Disease Management in Pre-industrial Europe: a Reconsideration of the Efficacy of the Local Response to Epidemics

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Chief among the many adversities that blight life and human potential is disease. 'Physical ills are the taxes laid upon this wretched life; some are taxed higher and some lower, but all pay something.' So wrote the Fourth Earl of Chesterfield in the eighteenth century, and his words remain true today, even though by modern standards the rate of 'taxation' Chesterfield expected would undoubtedly be deemed excessive. Premature death from infectious disease was a fate that befell many in pre-industrial societies. Of the many diseases, bubonic plague with a case fatality rate between fifty and ninety per cent has historically had the most significance. From the Black Death of the fourteenth century to the beginning of the eighteenth century, there were few years when the plague did not strike some region of Europe. In many ways, the plague was the pre-eminent arbiter of pre-industrial population growth rates, devastating any community that had the misfortune of coming in contact with it. The deleterious effects of such contact on economic growth and welfare has attracted much attention in the literature[1], less so the societal response to epidemics.[2] These responses were at times quite sophisticated, often resembling modern public health techniques. Indeed, Rosen has claimed that medieval public health measures should be viewed as attempts to create a rational system of public hygiene.[3] Nonetheless, the view persists that public health measures in pre-industrial societies were at best useless, at worst positively detrimental, or simply just non-existent. In Jones' terminology, the local responses of medieval times are seen as conforming to the 'less-developed' model of social behaviour; *viz.*, flight, prayer, incantation, witch hunts etc. This is a view that is not justified by the historical record. This article

[1] The traditional view is that there is an inverse relationship between population movement, largely dictated by the impact of disease, and living standards. See Hatcher, *Plague*; Lee, 'Population'; Postan, *Medieval Economy*; and Abel, *Agricultural fluctuations*. Recently, Snooks, *Economics without time*, pp. 258-69, has challenged this view. Employing economic theory, he demonstrates that the Black Death of the fourteenth century could well have led to a deterioration, rather than an improvement, in living standards in medieval Europe.

[2] Jones, 'Societal Adaptations', pp. 145-9; *idem*, 'Disaster Management'.

will show that considerable effort to combat the outrages of disease was made from early times and that the increasing sophistication of these measures were crucial in the eventual defeat of epidemics in Europe. Furthermore, a reconsideration of the effectiveness of local measures in this victory is made. In particular, it is argued that not all of the gains in this area can be traced back to the increasingly interventionist policies of the nation states, and that as a result the importance of local responses to disease is far greater than is generally admitted.

1. The provision of public health services and the attempt by administration to restrain the harmful consequences of disease and epidemic have a history in Europe that stretches back as far as Antiquity. Certainly, by later standards, the effects of the Athenian *Asrynomi*, who looked after the general health of their district and ensured its people a regular supply of potable water, were minimal and unlikely to have had made significant headway in the fight against disease.[4] They were nevertheless indicative of an early concern with public health. Much the same can be said of later Roman efforts. The *Aediles* of Ancient Rome likewise had the duty of maintaining a clean and healthy environment for the public. This involved them in the regulating and supervising of the flow of food into their districts, a power which enabled them to refuse or confiscate produce they believed was spoiled or posed a threat to the health of the populace. As time passed, the powers of the *Aediles* in the public health arena were further augmented so that by the reign of Augustus, it has been argued that the outlines of a well-organised system of public health were discernible.[5]

These beginnings, however, for the most part were lost in the Dark Ages following the decline of Rome. Health problems came to be perceived as religious or magical phenomena and, thus, beyond the realm of human intervention. In the dogma of early Christianity, a fundamental connection between disease and sin was made, so that prayer, penitence, and the invocation of saints were the means usually employed to deal with sickness. Still, the belief that there was some relationship between illness and impurity left an opening, albeit a small one, for human measures against disease. If the body was the vessel of the soul, it was argued by some clerics, then every effort should be made to make that body impregnable to the onslaught of sin. It was on this basis that knowledge and practice of public health was kept alive. As in other fields, the resources at the Church's disposal, as well as its desire to be the storehouse of all wisdom of the medieval world, ensured that monastic orders became the last refuges of classical knowledge and practice on public health. It is, therefore, not surprising that monasteries

[3] Rosen, *Public Health*, p. 79.
[4] *Ibid.*, p. 37.
[5] *Ibid.*, p. 49.

