

# Trustworthy Facts on 2019-nCoV and COVID-19 Waste Handling



The World Health Organization (WHO) states the new coronavirus 2019-nCoV outbreak has prompted an “overabundance of information” and [trustworthy sources are essential](#) for instituting evidence-based prevention measures as some information is not accurate.<sup>1</sup> Trustworthy up-to-date sources relevant to U.S. (in addition to state and federal regulations) are WHO, the U.S. Dept of Labour Occupational Safety and Health Administration (OSHA), and the U.S. Centers for Disease Control and Prevention (CDC). The following advice is extracted from these and other trustworthy sources.

## What is 2019-nCoV?

Coronaviruses are a family of [seven viruses](#) common in many animals, including camels, cattle, cats, and bats.<sup>2</sup> Common human coronaviruses usually cause mild to moderate upper-respiratory tract illnesses, like the common cold. However, rarely, animal coronaviruses can infect people and then spread between people such as with Middle East Respiratory Syndrome ([MERS](#)),<sup>3</sup> Severe acute respiratory syndrome ([SARS](#)),<sup>4</sup> and now [2019-nCoV](#) in Dec 2019.<sup>5</sup>

Note. A proposal to rename 2019-nCoV *virus* as [SARS-CoV-2](#)<sup>6</sup> has yet to be sanctioned by WHO and is not adopted at the moment. On Feb 11, WHO named the *disease* [COVID-19](#).<sup>7</sup>

[Symptoms of COVID-19](#) infection may appear between 2 to 14 days after exposure and can include fever, cough and shortness of breath, however in some of cases the illness can be severe and fatal.<sup>8</sup>

## World and U.S. situation

By Feb 12, 2020, 45,171 cases of COVID-19 from 25 countries had been [reported to WHO](#) (44,730 cases (99.1%) in China).<sup>9</sup> Severe illness occurred in 18% with 1,115 deaths (fatality rate 2.4% within China; 0.2% outside China).<sup>1a</sup> The fatality rate in China may be falsely high as the number of COVID-19 cases may be much larger than that reported. The U.S. has reported 14 cases and no deaths. No new countries reported COVID-19 in last 6 days.<sup>9</sup>

[CDC](#) state COVID-19 is not currently spreading in the U.S. and the immediate health risk to the general American public is low.<sup>5</sup>

Note. To put COVID-19 into perspective, U.S. has had 14 COVID-19 cases and no deaths. When compared to the current flu season, [CDC estimates](#) U.S. has had 22,000,000 flu cases with 210,000 hospitalizations (11%) and 12,000 deaths (0.6% fatality).<sup>10</sup>

## Mode of Transmission

On current evidence, [CDC state](#) spread from person-to-person is most likely among close contacts (about 6 feet) mainly via respiratory *droplets* produced when an infected person coughs or sneezes.<sup>11</sup> These droplets can land in the mouths or noses of nearby people or possibly be inhaled into their lungs. The risk of transmission from touching a contaminated surface or object is currently unclear.<sup>11</sup>

## How “Infectious” is 2019-nCoV?

Infectivity is calculated mathematically and termed “R0” (“R-naught”) which is the number of new cases likely to occur from each case. WHO state [COVID-19 R0](#) is likely between 1.4-2.5,<sup>12</sup> and the upper limit is similar to the R0 of [3 for SARS](#),<sup>4</sup> but less infectious than the upper limit of [1.0-5.7 for MERS](#).<sup>13</sup> [By comparison](#) influenza is 1.3 (Seasonal) to 1.8 (Pandemic), and measles R0 is 12-18. At a current mortality rate of 2% or less, 2019-nCoV is considerably less fatal than [SARS \(11%\)](#),<sup>4</sup> and [MERS \(35%\)](#).<sup>3</sup>

## How can HCP protect themselves against 2019-nCoV?

Clear updated guidelines for healthcare professionals (HCP) protection are available at [WHO](#),<sup>15</sup> [OSHA](#)<sup>16</sup> and [CDC](#).<sup>12</sup> CDC advises that administrative rules and engineering controls, environmental hygiene, correct work practices, and appropriate use of personal protective equipment (PPE) are all necessary to prevent infections, and all HCP who enter the room of a patient with suspected or confirmed COVID-19 should adhere to Standard, Contact, and Airborne Precautions, which along with hand hygiene may include gloves, gowns, respiratory and eye protection.<sup>12</sup>

## How is 2019-nCoV waste handled?

[OSHA](#), [CDC](#) and [WHO](#) all state that waste from COVID-19 patients is handled as standard regulated medical waste (RMW).<sup>12,15,16</sup>

