disorder were also factors in societal breakdown. Wars divided the continent. Northern Italy and Germany were torn apart by continuing local conflicts. Beginning in 1337 England and France engaged in the ruinous Hundred Years War. King Edward III of England attempted to claim the kingdom of France. These battles degenerated into a continuing series of raids and looting. English knights ravaged the French countryside and carried what they could back to England with their booty. They founded rich dynasties while at the same time planting centuries of hatred between the two countries. Furthermore, armed mercenaries terrorized local populations.⁴³

For many the overriding factor in their lives was God and the church. The power and authority of the Roman Catholic Church during the Middle Ages was of profound importance to the people of the day. Prior to the outbreak of plague the church's power dictated the way many people lived their daily lives. A testament to this

power can be seen in villages throughout Europe, in the form of massive stone cathedrals that reach toward the heavens. The style of architecture that was most common prior to plague was known as Gothic.

Gothic cathedrals became the major focal point of medieval communities. Labor to build these great cathedrals came mainly from laymen and was often freely given. The intricate ornamentation and sculpture emphasized the union of man and the nature of God. Most importantly the gothic cathedral mirrored the rich life of the centuries that preceded the Black Death.⁴⁴ These imposing structures were also constant reminders to medieval people that God and his church were all powerful.

At the end of the 13th century the power and authority of the church began to decline. Two major reasons for this decline were the abuses of papal authority and the consolidation of power by secular authorities. While the political power of the church began to falter by the end of the 13th century, there still existed a strong conservative religious ideology among the people of Europe. This strong religious ideology plays a role in the way medieval people dealt with the onset of the Black Death. Philip Ziegler writes, "A man's mental health and the public and private morality to which he deferred was inextricably involved with his relationship with the church. His faith was unquestioning and his psychological dependence upon its institutions complete. Any blow suffered by the Church was a direct blow to his own morale".⁴⁵ During the Black Death it was widely believed that God was punishing European society for their sins.

Members of the aristocracy also came into conflict with ordinary people who could not forgive them their inefficiencies, defeats and extravagances. The medieval world was both physically and emotionally unprepared for the Black Death. Ziegler writes;

Whatever one's thesis about the inevitability of the Black Death it cannot be denied that it found awaiting it in Europe a population singularly ill-equipped to resist. Distracted by wars, weakened by malnutrition, exhausted by his struggle to win a living from his inadequate portion of less fertile land, the medieval peasant was ready to succumb even before the blow had fallen. But it was not only physically that he provided an easy prey; intellectually and emotionally he was prepared for disaster and ready to accept if not welcome it.⁴⁶

Historical Accounts of Plague:

In order to understand the magnitude of the plague during the Middle Ages, it is useful to read actual accounts from that time period. These accounts show a more human side of what an epidemic must have been like. This following account is from Messina, and describes the arrival and initial progress of the plague. It also illustrates basic public health prevention measures, the breakdown of social order, the spread of the disease, and how the disease affected both rich and poor.

At the beginning of October, in the year of the incarnation of the Son of God 1347, twelve Genoese galleys . . . entered the harbor of Messina. In their bones they bore so virulent a disease that anyone who only spoke to them was seized by a mortal illness and in no manner could evade death. The infection spread to everyone who had any contact with the diseased. Those infected felt themselves penetrated by a pain throughout their whole bodies and, so to say, undermined. Then there developed on the thighs or upper arms a boil about the size of a lentil which the people called "burn boil". This infected the whole body, and penetrated it so that the patient violently vomited blood. This vomiting of blood

continued without intermission for three days, there being no means of healing it, and then the patient expired.

Not only all those who had speech with them died, but also those who had touched or used any of their things. When the inhabitants of Messina discovered that this sudden death emanated from the Genoese ships they hurriedly ordered them out of the harbor and town. But the evil remained and caused a fearful outbreak of death. Soon men hated each other so much that if a son was attacked by the disease his father would not tend him. If, in spite of all, he dared to approach him, he was immediately infected and was bound to die within three days. Nor was this all; all those dwelling in the same house with him, even the cats and other domestic animals, followed him in death. As the number of deaths increased in Messina many desired to confess their sins to the priests and to draw up their last will and testament. But ecclesiastics, lawyers and notaries refused to enter the houses of the diseased.

Soon the corpses were lying forsaken in the houses. No ecclesiastic, no son, no father and no relation dared to enter, but they hired servants with high wages to bury the dead. The houses of the deceased remained open with all their valuables, gold and jewels. . . . When the catastrophe had reached its climax the Messinians resolved to emigrate. One portion of them settled in the vineyards and fields, but a larger portion sought refuge in the town of Catania. The disease clung to the fugitives and accompanied them everywhere where they turned in search of help. Many of the fleeing fell down by the roadside and dragged themselves into the fields and bushes to expire. Those who reached Catania breathed their last in the hospitals there. The terrified citizens would not permit the burying of fugitives from Messina within the town, and so they were all thrown into deep trenches outside the walls.

Thus the people of Messina dispersed over the whole island of Sicily and with them the disease, so that innumerable people died. The town of Catania lost all its inhabitants, and ultimately sank into complete oblivion. Here not only the "burn blisters" appeared, but there developed gland boils on the groin, the thighs, the arms, or on the neck. At first these were of the size of a hazel nut, and developed accompanied by violent shivering fits, which soon rendered those attacked so weak that they could not stand up, but were forced to lie in their beds consumed by violent fever. Soon the boils grew to the size of a walnut, then to that of a hen's egg or a goose's egg, and they were exceedingly painful, and irritated the body, causing the sufferer to vomit blood. The sickness lasted three days, and on the fourth, at the latest, the patient succumbed. As soon as anyone in Catania was seized with a headache and shivering, he knew that he was bound to pass away within the specified time. . . . When the plague had attained its height in Catania, the patriarch endowed all ecclesiastics, even the youngest, with all priestly powers for the absolution of sin which he himself possessed as bishop and patriarch. But the pestilence raged from October 1347 to April 1348. The patriarch himself was one of the last to be carried off. He died fulfilling his

duty. At the same time, Duke Giovanni, who had carefully avoided every infected house and every patient, died.

Please refer to Appendix I in the back of this thesis for more historic accounts.

Public Health Responses:

During the Middle Ages attempts to arrest epidemic disease were sometimes successful, and the careful development of quarantine measures can be considered to be one of the few advances in public health during the time period. Quarantine measures had their origins in the leprosy epidemics of earlier years. From these roots grew ever more extensive measures that were designed to help stop the spread of plague in a community.

The Black Death was considered a communicable disease, and as such the primary method of prevention was isolation. Infected individuals had to report to local officials and were then examined and isolated within their homes for the duration of their illness. Visits to homes of infected people were banned and any person that came into contact with the infected individual was also isolated. Basic provisions and other items necessary for survival were provided by local officials through messengers. Those individuals unfortunate enough to perish were taken from their homes via windows and removed in city carts. They were then buried outside the city, a further measure that was supposed to stop further infection. Isolation of ships, cargo and people was another mechanism used in the fight to combat the epidemic. Typically found in port cities like Venice, these isolation measures were extremely stringent and

lasted for a specified period of time. As the Black Death entered Venice a special council of three men was set up on March 20, 1348. This temporary council was designed to monitor the health of the community and was given broad powers to take whatever actions were needed to ensure the safety of the people of Venice. These authorities had the power to quarantine ships, goods, and people on an island in the lagoon. From these efforts a basic contribution was made to public health, namely the institution of Quarantine.⁴⁷

In Milan and Venice stringent quarantine measures were initiated on the population. Infected people were isolated outside the cities, corpses and linens burned, and rooms and furniture were exposed to the sun for long periods of time.⁴¹ Once a person became infected, all occupants of his/her house, sick or well, were walled up and left to die.⁴⁸ This was one of the worst possible ways of fighting plague. Anytime you group sick people with well, you increase the risk of infecting larger numbers of healthy individuals. Plague is a disease of locality, meaning when rats, fleas and people are grouped together in a small area there is a greater risk of an outbreak. The closer people are to each other will increase their chance of being bitten by an infected flea.³⁶

In Pistoia, a provincial city of about 11,000 located in the region of Tuscany, less than thirty kilometers northwest of Florence, the City Council enacted regulations designed to keep the people of Pistoia safe from plague. The following list of 15 measures is an summary of the original regulations (see Appendix II for more information from the original text).⁴⁹

1. People were forbidden to leave Pistoia without a license. Those who did leave without a license could have been fined.
2. Extensive fines were imposed on those who brought in any used cloth, linen or woolen, that would have been used in the production of clothing or bedclothes. A maximum of 30 pounds of luggage was allowed to be brought through the gates; the luggage would have to be exported back out within 3 days.
3. Dead bodies needed to be secured in a nailed casket that was covered by a drape or canopy prior to passage to a cemetery. City officials had to be notified of each death, and in turn a city official had to be sent to the location to see the law was enforced. If this law was not obeyed a fine could be imposed; however the poor were exempt.
4. Dead bodies had to be buried to a specified depth.
5. People were not allowed to bring dead bodies through the city gates.
6. People were only allowed to be in the presence of a dead body during the procession to church. Individuals at any other point were not allowed to be in the presence of the corpse, surviving family members, or the victim's residence.
7. Gifts were forbidden to presented or sent to the residence of any dead person, except by immediate family members.

8. To counter fruitless expenditures, mourners were forbidden to purchase new clothing for a period of 8 days. Wives were the exception to the rule, and were permitted to buy without any penalty.
9. Families of the deceased were not allowed to hire a cryer, drummer, hornplayer, or mourner to alert the city of a funeral.
10. Bells in churches where funerals were taking place were only allowed to ring once.
11. Widows were not allowed to leave the home unless they were escorted by four women sent by blood relatives.
12. Families of individuals of importance, such as physicians, lawyers, judges and soldiers, were exempt from many of these provisions.
13. Meat vendors were not allowed to sell or butcher their wares by public places due to the stench.
14. For similar reasons, tanners were not allowed work within the city walls.
15. Law officials were ordered to charge appropriate fines for anyone breaking any of the above ordinances. People were also instructed to turn in others who were not in compliance. In return these people would be rewarded $\frac{1}{4}$ of the fine money.

Although none of these regulations helped, they were indicative of the efforts made to protect citizens by officials of the day.

In most towns and cities throughout medieval Europe there existed local councils that were responsible for a wide array of duties, including health related issues. In Milan, during the 14th century there were a total of six officials that were responsible for environmental sanitation and street cleaning. Guilds also played a major role in medieval society, including carrying out health measures. Public health measures of the day were developed by lay people, who were not physicians nor affiliated with the church. Physicians were consulted on medical matters that involved legal issues and were employed to care for the indigent and those in prisons.⁴⁷

There were some in the community that believed the disease was spread by animals, like dogs or cats. Ironically, during the Middle Ages cats and snakes were often killed because of the association with witchcraft. As in many urban centers today, stray dogs can have the potential to become a serious nuisance. In the Middle Ages this very well may have been the case. One prime example comes from Sienna, in which dogs began to dig corpses up from their shallow graves and then devoured the remains in the city streets.³⁹ Fleas and rats were a common everyday occurrence for people living during the Middle Ages, and there is little mention of them in the literature of the day.