usually had the best ventilation, latrines, and the drainage of all buildings constructed in the early Middle Ages.[6] But the knowledge the Church possessed on public health was put to more use than the provision of salubrious living conditions for the clergy. Before the plague, leprosy was the nemesis of medieval humanity. During the sixth and seventh centuries, it spread widely in Europe, becoming a serious social and health problem. It assumed epidemic proportions once again in the twelfth century with the return of the Crusaders from the Holy Land. The need for action was recognised early and was carried out primarily under the aegis of the Church. The Council of Lyons in 583, following the precepts laid down in Leviticus, restricted the free association of lepers with the healthy: a policy that was continued and extended by later Church councils and secular authorities. In 644, for example, Rothan, the Lombard King issued an edict establishing leprosaria. By the beginning of the thirteenth century, it has been estimated that there were 19,000 leprosaria in Europe, with 2,000 in France alone. The Third Laterian Council in 1179 devoted much of its time to formulating detailed regulations on how to counter the spread of leprosy.[7] These measures, which were widely adopted, established the strict quarantine of lepers. The chilling finality of these exclusions is vividly portrayed in the fourteenth-century English ceremony whereby the soon-to-be-banished leper participated in an enactment of his own funeral. Dressed in a shroud, the leper was read the Mass for the Dead, had earth thrown upon him, and then was lead by the priest and relatives to the leprosarium, usually outside the city walls, whereupon final farewells were bid.[8] *Aux plus fortes maladies les plus fortes remèdes.* Strong remedies indeed, but one whose positive effects extended beyond the containment of leprosy. When the Black Death raised its unwanted head in the fourteenth century, authorities had at least a precedent to turn to.

It was in Italy that the administrative effort to fight the plague was most firmly taken up. The attack was led by the public health boards of the respective Italian city states. In Venice on 30 March 1348, the first public health board consisting of 'three wise men' was established, charged with the task of considering diligently all possible ways of preserving public health and avoiding the corruption of the environment.[9] The board was given considerable power to regulate the flow of trade, impose tough sanitary conditions, and confine the infected and the suspected to the certain doom of the pesthouses. Other Italian cities quickly followed suite — Florence in 1389, Milan in 1379 — and created their own boards and regulations. These early measures, however, were only temporary and were discarded once the epidemic subsided. By the sixteenth century, the continued recrudescence of

6 *Ibid.*, pp. 52-3.
7 *Ibid.*, pp. 63-7.
8 *Ibid.*, p. 65.

the plague and other infectious diseases forced local rulers to see the benefits of constant vigilance, despite the costs such measures invariably imposed. In January 1486, the three noblemen of the Venetian health board assumed the title of *Provveditori di Sanità* and were ordered on a full-time basis to seek remedies to prevent the outbreak and spread of contagion. With their existence guaranteed the health boards widened their authority in their charge to preserve life, so that by the middle of the sixteenth century, their activities impinged on every aspect of daily life. Cipolla compiled an impressive list of the activities of the typical health board. These included the monitoring of meat, fish, shellfish, game, fruit, grain, sausages, wine, water; the provision of sewerage, hospitals, cemeteries, pesthouses, and cheap burials; the preparation and sale of drugs; the regulation of the activities of physicians, surgeons and apothecaries, and movement of beggars, travellers and prostitutes.[10] Such wide-ranging powers obviously brought the health boards into contact with powerful interests. Officials were openly ridiculed, vilified and faced the obloquy of the public. Moreover, many attempts were made to evade health board regulations. In order to ensure compliance to the regulations and to protect its members from both slanderous and physical attacks, the boards were given extraordinary powers to carry out their duties and were generally answerable only to the supreme organ of the state. Among these powers was the ability to incarcerate, fine and torture at will — powers that were frequently exercised in the campaign against disease.

Despite the Draconian measures many of the policies adopted were strikingly modern in conception. The Milanese Ordinances of 1590, for example, stipulated that each household in the city be equipped with facilities for water and sewerage collection that met the specifications laid down by the health board's own engineers. Elsewhere, the Ordinances restricted the number of people sleeping in an average sized room to four: a maximum of two beds, with two people per bed.[11] Compliance with this regulation was checked by local inspectors, who had the legal right to remove and burn any excess bedding found during their examination of a building. The importance of keeping good records of death by contagion was also stressed. In Milan, the *Scriba Nomindrum Mortuorum* from 1452 registered not just the name and age, but also the presumed cause of death as determined by a doctor or certified surgeon, anticipating the seventeenth-century Bills of Mortality of London by some two hundred years.[12]

Quarantine and the isolation of the sick was, however, the most prevalent and visible actions taken by the boards. It did not take long for cities on major trade routes to see a link between the arrival of ships from

