Engineering Contributions to Societal Safety in the Era of Covid-19

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I think there are five “pushes” in engineering advancement which have come about through society's encounter with Covid-19.

Obviously first is improved teleconferencing. That has the potential to be hugely productive, disease or no, by enabling people not to have to spend days "on the road".

Second, improved air hygiene in buildings, and building-hygiene altogether. I discussed this in detail yesterday with my dentist: what he does in his building (pretty sophisticated, similar to what is done in operating theatres) and what he thinks are the short-term and medium-term prospects of improvement (the logistics and economics of getting already-proven kit installed where it is not yet installed).

Third, how to minimise possible encounters with fomites, and implementing those social and physical measures, will reduce the prevalence of infectious diseases enormously. There are nominally trivial but important things, such as how to design communal opening/gripping devices which do not require hands to operate: for example, for fridges in food stores, for pushbuttons in lifts and on public transport, for "handrails" in public transport and in escalators in stores.

Fourth, there could/will be improvements in modelling airflow around everyday activities, so we know more about whose expirations we are encountering, in what densities, and when, and can design social protocols accordingly.

Fifth and finally, the technical design of airflow and air conditioning systems in buildings.

These aren't the most important engineering contributions to contemporary life. I would say the two most important are:

*) emissions reduction, and

*) elimination of global warming.

All of the above have shown themselves to be more important to society than the other engineering safety matters on which I have spent the last almost thirty years.