In their [2019-nCoV Infection Prevention Recommendations](#), CDC state, “*Management of...medical waste should also be performed in accordance with routine procedures*”,<sup>6</sup> and refers readers to the RMW chapter of their [2003 Environmental Infection Control Guidelines](#).<sup>17</sup>

For COVID-19 waste containment onsite, the RMW Guidelines state:

- A single, leak-resistant biohazard bag is usually adequate for containment of regulated medical wastes, provided the bag is sturdy and the waste can be discarded without contaminating the bag's exterior.
- Contamination or puncturing of the bag requires placement into a second biohazard bag.
- All bags should be securely closed for disposal.

For transport of COVID-19 waste offsite, the [US Dept of Transport RMW 49 CFR 49 173.134\(c\)](#) requires the above RMW plastic bags be contained in a rigid container,<sup>18</sup> and [49 CFR 172.101](#)<sup>19</sup> requires it be transported as “UN 3291 Regulated medical waste, n.o.s. or Clinical waste, unspecified, n.o.s. or (BIO) Medical waste, n.o.s., or Biomedical waste, n.o.s. or Medical waste, n.o.s.” (i.e. standard RMW transport packaging).

Note. [Specimens from suspect 2019-nCoV cases and cultures of 2019-nCoV](#) are Category B substances and must be packaged and transported as UN 3373 when sent offsite.<sup>20</sup>

## How is 2019-nCoV waste treated?

As 2019-nCoV waste is standard regulated medical waste, the RMW chapter of the CDC [2003 Environmental Infection Control Guidelines](#)<sup>17</sup> states:

- Regulated medical wastes are treated or decontaminated to reduce the microbial load in or on the waste and to render the by-products safe for further handling and disposal.
- The treatment need not render the waste “sterile”
- Treatment processes are licensed under each state's medical waste regulations and treatment methods may include autoclaving, incineration, chemical disinfection, grinding/shredding/disinfection methods, energy-based technologies (e.g., microwave or radiowave treatments), and disinfection/encapsulation method

## Can reusable sharps containers be used for 2019-nCoV wastes?

Yes. 2019-nCoV is classified as RMW and reusable sharps bins may be used provided the sharps container:

- Meets [OSHA Bloodborne Pathogen Standard 29 CFR 1910.1030](#) requirements.<sup>21</sup>
- Meets [FDA requirements for pre-market clearance](#).<sup>22</sup>
- Meets [USDOT 49 CFR 173.134\(c\)2\(x\)](#) requirements,<sup>23</sup> is transported in accord with [49 CFR 172.101](#)<sup>19</sup> and meets the USDOT additional requirements for reusable sharps containers stipulated in [49 CFR 173.197\(e\)\(3\)](#),<sup>24</sup> being:
  - (i) The [sharps](#) container is specifically [approved](#) and certified by the U.S. Food and Drug Administration as a medical device for reuse.
  - (ii) The [sharps](#) container must be permanently marked for reuse.
  - (iii) The [sharps](#) container must be disinfected prior to reuse by any means effective for the infectious substance the container previously contained.
  - (iv) The [sharps](#) container must have a capacity greater than 7.57 L (2 gallons) and not greater than 151.42 L (40 gallons) in volume.

Note 1. [WHO states](#) preliminary information suggests the virus may survive a few hours on surfaces and that simple disinfectants can kill the virus.<sup>26</sup>

Note 2. Reusable sharps bins are not “[patient equipment](#)” and decontamination before removing from COVID-19 patient room is not required (i.e. no special handling, labelling or procedures are required).

Note 3. Under [CDC 2019-nCoV Infection Prevention recommendations](#), all people entering patient rooms (e.g. to exchange reusable sharps containers) are required to wear PPE appropriate to the activity in the room as per facility protocols.<sup>6</sup>

## Can reusable RMW bins be used for COVID-19 wastes?

Yes. COVID-19 wastes are classified as RMW and reusable RMW bins may be used provided the bins meet the usual requirements i.e.:

- Meet [US Dept of Transport 49 CFR 49 173.134\(c\)](#) for rigid containers,<sup>23</sup> and are transported as UN 3291 in accord with [49 CFR 172.101](#).<sup>19</sup>
- Meet [state RMW requirements](#) for decontamination between uses.<sup>19</sup>

Information in the publication is current as at the time of writing. Daniels Health is continuing to monitor the situations and will publish updates on the following website: [www.danielshealth.com/coronavirus](http://www.danielshealth.com/coronavirus)

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