9 Cipolla, *Public Health*, p. 11.
10 *Ibid.*, p. 32.
11 *Ibid.*, pp. 33-5.
12 *Ibid.*, p. 31.

infected areas and the outbreak of the contagion within the walls of their own city. Quarantines and lazarettos were natural consequences of such an observation. But effective quarantines could not operate at such a local level. Spies were sent to other cities and countries to report on outbreaks of disease elsewhere, and in the sixteenth century Milan even kept agents in Switzerland to monitor travellers entering Italy. Concerted efforts were also made to co-ordinate the activities of each city's health boards. By the sixteenth century, cities openly exchanged information, knowledge and techniques with the sole intention of combating disease. Apart from the short-lived *Concerto* of 1652 between Genoa and Florence, however, no actual coordination of policy was achieved, so that as time passed the practices of the Italian city states were unable to keep up with those of the nascent nation states which were in the processes of unifying health practices within their frontiers.[13] The reason for this failure was political, yet one should not let this later failure to develop detract from the Italian's earlier achievements. In their time the health boards of Renaissance Italy were widely regarded as paragons of such institutions. As late as 1721, the Consul of Holland, on behalf of his government, requested information on the organisation and practice of the Venetian health board with the expressed aim of establishing similar institutions in the Low Countries.[14] That the Italians were ahead of the times in the field of public health is indubitable. In France, the first health boards were only established in Lyons and Agenais in 1580, and remained on a temporary basis until well into the seventeenth century. By the end of the sixteenth century, *Pestmeesters* — doctors hired to take care of the infected — are also reported to have appeared in Brussels, though they were forced to operate without the complex organisation that supported Italian efforts. In Switzerland, health boards were unknown before 1620, whereas in England, Queen Elizabeth's Plague Order which introduced the quarantine of ships in 1543 is generally regarded as the beginnings of public health measures in that country.

But the Italian pre-eminence in this field did not last long. The gradual diffusion of Italian practices to Northern Europe coincided in this area with increasing interest of national governments in dealing with epidemics. Although local measures continued to be used — increasingly so in fact — this meant that the lessons of the Italian city states began to be replicated more and more at the national level, a level more suitable for the successful isolation and exclusion of infectious diseases of foreign origin. Frontiers and ports came to be subject to stringent quarantine. In eighteenth-century Marseilles, for example, the captain of each vessel intending to enter the port had to report to health officials on an offshore island. There the captain had to supply full details of his ship, crew, cargo, port of departure and any

[13] Cipolla, *Fighting the Plague*, pp. 40-50.
[14] Cipolla, *Public Health*, p. 19.

illnesses encountered during the voyage. The ship's papers and health clearances from prior ports-of-call, after being soaked in vinegar, were also inspected. From these the health officials determined the form and duration of the quarantine that was necessary before permission to enter the harbour could be granted. In normal circumstances, this quarantine could last for as long as eighty days.[15]

The development of national civil defence plans against epidemics was also the outcome of this new interest of national governments in public health. In November 1709, Frederick of Prussia issued *A Regulation and a Medical Plan on what to do in Connection with the current dangerous Occurrences of the Plague in Towns, Villages, and Hamlets.* This detailed a precise plan to deal with future epidemics of the plague. The plan contained *inter alia* a complex chain-of-command that would lead the fight against the contagion. It specified minutely each individual's task, from the city director to the gravediggers. All personnel and boards were appointed in advance so as to ensure readiness. It was the most comprehensive policy of its type ever constructed. Associated with the regulations was a medical plan from the Board of Sanitation. It oversaw the dissemination of medical literature and drugs, and specified sanitary practices that were to be followed at all times. It also made provisions for the supply of medical help to infected areas.[16] The policies of the government extended beyond the plan. The institution of poor relief, public works, and the importation of grain after famines and epidemics were other actions increasingly taken by Prussia and other national governments in their newly found concern for the well-being of their citizens.[17]

By far the most impressive action taken, at least in terms of sheer scale, was the Hapsburg's thousand-mile *cordon sanitaire* that stretched from Transylvania to the Adriatic. This *cordon sanitaire* from 1770 to 1871 protected the Austrian, and then the Austria-Hungarian Empire, from bubonic plague originating in the Ottoman Empire. The *cordon*, built along the *Militärgrenze*, consisted of a chain of manned lookouts, each within musket range of each other, regular patrols and *Bauernsoldaten* stationed intermittingly along the frontier. Guards were under orders to fire on all illegal traffic attempting to enter the Empire without passing through a quarantine station. At these quarantine stations goods and personal effects of the travellers were quarantined, fumigated, and often bathed in vinegar. The quarantine period of any person, animal or good crossing the frontier in normal times was twenty-one days, forty-two days when there was plague in Turkey, and eighty-four days when plague was known to be present in the Balkans. Supplementing the *cordon* was a network of government agents,

[15] Jones, 'Disaster Management', pp. 121-2.
[16] Dorwart, *Prussian Welfare State*, pp. 285-6.
[17] Post, *Food Shortage*, ch. 6.

operating within the Ottoman Empire, who sought out information on the current status of the plague in Turkey. These intelligence agents acted to forewarn the authorities in Austria of the degree of threat existing at any particular time. Based on this information, the *cordon* could be strengthened or relaxed depending on the current gravity of the threat. In normal times, four thousand soldiers were stationed along the *Militärgrenze*, though these numbers were usually boosted to seven thousand when there was plague anywhere in Turkey, and to eleven thousand if it spread into the Balkans.[18]

The Hapsburg *cordon sanitaire*, whilst impressive in its grandeur, was by no means unique. Similar practices were not only employed in virtually every Western European nation of the time, but were continually being extended both in terms of scope and detail, so that in subsequent centuries less room was left for error. In a sense then the sophisticated public health measures we are accustomed to today can be seen as result of a long history of struggle against disease, a struggle beset by many defeats, but with just enough victories to keep the hope alive that humanity may just yet triumph.