Public health during the late Middle Ages was a difficult endeavor, due in part to the squalid conditions that persisted in almost every locale. However, the institution of sanitation measures, including street sweeping, garbage removal, and measures to stop pollution of streams and rivers was an important advance. It is especially amazing

that any measures were adopted, considering the psychological mindset of the people, who were extremely superstitious, and the low level of scientific knowledge available at the time. The measures that were adopted during the Black Death and before provided the public health backbone for nearly three centuries to follow.⁴⁷

Medieval Medicine and Medical Consequences:

During the Black Death there were many people who believed in bizarre methods of preventative medicine. One common belief was that plague could be treated by leaning over a latrine and inhaling the stench. Another idea was to swallow the pus from the boils of plague victims.³⁹

Many people turned their attention to the medical community for answers. However medieval medicine was at a loss to explain the reasons why plague struck, and what is worse, they were unable to do anything about it. Although clinical observation did play some role in medical education, an extensive reliance on ancient and inadequate texts prevailed. Three physicians that were relied on by medieval doctors was the ancient Greek physician Hippocrates, the medieval Islamic doctor Avicenna and the Roman physician Galen. Medical practitioners could be divided into four main groups. The first group was comprised by physicians that held university degrees and knew medical theory but rarely cared for the sick. The second group of men were the surgeons, whom usually had a good deal of clinical experience, but were considered mainly to be skilled craftsmen rather than people of real learning. Their experience was not often incorporated into the body of medical knowledge. The next group were the

barber who performed minor surgeries, blood-letting and the like. The final group consisted of mainly women and practiced folk medicine.⁵⁰ In 1300 Pope Boniface VIII had published a papal bull specifically forbidding the mutilation of corpses. This was designed to cut down on the sale of miscellaneous bones as holy relics, but one of the effects was to discourage dissection.³⁸

The medical professionals' efforts were as futile as their approach was fatalistic. Out of fear of infection, they hesitated to visit the sick. Even if they did, their remedies achieved nothing. Though treatment may have eased a patient's suffering, cure was unobtainable.³⁸ Considering that medical teaching was controlled by the church and consisted mainly of the reading of old texts and misleading interpretations, medicine could not be expected to provide a more constructive approach to treatment. In October 1348, at the request of King Phillip VI of France, forty-nine medical experts from the University of Paris were asked to determine the cause of the plague. Their work, the *Paris Consilium*, concluded the reason for plague was beyond human understanding; however, they did provide some possible explanations. They believed that plague was caused by a conjunction of the planets Saturn, Mars and Jupiter at 1:00 P.M. on March 20, 1345, which caused the pollution of the atmosphere.³⁹

The Paris faculty also advised the burning of incense and chamomile flowers where people congregated, and also inside the home. The group gave strange suggestions to ward off the plague, including the absence of poultry, fat meat, or olive oil in the diet. These also wrote people should avoid sleeping during the day, bathing

or having sexual intercourse. The faculty at Mountpellier were more conservative with their beliefs than that expressed by the Paris Faculty of Medicine. Their recommendations came from more of a hygiene standpoint, including washing down of sick rooms with rose water. They also felt that people should place vessels containing vinegar in sick rooms in order to neutralize poisonous exhalations.⁴¹

Positive consequences for medicine did take place as a result of the Black Death. Confidence in ancient medicine began to falter as physicians were unable to stop the spread of plague. Direct consequences of the plague were many. The plague broke down the division between theorizing physicians and those who cared for the sick, and gave surgeons new prestige. The idea arose that the human body was important to study in sickness and in health. The study of anatomy became extremely important and was supported by local officials. Perhaps most important was that the development of pathological theory and the slow decline in the Galenic system.⁵⁰

The death of so many physicians and surgeons allowed new individuals (almost exclusively men) with new ideas to enter into the profession, furthering the slow removal of the Galenic system. One Venetian-born physician wrote, “It has pleased God, by this terrible mortality to leave our native place so destitute of upright and capable doctors that it may be said not one has been left”. By 1349, the University of Padua had a vacancy in every chair of medicine and surgery. Medical textbooks that were once only in Latin now began to appear in the native languages of the reader.³⁹ This once again shows that the power of the church was on the decline.

Religious Consequences:

By the time plague entered Europe, people firmly believed that they were being punished for their excesses. People of the day believed that it was the wrath of God that was responsible for the death and disease that was spreading throughout Europe. People were unwilling to flee communities that were being ravaged by the plague.

The church was unable to provide adequate answers to explain why the plague epidemic was occurring. The church responded to the outbreak in a variety of ways. One widespread method was tending to the sick and dying. Victims of plague often sought treatment at monasteries or hospitals that were run by the church. Evidence exists that the mortality of the clergy was much higher than that of the general public.⁵¹ Ziegler shows that parish priests in England had a mortality of 45%, while monks had a mortality of 44%, and in Germany the mortality rate was 35%.³⁸

While many clerics did help the sick and dying, there were others who fled at the first hint of plague. The power and dominance of the church was lessened by this action, for many people became suspicious of about the role of the church in their daily lives. Another factor that led to the decrease in power of the church was the great loss of economic resources. With so many deaths the church had no one to cultivate their vast land holdings. The high mortality of the clergy left the church depleted of many knowledgeable staff that were needed to resist the pressures of a changing environment. Out of this time of fear and discontent, a small but established group of religious fanatics known as the flaggelants broke onto the scene.³⁷

This cult believed that the wrath of God was responsible for the plague and the reason for this was the decay and corruption found in society. To avoid the wrath of God these men would whip themselves with a wooden scourge that had 3 or 4 leather tails, which were knotted and iron spikes fastened at the end. Large groups of these men would then travel from town to town. Once in a village they would perform public displays, which included whipping themselves till blood flowed freely. These whippings usually occurred once a day for three days in a row, then the group would move on to the next village with hopefully a few more converts. In 1349, Pope Clement VI declared the movement to be heretical and efforts were made to destroy the movement.³⁸ The importance of the flaggelant movement is that it showed the weakening power of the church and the discontent of the masses who were looking for answers and were not getting them. The beginnings of the reformation can be seen in the movements of the flagellants. For a detailed historical account of the flagellant by Jean Froissart please see Appendix III.

During the epidemic serious religious intolerance occurred that led to mass executions and the extermination of entire villages. To the medieval person the advance of plague upon their community was truly a horrific event, in which fears and prejudices of the time were brought to the forefront of the community. During the Black Death many people lost their lives due to the actions of those who were unable or unwilling to put aside their differences and work together to help those who were sick and dying. Those who were most vulnerable were people from the Jewish community, beggars, prostitutes, Gypsies and those of differing locales.⁵⁰

By far the greatest amount of human suffering caused by other humans was the wholesale slaughter of thousands of innocent Jews. People of the day believed the Jews had poisoned the drinking wells of the towns inhabitants; however, there is no evidence that this ever occurred.⁵⁰ What is clear is that many communities participated in the persecution of an entire culture. The persecution began in France and quickly spread to other parts of Europe. The greatest number of massacres occurred in the medieval towns and cities that are known today as Germany. Jews were rounded up in wooden enclosures and burned alive in Solothurn, Zofingen, Stuttgart, Landsberg, Burren, Memmingen, Lindau, Freiburg, Ulm, Speyer, Gotha, Eisenbach, Dresden, Worms, Baden and Erfurt. In Strasbourg on Feb. 14, 1349, two weeks before plague struck, 2,000 Jews were murdered by an angry mob; in all, some 16,000 lives were lost. In Mainz approximately 12,000 Jews were murdered for killing 300 Christians.⁵² By the year of 1350 those in North of Germany not burned alive were walled up in their homes and left to die. There were many in the Jewish community that set fire to their own residences and died in the ensuing flames, rather than die at the hands of the persecutors.³⁸

The flagellants played an important role in the persecution of the Jews, for it was their hatred and ignorance that was responsible for several massacres during this period. An example of this can be found in the towns of Frankfurt and Brussels. In the town of Brussels the mere advance of the flagellants set off a mass execution, were approximately 600 Jews were killed.³⁸ The flagellant movement finally came to a

temporary end in 1349, when Pope Clement VI declared the movement to be heretical. It is interesting to note that these members carried plague with them wherever they went.⁵¹

The persecution of the Jews finally ended in 1351 with the subsiding of the Black Death. Unfortunately the end result was horrifying. In all, some 60 large-scale communities were exterminated, 150 smaller communities exterminated, and 350 massacres took place. One main reason for the persecution of the Jews was the wealth of the Jewish community. Many medieval people who lived in communities where persecution occurred owed money to Jewish moneylenders. It was not uncommon for the possessions of the Jews to be stolen and debts absolved. Even Charles IV gave property that had belonged to murdered Jews away to church and secular rulers.³⁸

Philip Zielgler wrote, "It is a curious and somewhat humiliating reflection on human nature that the European, overwhelmed by what was probably the greatest natural calamity ever to strike his continent, reacted by seeking to rival the cruelty of nature in the hideousness of his own man-made atrocities".⁵³ Today this quote is as valid as ever, for only 50 years ago the Jewish population of Europe had too once more bear the brunt of ignorance, bigotry and hate.

Another religious consequence during the Black Death came as a result of the mass burial pits that were created to bury the bodies of the dead. These mass graves called into doubt the notion of resurrection, for it was believed each individual body

was destined to rise up from the dead. Once the bodies were thrown in pits, lye was often used to stop the contagion.⁵⁰

Social Consequences:

It is interesting to note that not only did plague cause suffering on marginal individuals, but also on the more wealthy. Leaders of society became discredited, along with priests, governors, intellectuals, as well as the laws and theories supported by them.⁵⁰ We have already seen how an epidemic can cause mass panic and hatred. This same fear and hatred can also be seen in modern epidemics, especially AIDS. AIDS patients have suffered in a variety of ways, like being fired from their jobs, having to move out of a community, being forced out of recreational activities, losing health insurance and facing violent encounters with others in society. Instead of persecution of Jews, the main group targeted were members of the Gay community.

During the Black Death tension also began to occur between those who were suffering and those who were healthy. In many instances the sick had become the enemy. In 1348 a witness at Avignon wrote:

*[Sick] relatives were cared for not otherwise than dogs. They threw them their food and drink by the bed, and then they fled the household. Finally, when they died, strong rustics came from the mountains of Provence, miserable and poor and foul-tempered, who are called gavots. At least, in return for big pay, they carried the dead to burial. No relatives, no friends showed concern for what might be happening. No priest came to hear the confession of the dying, or to administer the sacraments to them. People cared only for their own health [and that of their families]. It even happened that every day a dead rich man was carried to the grave with only a light and by ruffians-----none else followed the corpse but these.*⁵⁴

When an epidemic disease or other disaster occurs, there may be those who try to profit from the suffering of others. This sort of behavior also occurred during the Black Death. In Florence, so many dead bodies were piled up on the streets that citizens would hire men, known as becchini, to fetch dead corpses and bring them to mass burial pits. Believing they to were close to death themselves, many of these men began to engage in acts of violence. They would break into people's homes and demand they be paid in money or sexual favors or else they would carry off a member of the household.³⁹

A further consequence of the epidemic was that the institutions that once held authority over the masses were now in serious disarray. The widespread deterioration in morals led to an increase in the level of crime. Individuals became wealthy through unexpected inheritance, and indulged in an orgy of spending and debauchery.⁵¹

Matteo Villani wrote the following account that provides even more information on this subject.

