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# *International Quarantine*

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*INTERNATIONAL  
QUARANTINE*

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BORIS MEEROVICH and VLADIMIR BOBROV

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*INTERNATIONAL  
QUARANTINE*

## Foreword

For the last 150 years international quarantine has been, and still is, an important inter-state health problem for all countries of the world. This period of mankind's history saw tremendous changes in the world, which necessitated changes in the overall concepts, structural principles, content, methods of implementation and epidemiological effectiveness of international quarantine regulations.

At present, the radical changes in the lives of peoples and states, as well as in the potentials of modern medicine and health services, call for appropriate changes to international quarantine policies. To make such changes it is essential to study the specific features of the world's epidemiological and ecological map and the means at the disposal of preventive medicine. Until now, no historical generalization and analysis has been carried out of the numerous problems in this field of public health organization and applied epidemiology. Preparing an investigation of this kind is a rather complex task, entailing the study of a vast number of materials. It is a task which calls for a high degree of civic and scientific objectivity in the interpretation of historical facts and factors, and in formulating appropriate conclusions and regulations.

This monograph describes the evolution of international quarantine regulations and services. The main purpose of the work was to lay the ground, through a historical study of the development of international quarantine regulations, for the introduction into world practice of forward-looking methods to prevent the spread of infectious diseases that would be adequate for modern means of international travel.

The book analyzes international measures against the importation and spread of quarantinable infections, and shows how the need to safeguard national borders against virulent infections (such as plague, cholera, smallpox and yellow fever) prompted the elaboration

of relevant national and international measures and agreements. It assesses the causes of the clash of interests between medicine and economics during the development of international sanitary quarantine regulations. Against the background of the socio-economic changes that have been taking place in the world in the last one hundred years, and of the part they played in creating conditions for the spread of infection from country to country, the authors analyze the increasing scientific, organizational and practical means at the disposal of public health services. They further analyzed the reasons which compelled states to regularly revise their strategy and tactics in preventing the importation and spread of quarantinable diseases, and examine the organization of anti-epidemic defense measures on national and international borders from the viewpoint of their effectiveness in the prevailing epidemic situation.

Through historical comparison the authors determine the degree of epidemiological effectiveness of previous international agreements and the existing system of international health regulations. They discuss the influence of economic, scientific and political factors on the evolution of international quarantine in combination with the development of medical science and the health services, and examine the advances in the field of controlling quarantinable diseases, as well as the capabilities of present-day preventive medicine.

# CONTENTS

	<i>page</i>
<i>Foreword</i>	ix
1. A brief history of epidemics	1
Spread	1
Plague	2
Yellow fever	4
Smallpox	6
Effect on civilizations	7
2. National quarantine services	9
Sanitary cordons	10
Quarantines	10
Early legislation	11
France	13
Austria and Germany	15
England	15
America	17
Russia	18
Izmail quarantine	22
Practical and economic influences	24
3. Epidemics of cholera	29
4. Science and commerce	37
5. Sanitary defense of Europe against epidemics	45
The Egyptian Sanitary Council (1843–1938)	46
The International Sanitary Council at Constantinople (1839–1914)	51
The International Sanitary Council at Tehran (1867–1914)	59
The International Sanitary Council at Tangier (1792–1914)	60
Summary	61

6. International unification of quarantine measures	63
Need for an international conference	63
Convocation	65
First International Sanitary Conference	66
First International Quarantine Rules	70
Second International Sanitary Conference	74
7. The international sanitary conference in Constantinople	79
Convocation	86
Program	86
Recommendations and outcome	88
8. Quarantines or medical inspection?	95
Convocation of Fourth International Conference	99
Conference program	100
9. The problem of epidemiological information	105
Establishment of US Department of Health	106
Fifth International Sanitary Conference	107
Bills of health	108
Yellow fever	110
10. The discovery of Robert Koch and the Sixth International Sanitary Conference in Rome	111
11. The importance of advances in bacteriology for the control of epidemics: ratification of international sanitary conventions	125
Seventh International Sanitary Conference	129
Eighth International Sanitary Conference	135
Ninth International Sanitary Conference	145
12. A new epidemic of plague: return to quarantines	151
Tenth International Sanitary Conference	155
13. The Pan American Sanitary Bureau	159
14. The convention of 1903—the basis for effective control of epidemics	169
The Eleventh International Sanitary Conference	176