2. From the preceding section, it is clear that in pre-industrial Europe there was considerable effort at both the national and local level to manage epidemics. The question remains, however, whether these measures were of any importance. Some are sceptical, especially of the efficacy of measures conducted at any level below the national. Cipolla, for example, whilst finding the story of the health boards of Renaissance Italy 'the most original and most exciting chapter in the history of medicine in late Medieval and early modern times', could only conclude that it was 'very difficult to judge if they had any benefit'.[19] Some point to the counterproductiveness of policies based on fallacious epidemiological theories, while still others find more cynical motivations behind the measures.[20] Nonetheless, there has been a strong school of thought that has regarded such measures at the national level of great importance. In numerous articles, Jones has stressed the importance of increasing activity on the health front by Western European states in the early modern period. Whilst accepting that in reality European success was due to the synergy of better administration and prior economic growth, he also argues that ' it does seem likely that Europe conformed to the "developed model" as a result more of the changes in social and political life than independent economic advance. Indeed the responses were initially likely to have contributed to European economic growth rather than

[18] Flinn, *European Demographic System*, pp. 61-2.

[19] Cipolla, *Public Health*, pp. 10 and 60.

[20] See, for example, ibid., p. 20. For a survey of these criticisms, as well as other theories purporting to explain the disappearance of major epidemics from Europe, see Porter, *Disease*.

[21] Jones, 'Societal Adaptations', pp. 148-9.

to have been a result of it.'[21] The placebo effect aside, other benefits of the administrative efforts are found in the foundations they were laying for the even more successful responses of the nineteenth century and the positive demonstration effects that such action afforded. Jones cites three indications of the effectiveness of organisational methods. First, the strong correlation between the diminution of disaster losses and the timing of increased state interest in measures to deal with them; second, the concomitant bringing under control of other disasters such as famine, epizootic, and fires by governmental efforts, and thirdly, the selfless action of administrators and citizens to defeat disease despite abuse, great risk, and financial loss.[22] Of the three, the last is the hardest to accept. Jones writes in glowing terms of the unique European determination to take the necessary action: 'the remarkable history of the response to that outbreak [Marseilles 1720] ... shows the toughness and moral fibre, the identification of self with community, which Europeans were now able to expect.'[23] 'The European style of response required ... a social consensus that was not spontaneously generated elsewhere.'[24] Certainly, individuals in Europe acted courageously during epidemics — that is beyond doubt — but this is no reason to suppose similar courage was not shown by individuals elsewhere just because the administrative concern was lacking there. Moreover, often the 'moral fibre' Jones writes of was painfully absent in Europe. Slack was aware of this when he noted that in England officials, church wardens and overseers frequently fled before the plague and 'had to be bribed or cajoled into acting.' What's more, they 'occasionally pocketed funds at their disposal.'[25] Even the famous *Peste de Marseilles* from which Jones draws numerous examples can throw many counter-examples of cupidity and unsavoury behaviour. Galley slaves and convicts were forced to bury the dead and clear the streets when no else would do it. A group of local doctors, eager to take advantage of increased demand for their services, refused to treat the sick for free and became openly belligerent to doctors brought in from outside the city who offered to treat the infected without charge.[26] During the same epidemic, the health board for the city of Orange, fifty in number, locked themselves in the *Hôtel de Ville*, where they wined and dined on the city's stock of food and waited for the plague to disappear.[27] This is not to suggest that all administrative efforts were like this, but rather to illustrate the fact that there is no need to ascribe to Europeans any unique characteristic or special moral fibre. Indeed, in as far

[22] Anderson and Jones, 'Natural Disasters', pp. 15-6.
[23] Jones, 'Disaster Management', p. 122.
[24] Jones, 'Societal Adaptations', pp. 146-7.
[25] Slack, *Impact of Plague*, p. 271.
[26] McCloy, *Government Assistance*, p. 143.
[27] *Ibid.*, p. 154.

as individual well-being requires the maximisation of other peoples', if not society's, overall utility function, there may in fact be no need for us at all to attribute the development of public health measures in the Europe to the emergence of large doses of altruistic behaviour.[28]

