

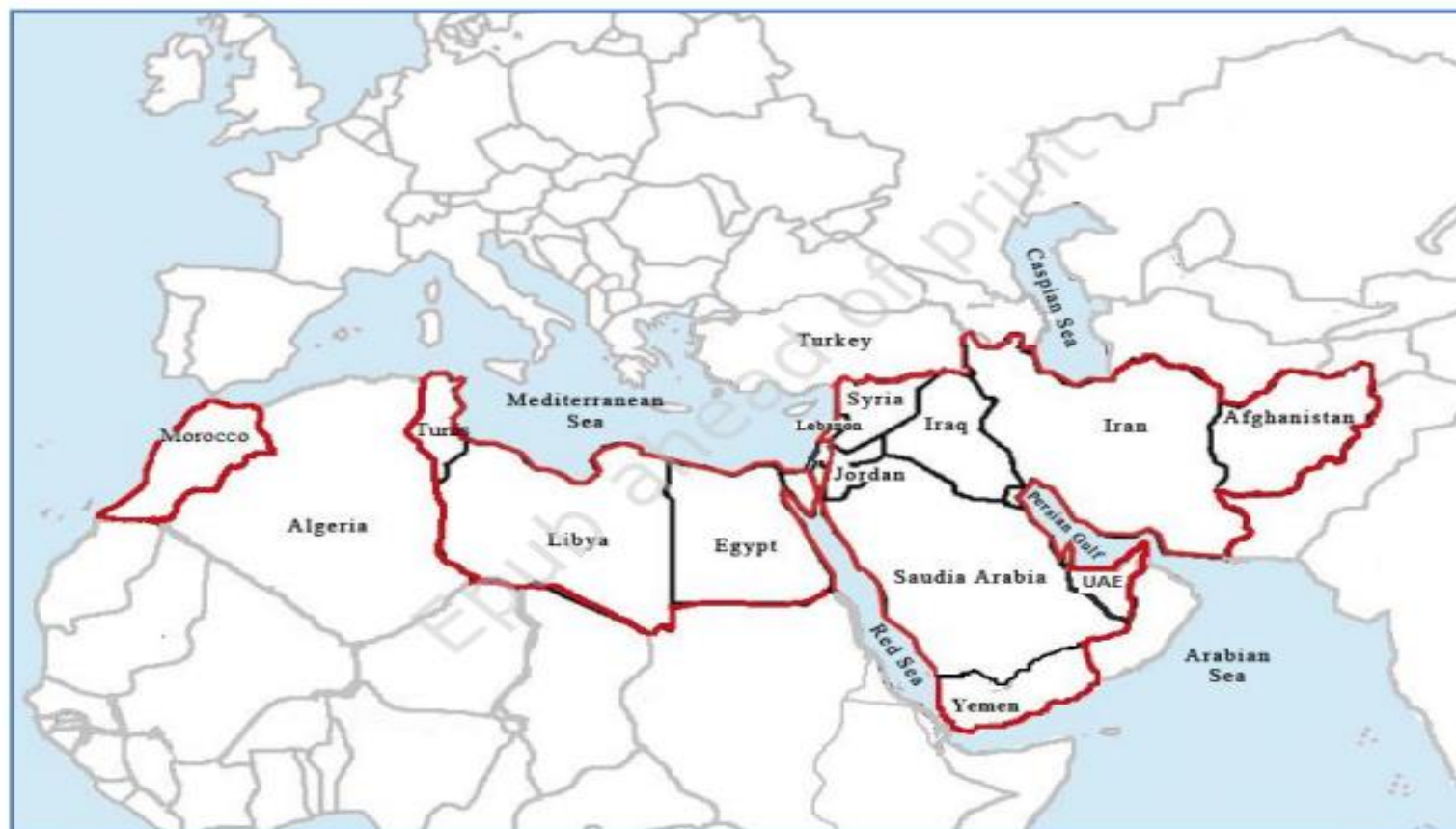
# Overview of the Epidemiological Situation of Plague in EMR countries



