

Public Transit Makes Me Sick

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June 18, 2020

The COVID-19 pandemic has knocked mass transit's sainted halo off kilter. The Center for Disease Control and Prevention (CDC), whose trademarked motto is "CDC 24/7: Saving Lives, Protecting People™", has decided that one way to save lives and protect people is to discourage them from using public transportation. Of course, they do not actually say "avoid public transportation," but their [webpage on returning to work](#) in a COVID-19 world suggests every form of commuting except public transportation.

This should not strike anybody as surprising. It is a lot easier to practice social distancing in a car alone than in a crowded bus or subway car. Nevertheless, the mere suggestion caused [conniptions among the car-haters](#). It is easy to see why this commonsensical policy in uncommon times would strike fear in those who promote blank-check subsidies for public transportation. It peels away the veneer of righteous superiority for mass transit and could lead to people asking, "hey, what about...?"

For "hey, what about efficiency, CO2 emissions, and a lot of other questions," Randal O'Toole at Cato [finds public transit systems continually flunk](#) big time. Public transit is less energy efficient than cars, has a higher CO2 impact (if you care), and is increasingly subsidized for the benefit of wealthier people.

It would also make sense to ask, "hey, what about other communicable diseases?" If public transportation is a risk factor for COVID-19, it would be odd if it were not also a risk factor for other diseases that have similar transmission mechanisms—droplets, aerosols, and touched surfaces.

How about tuberculosis? Marsh L. Feske, et al. [looked at bus transportation](#) and *Mycobacterium tuberculosis* (MTB). Uh oh, public transportation is a risk factor there. "[G]eospatial analysis of the well-defined Houston Tuberculosis Initiative (HTI) database identified an association between the use of city-bus transportation (inclusive of time onboard) and Tuberculosis (TB)... Individual bus routes, including one route servicing the local hospitals, were found to be risk factors for endemic MTB..."

What about the flu? Researchers studied the impact of public transit on flu and-influenza like illnesses (ILI) in multiple places.

First up is London. A [study by Lara Grosché and Anders Johansson](#) "shows a correlation between the use of public transport and the spread of ILI. Specifically, we show that passengers departing from boroughs with higher ILI rates have higher number of contacts when travelling on the underground. Moreover, by comparing our results with other demographic key factors, we are

able to discuss the role that the Underground plays in the spread of airborne infections in the English capital.”

Yosushi Ohkusa and Tamie Sugawara modeled pandemic flu transmission in the Tokyo area. In their paper they point out that train commuting speeds flu transmission. “On the other hand, in local cities, transportation by train, especially commuting, is not as common as it is in the Tokyo metropolitan area, so disease transmission is slower in local cities than in the Tokyo metropolitan area.”

Moving back to the U.S. there is a National Bureau of Economic Research working paper by Jeffrey E. Harris. His analysis finds “New York City’s multitentacled subway system was a major disseminator – if not the principal transmission vehicle – of coronavirus infection during the initial takeoff of the massive epidemic that became evident throughout the city during March 2020.”

Though Harris and the others provide evidence and models linking public transit to disease transmission, they do not quantify how much transmission is due to public transit.

A 2011 paper by Philip Cooley, et al., models the transmission of a flu with characteristics of the 1957-1958 pandemic on circa-2000 New York City transportation system. Though they dismiss the subway system as a major vector, in their conclusion they state, “Our results indicate that the high level of subway ridership in NYC can influence disease spread, but that interventions aimed at subway riders would provide very limited benefits on overall attack rates and epidemic peaks. Even a highly unlikely intervention targeting all subway riders that provided 100% effectiveness (or, alternatively, subway service was suspended without side effects) would only reduce the cumulative incidence by 12.5%.”

Whether Harris’s “major... if not principal” would be greater than Cooley et alia’s 12.5 percent we do not know for now. However, even 12.5 percent seems worthy of a label graver than “only.” For instance, if only 12.5 percent of the COVID-19 hospitalizations and deaths were due to the impact of the New York City subway system to date, it would still be a significant impact.

As of June 15, the official New York City COVID-19 website lists hospitalizations at 53,571 and confirmed deaths at 17,433. Twelve-and-one-half percent of those numbers is 6,696 and 2,179, which is greater than the COVID-19 death totals in most states.

That some project or activity has a risk is not necessarily a reason to kill the project or stop the activity completely. However, when weighing the costs and benefits of public transits systems, the cost of disease transmission does not get included. If it were, it could be significant.

One estimate of a single COVID hospital stay is \$73,000. For NYC subway system, that would add up to nearly \$500 million to date. The EPA’s recommended value of a statistical life (which is a standardized measure of willingness to accept risk and not the price anybody would place on their own life) is \$9.4 million. This risk-value of the lives lost to date would sum to more than \$20 billion. For perspective, the total operating costs of the NYC Metropolitan Transportation Authority was \$16.7 billion in 2019.

Though pandemics do not happen frequently, there are still other diseases that would be transmitted via the public transportation system. The nyc.gov website estimates that there are

2,000 influenza deaths per year in the city. A 12.5 percent share of those deaths would have a risk cost of about \$2.4 billion per year.

Mass transit is the bay leaf of energy policy stew. Every recipe requires it. Perhaps driven by a public perception of inherent goodness, public transportation subsidies and mandates are a part of virtually every green-energy recommendation. Research cited above would point to some offsetting inherent badness. The risk of disease transmission on public transportation has been recognized by the CDC. It is also recognized by travelers themselves as revealed in their decisions to shift away from public transit toward private cars during our current epidemic.