## Contents

15. International quarantine controlled by the International Office of Public Health	181
The Twelfth International Sanitary Convention of 1911	185
The Thirteenth International Sanitary Convention of 1926	193
The International Sanitary Convention for Aerial Navigation (the Hague, 1933)	201
IOPH activities	206
16. The health organization of the League of Nations and the system of global epidemiological information	211
The sanitary cordon of Western Europe	213
International quarantine and a global system of epidemiological information	219
17. International quarantine during the Second World War	231
18. The World Health Organization (WHO) and the adoption of international sanitary regulations	241
Cholera	246
Plague	248
Louse-borne typhus	248
Smallpox	249
Yellow fever	250
The changing environment	250
The international sanitary regulations	256
Epidemiological information (Articles 2–13)	263
Sanitary quarantine service on the frontiers (Articles 14–23)	265
Admissible sanitary restrictive practices (Articles 24–82)	266
Measures upon departure	266
Measures en route	266
Measures on arrival	267
19. Quarantinable diseases in the second half of the 20th century	271
Plague	272
Cholera	273

## Contents

Smallpox	287
Yellow fever	295
20. From sanitary cordons to sanitary protection of territories	307
<i>Epilogue</i>	323
<i>References</i>	325
<i>Index</i>	331

# 1

## A brief history of epidemics

In the history of the Earth's populations, wholesale deaths from epidemics (pestilences) feature prominently among the many factors (including wars and natural calamities) that seriously affected the development of human civilization and the evolution of socio-economic orders in general.

### SPREAD

In primitive society the spread of contagious diseases was initially localized, but with the passage of time, when exchange of commodities began to take place between individual communities, diseases of communities gradually turned into diseases of the tribe, then of whole nations, until eventually their dissemination became global. Wherever the merchants went, diseases followed. Along with the development of nationwide and international trade, disastrous epidemics swept away whole tribes and nations. Moreover, the prevailing grave social conditions were conducive to the wide dissemination of infections and the formation of stable endemic foci of diseases in different geographical regions.

The movement and penetration of these especially virulent, diseases across the national borders of European states, were always closely related to the establishment and development of regular trade relations with other countries.

From ancient times contacts between the countries of the Orient and Europe were maintained along three most important trade routes. The Northern Way led towards the Black Sea, through the Crimea towards Constantinople which served as the main clearing house for East-West trade contacts. The second route carried the

treasures of India through Herat to the Caspian Sea, to Armenia and Asia Minor, and to the ports of the Mediterranean. The third road led from the banks of the Tigris and Euphrates near Basra across Arabia to Egypt and Mediterranean ports, and to the coasts of Northern Africa.

Between the tenth and the sixteenth centuries the monopoly of trade with the countries of the East belonged to Venice and other Italian provinces and cities (such as Genoa and Florence). Venice was practically the principal port which received goods from India, China and Persia. The merchandise, as a rule, was carried overland by caravans to the ports of the Mediterranean and Black Seas where it was reloaded into ships for dispatch to various European countries. Venice maintained lively trade with the biggest cities of Central and Northern Europe, linked by land and river trading routes. All this was conducive to the dissemination of epidemic diseases in European countries. Suffice it to say that from 900 to 1500 Venice alone sustained 63 big epidemics of plague (Hoffman, 1929).

## **PLAGUE**

In the history of epidemiology there is no other instance of a pestilence wreaking such dreadful desolation and mortality among the population as in fourteenth-century Europe. According to B. Ts. Urlanis (1941), from fourteen to fifteen million people, or from one-fifth to one-sixth of Europe's population, succumbed to the Black Death; it took at least 110–120 years for the populations of European countries to regain their former size. Following the abatement of the plague epidemic in the fourteenth century, sporadic cases of the disease continued to be recorded in different countries of Europe, though these epidemics were less virulent and more localized. Thus, during the sixteenth century, plague epidemics occurred from time to time in Germany, the Netherlands, Italy and different towns in Russia. In the seventeenth century plague was still recorded in some European countries. Of the numerous plague epidemics in the mid-seventeenth century the most calamitous flare-ups were recorded in Russia (Moscow, 1654–1655) and England (London, 1665). The second half of the seventeenth and the early eighteenth century saw an end to large epidemics of plague in most

## A brief history of epidemics

countries of Western Europe. However, sporadic cases of this disease continued to be recorded in subsequent centuries in different European ports. The disappearance of the plague was a consequence of the development of agriculture and the changing landscapes, as well as of changes in the trade routes linking Europe with the East.