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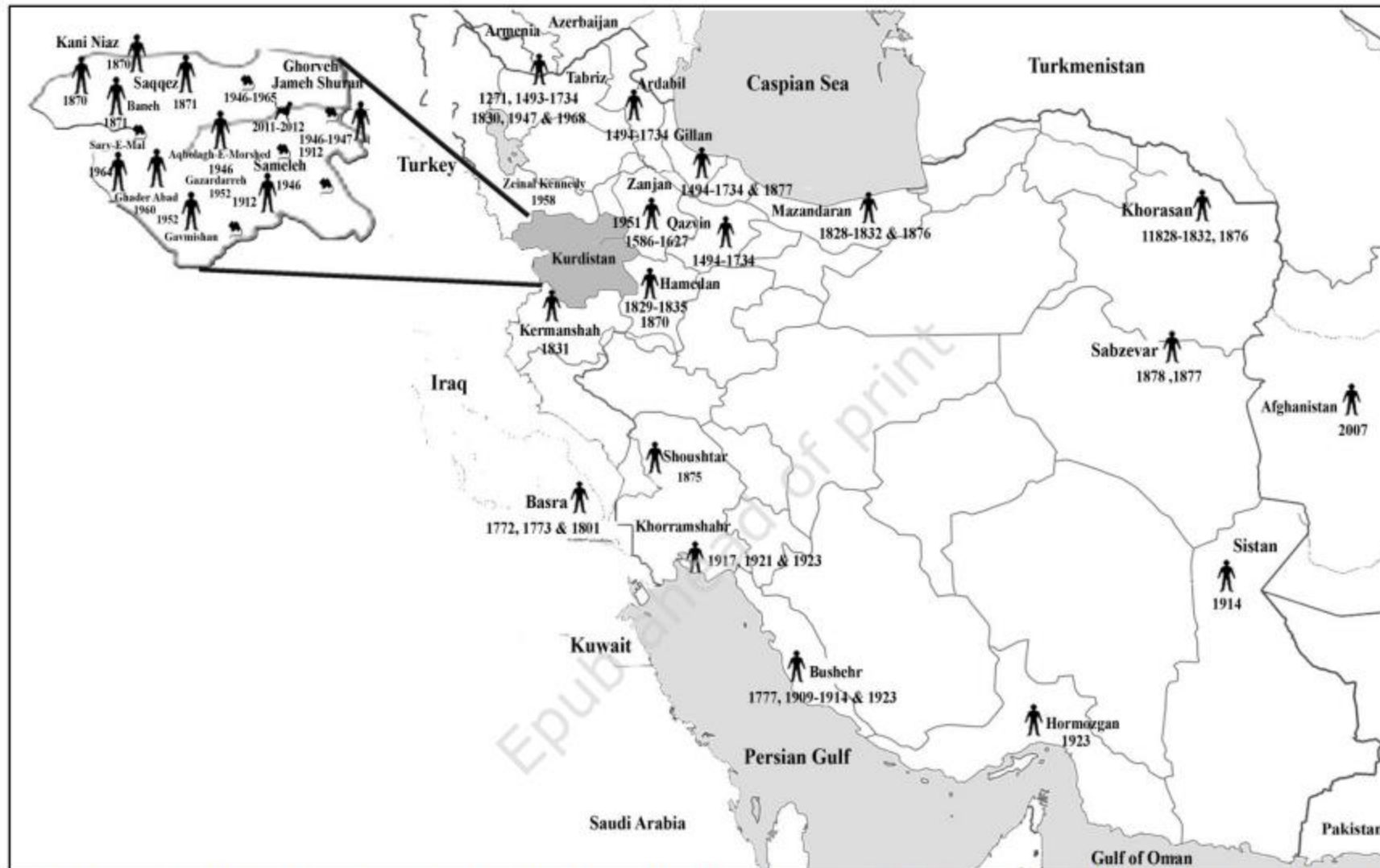
# Plague affected countries in EMR

16 + countries in the region have been historically reported to be affected by plague