It was thought that the people, whom God by his grace had preserved in life, having seen the extermination of their neighbors and of all the nations of the world...would become better, humble, virtuous and catholic, avoiding iniquities and sins and overflowing with love and charity for one another. But...the opposite happened. Men, finding themselves few and rich by inheritances and successions of earthly things, forgetting the past as if it never was, gave themselves to the most disordered and sordid behavior than ever before. As they wallowed in idleness, their dissolution led them into the sin of gluttony, into banquets, taverns, delicate foods, and gambling. They rushed head long into lust....And without any restraint almost all our city took up this shameful style of life; the other cities and provinces of the world did the same or worse.⁵⁵

Though plague was disastrous to most of European society there were certain aspects that were positive. These positive changes were made possible by the great loss of life within society. Many professionals had died during the plague, including priests, lawyers, craftsmen, and medical professionals. As a result there were a vast number of open positions that needed to be filled. In almost every sector of society the traditional methods used to acquire help vanished. Guilds were no longer able to operate as they once did; instead they had to reach beyond their cadres. Even the church was not immune to these effects. Individuals from the community were called upon to take over the duties of priests, thus providing fertile ground for the development of lay religious movements.³⁴

Development of new universities and colleges throughout Europe can also be attributed to the Black Death. Europe contained approximately 30 universities prior to 1348. After the arrival of plague there was a sharp increase in the number of schools, even as the number of enrolled students fell drastically. In England for example, Oxford had gone from a pre-plague high of some 30,000 students to approximately 6,000 by the end of the fourteenth century. Reasons for the jump in the number of schools includes a variety of factors, including the church needing to train more priests to replace those lost by plague, the creation of local universities due to the dangers of traveling abroad, and the overall decay of learning that existed throughout most of Europe. Many of those who died were wealthy and left large sums of money to poor scholars, future priests, and the institutions that trained them. Universities that were started during and after the plague include Trinity Hall in 1350, Corpus Christi in 1352,

Clare Hall in 1362, and The University of Prague in 1348. Oxford obtained two new colleges: Canterbury in 1362 and New College in 1372. These new universities helped to bring about a national identity, loosened the international cohesion of medieval culture, and prepared the way for the theological schisms to come in, and even before, the Reformation.⁵⁰

Economic Consequences:

The Black Death had a strong impact on the economy of the day. The effects of the epidemic can be divided into long- and short-term economic effects. In the short term the plague produced general inflation. In 1363 Matteo Villani, a Florentine, wrote about price movements from the time of the plague:

*It was thought that, given the lack of people there ought to be a wealth of all things which the earth produces. On the contrary, through men's ingratitude an unprecedented scarcity affected everything, and this continued for a long time. In certain lands, as we shall narrate, there were severe and unprecedented famines. And again, it was thought that there ought to be wealth and abundance of clothing, and of all the other things that the human body needs...but the opposite happened...Most things cost two times or more what they cost before the epidemic. And labor, and the manufactures of every art and profession increased in disorderly fashion to double the price...*⁵⁶

A related short-term economic consequence was that it decreased the number of available workers, which in turn produced a sharp rise in wages.⁵⁷ Again, Matteo Villani describes how wages increased:

Serving girls and unskilled women with no experience in service and stable boys want at least 12 florins per year, and the most arrogant among them 18 or 24 florins per year, and so also nurses and minor artisans working with their hands

*want three times or nearly the usual pay, and laborers on the land all want oxen and all seed, and want to work the best lands, and to abandon all others.*⁵⁸

The overwhelming majority of rural people were engaged in agricultural production. In the countryside the lack of help also increased the ability of the peasant to better his position in life. Those peasants who died from the epidemic often had their land divided among the remaining peasants, who thus were able to create larger and more clearly defined areas.³⁸ With more land peasant farmers were able to increase their income level, which in turn helped to decrease class differences. However, high grain prices gave landlords the economic power to maintain the old manorial system.⁵⁹ In need of help, landlords were forced to accept the demands of tenants. Landlords were forced to hire expensive wage labor.⁵⁷ As a result peasants acquired more wealth, and they began to acquire material possessions which began to blur the distinction between the classes.

By the 14th and 15th century sumptuary laws throughout Europe were put in place to combat these pressures, including the regulation of women's dresses, food served at weddings, and the number of mourners who could attend funerals.⁵⁰ In England two legislative acts were enacted for the sole purpose of restoring pre-plague wages and rents, and to preserve the status quo between the laboring and non-laboring feudal classes. The first of these acts was the Ordinance of Laborers in 1349, and required all healthy non self-sufficient people under sixty years of age to work for reasonable wages till their agreed term ended.⁶⁰

The king to the sheriff of Kent, greeting. Because a great part of the people, and especially of workmen and servants, late died of the pestilence, many seeing the necessity of masters, and great scarcity of servants, will not serve unless they may receive excessive wages, and some rather willing to beg in idleness, than by labor to get their living; we, considering the grievous incommodities, which of the lack especially of ploughmen and such laborers may hereafter come, have upon deliberation and treaty with the prelates and the nobles, and learned men assisting us, of their mutual counsel ordained:

That every man and woman of our realm of England, of what condition he be, free or bond, able in body, and within the age of threescore years, not living in merchandise, nor exercising any craft, nor having of his own whereof he may live, nor proper land, about whose tillage he may himself occupy, and not serving any other, if he in convenient service, his estate considered, be required to serve, he shall be bounden to serve him which so shall him require; and take only the wages, livery, meed, or salary, which were accustomed to be given in the places where he oweth to serve, the twentieth year of our reign of England, or five or six other commone years next before. Provided always, that the lords be preferred before other in their bondmen or their land tenants, so in their service to be retained; so that nevertheless the said lords shall retain no more than be necessary for them; and if any such man or woman, being so required to serve, will not the same do, that proved by two true men before the sheriff or the constables of the town where the same shall happen to be done, he shall anon be taken by them or any of them, and committed to the next gaol, there to remain under strait keeping, till he find surety to serve in the form aforesaid.⁶¹

The Statutes of Laborers was enacted in 1351. The goal of the legislation was to set wage limits for specific occupations. It also mandated that artisans could only be in one type of craft, and that merchants could only deal in one type of merchandise.⁶⁰

Whereas late against the malice of servants, which were idle, and not willing to serve after the pestilence, without taking excessive wages, it was ordained by our lord the king, and by the assent of the prelates, nobles, and other of his council, that such manner of servants, as well men as women, should be bound to serve, receiving salary and wages, accustomed in places where they ought to serve in the twentieth year of the reign of the king that now is, or five or six years before; and that the same servants refusing to serve in such manner should be punished by imprisonment of their bodies, as in the said statute is more plainly contained: whereupon commissions were made to divers people in every county to inquire and punish all them which offend against the same: and now forasmuch as it is given the king to understand in this present parliament, by the petition of the commonalty, that the said servants having no regard to the said ordinance, but to their ease and singular covetise, do withdraw themselves

to serve great men and other, unless they have livery and wages to the double or treble of that they were wont to take the said twentieth year, and before, to the great damage of the great men, and impoverishing of all the said commonalty, whereof the said commonalty prayeth remedy: wherefore in the said parliament, by the assent of the said prelates, earls, barons, and other great men, and of the same commonalty there assembled, to refrain the malice of the said servants, be ordained and established the things underwritten:

First, that carters, ploughmen, drivers of the plough, shepherds, swineherds, deies [dairy maids], and all other servants, shall take liveries and wages, accustomed the said twentieth year, or four years before; so that in the country where wheat was wont to be given, they shall take for the bushel ten pence, or wheat at the will of the giver, till it be otherwise ordained. And that they be allowed to serve by a whole year, or by other usual terms, and not by the day; and that none pay in the time of sarcling [hoeing] or hay-making but a penny the day; and a mower of meadows for the acre five pence, or by the day five pence; and reapers of corn in the first week of August two pence, and the second three pence, and so till the end of August, and less in the country where less was wont to be given, without meat or drink, or other courtesy to be demanded, given, or taken; and that such workmen bring openly in their hands to the merchant-towns their instruments, and there shall be hired in a common place and not privy.⁶²

These efforts were largely unsuccessful, for they were loosely enforced while labor prices were high. When labor prices began to fall in the 1370's it was strongly enforced, leading directly to the peasant's revolt of 1381. These governmental regulations did not address stopping the plague. However, they did create a rift between the rich and poor. They also encouraged social conflict and antagonism between various social groups.⁵⁷

Agriculture also began to rapidly shift from labor-intensive crop production to raising livestock, which required far fewer people. New machines and tools were being designed in urban centers that enabled the artisan to be more productive. The late Middle Ages was a time of technological advancements made necessary by the

plague.⁵⁰ The short-term economic effect of plague on European society was disastrous. However, in the long term Europe was able to overcome its problem with stagnation. As mentioned earlier, Europe prior to 1348 had an extensive population that suffered from periodic famines and had reached the level of agricultural production. With the loss of so many lives Europe broke free from these chains. With plenty of land and food people were able to explore new avenues that helped better their lives within society. While the Black Death did not destroy the manorial system, it did provide the foundation for discontent among the masses.

Other Consequences:

Plague also had effects on the art in medieval society, which reflects larger issues. Prior to the pandemic art typically depicted God's love and kindness. After the onset of plague artists turned away from the traditional style and began to produce works that reflected a preoccupation with death. Many works from the era depict death in one form or another, some showing dead bodies in or out of graves while other depict skeletons with scythes.³⁸

Since so many believed God was punishing them for their sins, God began to be depicted as a malevolent figure. Many depictions show arrows, symbolizing plague and God's wrath, showering down upon the land.³⁸ A commonly depicted figure during the Middle Ages was St. Sebastian, who deflected plague arrows from the innocent. During this time images of St. Sebastian and other saints outnumbered images of Christ. Mary was another popular figure of mercy that artists used in their work. She was often depicted as defying God to protect humanity.⁶³ Frescoes still exist that show Mary

deflecting arrows sent by Christ himself. Plague arrows were typically depicted as being shot by God, Jesus, angels or demons.⁵⁰ Again what we see is a shift in the values of society that can be attributable to plague and reflect the weakening power of the church.

A great piece of macabre art was created shortly before 1400, and was done on the tomb of Cardinal La Grange in Avignon. The depiction on the side of the tomb shows the cardinal's body naked and decomposing. The writing on the tomb reads:

*We are a spectacle to the world. Let the great and humble, by our example, see well to what state they shall be inexorably reduced, whatever their condition, age or sex. Why then, miserable person, are you puffed with pride. Dust you are and unto dust you shall return, rotten corpse, morsel and meal for worms.*⁶⁴

Literature was also affected by the plague. Even today, a popular nursery rhyme from the era of the Black Death is spoken by children. Below is the rhyme which clearly depicts symptoms, a prevention measure, and ultimately death.

*Ring a ring o' roses
A pocket full of posies
Ah-tishoo! Ah-tishoo!
We all fall down.*⁴⁸

“Ring o’ roses” referred to changes in the skin, while “Ah-tishoo! Ah-tishoo!” referred to sneezing that was associated with the pneumonic form. Individuals of the day carried “a pocket full of posies”, which consisted of a pleasant smelling herb used to prevent contagion from bad odors. “We all fall down” refers to those who died from the plague.⁹

Plague altered medieval society, and the consequences from the epidemic have helped to shape our modern world. Nearly all aspects of society were touched, leading to changes in the way the medieval person thought, felt and behaved. The old institutions that once held supreme power over the masses were on the decline. While the short-term effect of plague was harsh, in the long-term plague helped to revitalize society.