The most model-like approach to the problem is provided by Post, who relates the decline in mortality from disease to climatic variation, famine, government policies and social dysfunction. In a nutshell, this model suggests that climatic variation reduces agricultural output, leading to high agricultural prices and dearth, which in turn promote vagrancy, migration and unemployment — all vehicles for the spread of epidemics. A crucial point that needs to be made here is that each infection is different and reacts to different circumstances in different ways. Hence, it is of little use to investigate epidemic diseases as if they are homogeneous. Infectious diseases can be classified into two broad categories: those influenced by nutritional status, and those influenced by the external environment irrespective of nutritional status.[29] In the latter category one finds smallpox, bubonic plague, influenza, typhoid fever and malaria. By contrast, typhus, dysentery and diarrhoeal diseases, and a number of respiratory diseases belong to the first category influenced by nutritional deficiency. It follows that each respective infection will be affected differently by a given policy measure. The quarantines and *cordon sanitaires* initiated by governments in Europe in the seventeenth and eighteenth centuries, along with the better housing conditions and sanitation of the time, were integral in the control of the second category of infections, most notably bubonic plague.[30] Their effects on the first category, however, was negligible. The mortality rates of these infectious diseases were stabilised by public measures taken to alleviate distress during famine.[31] These measures included government purchase and subsidised resale of foreign grain, poor relief programmes, and public works that provided employment to the unemployed. For example, the French administration during the dearth of 1817 increased employment on public works and imported seventy million francs of grain, almost a half of the total global expenditure of 164 million on imported provisions in that year. This grain was distributed to granaries all over the country, easing the scarcity particularly in Paris and the Eastern Departments.[32] By the end of the eighteenth century, these measures had taken effect and the agelong correlation between food prices and mortality rates in Europe was broken.[33] The importation of foreign grain, however, tended to augment the risk of the

[28] For a discussion of this issue, see Snooks, *Portrait*, pp. 42-51.
[29] Post, *Food Shortage*, pp. 271-3.
[30] Post, 'Famine, Mortality and Epidemic Disease', pp. 36-7.
[31] Post, *Food Shortage*, *passim*.
[32] Post, 'Famine, Mortality and Epidemic Disease', p. 23.
[33] Appleby, 'Grain Prices', pp. 865-87.

second category of disease, because of that commodity's potential as a vehicle of plague infection. Not only is grain the preferred food for the deadly black rat, but it also provides an ideal breeding ground for *Xenopsylla Cheopis*, the rat flea, which just happens to mate best in the debris of cereal grains. Indeed, the last major epidemic in North Western Europe can be traced back to Dutch ships returning to Amsterdam in 1663 from Smyrna laden with grain. However, the growing effectiveness of quarantine and the substitution of public granaries for the storage of cereals in private houses in time counteracted this additional threat.[34]

Imported grain constituted one of the links between famines and epidemics. Historians have for long noted that epidemics usually followed quickly on the heels of famine. 'First dearth then plague' went the saying based on experience. The usual connection was that famine created nutritional deficiencies that reduced the resistance and increased the vulnerability of the individual to disease. But if vulnerability to certain diseases such as plague is not related to nutritional status, as medical research claims, then this standard explanation is not sufficient.[35]Yet as Meuvret has noted, if famine itself did not always lead to epidemic, then the conditions that inevitably accompanied it may well have. Meuvret believed that beggars, vagrants and day labourers were the principal vectors that diffused infection, especially during and immediately after famine. Unable to obtain food for themselves, the poor, either infected with the disease or playing host to fleas and rats, deserted their homes and wandered considerable distances in search of relief . The destination more often than not was another town, where if they were admitted, these 'incubators' of disease could pass on the disease to that town's inhabitants.[36] Meuvret's observations are supported by the sequence of dearth, itinerant vagrancy and the outbreak of epidemics that was characteristics of most *crises de mortalité*, especially that of the early 1740s. One problem with the hypothesis, however, is that it fails, to account for the variation in the progression from dearth to epidemic experienced in Europe. England, for example, experienced severe epidemics from 1740 to 1742, despite the fact there was only a moderate shortfall in the harvest, and only a slight increase in vagrancy. Prussia, by contrast, came off relatively untouched despite a more pronounced dearth than England. Post's explanation depends on the effectiveness of government measures 'to preempt the dysfunctional social behaviour promoted by climatic stress and food shortages'. Such measures reduced unemployment, migration and vagrancy, and hence diminished the likelihood of an outbreak of epidemic. Seen in this light, Prussia's relative success in the 1740-42 was a result of good

[34] Post, 'Famine, Mortality and Epidemic Disease', p. 37.
[35] Post, *Food Shortage*, pp. 271-3.
[36] Meuvert, 'Demographic Crisis', pp. 510-3.