The character of international trade changed considerably with the discovery of America and the sea route round the Cape of Good Hope. Venice began quickly to lose its monopoly of trade, mainly to Portugal and Spain. Commerce now concentrated mostly in the region of Portugal, though commercial activities in the Mediterranean remained quite vigorous and were controlled by Italy and France. In the seventeenth century, Venice and Spain virtually lost their monopoly of trade to England and the Netherlands and the trading routes shifted to Europe's northern ports. The Thirty Years' War (1616–1648) in Europe effectively paralyzed trade relations between its south and north. The trade of France with the Levant\* and Northern Africa also dropped steeply because of strained relations with Turkey. This is why in this period another vital trading route with Eastern countries was used: across the Caspian Sea, Astrakhan, Novgorod and Narva, along which commodities from the East were brought across Russia into Europe.

The shift of trading routes in the seventeenth century could not but affect the character and possibilities of importing plague from Eastern countries into Western Europe and, though epidemics periodically still let themselves be felt, by the mid-seventeenth century an overall abatement of the intensity of plague epidemics in West-European countries took place. Simpson (1905) believed that the cause of the rapid disappearance of plague from the European continent should be sought precisely in these changes of trade relationships in Western and Central Europe.

Of all the epidemics of plague in the first half of the eighteenth century, the one of greatest significance from every point of view was the plague in Marseille in 1720–1721. In spite of subsequent stringent quarantine measures, in 1720 the epidemic spread far

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\*Name applied to countries bordering on the eastern Mediterranean (Syria, Lebanon, Egypt, Turkey, Greece and others); more specifically, Syria and Lebanon.

beyond the initial focus. This epidemic is believed to have taken a toll of 87,639 lives.

In the second half of the eighteenth century, plague epidemics were recorded in Moldavia, Wallachia and Russia. The biggest epidemic of plague in that period broke out in Moscow in 1770–1771 and it proved of great importance for the subsequent establishment and consolidation of the Russian epidemiological school. A monument to the efforts of Moscow physicians to control the epidemic is “A Description of the Plague which Visited the Capital City of Moscow from 1770 to 1771”, published in 1775 under the editorship of Dr. Shafonsky.

In the nineteenth century, plague epidemics were recorded also in different localities and towns of southern Europe, the Near East and Northern Africa. In Western Europe only sporadic local outbreaks of the disease occurred.

In the early nineteenth century, considerable plague epidemics occurred in Northern Africa, Syria, Constantinople, Odessa and on Malta. According to A. Hirsch (1876), in the period between 1800 and 1847 there were nine epidemics in Turkey; between 1800 and 1842 there were fifteen epidemics in Egypt; from 1552 to 1784 there were 26 in Tunisia and Algeria.

From 1839 to 1844 plague had virtually disappeared from its old foci in the countries of the Levant. Thus, a Russian special commission in 1846 and Austrian scientists in 1844, dispatched to Egypt to study the causes of the disappearance of plague, were unable to detect a single case of the disease.

## **YELLOW FEVER**

The first authentic information about yellow fever dates back to 1648, when a major epidemic was recorded in Yucatan (Central America), in all probability brought in from West Africa.

Up to the mid-nineteenth century three main periods may be singled out in the history of the dissemination of yellow fever: 1635–1692 when it appeared on the Antilles; 1693 and especially 1699–1702, when it was widespread in connection with a large epidemic on the Antilles; 1703–1848 when the infection spread to the North Atlantic area and the Gulf of Guinea.

## A brief history of epidemics

According to data by A. Hirsch (1881–1886), in the period from 1648 to 1879 there were 148 recorded epidemics of yellow fever in the West Indies and other islands of North and Central America.

The history of yellow fever before the twentieth century is characterized by severe epidemic flare-ups outside its main foci. Epidemics of yellow fever were recorded fifteen times in New York, twenty times in Philadelphia, seven times in Baltimore, and eight times in Boston. The last epidemic of yellow fever in the USA occurred in 1905 in New Orleans. Epidemics of this disease were always accompanied by high mortality, panic and fear.

Yellow fever was repeatedly brought into Europe in ships arriving from America and the West Indies, and epidemics occurred, as a rule, in the littoral zone or in the main (commercial) seaports. It is known (H.H. Scott, 1942), that as early as 1649 yellow fever was brought from the West Indies to Gibraltar.

The earliest authentic data on yellow-fever epidemics in Europe refer to 1723, when a major outbreak of the disease was recorded in Lisbon. In 1730 the disease was recorded in Cadiz, and in subsequent years in many Spanish towns (Malaga and Cartagena).