Historical Record of Plague After the Black Death:

Plague continued to ravage portions of the European continent for hundreds of years. After the Black Death, the 14th century had additional plague outbreaks in 1360, 1369, 1372 and 1382. In the 15th century outbreaks were reported in 1400, 1406, 1437, 1460, 1473, 1482 and 1492, and in the 16th century outbreaks were reported in 1509, 1514, 1527, 1532, 1560, 1576 and 1593. During the 16th century numerous individuals were still being executed for the belief that they were spreading plague. In the 17th century plague outbreaks occurred in 1603, 1622, 1633, 1654, 1655 and 1675. Two particularly virulent epidemics occurred in Milan in 1630, and in London in 1665. Even with these numerous outbreaks plague began to disappear from the European continent during the 17th century, and the last severe epidemic was reported in Marseille in 1720.²³

The third pandemic began in 1855 in the Yunnan province of China. Plague was then spread throughout world by steamboat. In fact, 15 years after a serious outbreak of plague in Canton, China, that occurred in 1894, a total of 136 ships, and 51 countries were known to have been infected via trade routes.¹⁵ The worldwide

distribution of plague can be attributed to the third pandemic. The third pandemic continues to impact portions of our population..

Summary and Conclusions:

Plague has had a devastating impact on past and present society. Today, medication is available to easily treat patients who contract plague. However, in the past decade plague has been on the rise throughout much of the world. The outbreak in India shows how plague can have political, social, and economic effects on a population. The development of plague in modern society is an indicator of the overall social health of a nation, for plague is a disease that can be controlled by implementing preventative control measures.

We as a society need to draw upon the lessons learned from past epidemics to ensure another pandemic of plague does not occur. In countries like Madagascar, serious efforts are still needed to control plague. Since epidemic diseases have the ability to travel great distances in short periods of time, a strong, well-funded, international surveillance system is still needed.

The Black Death caused widespread disease and suffering throughout the known world, resulting in the loss of tens of millions of lives. People of the day had no idea how plague was spread, however important contributions were still made to public health, especially the notion of quarantine. With the onset of plague, people of the Middle Ages took out their anger and pain on the marginal people of the day, including Jews, beggars, and gypsies. The Black Death had a profound short-term impact on all aspects of society, including art, literature, medicine, public health, and sanitation. In the long term medieval society was able to benefit from the vast reduction in the

population. The old ruling establishment that dominated European society was severely weakened, which helped lead to the Reformation and Renaissance.

The epidemic known as the Black Death was a horrific nightmare for the public health community of the Middle Ages. It swept through Europe within a matter of years, leaving in its wake a path of disease, death, and destruction. Knowledge of past epidemics is vitally important for understanding epidemics that occur today. Some of the same factors that were present during the Middle Ages are still present today, such as widespread poverty, lack of public health measures, hatred of other cultures or religions, and fear of poorly understood diseases. However, epidemic disease has the potential for both the potential to destroy civilizations as well as to be a catalyst for positive changes within society when that destruction is of institutions that are not beneficial.

One of the greatest lessons we can learn from the Black Death is that epidemic disease can create social upheaval resulting in violent and destructive behavior among people. Condran writes, "Epidemics always evoked fear and panic, but the specific responses to them ranged widely by time, place, and the social condition of those who had to live through them".⁶⁵ It is important to understand the role of panic and fear when implementing a public health campaign against epidemic disease. The horrific consequences of fear and panic imposed on specific portions of the population of medieval Europe need to be analyzed once more in order to prevent future evils from occurring.

The modern AIDS epidemic closely resembles that of the Black Death, in that marginal groups (such as the Gay and Lesbian communities) were singled out as targets. Fee and Krieger discuss how no one theory is adequate for understanding or controlling AIDS. Instead, they point to the creation of a paradigm that is multifaceted in nature, incorporating biological determinates, history, and societal beliefs:

“Transforming our approach to AIDS will not be an easy task...By analyzing the changing constructions of AIDS, we can begin to challenge the conventional view that AIDS will be understood by science alone, and we can thereby expand our strategies to prevent this wretched and wrenching epidemic from becoming ever more entrenched”.⁶⁶

Fear, prejudice and panic are extremely important considerations in the development of prevention efforts. Plague and AIDS are not the only epidemic diseases that generate these types of emotions. The tuberculosis epidemic of the nineteenth century is another case where marginal people were blamed. Many people of the day believed tuberculosis was spread by Eastern European Jews. The historian Irving Howe wrote, “It came to be regarded as ‘a Jewish disease,’ or ‘the tailors’ disease”, because many from the Jewish community who had tuberculosis worked in the garment industry. In reality tuberculosis was not caused by any particular group, yet it was the Jewish population that was once again stigmatized.”⁶⁷ The public health community needs to address issues of stigmatization in any prevention and containment model.

As advances in medicine make treatment of epidemic disease easier, society must remember to examine any underlying factors that may contribute to a disease

outbreak. Simply curing individual patients will not stop the root problem. The best way to combat a disease like plague is by implementing primary and secondary prevention measures. These measures (including vaccination and isolation of infected individuals before they develop active disease) may be readily available in well-developed countries, but countries of poor economic status may not be adequately prepared for a potential epidemic. Tertiary prevention with the institution of immediate antibiotic therapy and isolation of the individuals with symptoms and signs of active disease are readily available and affordable to those that need treatment.

Improving the health and well being of a population is the driving force behind public health. As we move ever closer to a global community it is up to those countries with great economic power to provide resources to nations of poor economic status. It is up to the United Nations to provide the leadership for global health efforts.

Educational prevention efforts must focus on the complex web of social, political, religious, and economic institutions found within society. In order to prevent future pandemics, epidemic diseases must be fought on all fronts by a coordinated team of health professionals.

By careful study of historical epidemics a picture emerges of how to develop preventative public health measures. We currently have all the necessary tools to combat many preventable diseases. However, people are still dying without good cause. Society needs to acknowledge and take responsibility for those diseases which are

totally preventable. It seems to me the lessons of the past have yet to be realized in the present, and until these lessons are learned, only greater challenges will face the public health community in the future.

Appendix I:

The second account is from Marchione di Coppo Stefani, who wrote the Florentine Chronicle in the late 1370s and early 1380s. In this account he discusses many of the same issues as the previous account, including symptoms, fear, efforts of the clergy, and economic prosperity gained at the suffering of others.

In the year of the Lord 1348 there was a very great pestilence in the city and district of Florence. It was of such a fury and so tempestuous that in houses in which it took hold previously healthy servants who took care of the ill died of the same illness. Almost none of the ill survived past the fourth day. Neither physicians nor medicines were effective. Whether because these illnesses were previously unknown or because physicians had not previously studied them, there seemed to be no cure. There was such a fear that no one seemed to know what to do. When it took hold in a house it often happened that no one remained who had not died. And it was not just that men and women died, but even sentient animals died. Dogs, cats, chickens, oxen, donkeys sheep showed the same symptoms and died of the same disease. And almost none, or very few, who showed these symptoms, were cured. The symptoms were the following: a bubo in the groin, where the thigh meets the trunk; or a small swelling under the armpit; sudden fever; spitting blood and saliva (and no one who spit blood survived it). It was such a frightful thing that when it got into a house, as was said, no one remained. Frightened people abandoned the house and fled to another. Those in town fled to villages. Physicians could not be found because they had died like the others. And those who could be found wanted vast sums in hand before they entered the house. And when they did enter, they checked the pulse with face turned away. They inspected the urine from a distance and with something odoriferous under their nose. Child abandoned the father, husband the wife, wife the husband, one brother the other, one sister the other. In all the city there was nothing to do but to carry the dead to a burial. And those who died had neither confessor nor other sacraments. And many died with no one looking after them. And many died of hunger because when someone took to bed sick, another in the house, terrified, said to him: "I'm going for the doctor." Calmly walking out the door, the other left and did not return again. Abandoned by people, without food, but accompanied by fever, they weakened. There were many who pleaded with their relatives not to abandon them when night fell. But [the relatives] said to the sick person, "So that during the night you did not have to awaken those who serve you and who work hard day and night, take some sweetmeats, wine or water. They are here on the bedstead by your head; here are some blankets." And when the sick person had fallen asleep, they left and did not return. If it happened that he was strengthened by the food during the night he might be alive and strong enough to get to the window. If the street was

not a major one, he might stand there a half hour before anyone came by. And if someone did pass by, and if he was strong enough that he could be heard when he called out to them, sometimes there might be a response and sometimes not, but there was no help. No one, or few, wished to enter a house where anyone was sick, nor did they even want to deal with those healthy people who came out of a sick person's house. And they said to them: "He is stupefied, do not speak to him!" saying further: "He has it because there is a bubo in his house." They call the swelling a bubo. Many died unseen. So they remained in their beds until they stank. And the neighbors, if there were any, having smelled the stench, placed them in a shroud and sent them for burial. The house remained open and yet there was no one daring enough to touch anything because it seemed that things remained poisoned and that whoever used them picked up the illness.

At every church, or at most of them, they dug deep trenches, down to the waterline, wide and deep, depending on how large the parish was. And those who were responsible for the dead carried them on their backs in the night in which they died and threw them into the ditch, or else they paid a high price to those who would do it for them. The next morning, if there were many [bodies] in the trench, they covered them over with dirt. And then more bodies were put on top of them, with a little more dirt over those; they put layer on layer just like one puts layers of cheese in a lasagna.

The beccamorti [literally vultures] who provided their service, were paid such a high price that many were enriched by it. Many died from [carrying away the dead], some rich, some after earning just a little, but high prices continued. Servants, or those who took care of the ill, charged from one to three florins per day and the cost of things grew. The things that the sick ate, sweetmeats and sugar, seemed priceless. Sugar cost from three to eight florins per pound. And other confections cost similarly. Capons and other poultry were very expensive and eggs cost between twelve and twenty-four pence each; and he was blessed who could find three per day even if he searched the entire city. Finding wax was miraculous. A pound of wax would have gone up more than a florin if there had not been a stop put [by the communal government] to the vain ostentation that the Florentines always make [over funerals]. Thus it was ordered that no more than two large candles could be carried [in any funeral]. Churches had no more than a single bier which usually was not sufficient. Spice dealers and beccamorti sold biers, burial palls, and cushions at very high prices. Dressing in expensive woolen cloth as is customary in [mourning] the dead, that is in a long cloak, with mantle and veil that used to cost women three florins climbed in price to thirty florins and would have climbed to 100 florins had the custom of dressing in expensive cloth not been changed. The rich dressed in modest woolens, those not rich sewed [clothes] in linen. Benches on which the dead were placed cost like the heavens and still the benches were only a hundredth of those needed. Priests were not able to ring bells as they would have liked. Concerning that [the government] issued ordinances discouraging the sounding of bells, sale of burial benches, and limiting expenses. They could not sound bells, sell benches, nor cry out announcements because the sick hated to hear of

this and it discouraged the healthy as well. Priests and friars went [to serve] the rich in great multitudes and they were paid such high prices that they all got rich. And therefore [the authorities] ordered that one could not have more than a prescribed number [of clerics] of the local parish church. And the prescribed number of friars was six. All fruits with a nut at the center, like unripe plums and unhusked almonds, fresh broadbeans, figs and every useless and unhealthy fruit, were forbidden entrance into the city. Many processions, including those with relics and the painted tablet of Santa Maria Inpruneta, went through the city crying our "Mercy" and praying and then they came to a stop in the piazza of the Priors. There they made peace concerning important controversies, injuries and deaths. This [pestilence] was a matter of such great discouragement and fear that men gathered together in order to take some comfort in dining together. And each evening one of them provided dinner to ten companions and the next evening they planned to eat with one of the others. And sometimes if they planned to eat with a certain one he had no meal prepared because he was sick. Or if the host had made dinner for the ten, two or three were missing. Some fled to villas, others to villages in order to get a change of air. Where there had been no [pestilence], there they carried it; if it was already there, they caused it to increase. None of the guilds in Florence was working. All the shops were shut, taverns closed; only the apothecaries and the churches remained open. If you went outside, you found almost no one. And many good and rich men were carried from home to church on a pall by four beccamorti and one tonsured clerk who carried the cross. Each of them wanted a florin. This mortality enriched apothecaries, doctors, poultry vendors, beccamorti, and greengrocers who sold of poultices of mallow, nettles, mercury and other herbs necessary to draw off the infirmity. And it was those who made these poultices who made alot of money. Woolworkers and vendors of remnants of cloth who found themselves in possession of cloths [after the death of the entrepreneur for whom they were working] sold it to whoever asked for it. When the mortality ended, those who found themselves with cloth of any kind or with raw materials for making cloth was enriched. But many found [who actually owned cloths being processed by workers] found it to be moth-eaten, ruined or lost by the weavers. Large quantities of raw and processed wool were lost throughout the city and countryside.

