



# Transmission Mitigation Practices in Public Transportation July 16, 2020

## Background

Public transportation poses serious risks for the transmission of COVID-19. Public transit vehicles like buses and trains are shared by a considerable number of people every day. The enclosed space and crowds make vehicles and stations high-risk locations for transmission of the virus through the spread of respiratory droplets and contamination of high-touch surfaces.<sup>1</sup> Moreover, the long incubation period and a high proportion of asymptomatic infections also put drivers and passengers at risk of exposure without knowingly coming in contact with someone who has obvious symptoms of the disease.<sup>2</sup> As an example, New York City's complex subway system may have seeded transmission in the city.<sup>3</sup> Since the start of the pandemic, many transit workers have died from infection with COVID-19.

## Key Role for Public Transit

Most regions have not shut down public transit completely, as it plays a crucial role as an essential service. Public transportation provides means to get to essential workplaces, reach healthcare services, and purchase necessities, especially for those who

lack alternative transportation options. In the United States, around 2.8 million essential workers use public transportation.<sup>4</sup> Ridership statistics highlight equity issues: people who are black, Hispanic, immigrants, lower-income, and/or urban residents are more likely to use public transportation.<sup>5</sup> Many essential workers fit into one or more of these categories.<sup>6,7</sup> Ensuring safe and equitable transportation during the pandemic is crucial for reducing the spread of the disease within these groups and their communities.

## COVID-19 Practices Overview

This work identified the most frequently adopted public transportation policies in response to the pandemic from 20 countries/regions and 6 US cities. Criteria for selection included accessible information about public transportation policies and a prioritization of places that have had or currently have high COVID-19 death counts. The practices and typical regions were reviewed, subcategorized, and listed. This review of policies occurred in May of 2020, some may be updated over time.

Policies	Practices	Example regions
Limited travel	Shutdown of public transit	Wuhan (China), <sup>8</sup> India <sup>9</sup>
	Suspended service partly or at certain time	Italy, <sup>10</sup> Egypt <sup>11</sup>
	Limitation on passengers with a fever	Wuhan (China), <sup>12</sup> Taiwan <sup>13</sup>
Service adjustments	Reduction or cancellation service	Most regions
	Increasing peak-hour rides	Canada, <sup>14</sup> some US cities <sup>15,16</sup>
Cleaning procedures	Cleaning of vehicles and public areas daily	Most regions
	Disinfection of high-touch surfaces daily	Most regions
Applying personal protective equipment	Mandated masks for all passengers	Most regions
	Other personal protective equipment, including gloves for drivers	Most regions
	Hand sanitizer or wipes in public area	Most regions
Distancing practices	Limitation on passenger load	Most regions
	Adding social distancing markers at stations	New York City <sup>17</sup>
	Alternation of entries or exits	Germany, <sup>18</sup> United Kingdom, <sup>19</sup> some US cities <sup>20,21</sup>
	Contactless payment or free of fare	Canada, <sup>22</sup> some US cities <sup>23</sup>
Financial relief	Financial relief for transit workers	Singapore, <sup>24</sup> Belgium <sup>25</sup>
	Financial relief for transit companies	Hong Kong, <sup>26</sup> United States <sup>27,28</sup>

A review of protective measures in past outbreaks, including 2009 H1N1 and severe acute respiratory syndrome in 2003, also highlighted the potential value of masks, gloves, shields, sanitizer, cleaning procedures, and physical distancing.<sup>29-33</sup>

Public transportation practices should evolve with the progress of the pandemic, with a focus on providing safe and equitable services. Policymakers should assess potential needs and risks, develop guidelines to suit each transit system, evaluate the implementation, and make adjustments regularly.

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