administration. A well-organised grain policy, the establishment of networks of public granaries and the protection afforded by the nascent welfare state were the tools of this victory. Important as well was the fact that the Prussian state's welfare and relief policies restrained the potential increase in such social dysfunctional behaviour as crowding the poor into workhouses, cities and jails.[37] In England, severe epidemic was related to the nature of relief measures in a negative way. The growing practice in England of providing workhouses which gave refuge to people in dire straits fostered epidemics. During the winter, and in particular the cold winters of 1740-42, these workhouses became crowded with inmates unable to find employment. These conditions proved favourable to epidemic disease, so that, for example, in January 1741, a workhouse in Leeds lost at least a quarter of its inmates to typhus.[38] A similar story can be told about the jails which at the time swelled with demonstrators arrested in popular disturbances. It seems highly likely, then, that the extremely cold winters and consequential unemployment in combination with the peculiar brand of relief measures utilised in England, created the preconditions for the severe typhus epidemics of the 1740s.

3. As we have seen, it is probably erroneous to regard all infections as similar in nature and effect. The same can be said of the source of the epidemic. Epidemics can originate from two sources: one external, the other internal. The distinction between the two is not often made, despite its importance. The external source is familiar enough, as virtually all accounts of epidemics focus on it. The plague is brought into the country by travellers, sailors or products from another country where plague is rampant in either its epidemic or endemic form. Once introduced to the society the plague quickly takes hold, and unless vigorous action is taken, an epidemic soon ensues. By contrast, the internal source is less well known. Epidemics can also emanate from diseases already endemic in the country or region. In this case, some concatenation of events triggers off the disease, transforming it from its endemic to its epidemic form. Evidence suggests the most likely source of this transformation is environmental change and social dysfunction. That the important epidemic diseases of pre-industrial societies were present in endemic form in European cities is still a matter of dispute, although quite a few authorities believe they were. Flinn in discussing the incidence of the plague suggested that after the Black Death, 'one might say that the disease became endemic but that particular countries, regions, or places experienced the disease as periodical epidemics.'[39] McCloy likewise noted that the plague was endemic in most ports and that the infamous *Peste*

[37] Post, *Food Shortage*, pp. 195-6.
[38] *Ibid.*, pp. 183-92.
[39] Flinn, *European Demographic System*, pp. 51-2.

de Marseilles, that wreaked havoc on the population of Marseilles in 1720, could well have had its origins in such internal sources of epidemic, rather than the external ones, as has been traditionally believed.[40] According to Post, other infections such as dysentery, typhus, typhoid and relapsing fever had also become endemic by the end of the seventeenth century, if not much earlier.[41] These endemic diseases were the smouldering embers from which a great conflagration could easily ignite. The importance of this alternative source of epidemics for the type of government policy needed has hitherto never been fully realised.

Just as the effects of a policy vary with different diseases, so too do the effects vary with the source of the epidemic. Policy measures such as quarantines, lazarattos, and *cordon sanitaires*, which are lauded for their contribution in defeating the importation of epidemics, are of limited value in the prevention of epidemics stemming from endemic disease. Indeed, as Slack commented, 'the question to be asked in the circumstances of established infection was not whether the quarantine was useful, but whether it was positively detrimental.'[42] A *cordon sanitaire* around an infected area of a country may prevent the spread of the disease to other areas (ie., the external source of epidemics. To an uninfected area, an infected area is external) but would make no impact on the internal source of epidemics in the rest of the country. If the same forces prompting the development of an epidemic from endemic conditions in the infected area (cold weather, vagrancy, etc) occurred in the protected area, then *cordon sanitaire* or not, the potential for epidemic was strong. The control of the internal source of epidemics required an entirely different set of policy tools. Thus, policies that put downward pressure on the potential rise in the scale of unemployment, overcrowding, migration, vagrancy, and begging tended to reduce the likelihood of epidemics.[43] Despite Post's emphasis on such policies carried out at the national level, the response of local administration was that which was crucial. This stems from the fact that when a disease is endemic in a particular vicinity, it is the action of the local health boards that for the most part determines whether the disease will take on epidemic proportions. The malfeasance and nonfeasance of the health board have dramatic consequences for the town and region. By the time the central government has responded to these dramatic consequences, it is too late for the region: the epidemic has already started. The action of national government can stop the spread, but not the

[40] McCloy, *Government Assistance*, pp. 175-6.

[41] Post, *Food Shortage*, p. 274.

[42] Slack, *Impact of Plague*, p. 320.