This pestilence began in March, as was said, and ended in September 1348. And people began to return to look after their houses and possessions. And there were so many houses full of goods without a master that it was stupefying. Then those who would inherit these goods began to appear. And such it was that those who had nothing found themselves rich with what did not seem to be theirs and they were unseemly because of it. Women and men began to dress ostentatiously.⁶⁸

The third account was written by Agnolo di Tura, of Siena and graphically depicts how severe the situation at the time was. Again, many of the same themes are echoed in this account as in the accounts from above.

The mortality in Siena began in May. It was a cruel and horrible thing. . . . It seemed that almost everyone became stupefied seeing the pain. It is impossible for the human tongue to recount the awful truth. Indeed, one who did not see such horribleness can be called blessed. The victims died almost immediately. They would swell beneath the armpits and in the groin, and fall over while talking. Father abandoned child, wife husband, one brother another; for this illness seemed to strike through breath and sight. And so they died. None could be found to bury the dead for money or friendship. Members of a household brought their dead to a ditch as best they could, without priest, without divine offices. In many places in Siena great pits were dug and piled deep with the multitude of dead. And they died by the hundreds, both day and night, and all were thrown in those ditches and covered with earth. And as soon as those ditches were filled, more were dug. I, Agnolo di Tura . . . buried my five children with my own hands. . . . And so many died that all believed it was the end of the world.⁶⁹

The fourth account comes from another Florentine named Jean de Venette. Again many themes are echoed in this account as in the others, including the spread of plague, religious beliefs, and reasons for the plague.

In A.D. 1348, the people of Florence and of almost the whole world were struck by a blow other than war. For in addition to the famine . . . and to the wars . . . pestilence and its attendant tribulations appeared again in various parts of the world. In the month of August, 1348, after Vespers when the sun was beginning to set, a big and very bright star appeared above Paris, toward the west. It did not seem, as stars usually do, to be very high above our hemisphere but rather very near. As the sun set and night came on, this star did not seem to me or to many other friars who were watching it to move from one place. At length, when night had come, this big star, to the amazement of all of us who were watching, broke into many different rays and, as it shed these rays over Paris toward the east, totally disappeared and was completely annihilated. Whether it was a comet or not, whether it was composed of airy exhalations and was finally resolved into vapor, I leave to the decision of astronomers. It is, however, possible that it was a presage of the amazing pestilence to come, which, in fact,

followed very shortly in Paris and throughout France and elsewhere, as I shall tell. All this year and the next, the mortality of men and women, of the young even more than of the old, in Paris and in the kingdom of France, and also, it is said, in other parts of the world, was so great that it was almost impossible to bury the dead. People lay ill little more than two or three days and died suddenly, as it were in full health. He who was well one day was dead the next and being carried to his grave. Swellings appeared suddenly in the armpit or in the groin -- in many cases both -- and they were infallible signs of death. This sickness or pestilence was called an epidemic by the doctors. Nothing like the great numbers who died in the years 1348 and 1349 has been heard of or seen of in times past. This plague and disease came from ymaginatione or association and contagion, for if a well man visited the sick he only rarely evaded the risk of death. Wherefore in many towns timid priests withdrew, leaving the exercise of their ministry to such of the religious as were more daring. In many places not two out of twenty remained alive. So high was the mortality at the Hôtel-Dieu in Paris that for a long time, more than five hundred dead were carried daily with great devotion in carts to the cemetery of the Holy Innocents in Paris for burial. A very great number of the saintly sisters of the Hôtel-Dieu who, not fearing to die, nursed the sick in all sweetness and humility, with no thought of honor, a number too often renewed by death, rest in peace with Christ, as we may piously believe.

This plague, it is said, began among the unbelievers, came to Italy, and then crossing the Alps reached Avignon, where it attacked several cardinals and took from them their whole household. Then it spread, unforeseen, to France, through Gascony and Spain, little by little, from town to town, from village to village, from house to house, and finally from person to person. It even crossed over to Germany, though it was not so bad there as with us. During the epidemic, God of His accustomed goodness deigned to grant this grace, that however suddenly men died, almost all awaited death joyfully. Nor was there anyone who died without confessing his sins and receiving the holy viaticum. . . .

Some said that this pestilence was caused by infection of the air and waters, since there was at this time no famine nor lack of food supplies, but on the contrary great abundance. As a result of this theory of infected water and air as the source of the plague the Jews were suddenly and violently charged with infecting wells and water and corrupting the air. The whole world rose up against them cruelly on this account. In Germany and other parts of the world where Jews lived, they were massacred and slaughtered by Christians, and many thousands were burned everywhere, indiscriminately. The unshaken, if fatuous, constancy of the men and their wives was remarkable. For mothers hurled their children first into the fire that they might not be baptized and then leaped in after them to burn with their husbands and children. It is said that many bad Christians were found who in like manner put poison into wells. But in truth, such poisonings, granted that they actually were perpetrated, could not have caused so great a plague nor have infected so many people. There were

other causes; for example, the will of God and the corrupt humors and evil inherent in air and earth. Perhaps the poisonings, if they actually took place in some localities, reinforced these causes. The plague lasted in France for the greater part of the years 1348 and 1349 and then ceased. Many country villages and many houses in good towns remained empty and deserted. Many houses, including some splendid dwellings, very soon fell into ruins. Even in Paris several houses were thus ruined, though fewer here than elsewhere.

After this cessation of the epidemic, pestilence, or plague, the men and women who survived married each other. There was no sterility among the women, but on the contrary fertility beyond the ordinary. Pregnant women were seen on every side. . . . But woe is me! the world was not changed for the better but for the worse by this renewal of population. For men were more avaricious and grasping than before, even though they had far greater possessions. They were more covetous and disturbed each other more frequently with suits, brawls, disputes, and pleas. Nor by the mortality resulting from this terrible plague inflicted by God was peace between kings and lords established. On the contrary, the enemies of the king of France and of the Church or stronger and wicked than before and stirred up wars on sea and on land. Greater evils than before [swarmed] everywhere in the world. And this fact was very remarkable. Although there was an abundance of all goods, yet everything was twice as dear, whether it were utensils, victuals, or merchandise, hired helpers or peasants and serfs, except for some hereditary domains which remained abundantly stocked with everything. Charity began to cool, and iniquity with ignorance and stand to abound, for a few could be found in the good towns and castles who knew how or were willing to instruct children in the rudiments of grammar.⁷⁰

The fifth account comes from one of the most notable writers of the day, the Italian Poet Giovanni Boccaccio (1313-1375), who's riveting work the Decameron vividly tells the horrors that existed during the Black Death. The following is a selection that once again brings home the point that plague struck all levels of society in both rural and urban locations.

I say, then, that the years of the beatific incarnation of the Son of God had reached the tale of one thousand three hundred and forty eight, when in the illustrious city of Florence, the fairest of all the cities of Italy, there made its appearance that deadly pestilence, which, whether disseminated by the influence of the celestial bodies, or sent upon us mortals by God in His just wrath by way

of retribution for our iniquities, had had its origin some years before in the East, whence, after destroying an innumerable multitude of living beings, it had propagated itself without respite from place to place, and so calamitously, had spread into the West.

In Florence, despite all that human wisdom and forethought could devise to avert it, as the cleansing of the city from many impurities by officials appointed for the purpose, the refusal of entrance to all sick folk, and the adoption of many precautions for the preservation of health; despite also humble supplications addressed to God, and often repeated both in public procession and otherwise by the devout; towards the beginning of the spring of the said year the doleful effects of the pestilence began to be horribly apparent by symptoms that shewed as if miraculous.

Not such were they as in the East, where an issue of blood from the nose was a manifest sign of inevitable death; but in men a women alike it first betrayed itself by the emergence of certain tumors in the groin or the armpits, some of which grew as large as a common apple, others as an egg, some more, some less, which the common folk called gavoccioli. From the two said parts of the body this deadly gavocciolo soon began to propagate and spread itself in all directions indifferently; after which the form of the malady began to change, black spots or livid making their appearance in many cases on the arm or the thigh or elsewhere, now few and large, then minute and numerous. And as the gavocciolo had been and still were an infallible token of approaching death, such also were these spots on whomsoever they shewed themselves. Which maladies seemed set entirely at naught both the art of the physician and the virtue of physic; indeed, whether it was that the disorder was of a nature to defy such treatment, or that the physicians were at fault - besides the qualified there was now a multitude both of men and of women who practiced without having received the slightest tincture of medical science - and, being in ignorance of its source, failed to apply the proper remedies; in either case, not merely were those that covered few, but almost all within three days from the appearance of the said symptoms, sooner or later, died, and in most cases without any fever or other attendant malady.

Moreover, the virulence of the pest was the greater by reason the intercourse was apt to convey it from the sick to the whole, just as fire devours things dry or greasy when they are brought close to it, the evil went yet further, for not merely by speech or association with the sick was the malady communicated to the healthy with consequent peril of common death; but any that touched the clothes the sick or aught else that had been touched, or used by these seemed thereby to contract the disease.

So marvelous sounds that which I have now to relate, that, had not many, and I among them, observed it with their own eyes, I had hardly dared to credit it,

much less to set it down in writing, though I had had it from the lips of a credible witness.

I say, then, that such was the energy of the contagion of the said pestilence, that it was not merely propagated from man to man, but, what is much more startling, it was frequently observed, that things which had belonged to one sick or dead of the disease, if touched by some other living creature, not of the human species, were the occasion, not merely of sickening, but of an almost instantaneous death. Whereof my own eyes (as I said a little before) had cognisance, one day among others, by the following experience. The rags of a poor man who had died of the disease being strewn about the open street, two hogs came thither, and after, as is their wont, no little trifling with their snouts, took the rags between their teeth and tossed them to and fro about their chaps; whereupon, almost immediately, they gave a few turns, and fell down dead, as if by poison, upon the rags which in an evil hour they had disturbed.

