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## **Quarantine and isolation**

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The concepts of quarantine and isolation lie at the juncture of medicine, law, and public safety. When these concepts intersect with the maritime community, things quickly get both interesting and complicated.

Quarantine and isolation have been invoked in cases of communicable diseases throughout human history. Special treatment of lepers is mentioned in the Bible. During the middle ages, the Venetians required ships arriving from suspect areas to anchor out of port for 40 days, based on the assumption that any disease on board would run its course during that time. Modern quarantine and isolation are more sophisticated, but only slightly. The outbreak of severe acute respiratory syndrome (SARS) in 2002 revealed the difficulty of instituting efficient and effective quarantine and isolation protocols in an interconnected world village.

The recent case of the journeying tuberculosis patient has highlighted the problem once again. Congressional hearings have been held. Health agencies and law enforcement agencies are re-examining their procedures and their authorities. New regulations and enhanced utilization of existing protocols should be expected. Concern about a possible pandemic caused by avian flu or another emerging disease is growing.

### **Definitions**

Now is a good time to define some terms. A "pandemic" occurs with the outbreak of a new contagious disease that causes death or serious illness in large numbers of persons. SARS is a recent example (but fortunately was stopped before becoming widespread, making it an epidemic rather than a true pandemic), but the Black Death in the middle ages, the so-called Spanish flu in 1918-1919 and flu outbreaks in 1957 and 1968 are other examples. "Isolation" involves the separation of a person who has been diagnosed with a specific infectious disease from those who are healthy and a restriction of the movement of that individual to stop or deter the spread of the illness. In most cases, isolation is voluntary, but authority exists for compulsory isolation if proven necessary. The journeying tuberculosis patient is now subject to a mandatory isolation order. "Quarantine" is the separation and restriction of movement of persons who, while not yet ill, may have been exposed to an infectious agent. As with isolation, quarantine is generally voluntary, but may be enforced when and if necessary.

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## **International impact**

SARS, which was first identified in southeast China and Hong Kong in late 2002, provides a good example of a potential pandemic and the impacts that flow therefrom. While governments did not impose mass quarantines and isolations, travel was effectively restricted and commerce was impaired. The SARS epidemic caused over 8,000 reported cases of the condition, including almost 800 fatalities. In China, Hong Kong, and Southeast Asia during the height of the epidemic (second quarter of 2003), the gross domestic product of the affected nations is estimated to have dropped 2% on average. If a pandemic were to occur in the near future with the same severity as SARS, but not so limited in geographic impact, the World Bank estimates an economic impact of approximately \$800 billion.

Justifiably, concern about a potential pandemic is widespread. The World Health Organization (WHO), a sister agency to the IMO within the United Nations, implemented new and enhanced International Health Regulations on June 15, 2007. The regulations are intended to provide for improved procedures for addressing significant health emergencies and address a wider range of medical conditions than previously. Among other things, the revised IHR provide for a declaration of health by ships and for minimum sanitary conditions for cargo loading areas, including areas where shipping containers are packed.

## **United States approach**

In the United States, isolation and quarantine are generally matters for state and local health authorities and law enforcement agencies. Only when the problems involve interstate and international movement and exceed the ability of local control do the federal authorities normally step in.

At the federal level, quarantine and isolation are primarily the responsibility of the Centers for Disease Control and Prevention (CDC). The CDC is empowered to detain, medically examine, or conditionally release individuals reasonably believed to be carrying a communicable disease. The list of quarantinable diseases is established by an Executive Order, which was amended in 2005 to include “influenza caused by novel or reemergent influenza viruses that are causing, or have the potential to cause, a pandemic.”

## **Potential changes in regulations**

The CDC is considering changes to quarantine and isolation regulations. The changes would, among other things, make it easier for the CDC to require a ship clearing or departing a foreign port bound for the United States to obtain a bill of health from the US consular officer for that port setting forth the sanitary history of the vessel. The CDC could also suspend, in whole or in part, entries and imports from designated foreign countries or places. This would be done when the CDC Director determines that the risk of introduction of a disease into the United

States is increased by the introduction of persons or property from such foreign countries or places.

Operators of ships on international voyages would be required to report deaths or illnesses prior to arrival. This basic requirement exists currently, but the CDC proposes to amend this provision by requiring the operator to develop a written plan for reporting such deaths and illnesses and designation of an agent who would serve as the primary contact between the operator and the CDC. Operators would be required to report not just persons on board with a designated communicable disease, but persons defined as ill, meaning a person who: (1) has a temperature of 100.4°F (38°C) or greater accompanied by one or more of the following: rash, swelling of lymph nodes or glands, headache with neck stiffness, or changes in level of consciousness or cognitive function; (2) has a temperature of 100.4°F (38°C) or greater that has persisted for at least 48 hours; (3) has more than common diarrhea; (4) has severe bleeding, jaundice, or severe persistent cough accompanied by bloody sputum, respiratory distress, or a temperature of 100.4°F (38°C) or greater; (5) or displays other symptoms or factors that are suggestive of communicable disease.

Such operators would also be required to collect certain identifying information from each passenger and crewmember (such as name, contact information, address, and returning flight or ports of call). The operator would have to retain this information for at least 60 days and provide it to the CDC upon request.

Arriving vessels would be subject to inspections and sanitary measures could be directed if there is evidence that the ship or something on board is or may be contaminated with a communicable disease. The ship could be detained until satisfactory sanitary measures have been completed. The owner of the ship would bear any expenses relating to sanitary measures and detention. In the case of animals, articles, or things on board the ship, any expenses relating to detention would be borne by the owner thereof.

The CDC may, at US ports, conduct screenings of arrivals to detect the presence of ill persons. Any person reasonably believed to be infected with or exposed to a quarantinable disease may be provisionally quarantined. If evidence (such as diagnostic tests) indicates that an arrival is infected with or has been exposed to a quarantinable disease, the CDC may issue a quarantine order to that person. A person for whom a quarantine order has been served may not be required to undergo medical treatment, but may be subject to movement restrictions throughout the period of incubation and communicability of the disease.

Persons violating the quarantine laws and regulations would be subject to a fine of up to \$250,000 or one year in jail or both. Violations by organizations could result in a criminal fine of up to \$500,000.

## **Summary**

The real penalty, though, would be the disruption in trade. Due to the (hopefully short-term) reduction in international trade, many ships would be without cargoes (and possibly crews, support personnel, and bunkers). Ships could end up delayed in departure ports because the arrival ports are not accepting ships therefrom. Alternatively, the ship could be required to anchor out for an extended period awaiting clearance – recalling the ancient *quaranta giorni* or 40 day delay imposed by Venice. All of this would add fresh meaning to the concept of “restraint of princes.”

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