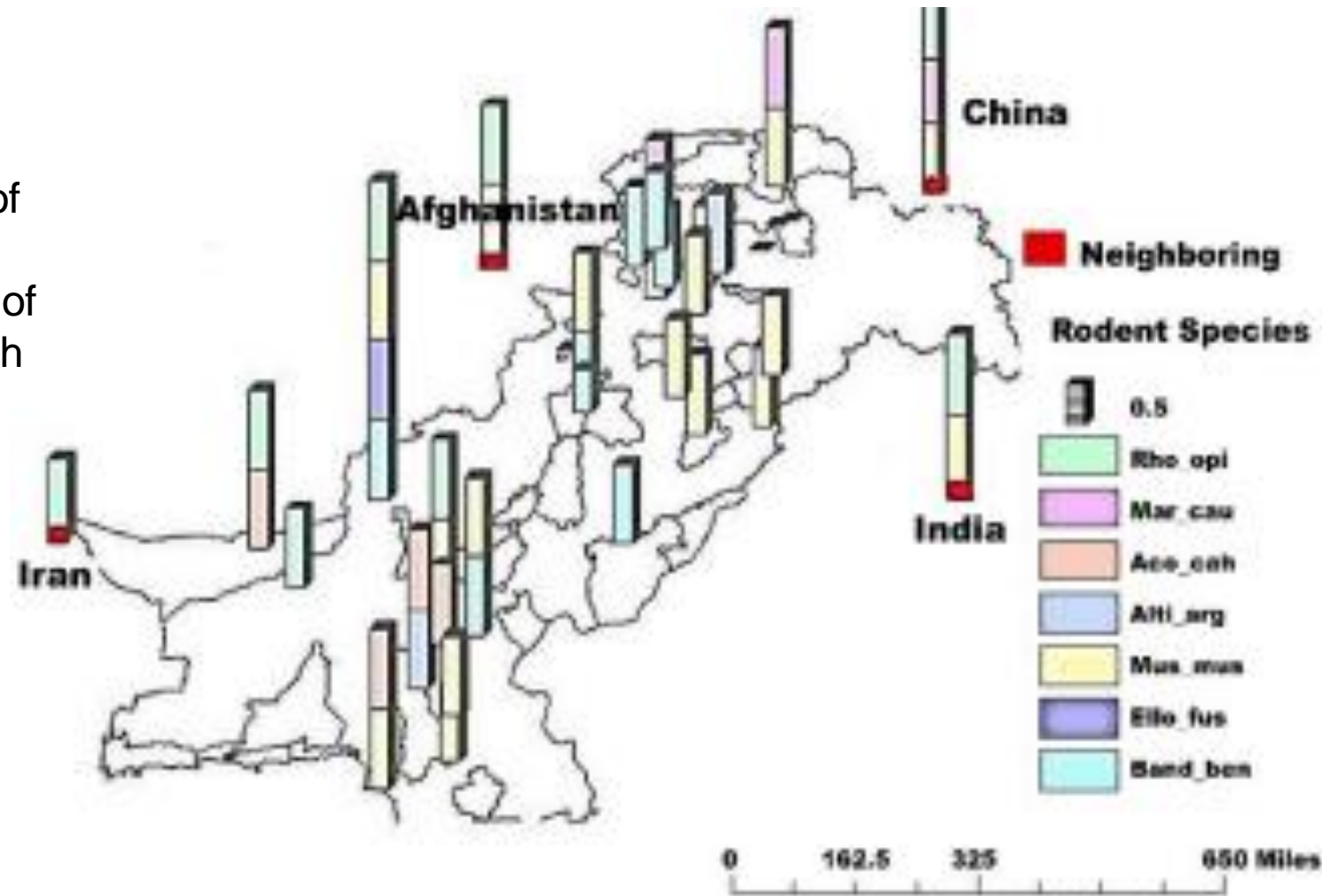
- AFG
- Bahrain
- Egypt
- Iraq
- Iran
- Jordan
- Kuwait
- Libya
- Lebanon
- Morocco
- Pakistan
- KSA
- Syria
- Tunisia
- UAE
- Yemen

# Plague affected areas in Iran



# Plague rodent species, Pakistan 2016

Map showing the number of plague-associated rodents species in studied districts of Pakistan in comparison with neighboring countries

