Thinking Aloud: Direct Contact

By Chuck Dinerstein, MD, MBA — October 26, 2020

This week, the CDC modified its definition of direct contact for COVID-19 from 15 continuous minutes to 15 accumulated minutes within a distance of six feet or less. Should we consider this change in definition as flip-flopping, "moving the goalposts," or something else?

The Incident

“…available data suggests that at least one of the asymptomatic IDPs transmitted SARS-CoV-2 during these brief encounters.”

The change was prompted by a Vermont correction officer, age 20, who came into contact with six “incarcerated or detained persons” (IDPs), prisoners who, while all initially asymptomatic, were found to be on routine screening positive for COVID-19 based on a PCR test. The officer had brief contacts with the prisoners the day before they were found to be positive and seven days before he became symptomatic himself and was subsequently COVID-19 positive by PCR. The officer indicated that his only two outside contacts were COVID-19 negative. The baseline incidence of COVID-19 infections in the county and facility is low, and he has not left the area for several weeks.

Contact tracing identified 22 incidents where the officer was within six feet of these six individuals for a cumulative time of 17 minutes. Those incidents include opening doors, observing prisoners,
delivering food and medications, and health and safety checks. During those intervals, the corrections officer wore a mask, gown, gloves, and eye protection; most of the time, the prisoners did not wear masks. Remember, they were, at this point, asymptomatic and undiagnosed.

The cumulative time was an estimate based upon the typical interactions and typical range of time involved with each activity. Seventeen minutes is a fuzzy number. Of the seven employees with 15 minutes of continuous contact, one developed COVID-19, for a rate of 14%. Of the thirteen employees with less than 15 minutes of constant contact, only the reported correctional officer was infected, for a rate of 7.6%

I hope we can all agree that the incident again demonstrates that masks and social distancing protect others, in this case, the majority of exposed correctional officers, from us, in this instance, the IDPs or prisoners. But do the facts support a change in the definition of direct contact to include cumulative rather than continuous exposure? The change in definition would be more trustworthy transparent if we had the data on the cumulative exposure of the other employees with less than 15 minutes of continuous contact. But more importantly, what does it mean for our behavior?

“The change by the Centers for Disease Control and Prevention is likely to have its biggest impact in schools, workplaces and other group settings where people are in contact with others for long periods of time.” Washington Post

Most of the media coverage that I have seen is even-handed in its reporting; the pull quote from the Washington Post is an exception. The CDC suggests that public health officials take these cumulative interactions into account “in correctional settings,” which, despite some of our experiences, do not include school or the workplace.

Direct or close contact is an “operational definition for contact tracing investigations,” it reflects a probability of exposure, not a dosage. Fifteen minutes, cumulative or continuous, within six feet does not guarantee exposure to COVID-19, nor does 5 minutes protect you. It is merely an estimate of the likelihood that you will be exposed to a sufficient amount of viral particles for you to become infected. As the CDC points out, “Additional factors to consider when defining close contact include proximity, the duration of exposure, whether the infected person has symptoms, whether the infected person was likely to generate respiratory aerosols, and environmental factors such as adequacy of ventilation and crowding.”

The changed definition allows track and trace to cast a wider net, identifying more individuals than previously. This change in the definition should not automatically limit our interactions with individuals to fifteen cumulative minutes. If direct contact was a dosage, then indeed, no matter how you gathered the minutes, your risk would be ever-increasing. But direct contact reflects the probability of independent events and that are not strictly additive. Vegas is built on that mathematical principle.

Las Vegas

The business model of casinos is to make money, which they do. Their income is based on the house-edge, the slight or not so slight advantage they have in the odds of your bet. The edge can
be minimal, as in craps (0.8%) or blackjack (0.5%), and very high as in the slot machines (17%).
Those numbers assume you are an expert player. But the reality is that we are not, and the longer
we play, the more likely the edge allows the house to win and us to lose. Despite his protective
gear, the correctional officer was in an environment where the asymptomatic, but infectious IDPs
were the high house-edge of COVID-19. Repeated contacts, just like repeated pulls of the slot
machine handle or push of its button, increase the chance of the house winning. That’s math. If
you want to have a better chance of beating the house, play blackjack. If you’re going to have less
of a risk of exposure to COVID-19, wear a mask, social distance, and expect the same from those
around you.

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