

Are we in real danger?

Bubonic plague in China's Inner Mongolia

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Pieter Bruegel's *The Triumph of Death* reflects the social upheaval and terror that followed bubonic plague, which devastated medieval Europe.

As the world's new coronavirus disease cases top 12 million, and the Philippines's cases has reached more than 50,000, the unwelcome report of bubonic plague afflicting a herdsman in China's Inner Mongolia was reported last weekend.

This prompted the World Health Organization (WHO) to place China's bubonic plague situation under strict monitoring.

Six months since the first new coronavirus case was reported in Wuhan, China, the disease that spread into a pandemic has caught governments across the world unprepared.



A marmot seen on top of Mount Dana, Yosemite in California, USA.

The Philippines, for one, is still struggling and is not getting any closer into flattening the curve, much more, stop the spread of the virus.

After Chinese authorities confirmed the case of the bubonic plague, news reports said that Russia stepped up patrols to stop hunting and eating of marmots near its borders with China and Mongolia.

Marmots are giant ground squirrels, also called rodents, found primarily in North America and Eurasia, Britannica.com said.

While Inner Mongolia is 3,450 kilometers away from the Philippines and with no less than the WHO saying it is “not a high risk,” the very thought of a bubonic plague reaching the country’s shores while it is still reeling from the adverse impact of Covid-19 sends chills down the spine.

But before people go on panic mode, here’s what we need to know about plagues and the bubonic plague.

Plagues and bubonic plague

According to the WHO, bubonic plague is caused by bacillus *Yersinia pestis*.

A zoonotic disease affecting rodents and transmitted by fleas from rodents to other animals and humans, direct person-to-person transmission of the disease does not occur except in the case of pneumonic plague, through respiratory droplets, being transferred from an infected person to another person in close contact.

There are three clinical forms of plague depending on the route of infection—pneumonic (affecting the lungs), septicaemic (infection of the blood) and bubonic (swelling inflamed lymph nodes in the armpit or groin).

“Bubonic plague is the form that usually results from the bite of infected fleas. Lymphadenitis develops in the drainage lymph nodes, with the regional lymph nodes most commonly affected. Swelling, pain and suppuration of the lymph nodes produce the characteristic plague buboes,” the WHO said on its web site.

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The scary part about the disease is that “without prompt and effective treatment, 50 percent to 60 percent of cases of bubonic plague are fatal, while untreated septicaemic and pneumonic plague is invariably fatal.”

14th-century bubonic or Black Plague

Among the early known bubonic plague, also known as the Black Death, spread across Europe that killed 50 million people from 1346-53, Ole J. Benedictow, emeritus professor of History at the University of Oslo, Norway, said in the article "The Black Death: The Greatest Catastrophe Ever" posted on historytoday.com.

Researchers generally agree that the Black Death swept away 20 percent to 30 percent of Europe's population during the period.

Benedictow, known for his research on plagues especially the Black Death, said the plague occurred when rodents in human habitation, normally black rats, become infected. The black rat, also called "house rat" and "ship rat"—having lived on ships, the main means of trade transportation in the Middle Ages—likes to live close to people.

The infection takes three days to five days to incubate in people before they fall ill, and another three days to five days before, in 80 percent of the cases, the victims die.

He explained that the plague bacteria can break out of the buboes and carried by the blood stream to the lungs and cause a variant of the plague that is spread by contaminated droplets from the cough of patients, becoming the pneumonic plague.

Recent incident

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It is largely believed that the plague had been already eradicated.

However, occasional cases are still reported, especially among hunters coming into contact with fleas carrying the bacterium, the Associated Press said on July 6.

The last major known outbreak was in 2009, when several people died in the town of Ziketan in Qinghai province on the Tibetan Plateau.

A cause for alarm?

Is the bubonic plague something Filipinos should worry about? Yes and no. Here's why.

Environment Assistant Secretary Ricardo Calderon said chances that the bubonic plague from Inner Mongolia reaching the country is a "far-fetched idea."

In a telephone interview on July 7, Calderon said that on record, the Philippines had no interaction with marmots, hence, it is impossible for the dreaded disease afflicting Filipinos in the country.

"While we have rodents in rice fields and sugarcane plantations, it is not that prevalent," added Calderon, the concurrent director of the Biodiversity Management Bureau of the Department of Environment and Natural Resources.

Pests, not pets

He said Filipinos' treatment of rats is more of pests rather than disease-carrier.