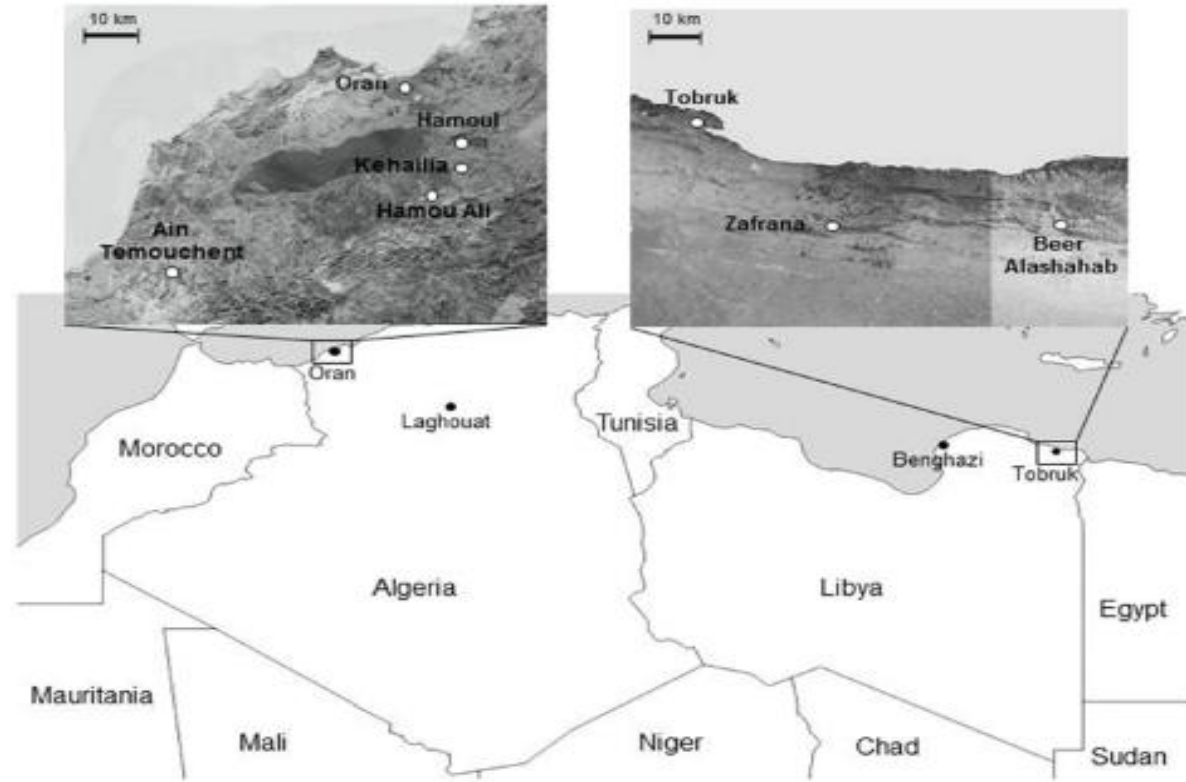




# Plague Outbreak, Libya 2009

After 25 years of no plague cases, the disease recurred near Tobruk, Libya, in 2009. An epidemiologic investigation identified 5 confirmed cases.

Locations of plague outbreaks in Libya are Oran, Algeria, and Tobruk. The upper panels show regions around Oran and Tobruk where plague cases were found.



# History of plague in EMR countries

<b>AFG</b>	The WHO Expert Committee on Plague determined plague to be endemic in Afghanistan in its report in 1953. Enzootic sylvatic rodent plague is endemic in the northeast (Badakshan, Konar) along the Pakistani border; isolated cases of human bubonic plague have occurred, particularly along the Pakistani border. <i>Meriones</i> spp. (gerbils) and various <i>Microtinae</i> (meadow mice) are sylvatic reservoirs of plague in this region. In late 2007, an outbreak of plague with acute gastroenteritis symptoms occurred in Nimruz Province in southern Afghanistan; in this outbreak, 17 of the 83 infected cases died, and consumption of infected camel meat was diagnosed as the source of infection.
<b>BAH</b>	In 1529, an outbreak of plague occurred in Bahrain; leading to the failure of a Portuguese attack on this region. A plague epidemic in the Arabian littoral also affected Bahrain in 1773. From 1907 to 1914, two other epidemics of bubonic plague were reported in this area. In 1914, 1915, and 1924, imported cases of plague were also reported in Bahrain.
<b>IRQ</b>	Throughout its history, Iraq has experienced multiple epidemics of plague. In 716 and 717, a large outbreak known as al-Ashraf (the Notables) was recorded in Iraq and Syria. In an epidemic of bubonic plague in 1772 and 1773, many victims died in cities such as Basra (with 250,000 deaths) and Mosul. In 1801, a large plague epidemic occurred in Mosul and Baghdad. A plague epidemic occurred again in Baghdad in 1908. From 1923 to 1924, approximately 90 cases of pneumonic plague were reported in Baghdad, and some plague outbreaks were reported in Basra.

# History of plague in EMR countries

<b>JRD</b>	Plague in Jordan was first seen in the seventh century. In 1997, an outbreak of bubonic plague was reported in northeastern Jordan, and all affected cases recovered from the disease. Two dogs tested serologically positive. All cases were infected through the consumption of camel meat .
<b>KWT</b>	The plague outbreak of 1773 in Iraq spread to Kuwait, leading to an outbreak in this region
<b>LBN</b>	This country has been affected by plague in a variety of ways over the ages and has played a significant role in transmitting the disease to other parts of the world. The plague epidemic in Marseille, France, in 1720 led to 50,000 deaths and occurred via transmission of the infection by a ship from Lebanon. In 1900, four cases of plague were reported in Beirut. This outbreak took place after 65 years with no reported cases.
<b>SAA</b>	This country has experienced several outbreaks of plague in the past. An outbreak of plague took place in 1773 in the al-Qatif region, an area located in the eastern part of Saudi Arabia. In 1897 and 1898, several fatal cases of plague were reported in Mecca. In 1899, only two cases, both originating in Jeddah, were observed in Mecca. In 1994, five cases of bubonic plague were reported in Goriat, a city located in the desert in southern Saudi Arabia with one reported death. The source was consumption of an infected camel's liver. The presence of plague in wildlife and domestic animals is confirmed in this country, and this should be considered a potential risk for the general population as well as for Hajj pilgrims.
<b>UAE</b>	In 1914 and 1924, imported cases of plague were reported in Dubai

