To Fight COVID-19, Do We Need To Socially Distance More Than Just Ourselves?

By Chuck Dinerstein, MD, MBA — August 10, 2020

Social distancing reduces the possibility of becoming infected with COVID-19. A new study suggests that social distancing also applies to facilities -- in this case -- nursing homes. But how can these particular facilities do that? Read on.

The study comes from a working paper of the National Bureau of Economic Research by authors from UCLA and Yale, seeking to understand how nursing home populations were particularly vulnerable. They found, as I had suggested in April [2] and May, [3] that CMS star ratings among many other variables bore no relationship to nursing home mortality. They point out that if a nursing home were completely shut off to the outside world, there would be no infections – the infections were brought, in large part, by the staff traveling from one to another facility – cross traffic. While secluding the occupants from their families was partially justifiable, nursing homes left the “barn door” wide open, so to speak, by not controlling their staff.

A bit of context. Nursing home populations fluctuate so that to avoid under and over staffing, staffing agencies are used to buffer day-to-day needs, introducing new personnel. In addition, the permanent staff that does much of the heavy lifting of daily care, nursing assistants have a median income of $29,000; so, they need to have more than one job to make ends meet. And this applies, to a lesser degree, to the registered nurses. Finally, there are medical transporters, clinicians, and
specialists, like dialysis technicians and respiratory therapists that come and go.

To look at the mobile members of facility staff, the researchers made use of cell-phone GPS data, looking at what numbers appear at multiple nursing homes. The smartphone data from six weeks, March 13th to April 23rd, was pared with specific nursing homes, their CMS data on the demographics of residents as well as their ratings, and COVID-19 deaths.

With all of the data in hand, they used the GPS data to describe a network of nursing homes, linked by those traveling staff members. They considered about 6,700 nursing homes across 23 states.

- Even with nursing home lockdowns, 7% of phones, and presumably the staff that owns them, traveled to more than one facility.
- Nursing homes are well connected; on average, each nursing home has staff at 14 other nursing homes. In states with smaller populations, the number of connections was lower; in well-populated states, the links were higher.
- Nursing homes with COVID-19 cases had 17.3 connections, nursing homes without cases, only 11.8. As those connections grew more robust, meaning there was more cross-traffic or sharing of staff, so did the number of COVID-19 cases
- The connections between the nursing homes were not always straightforward; a facility might have a large number of cases and be only connected to a few other sites. But those sites, in turn, could be highly connected and pass the virus on many-fold more than the originating facility. Much like the spread of sexually transmitted diseases, it is the connections of both parties that describe exposure.
- By their calculations, simply restricting nursing home staffing to one facility would reduce COVID-19 transmission by about 43%.
- While infections in nursing homes were indeed influenced by the susceptibility of their population’s demographics and co-morbidities, the movement of staff, not “traditional federal regulatory metrics of nursing home quality,” were critical to the spread of COVID-19.

So, in the sense that facilities, like nursing homes and the current worry du jour, schools, socially distance, by not having staff moving from one to another institution, COVID-19 infections will decrease. When staff travels to more than one site, because they are temporary workers buffering a chronically understaffed organization or when a 40-hour a week job is insufficient to cover their expenses, they may well bring along an unintended fellow traveler, COVID-19.

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