"Fortunately, rats are not palatable as being hunted and eaten," he said.

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In certain areas, he said rats are indeed considered a delicacy, but again, such practice is "not prevalent."

He added that a marmot is not engaging as a pet. Hence, marmots being brought into the Philippines is unlikely, he explained.

Proper hygiene, sanitation

Calderon said the spread of any disease can be effectively prevented by simply practicing proper hygiene and sanitation at home.

“When it comes to zoonotic disease, our response is always proper hygiene and sanitation,” he said.

Moreover, he said the Philippines is strictly guarding its borders to prevent smuggling of wild animals.

Even those with special permits, he said, go through stringent quarantine procedures.

“We have the Bureau of Quarantine taking care of that, too,” Calderon explained.

However, he maintained that the best way to avoid contracting a zoonotic disease is by “staying away from wild animals.”

Still vulnerable

A biodiversity expert, Theresa Mundita S. Lim, executive director of the Asean Centre for Biodiversity (ACB) said bubonic plague “is something to worry about.”

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In fact, the Philippines, as with the rest of Southeast Asia, is vulnerable to the deadly plague, because of the existence of rodents

Interviewed via Messenger on July 7, Lim, said the Philippines has populations of domestic rats in urban areas, which are the known carriers of the plague.

“Once the causative agent [*Y. pestis*], spills over into our domestic rat population, we become highly vulnerable,” says Lim.

However, she was quick to point out that “there is no evidence yet that native wild rats are a reservoir of the pathogen.”

“We do have a high diversity of wild rodents [more than 70 multiple species] native to the Philippines, but there is no evidence yet that our indigenous wild rats are a reservoir of the pathogen,” Lim said.

Threats: Illegal wildlife or pet trade

According to Lim, Philippine authorities should be on the lookout for the trading of wild animals, whether for the pet trade or for consumption—for their meat, skin, or parts—which is strictly prohibited under the law.

The annual cost of the illegal wildlife trade in the Philippines is P50 billion. Globally, it is a major driver of biodiversity loss. Hunting of critically endangered animals has been driving unique Philippine species to the brink of extinction.

According to Lim, while there is no marmot in the Philippines, private collectors who want to bring them in as pets or part of their wildlife collection is something we should all worry about.

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Hence, Lim said like any other zoonotic disease, bubonic plague can spread across borders through wildlife trafficking or illegal wildlife trade.

“Illegal wildlife trade can definitely contribute to transmission. When wild rodents are hunted or captured, killed or smuggled into the country, and they happen to carry the pathogen, their fleas can move and bite other species that they come in contact with, including domestic rats and humans, who will contract the disease and can spread them,” she said.

Human to human transmission

According to Lim, a licensed veterinarian with expertise on zoonotic diseases, bubonic plague can be transmitted from human to human. From the rats, it can spread to the human population, like the coronavirus.

Worse, like Covid-19, she said there is still no vaccine for the bubonic plague, although it is curable.

“Even if there is as yet no evidence of the bacteria present in our indigenous rodent population, they can, technically, harbor them, or any similar pathogen, for that matter. But for as long as our native rodents are maintained in their natural habitats, they can keep these potential pathogens at bay,” she said.

A wave of zoonotic diseases

Sought for reaction, Leon Dulce, national coordinator of the environmental group Kalikasan-People’s Network for the Environment, said the bubonic plague case along the borders of China, Mongolia and Russia is part of the expected continuing wave of zoonotic epidemic and pandemic outbreaks.

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“Locally, we are experiencing avian flu, swine flu and dengue outbreaks on top of the Covid-19 contagion,” said Dulce, who connected the spread of zoonotic diseases to habitat loss and species’ extinction occurring in various parts of the world.

Sixth mass extinction event

“The United Nations has called for the effective protection of 30 percent of critical landscapes and seascapes across the world if we are to avert the extinction of over a million flora and fauna species over the next few decades. If we fail to avert this sixth mass extinction event, hardier species that carry viruses and other dangerous microorganisms will proliferate and spill more emerging infectious diseases into human populations,” Dulce said.

Worse, he said the country’s public health care systems will not be able to manage the increasing load if we do not address these diseases on a planetary health scale.

“There must be greater resources allocated by all governments of the world on stopping destructive projects like large-scale mining, poaching and mega infrastructure that destroy our natural defenses to diseases, he said.

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