In which circumstances, not to speak of many others of a similar or even graver complexion, divers apprehensions and imaginations were engendered in the minds of such as were left alive, inclining almost all of them to the same harsh resolution, to wit, to shun and abhor all contact with the sick and all that belonged to them, thinking thereby to make each his own health secure. Among whom there were those who thought that to live temperately and avoid all excess would count for much as a preservative against seizures of this kind. Wherefore they banded together, and dissociating themselves from all others, formed communities in houses where there were no sick, and lived a separate and secluded life, which they regulated with the utmost care, avoiding every kind of luxury, but eating and drinking moderately of the most delicate viands and the finest wines, holding converse with none but one another, lest tidings of sickness or death should reach them, and diverting their minds with music and such other delights as they could devise. Others, the bias of whose minds was in the opposite direction, maintained, that to drink freely, frequent places of public resort, and take their pleasure with song and revel, sparing to satisfy no appetite, and to laugh and mock at no event, was the sovereign remedy for so great an evil: and that which they affirmed they also put in practice, so far as they were able, resorting day and night, now to this tavern, now to that, drinking with an entire disregard of rule or measure, and by preference making the houses of others, as it were, their inns, if they but saw in them aught that was particularly to their taste or liking; which they, were readily able to do, because the owners, seeing death imminent, had become as reckless of their property as of their lives; so that most of the houses were open to all comers, and no distinction was observed between the stranger who presented himself and the rightful lord. Thus, adhering ever to their inhuman determination to shun the sick, as far as possible, they ordered their life. In this extremity of our city's suffering and tribulation the venerable authority of laws, human and divine, was abased and all but totally dissolved for lack of those who should have administered and enforced them, most of whom, like the rest of the citizens, were

either dead or sick or so hard bested for servants that they were unable to execute any office; whereby every man was free to do what was right in his own eyes.

Not a few there were who belonged to neither of the two said parties, but kept a middle course between them, neither laying t same restraint upon their diet as the former, nor allowing themselves the same license in drinking and other dissipations as the latter, but living with a degree of freedom sufficient to satisfy their appetite and not as recluses. They therefore walked abroad, carrying in the hands flowers or fragrant herbs or divers sorts of spices, which they frequently raised to their noses, deeming it an excellent thing thus to comfort the brain with such perfumes, because the air seemed be everywhere laden and reeking with the stench emitted by the dead and the dying, and the odours of drugs.

Some again, the most sound, perhaps, in judgment, as they were also the most harsh in temper, of all, affirmed that there was no medicine for the disease superior or equal in efficacy to flight; following which prescription a multitude of men and women, negligent of all but themselves, deserted their city, their houses, their estates, their kinsfolk, their goods, and went into voluntary exile, or migrated to the country parts, as if God in visiting men with this pestilence in requital of their iniquities would not pursue them with His wrath wherever they might be, but intended the destruction of such alone as remained within the circuit of the walls of the city; or deeming perchance, that it was now time for all to flee from it, and that its last hour was come.

Of the adherents of these divers opinions not all died, neither did all escape; but rather there were, of each sort and in every place many that sickened, and by those who retained their health were treated after the example which they themselves, while whole, had set, being everywhere left to languish in almost total neglect. Tedious were it to recount, how citizen avoided citizen, how among neighbors was scarce found any that shewed fellow-feeling for another, how kinsfolk held aloof, and never met, or but rarely; enough that this sore affliction entered so deep into the minds of men a women, that in the horror thereof brother was forsaken by brother nephew by uncle, brother by sister, and oftentimes husband by wife: nay, what is more, and scarcely to be believed, fathers and mothers were found to abandon their own children, untended, unvisited, to their fate, as if they had been strangers. Wherefore the sick of both sexes, whose number could not be estimated, were left without resource but in the charity of friends (and few such there were), or the interest of servants, who were hardly to be had at high rates and on unseemly terms, and being, moreover, one and all, men and women of gross understanding, and for the most part unused to such offices, concerned themselves no further than to supply the immediate and expressed wants of the sick, and to watch them die; in which service they themselves not seldom perished with their gains. In consequence of which dearth of servants and dereliction of the sick by neighbors, kinsfolk and friends, it came to pass-a thing, perhaps, never before heard of-that no woman,

however dainty, fair or well-born she might be, shrank, when stricken with the disease, from the ministrations of a man, no matter whether he were young or no, or scrupled to expose to him every part of her body, with no more shame than if he had been a woman, submitting of necessity to that which her malady required; wherefrom, perchance, there resulted in after time some loss of modesty in such as recovered. Besides which many succumbed, who with proper attendance, would, perhaps, have escaped death; so that, what with the virulence of the plague and the lack of due attendance of the sick, the multitude of the deaths, that daily and nightly took place in the city, was such that those who heard the tale-not to say witnessed the fact-were struck dumb with amazement. Whereby, practices contrary to the former habits of the citizens could hardly fail to grow up among the survivors.

It had been, as to-day it still is, the custom for the women that were neighbors and of kin to the deceased to gather in his house with the women that were most closely connected with him, to wail with them in common, while on the other hand his male kinsfolk and neighbors, with not a few of the other citizens, and a due proportion of the clergy according to his quality, assembled without, in front of the house, to receive the corpse; and so the dead man was borne on the shoulders of his peers, with funeral pomp of taper and dirge, to the church selected by him before his death. Which rites, as the pestilence waxed in fury, were either in whole or in great part disused, and gave way to others of a novel order. For not only did no crowd of women surround the bed of the dying, but many passed from this life unregarded, and few indeed were they to whom were accorded the lamentations and bitter tears of sorrowing relations; nay, for the most part, their place was taken by the laugh, the jest, the festal gathering; observances which the women, domestic piety in large measure set aside, had adopted with very great advantage to their health. Few also there were whose bodies were attended to the church by more than ten or twelve of their neighbors, and those not the honorable and respected citizens; but a sort of corpse-carriers drawn from the baser ranks, who called themselves becchini and performed such offices for hire, would shoulder the bier, and with hurried steps carry it, not to the church of the dead man's choice, but to that which was nearest at hand, with four or six priests in front and a candle or two, or, perhaps, none; nor did the priests distress themselves with too long and solemn an office, but with the aid of the becchini hastily consigned the corpse to the first tomb which they found untenanted. The condition of the lower, and, perhaps, in great measure of the middle ranks, of the people shewed even worse and more deplorable; for, deluded by hope or constrained by poverty, they stayed in their quarters, in their houses where they sickened by thousands a day, and, being without service or help of any kind, were, so to speak, irredeemably devoted to the death which overtook them. Many died daily or nightly in the public streets; of many others, who died at home, the departure was hardly observed by their neighbors, until the stench of their putrefying bodies carried the tidings; and what with their corpses and the corpses of others who died on every hand the whole place was a sepulchre.

It was the common practice of most of the neighbors, moved no less by fear of contamination by the putrefying bodies than by charity towards the deceased, to drag the corpses out of the houses with their own hands, aided, perhaps, by a porter, if a porter was to be had, and to lay them in front of the doors, where any one who made the round might have seen, especially in the morning, more of them than he could count; afterwards they would have biers brought up or in default, planks, whereon they laid them. Nor was it once twice only that one and the same bier carried two or three corpses at once; but quite a considerable number of such cases occurred, one bier sufficing for husband and wife, two or three brothers, father and son, and so forth. And times without number it happened, that as two priests, bearing the cross, were on their way to perform the last office for some one, three or four biers were brought up by the porters in rear of them, so that, whereas the priests supposed that they had but one corpse to bury, they discovered that there were six or eight, or sometimes more. Nor, for all their number, were their obsequies honored by either tears or lights or crowds of mourners rather, it was come to this, that a dead man was then of no more account than a dead goat would be to-day.⁷¹

The sixth account comes from Francesco Petrarca (1304-1374), who wrote a letter to himself, and in it described the impact of the plague and possible explanations of why.

O what has come over me? Where are the violent fates pushing me back to? I see passing by, in headlong flight, time which makes the world a fleeting place. I observe about me dying throngs of both young and old, and nowhere is there a refuge. No haven beckons in any part of the globe, nor can any hope of longed for salvation be seen. Wherever I turn my frightened eyes, their gaze is troubled by continual funerals: the churches groan encumbered with biers, and, without last respects, the corpses of the noble and the commoner lie in confusion alongside each other. The last hour of life comes to mind, and, obliged to recollect my misfortunes, I recall the flocks of dear ones who have departed, and the conversations of friends, the sweet faces which suddenly vanished, and the hallowed ground now insufficient for repeated burials. This is what the people of Italy bemoan, weakened by so many deaths; this is what France laments, exhausted and stripped of inhabitants; the same goes for other peoples, under whatever skies they reside. Either it is the wrath of God, for certainly I would think that our misdeeds deserve it, or it is just the harsh assault of the stars in their perpetually changing conjunctions. This plague-bearing year has borne down on humankind and threatens a tearful slaughter, and the highly charged air encourages death. From his diseased heavenly pole, cruel Jupiter looks

down, and from there he rains upon the earth diseases and grievous mortality. The merciless Fates rush to sever the threads of life all at once, if they can: seeing so many ashen faces of the wretched common people, and so many seeking gloomy Tartarus, I fear that from on high they may have been granted what they wish. Just thinking of these things, I confess I am frightened and I see before me the snares of imminent death. For where could I hide my head, when neither the sea nor the land nor the rocks full of dark caves show themselves to the one who flees, because death, rushing impetuously into even safe hiding-places, overcomes all things. Thus, like the mariner caught in a dangerous storm, before whose eyes cruel Neptune has sucked down the other ships in the convoy, who hears the fragile keel cracking in the belly of his ship and the splintering of the oars as they are dashed against the reefs, and sees the rudder carried away amongst the terrifying waves, I hesitate uncertain as to what to do, though certain of the peril. No differently, where unnoticed a deadly fire has taken hold of ancient timbers and greedy flame licks resin-rich floorboards, the household, aroused by the commotion, suddenly gets out of bed, and the father, before anyone else, rushes up to the top of the roof, gazing about him, and grasping his trembling son seeks to save him first from the dangerous fire, and works out in his mind how to escape with this burden through the opposing flames. Often in fear clasping to myself my helpless soul I too wonder whether there is an escape-route to carry it out from the conflagration and I am minded to extinguish the bodily flames with the water of tears. But the world holds me back. Headstrong desire draws me and I am bound ever more tightly by deadly knots. That is the state I am in. Dense shadows have covered me with fear. For whosoever thinks they can recall death and look upon the moment of their passing with fearless face is either mistaken or mad, or, if he is fully aware, then he is very courageous.⁷²

The seventh account was written by Gabriele de Mussi, a notary from Piacenza.

"Tell, O Sicily, and ye, the many islands of the sea, the judgements of God. Confess, O Genoa, what thou hast done, since we of Genoa and Venice are compelled to make God's chastisement manifest. Alas! our ships enter the port, but of a thousand sailors hardly ten are spared. We reach our homes; our kindred and our neighbours come from all parts to visit us. Woe to us for we cast at them the darts of death! Whilst we spoke to them, whilst they embraced us and kissed us, we scattered the poison from our lips. Going back to their homes, they in turn soon infected their whole families, who in three days succumbed, and were buried in one common grave. Priests and doctors visiting the sick returned from their duties ill, and soon were numbered with the dead. O death! cruel, bitter, impious death! which thus breaks the bonds of affection and divides father and mother, brother and sister, son and wife. Lamenting our misery, we feared to fly, yet we dared not remain."⁷³

Appendix II.

