

Global Alert: Novel coronavirus (2019-nCoV)

Global Exposure: what do we know?

Novel coronavirus (2019-nCoV) is a dangerous virulent virus. There is no instant cure. Without immediate, decisive action, the infection will become world-wide and affect millions of people across the world. The World Health Organisation (WHO) has declared it a 'Global Health Emergency.'

The virus is transmitted from person to person, by direct contact, by an infected person coughing or sneezing onto another, or by a person coming into contact with viral material shed from an infected person. An infected person develops symptoms in 2-14 days but can transmit the virus to another before showing any symptoms (fever, shortness of breath, cough, possible pneumonia). It is possible to test for the virus once symptoms appear.

A person may appear healthy but be infected. That person may pass on the virus to others before showing signs of infection.

It appears that physical isolation for 14 days after possible exposure will prevent the virus from spreading. At the end of that period, it will become evident whether the virus was or was not contracted. If symptoms appear, the person may be cared for to mitigate the effect of the virus. There are now pools of infected populations in several Chinese cities. Chinese authorities are attempting to isolate these populations to prevent the further spread of the virus through a range of measures, including restricting transport, isolating patients in purpose-built hospitals, and closing large gatherings and schools.

Risk: what are the Vulnerabilities?

Scenario One: No known cases in a population.

The vulnerability here may seem to be limited to the introduction of an infected person into the population. However, it is not possible to exclude unreported infection being present. In this scenario, complacency based on a lack of knowledge about the virus or any ability to test for the virus may prove to be a significant vulnerability.

Protecting against vulnerabilities:

- a. Eliminate movement from any viral source; and
- b. Ensure there is competent medical/nursing awareness/testing.

Scenario Two: Small number of known cases in a population.

Even a small number of live instances creates legion risks.

The population may be exposed to vulnerabilities as an infected person moves through an urban environment. For example, an infected person (whether exhibiting symptoms or not) may shed viral material on hand luggage, seats, food, railings, bedding, public restrooms, taxis, restaurants, ATMs, elevators, etc. An infected person (whether exhibiting symptoms or not) may be brought into close

contact with many people in a school, market, tour, celebration, demonstration, airport, plane, train, bus, car, home, or restaurant.

Individuals who are not infected can avoid possible infection by avoiding crowds and places where they might be exposed to viral material.

Individuals who are infected should attempt to minimize further infection by catching sneezes and coughs, avoiding shedding viral material by touch and self-isolating.

While health systems have some capacity to isolate infectious patients, this capacity is seldom tested and can be overwhelmed in a severe crisis, placing stress on resources and the environment.

Further, care for viral patients close to general hospital patients risks transmission to those least capable of surviving the virus and medical staff.

Further, because measures to contain the virus have serious economic effects, the implementation of actions may be subject to significant resistance, based on the uncertainty of the progress of the virus. Where there is genuine uncertainty (other than the claim that 'it cannot happen here'), the measures below might be implemented for a specified period (14 days) pending emergence of hard data.

Managing a Systemic Risk:

- a. Eliminate movement from any viral source;
- b. Cancel public events;
- c. Close schools, daycare, theatres, entertainment venues and establish strict protocols for essential foodstuff shopping;
- d. Ensure the continued provision of essential services;
- e. Eliminate all unnecessary person to person contact in workplace situations (work-from-home or compulsory leave supplemented by government support);
- f. Ensure there is competent medical/nursing awareness/testing;
- g. Ensure there is sufficient general population awareness of symptoms and reporting process;
- h. Actively guard against hospital-based transmission and the overwhelming of public health resources.

Scenario Three: Large number of known cases in a population.

Here the focus switches to isolating and protecting healthy individuals by eliminating population exposure.

Managing a 'Wicked Problem':

- a. Curtail all local travel; and
- b. Require all households to observe 14-day isolation, relying on their own resources (e.g., stores of food).