In the nineteenth century, major yellow fever epidemics were repeatedly recorded in Spain and Portugal, with local outbreaks taking place also in British ports. A sweeping epidemic of yellow fever spread to many localities in Spain in 1800–1804 when 10,000 out of the 48,000 population died. An epidemic of the disease in Leghorn in 1804 aroused serious apprehensions in other European countries. In 1820 an epidemic of yellow fever broke out in Barcelona among sailors who had arrived from Havana. From Barcelona the disease apparently was carried to other parts of Spain, in particular to the town of Tortosa where of the 15,000 citizens 10,000 left the town, and of those who remained 90 per cent died. In subsequent years yellow fever occurred repeatedly in Spain. Numerous flare-ups were recorded on the southern coast of France.

Epidemics of yellow fever struck not only in Western Europe. In 1805 the Medical Council in Russia published by Royal Command a description of yellow fever with indications of its attacks, causes and methods of treatment and prevention. This publication, compiled by Dr. Karpinsky, should in all probability be regarded as one of the earliest works to appear in Russia entirely devoted to the problem of yellow fever. The author describes the history of the

disease and, which is particularly important, dwells on the need to protect Russian ports from the threat of importing yellow fever from endemic localities, particularly from countries of Western Europe.

For many centuries numerous yellow-fever epidemics created most grave epidemic situations in many countries of America and Africa, greatly retarding the development of international trade and the opening up of new territories on the American and African continents.

## **SMALLPOX**

The first epidemic of smallpox accurately recorded in history occurred in the sixth century in the Middle East during the Arab-Abyssinian War. Brought by the Arabs into Egypt in the early seventh century, smallpox spread all along the European coast of the Mediterranean. In the Middle Ages smallpox frequently visited the European continent and by the year 1000 it had been recorded in practically all European countries. Smallpox was repeatedly brought back to Europe by the Crusaders. The Mongolian invasion also facilitated the broad dissemination of this disease in the West.

Following the discovery of America, smallpox followed on the heels of the conquerors. In their conquest of Mexico, Europeans were doubtlessly aided by their invisible allies—epidemic diseases and, in particular, smallpox, to which the local tribes proved highly susceptible. It is known that a smallpox epidemic was brought there by a Negro Arab who arrived on a ship with the Army of Cortez, and three million Indians and indigenous Mexicans perished as a result in 1520 alone.

It has been calculated that during the seventeenth century more than 60 million Europeans perished from smallpox. One smallpox victim was the English Queen Mary II. Within 50 years smallpox claimed eleven members of the Austrian royal family. In the eighteenth century smallpox struck and killed the German emperor Joseph I, Louis XV of France and the Russian Tsar Peter II. In the opinion of M. A. Mozozov (1948), from the time of the appearance of smallpox in Europe to the end of the eighteenth century, it killed at least 150 million people. In the seventeenth and eighteenth

## A brief history of epidemics

centuries more than ten million people were stricken by smallpox every year, of whom 1.5 million perished.

In the nineteenth century, despite the introduction in a number of countries of obligatory vaccination for smallpox (England, 1805; Austria, 1807, 1817, 1835), smallpox morbidity remained, as before, rather high. In England, in the second half of the nineteenth century it brought death to 44,000 persons. In France a terrible epidemic of smallpox flared up during the Franco-Prussian War, when the disease afflicted 200,000 soldiers, of whom 25,000 died. It must be stressed that the smallpox epidemics could never compare with the tragic consequences of the epidemics of plague, particularly during the fourteenth century endemic.

## EFFECT ON CIVILIZATIONS

During the Middle Ages the causes of epidemics of plague and other diseases were ascribed to the will of God and other supernatural agencies, while man was regarded as a victim of fatal impotence in the face of heavenly punishment. Fear and ignorance drove the population from towns and villages, yet the hand of death pursued and accompanied people everywhere. Panic gave rise to social and moral disorganization. Farms stood abandoned, famine bred unrest, rebellions and wars, and in a number of cases led to fanatical religious movements which brought about profound spiritual and sociopolitical changes in society. In the publication *Medicine and Medical Men* E. Littré (cited by Gezer, 1867) vividly describes the attitude of people in the past to the appearance of epidemics. He writes: "At times one happens to see how the Earth suddenly shudders under peaceful towns, and buildings tumble upon the heads of the citizens. In the same sudden way fatal contagion emerges from the unknown abyss and by its deadly breath wipes out human generations as a reaper lays down a standing crop. The causes are unknown, the effect is dreadful, the spread is immeasurable: nothing can cause greater alarm. It seems that there is no limit to the death toll, that the devastation will be endless and that the conflagration, once it flared up, will end only for want of nourishment."

The ultimate fall of ancient Rome coincided in time with the