Ordinances for Sanitation in a Time of Mortality:

In the name of Christ Amen. Herein are written certain ordinances and provisions made and agreed upon by certain wise men of the People of the city of Pistoia elected and commissioned by the lords Anziani and the Standardbearer of Justice of the said city concerning the preserving, strengthening and protecting the health of humans from various and diverse pestilences which otherwise can befall the human body. And written by me Simone Buonacorsi notary. . . in the year from the Nativity of the Lord MCCCXLVIII, the first Indiction.

First. So that no contaminated matter which presently persists in the areas surrounding the city of Pistoia can enter into the bodies of the citizens of Pistoia, these wise men provided and ordered that no citizen of Pistoia or dweller in the district or the county of Pistoia . . . shall in any way dare or presume to go to Pisa or Lucca or to the county or district of either. And that no one can or ought to come from either of them or their districts ... to the said city of Pistoia or its district or county on penalty of £ 50 ... And that gatekeeper of the city of Pistoia guarding the gates of the said city shall not permit those coming or returning to the said city of Pistoia from the said cities of Pisa or Lucca, their districts or counties to enter the said gates on penalty of £ 10 ... It is licit, however, for citizens now living in Pistoia to go to Pisa and Lucca, their districts and counties and then return if they have first obtained a license from the Council of the People

II. Item. The foresaid wise men provided and ordered that no person whether citizen, inhabitant of the district or county of the city of Pistoia or foreigner shall dare or presume in any way to bring ... to the city of Pistoia, its district or county, any used cloth, either linen or woolen, for use as clothing for men or women or for bedclothes on penalty of £ 200. ... Citizens of Pistoia, its district and county returning to the city, district or county will be allowed to bring with them the linen or woolen cloths they are wearing and those for personal use carried in luggage or a small bundle weighing 30 pounds or less. ... And if any quantity of cloth of the said type or quality has been carried into the said city, county or district, the carrier shall be held to and must remove and export it from the said city, county and district within three days of the adoption of the present ordinance under the foresaid penalty for each carrier or carriers and for each violation.

III. Item. They provided and ordered that the bodies of the dead, after they had died, can not be nor ought to be removed from the place in which they are found unless first such a body has been placed in a wooden casket covered by a lid secured with nails, so that no stench can issue forth from it; nor can it be covered except by a canopy, blanket or drape under a penalty for £ 50 of

pennies paid by the heirs of the dead person.... And also that likewise such dead bodies of the dead must be carried to the grave only in the said casket under the said penalty as has been said. And so that the foresaid shall be noted by the rectors and officials of the city of Pistoia, present and future rectors of the parishes of the city of Pistoia in whose parish there is any dead person are held to and must themselves announce the death and the district [of the city] in which the dead person lived to the podesta and captain or others of the government of the said city. And they must notify them of the name of the dead person and of the district in which the dead person had lived or pay the said penalty for each contravention. And the podesta and captain to whom such an announcement or notification has been made, immediately are held to and must send one of their officials to the same location to see and inquire if the contents of the present article and other statutes and ordinances concerning funerals are being observed and to punish anyone found culpable according to the said penalty.... And the foresaid shall not be enforced nor is it extended to poor and miserable persons who are declared to be poor and miserable according to the form of any statutes or ordinances of the said city.

IV. Item. In order to avoid the foul stench which the bodies of the dead give off they have provided and ordered that any ditch in which a dead body is to be buried must be dug under ground to a depth of 2 1/2 braccia by the measure of the city of Pistoia.

V. Item. They have provided and ordered that no person of whatever condition or status or authority shall dare or presume to return or to carry to the city of Pistoia any dead body in or out of a casket or in any manner on penalty of £ 25 of pennies paid by whoever carries, brings, or orders [a body] to be carried or brought for each occasion. And that the gatekeepers of the said city shall not permit such a body to be sent into the said city on penalty of the foresaid fine by each gatekeeper at the gate through which the said body was sent.

VI. Item. They have provided and ordered that any person who will have come for the burial or to bury any dead person can not and may not be in the presence of the body itself nor with the relatives of such a dead person except for the procession to the church where it will be buried. Nor shall such persons return to the house where the defunct person lived or enter into that house or any other house on the said occasion on penalty of £ 10

VII. Item. They have provided and ordered that when anyone has died no person should dare or presume to present or to send any gift before or after burial to the former dwelling place of such a dead person or any other place on the said occasion or to attend or to go to a meal in that house or place on the said occasion on penalty of £ 25.... Children, carnal brothers and sisters, nieces and nephews of such a dead person and their children, however, shall be expected [from this provision].

VIII. Item. They have provided and ordered that in order to avoid useless or fruitless expenses no person should dare or presume to dress in new clothing during the period of mourning for any dead person or during the eight days after that, on penalty of £ 25 of pennies for whoever contravenes [this] and for each time. Wives of such dead persons however, shall be exempted; they can be dressed in whatever new clothing they wish without penalty.

IX. Item. They have provided and ordered that no paid mourner... shall dare or presume to mourn publicly or privately or to invite other citizens of Pistoia to go to the funeral or to the dead person; nor may anyone engage the foresaid mourner, hornplayer, cryer or drummer.

X. Item. So that the sounds of bells might not depress the infirm nor fear arise in them [the Wise Men] have provided and ordered that the bellringers or custodians in charge of the belltower of the cathedral of Pistoia shall not permit any bell in the said campanile to be rung for the funeral of the dead nor shall any person dare or presume to ring any of these bells on the said occasion.... At the chapel or parish church of the said dead person or at the friary if the person is to be buried at a church of the friars, they can ring the bell of the chapel, parish church or the church of the friars so long as it is rung only one time and moderately, on the foresaid penalty in the foresaid manner [for each violation].

XI. Item. They have provided and ordered that no one shall dare or presume to gather or cause to gather any persons for the purpose of bringing any widow from the former habitation of a dead person, unless at the time she is being returned from the church or cemetery where such a dead person was buried. [Blood relatives] of such a widow, however, wishing to bring the widow from the house at times other than at the time of burial may send up to four women to accompany the said woman, who is to be brought from the foresaid house of the dead person....

XII. Item. They have provided and ordered that no person should dare or presume to raise or cause to be raised any wailing or clamor over any person or because of any person who has died outside the city, district or county of Pistoia; nor on the said occasion should any persons be brought together in any place except blood relatives and associates of such a dead person, nor on the said occasion should any bell be rung or caused to be rung, nor announcements be made through the city of Pistoia by mourners, nor on the said occasion should any invitation [to join the mourners] be made on a penalty of £ 25.... It must be understood, however, in any written ordinances speaking of the dead and of honoring the burial of the dead that the foresaid shall not have force in the burial of the body of any soldiers of the militia, doctors of laws, judges or physicians whose bodies, because of their dignity, may be honored licitly at burial in a manner pleasing to their heirs.

XIV. Item. They have provided and ordered that butchers and retail vendors of meat, individually and in common, can not, nor ought to hold or maintain near a tavern or other place where they sell meats, or near a shop or beside or behind a shop any stable, pen or any other thing which will give off a putrid smell; nor can they slaughter meat animals nor hang them after slaughter in any stable or other place in which there is any stench on a penalty of £ 10.

XXII. Item. So that stench and putrefaction shall not be harmful to men, henceforth tanning of hides can not and must not be done within the walls of the city of Pistoia on penalty of £ 25....

XXIII. Item. For the observance of each and every provision contained in the present articles and everything in the article speaking of funerals of the dead, of butchers and retail vendors of meats, they provided and ordered that the lord podest^ and captain and their officials charged pro tem with the foresaid [duties] shall and must proceed against, investigate, and inquire. . . concerning acts contrary to the foresaid [ordinances], and cause whatever of the foresaid ordained to be reviewed as often as possible, and punish the guilty by the foresaid fines. . . . Also any person may accuse or denounce before either the said podest^ or captain any persons acting against the foresaid or any of the foresaid or the content of the said statutes or ordinances. And such denunciations or accusers shall, can and may have one fourth of the fine after it is levied and paid, which fourth part the treasurer pro tem of the treasury of the said city shall be held to and have to pay and give to the said accuser and informer as soon as the fine and penalty have been paid. And sufficient proof shall be offered by one witness worthy of belief, or four persons of good reputation who have learned [of the contravention]. . . .⁷⁴

Appendix III.

The following account on the flagellant movement of 1349 was written by the French historian and poet Jean Froissart (1333-1405). His famous work *Chronicle* deals with the time period of 1326-1400. His work mainly focused on England, France, Scotland and Flanders, however he also wrote about events in Spain, Germany, and Italy.

In the Year of Grace 1349, the penitents went about, coming first out of Germany. They were men who did public penance and scourged themselves with whips of hard knotted leather with little iron spikes. Some made themselves bleed very badly between the shoulders and some foolish women had cloths ready to catch the blood and smear it on their eyes, saying that it was miraculous blood. While they were doing penance, they sang very mournful songs about the nativity and passion of Our Lord.

The object of this penance was to entreat God to put a stop to the mortality, for in that time of death there was an epidemic of plague. People died suddenly and at least a third of all the people in the world died then. The penitents of whom I am speaking went in companies from town to town and from city to city and wore long felt hoods on their heads, each company with its own color. Their rules forbade them to sleep more than one night in each town and the length of their goings-out was fixed by the thirty-three and a half years which Jesus Christ spent on earth, as the Holy Scriptures tell us; each of their companies went about for thirty-three and a half days, and then they returned to the towns or castles from which they had come. They spent very little money on their journeys, because the good people of the towns which they visited asked them to dinner and supper. They slept only on straw, unless illness forced them to do otherwise. When they entered a house in which they were to dine or sup, they kneeled down humbly on the threshold and said three paternosters and three Ave Marias, and did the same when they left. Many reconciliations were achieved through the penitents as they went about, for instance, over killings which had taken place and about which it had so far been impossible to reach an accord; but by means of the penitents peace was made.

Their rules contained some quite reasonable and acceptable things which agreed with such natural human inclinations as to journey about and do penance, but they did not enter the Kingdom of France because Pope Innocent, who was at Avignon at that time with his cardinals, considered the practice and opposed it very strongly, declaring in condemnation of the penitents that public

penance inflicted by oneself was neither right nor lawful. They were excommunicated for doing it, and especially those clergy who went with them. A number of priests, canons and chaplains who supported them were deprived of their benefices. Any who wished for absolution had to go to Avignon to get it. So this movement was broken up and came to nothing when it was seen that the Pope and the King of France were against them, and they did not go beyond Hainault. If they had gone to Cambrai or Saint-Quentin, the gates would have been shut in their faces.⁷⁵

Appendix IV:

Ordinances of Labor, 1349

The king to the sheriff of Kent, greeting. Because a great part of the people, and especially of workmen and servants, late died of the pestilence, many seeing the necessity of masters, and great scarcity of servants, will not serve unless they may receive excessive wages, and some rather willing to beg in idleness, than by labor to get their living; we, considering the grievous incommunities, which of the lack especially of ploughmen and such laborers may hereafter come, have upon deliberation and treaty with the prelates and the nobles, and learned men assisting us, of their mutual counsel ordained:

That every man and woman of our realm of England, of what condition he be, free or bond, able in body, and within the age of threescore years, not living in merchandise, nor exercising any craft, nor having of his own whereof he may live, nor proper land, about whose tillage he may himself occupy, and not serving any other, if he in convenient service, his estate considered, be required to serve, he shall be bounden to serve him which so shall him require; and take only the wages, livery, meed, or salary, which were accustomed to be given in the places where he oweth to serve, the twentieth year of our reign of England, or five or six other commone years next before. Provided always, that the lords be preferred before other in their bondmen or their land tenants, so in their service to be retained; so that nevertheless the said lords shall retain no more than be necessary for them; and if any such man or woman, being so required to serve, will not the same do, that proved by two true men before the sheriff or the constables of the town where the same shall happen to be done, he shall anon be taken by them or any of them, and committed to the next gaol, there to remain under strait keeping, till he find surety to serve in the form aforesaid.