# History of plague in EMR countries

<b>SYR</b>	The circulation of plague among Syria, Palestine, and Egypt occurred regularly throughout history. Accordingly, data related to plague in these three regions have commonly been reported together. Outbreaks between 541 and 749 in these regions were related to regional trading and the disease was transmitted into Syria via ships entering from Egypt . An outbreak in 746 CE occurred due to a military attack on Constantinople, in which soldiers used swords contaminated with plague.
<b>YMN</b>	The oldest recorded case of human plague in Yemen occurred near the border with Saudi Arabia, in Asir Province, in 1815, and is believed to have spread to Jeddah and Mecca. Since the 1815 outbreak in this area, few outbreaks have been reported, perhaps due to the lack of investigation. A plague outbreak was reported in Khawlan in the northern highlands of Yemen in 1969 and left 15 dead in two villages. The isolation of <i>Y. pestis</i> confirmed the nature of this outbreak in 1969.
<b>LIB</b>	Between 1913 and 1920, multiple outbreaks occurred in Libya, with the largest taking place in 1917 in Benghazi, where 1,449 people died of plague. Twelve confirmed cases were noted in 1939 to 1943 in a locality 12 km from Tripoli. Small outbreaks occurred in 1972, 1976, 1977, and 1984 near Tobruk, close to the border with Egypt. In 2009, after 20 years with no reported cases, the reemergence of plague was observed. Three members of a family were infected with the septicemic form and one of them died. This outbreak was of Asian origin [88,89]. Another possible outbreak of plague comprising more than 20 cases occurred at Tobruk during the Libyan revolution in May 2011. These data suggest that plague has active foci in Libya.



# History of plague in EMR countries

## EGY

In 1347 CE, plague reached Alexandria in Egypt, most likely through the port's trade with Constantinople and ports on the Black Sea. Between 1347 and 1517, Egypt experienced more than twenty outbreaks. In an outbreak in 1581, approximately 500,000 people died of plague. In the plague pandemic in the sixth century, more than 900,000 cases in Egypt and 22,000 cases in Gaza (Palestine), which was under the authority of Egypt at that time, were reported. In a large outbreak in 1835, approximately 33,000 people died. In 1899, after a period of 50 years with no reported cases, plague recurred in Egypt, and between 1899 and 1919, approximately 15,000 cases of human plague were reported [35,84]. The coexistence of the Nile rat, *Arvicanthus niloticus*, and ectoparasites in combination with trade with Asia, Africa, and the Mediterranean, as well as the Nile floods, suggests that it is possible that *Y. pestis* was primarily a disease of the Nile rat, indicating that Egypt may have been the most probable point of origin of bubonic plague as an epidemic disease [85]. In 1940, 452 cases were reported in Assiut province, and some cases were also reported in Port Said. In 1943, an outbreak was observed in the Suez Canal area; and in the Ismailia district and Port Said in 1944 accounting for a total of 862 cases. In 1945, plague caused 19 cases in ports along the canal. In 1947, a 15-case outbreak took place in Alexandria and was the last reported outbreak in Egypt. The reemergence of plague in Egypt should not be excluded, due to the presence of suspected potential natural foci and global climate change.

# History of plague in EMR countries

<b>MAR</b>	The first plague cases reported in Morocco were in 1909 among 25 military stations in Casablanca. A severe epidemic with 8,000 to 10,000 deaths took place in 1911. Between 1940 and 1945, almost 5,400 cases were reported in Morocco in the regions of Chaouia, Agadir, Marrakech, Rabat, Doukkala, and Port Lyautey. Another large outbreak of plague occurred in 1977, in which almost 50,000 people died
<b>TUN</b>	Plague has not been very prevalent in Tunisia, although plague epidemics occurred in Tunisia from 1870 to 1900. Two major plague epidemics also struck Tunisia in 1784 and 1818, which lasted for months. Variable susceptibility to plague has been reported among the flea and rodent species in Tunisia. Twelve cases were reported in 1940 and one in 1941. A plague outbreak was recorded in 1944, in which 64 people were infected with 27 deaths .

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