[43] This distinction between internal and external sources of disease also suggests that it is probably erroneous to regard the outbreak of epidemics, as some have done, as purely exogenous and hence, unpredictable events.

incidence of this type of epidemic. Moreover, as Rosen forcefully argues national governments at this time probably did not have the capacity to act in the manner required:

> In general, governments of this period, however well-intentioned they may have been, lacked the knowledge and administrative machinery to carry out effectively a national health policy and program. As a result public health programs continued to handle overwhelmingly on a local community basis, a state of affairs that persisted well into the 19th century.[44]

Examples of the type of policy measures needed being implemented at the local level abound and become more frequent over the centuries. The Grand Duke of Florence in 1630 gave grants and offered interest-free loans to the city's merchants to ensure the continued production of wool and silk, the city's major exports, which had suffered a decline in demand because of strict quarantine introduced by other cities. Genoa did the same for its silk manufacturers in 1656-7. These measures were aimed at forestalling a rise in unemployment, but more importantly for the administration, they also offset social discontent. Even though it was not the sole motivation behind such measures, in practice this type of policy prevented the deprivation and social dysfunction that commonly led to epidemics from endemic sources.[45] This held true irrespective of the contagion's relationship to nutritional status. In the city of Cologne, the capital of the small ecclesiastical state of the same name, the city council, faced with a rise in the price of the staple *Malterbrot*, instituted between 1739 and 1741 measures to meet the subsistence needs of paupers and the unemployed. One of these measures was a scheme whereby the city council distributed loaves of bread daily to the city's poor below the market price. Municipal officials drew up lists of these poor and later distributed tokens entitling them to low-priced bread. Each token permitted the bearer to one seven-pound loaf each week — an amount equivalent to about 2,500 calories *per diem*. This was not a unique occurrence. Both Hanover and Bremen imported and rationed grain in similar ways, with an equal degree of success.[46]

Such instances alone suggest that a re-examination of local efforts in the fight against disease in pre-industrial Europe is called for. However, what can be reasonably called a local response needs to be clarified. In general, it refers to action taken at the town, city or regional level by councils, health boards, charities and possibly even trade organisations. It can, perhaps, be extended to include other measures implemented by provincial administration, but at this level it may be too far from the action to be

[44] Rosen, *Public Health*, p. 120.
[45] Cipolla, *Public Health*, pp. 40-3.
[46] Post, *Food Shortage*, pp. 198-9.

effective against the internal source of epidemics. It should also be stressed that although the activities of the city states are often adduced as examples of national policies, it is more accurate to label even these as cases of local management. This would appear to be true for the Italian and German city states, and may even be true for some larger states.[47]

On the whole, the activities of local governments have been regarded as interesting, perhaps didactic, but certainly ineffective attempts to stop epidemic infections. They are often merely regarded as ignorant stabs in the dark. Flinn, perhaps the most charitable of the critics, notes some of the remarkable successes, but even he considered such local measures as only partial: 'without action on a scale wider than anything within the scope of local government, the epidemics must continue.'[48] Certainly, the local response was only partial prevention, but by the same token, so were the actions of national governments. Because of the dual source of epidemics, no one set of policies can block off all of these sources. The patchiness of local responses is often taken to be indicative of their inherent inability to be effective. True, there were many failures, but there were also many successes, especially when the measures were undertaken with vigour and diligence. The failures are no reason to presume blithely that the successes were a matter of mere luck, or that one town's rats must have had less fleas than another's. Chance did play its part, but it was not the only or even the most important factor. After all, the failures of national measures have not detracted from the positive assessment they have widely received. The outbreak of plague in London in 1665 and Marseilles in 1720 were prime examples of the fallibility of quarantine, yet no serious authority would conclude from this that such national intervention was totally fruitless.

One can agree with Slack's conjecture that 'if quarantine and the isolation of the sick helped to eliminate the disease after 1665, they may also have helped to control it earlier and contemporaries would have stumbled on viable solutions'.[49] And stumble on it some most certainly did. Local policy measures could be very effective instruments in the prevention of epidemics from endemic sources. In certain circumstances they could also be effective in preventing the spread of epidemics from external sources. The potential, however, was often not forthcoming because of the enormous obstacles to their implementation. 'Like the plague itself', as one authority writes, 'plague regulations strained and tested the fabric of urban life'.[50] Detailed, expensive and time-consuming, regulation of local affairs cut across many vested

[47] Some historians, for example, even claim that Prussia-Brandenberg of 1709 was more akin to a principality than a nation state. Marriott and Robertson, *Evolution of Prussia*, pp. 71 and 113.

[48] Flinn, *European Demographic System*, p. 59.

[49] Slack, *Impact of Plague*, p. 311.

[50] *Ibid.*, p. 256.

interests, and these continually threatened the continuance of the regulations. Often interests proved insurmountable, but in an increasing number of cases, commonsense prevailed. Given the conflict involved, if local measures were useless there would have been little reason for their proliferation over the sixteenth and seventeenth centuries.