Item, if any reaper, mower, or other workman or servant, of what estate or condition that he be, retained in any man's service, do depart from the said service without reasonable cause or license, before the term agreed, he shall have pain of imprisonment. And that none under the same pain presume to receive or to retain any such in his service.

Item, that no man pay, or promise to pay, any servant any more wages, liveries, meed, or salary than was wont, as afore is said; nor that any in other manner shall demand or receive the same, upon pain of doubling of that, that so shall be paid, promised, required, or received, to him which thereof shall feel himself grieved, pursuing for the same; and if none such will pursue, then the same to be applied to any of the people that will pursue; and such pursuit shall be in the court of the lord of the place where such case shall happen.

Item, if the lords of the towns or manors presume in any point to come against this present ordinance either by them, or by their servants, then pursuit shall be made against them in the counties, wapentakes, tithings, or such other courts,

for the treble pain paid or promised by them or their servants in the form aforesaid; and if any before this present ordinance hath covenanted with any so to serve for more wages, he shall not be bound by reason of the same covenant, to pay more than at any other time was wont to be paid to such person; nor upon the said pain shall presume any more to pay.

Item, that saddlers, skimmers, white-tawers, cordwainers, tailors, smiths, carpenters, masons, tilers, [shipwrights], carters, and all other artificers and workmen, shall not take for their labor and workmanship above the same that was wont to be paid to such persons the said twentieth year, and other common years next before, as afore is said, in the place where they shall happen to work; and if any man take more, he shall be committed to the next gaol, in manner as afore is said.

Item, that butchers, fishmongers, hostellers, breweres, bakers, puters, and all other sellers of all manner of victual, shall be bound to sell the same victual for a reasonable price, having respect to the price that such victual be sold at in the places adjoining, so that the same sellers have moderate gains, and not excessive, reasonably to be required according to the distance of the place from whence the said victuals be carried; and if any sell such victuals in any other manner, and thereof be convict in the manner and form aforesaid, he shall pay the double of the same that he so received, to the party damnified, or, in default of him, to any other that will pursue in this behalf: and the mayors and bailiffs of cities, boroughs, merchant-towns, and others, and of the ports and places of the sea, shall have power to inquire of all and singular which shall in any thing offend the same, and to levy the said pain to the use of them at whose suit such offenders shall be convict; and in case that the same mayors or bailiffs be negligent in doing execution of the premises, and thereof be convict before our justices, by us to be assigned, then the same mayors and bailiffs shall be compelled by the same justices to pay the treble of the thing so sold to the party damnified, or to any other in default of him that will pursue; and nevertheless toward us they shall be grievously punished.

Item, because that many valiant beggars, as long as they may live of begging, do refuse to labor, giving themselves to idleness and vice, and sometime to theft and other abominations; none upon the said pain of imprisonment shall, under the color of pity or alms, give any thing to such, which may labor, or presume to favor them toward their desires, so that thereby they may be compelled to labor for their necessary living.

We command you, firmly enjoining, that all and singular the premises in the cities, boroughs, market towns, seaports, and other places in your bailiwick, where you shall think expedient, as well within liberties as without, you do cause to be publicly proclaimed, and to be observed and duly put in execution aforesaid; and this by no means omit, as you regard us and the common weal of

our realm, and would save yourself harmless. Witness the king at Westminster, the 18th day of June. By the king himself and the whole council. Like writs are directed to the sheriffs throughout England. ⁷⁶

Statutes of Laborers, 1351

The king to the reverend father in Christ W. by the same grace bishop of Winchester, greeting. "Because a great part of the people," as before, until "for their necessary living," and then thus: And therefore we entreat you that the premises in every of the churches, and other places of your diocese, which you shall think expedient, you do cause to be published; directing the parsons, vicars, ministers of such churches, and others under you, to exhort and invite their parishioners by salutary admonitions, to labor, and to observe the ordinances aforesaid, as the present necessity requireth: and that you do likewise moderate the stipendiary chaplains of your said diocese, who, as it is said, do now in like manner refuse to serve without an excessive salary; and compel them to serve for the accustomed salary, as it behooveth them, under the pain of suspension and interdict. And this by no means omit, as you regard us and the common weal of our said realm. Witness, etc. as above. By the king himself and the whole council.

Like letters of request are directed to the severall bishops of England, and to the keeper of the spiritualities of the archbishopric of Canterbury, during the vacancy of the see, under the same date.

Whereas late against the malice of servants, which were idle, and not willing to serve after the pestilence, without taking excessive wages, it was ordained by our lord the king, and by the assent of the prelates, nobles, and other of his council, that such manner of servants, as well men as women, should be bound to serve, receiving salary and wages, accustomed in places where they ought to serve in the twentieth year of the reign of the king that now is, or five or six years before; and that the same servants refusing to serve in such manner should be punished by imprisonment of their bodies, as in the said statute is more plainly contained: whereupon commissions were made to divers people in every county to inquire and punish all them which offend against the same: and now forasmuch as it is given the king to understand in this present parliament, by the petition of the commonalty, that the said servants having no regard to the said ordinance, but to their ease and singular covetise, do withdraw themselves to serve great men and other, unless they have livery and wages to the double or treble of that they were wont to take the said twentieth year, and before, to the great damage of the great men, and impoverishing of all the said commonalty, whereof the said commonalty prayeth remedy: wherefore in the said parliament, by the assent of the said prelates, earls, barons, and other great men, and of the same commonalty there assembled, to refrain the malice of the said servants, be ordained and established the things underwritten:

First, that carters, ploughmen, drivers of the plough, shepherds, swineherds, deies [dairy maids], and all other servants, shall take liveries and wages, accustomed the said twentieth year, or four years before; so that in the country where wheat was wont to be given, they shall take for the bushel ten pence, or wheat at the will of the giver, till it be otherwise ordained. And that they be allowed to serve by a whole year, or by other usual terms, and not by the day; and that none pay in the time of sarcling [hoeing] or hay-making but a penny the day; and a mower of meadows for the acre five pence, or by the day five pence; and reapers of corn in the first week of August two pence, and the second three pence, and so till the end of August, and less in the country where less was wont to be given, without meat or drink, or other courtesy to be demanded, given, or taken; and that such workmen bring openly in their hands to the merchant-towns their instruments, and there shall be hired in a common place and not privy.

Item, that none take for the threshing of a quarter of wheat or rye over 2 d. ob. [2 1/2 d.] and the quarter of barley, beans, pease, and oats, 1 d. ob. if so much were wont to be given; and in the country where it is used to reap by certain sheaves, and to thresh by certain bushels, they shall take no more nor in other manner than was wont the said twentieth year and before; and that the same servants be sworn two times in the year before lords, stewards, bailiffs, and constables of every town, to hold and do these ordinances; and that none of them go out of the town, where he dwelleth in the winter, to serve the summer, if he may serve in the same town, taking as before is said. Saving that the people of the counties of Stafford, Lancaster and Derby, and people of Craven, and of the marches of Wales and Scotland, and other places, may come in time of August, and labor in other counties, and safely return, as they were wont to do before this time: and that those, which refuse to take such oath or to perform that that they be sworn to, or have taken upon them, shall be put in the stocks by the said lords, stewards, bailiffs, and constables of the towns by three days or more, or sent to the next gaol, there to remain, till they will justify themselves. And that stocks be made in every town for such occasion betwixt this and the feast of Pentecost.

Item, that carpenters, masons, and tilers, and other workmen of houses, shall not take by the day for their work, but in manner as they were wont, that is to say: a master carpenter 3 d. and another 2 d.; and master free-stone mason 4 d. and other masons 3 d. and their servants 1 d. ob.; tilers 3 d. and their knaves 1 d. ob.; and other coverers of fern and straw 3 d. and their knaves 1 d. ob.; plasterers and other workers of mudwalls, and their knaves, by the same manner, without meat or drink, 1 s. from Easter to Saint Michael; and from that time less, according to the rate and discretion of the justices, which should be thereto assigned: and that they that make carriage by land or by water, shall take no more for such carriage to be made, than they were wont the said twentieth year, and four years before.

Item, that cordwainers and shoemakers shall not sell boots nor shoes, nor none other thing touching their mystery, in any other manner than they were wont the said twentieth year: item, that goldsmiths, saddlers, horsemen, spurriers,

Item, that cordwainers and shoemakers shall not sell boots nor shoes, nor none other thing touching their mystery, in any other manner than they were wont the said twentieth year: item, that goldsmiths, saddlers, horsemen, spurriers, tanners, curriers, tawers of leather, tailors, and other workmen, artificers, and laborers, and all other servants here not specified, shall be sworn before the justices, to do and use their crafts and offices in the manner they were wont to do the said twentieth year, and in time before, without refusing the same because of this ordinance; and if any of the said servants, laborers, workmen, or artificers, after such oath made, come against this ordinance, he shall be punished by fine and ransom, and imprisonment after the discretion of the justices.

Item, that the said stewards, bailiffs, and constables of the said towns, be sworn before the same justices, to inquire diligently by all the good ways they may, of all them that come against this ordinance, and to certify the same justices of their names at all times, when they shall come into the country to make their sessions; so that the same justices on certificate of the same stewards, bailiffs, and constables, of the names of the rebels, shall do them to be attached by their body, to be before the said justices, to answer of such contempts, so that they make fine and ransom to the king, in case they be attainted; and moreover to be commanded to prison, there to remain till they have found surety, to serve, and take, and do their work, and to sell things vendible in the manner aforesaid; and in case that any of them come against his oath, and be thereof attainted, he shall have imprisonment of forty days; and if he be another time convict, he shall have imprisonment of a quarter of a year, so that at every time that he offendeth and is convict, he shall have double pain: and that the same justices, at every time that they come [into the country], shall inquire of the said stewards, bailiffs, and constables, if they have made a good and lawful certificate, or any conceal for gift, procurement, or affinity, and punish them by fine and ransom, if they be found guilty: and that the same justices have power to inquire and make due punishment of the said ministers, laborers, workmen, and other servants; and also of hostlers, harbergers [those who provide lodging], and of those that sell victual by retail, or other things here not specified, as well at the suit of the party, as by presentment, and to hear and determine, and put the things in execution by the exigend after the first capias, if need be, and to depute other under them, as many and such as they shall see best for the keeping of the same ordinance; and that they which will sue against such servants, workmen, laborers, [and artificers], for excess taken of them and they be thereof attainted at their suit, they shall have again such excess. And in case that none will sue, to have again such excess, then it shall be levied of the said servants, laborers, workmen, and artificers, and delivered to the collectors of the Quintzime [the tax known as the "Fifteenth"], in alleviation of the towns where such excesses were taken.⁷⁷

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