It should also be pointed out that although the cases of public welfare and relief programmes emphasised in the literature were initiated at the national levels, many of these were, in effect, significantly carried out at the local level, much as they always had been. Indeed, national policy often did little more then delegate authority to the localities or co-ordinate existing practices. The Elizabethan Poor Law is a case in point. Its introduction created nothing new but simply endeavoured to organise existing town practices on a national basis.[51] As late as the mid-eighteenth century, central governments just did not act in the same ways as modern governments do. Although they were starting to show more interest in public welfare than their predecessors, the extent of national government activity in the field of public health was limited. In the words of McCloy, they were 'slow and close-fisted',[52] expecting a great deal more from the locality in tending to their own needs than would be expected nowadays. The accepted principle of the period seems to have been that the organisation of welfare and charity should be localised in each parish, town and province. Only when things got out of hand was the central government called in to lend assistance.[53] Much of the welfare system crucial in preventing epidemics from endemic sources was thus undertaken locally. In France, community welfare was based on the general hospitals and the town councils, supplemented by the charity of the churches and the voluntary activities of the local *bureaux de charité*. Local hospitals in particular played a crucial role in times of crisis. Organised and funded locally they provided the entire range of welfare services to the communities, including the distribution of food and clothing.[54] Municipalities also contributed much. Many cities purchased emergency stocks of grains with borrowed money or funds raised by charities and used these stocks to stabilise food prices in the marketplace. In the cities of Paris, Bordeaux, Rouen, Orleans and Amiens charitable workshops were established so that these cities' jobless could find gainful employment.[55] Similar measures were carried out in German cities such as Cologne, Bremen and Hanover. Even in Prussia, where there was a welfare system and extensive network of state granaries probably in advance of other European countries, the locality was often called on to

[51] Rosen, *Public Health*, p. 121.
[52] McCloy, *Government Assistance*, p. 156.
[53] *Ibid.*, pp. 153-4; Post, *Food Shortage*, p. 154.
[54] Post, *Food Shortage*, pp. 152-5.
[55] *Ibid.*, pp. 154-5.

provide its own relief measures. Indeed, a large part of Prussia's success in these areas appears to have been related to the landlord and peasant's tradition of 'hereditary subjection', which reduced unemployment, migration, vagrancy and mendicity especially in the Eastern provinces of the state.[56] In hard times, even greater efforts were expected from the localities. In 1740, for example, to defray Prussia's invasion of Silesia, Frederick temporarily slashed the central government's relief programmes and enjoined provincial, urban and town officials, as well as landlords, to assume even more responsibility for the care of their subjects.

4. In Albert Camus' *The Plague*, Dr Rieux resolved to compile a chronicle, so that he should 'bear witness in favour of those plague-stricken people, ... and to state quite simply what we learn in a time of pestilence: that there are more things to admire in men than to despise'.[57] In a sense, this is what this article has also found. Despite the lack of concern for one's fellow man that is commonly reported in times of stress and turbulence, there is another human attribute, less often highlighted, but just as persistent, that shows that people can, and do, act together to benefit, not only themselves but the community as a whole. Public health measures are manifestations of this attribute. In Europe, there is a long history of administrative attempts, initially at the local and then later at the national level, to prevent, control and limit the violence of epidemics. Certainly the success rate in earlier periods was not impressive, but like any technology, the development of public health was a long and cumulative process, a process that was propelled by the hard realities of experience and the desire to improve the quality and length of life.

In assessing the relative contribution of local and national management of disease, this article has also suggested that a distinction between the external and internal sources of epidemics ought to be drawn. When this is done, a role for the local measure, all too often ignored or disparaged, can be established. It is in the containment of endemic diseases that the local response becomes crucial and finds its place in the defeat of epidemics. Before the nineteenth century, national health policies were able to make significant progress in controlling the importation and spread of disease within a country, but had little success in preventing the transformation of diseases from their endemic to epidemic form. The comprehensive national health policies required to achieve this did not exist in pre-industrial Europe. At this time, the transformation could be best prevented by local action, and there is evidence that such action at the local level was increasingly forthcoming; a trend obscured by the normal preoccupation of most of the literature with large and impressive *cordon sanitaires* and quarantines. This is

[56] *Ibid.*, pp. 196-7.

[57] Camus, *The Plague*, pp. 251-2.

not to say that there were no successes at the local level in keeping out epidemic disease, for as Sheppard's account of Lourmarin and Slack's of York clearly demonstrate, vigilance and vigorous observance of quarantine at the local level could be efficacious.[58] Such atomistic, uncoordinated and irregular measures alone, however, could not make the impact on the external source of epidemics, and hence mortality rates, that consistent and all-embracing national policy could.

[58] Sheppard, *Lourmarin*, ch. 5; Slack, *Impact of Plague*, pp. 317-20.

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