

**From:** Fauci, Anthony (NIH/NIAID) [E]  
**Sent:** Sun, 15 Mar 2020 18:33:06 +0000  
**To:** Eisinger, Robert (NIH/NIAID) [E]  
**Subject:** FW: Tools that may help you

Please handle.

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**From:** Landrigan, David (b) (6)  
**Sent:** Sunday, March 15, 2020 1:44 PM  
**To:** Fauci, Anthony (NIH/NIAID) [E] (b) (6); Fauci, Anthony (NIH/NIAID) [E]  
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**Subject:** Tools that may help you

Tony,

It has been about 20 years since you and I talked about SARS and my model that David Williams at WHO used. I didn't know if your old email still worked, so I'm using the directory listing by NIH in addition. I have some ideas to share with you about the use of tools in the current war on covid-19.

Your 'close the bars' statement is right on target with what I was writing when I heard you say it. It was a great illustration counterintuitive to what will work. You could have more correctly said keep the bars open only to those in their twenties and thirties. Five minutes later Mayor DeBlasio said everything is on the table including closing bars and restaurants! Below you will see me argue why there are better approaches and this total closure approach is the wrong move. Selective participation will work in our favor to blunt the curve! Total closure will not work and can work against us!

In a period of two weeks demand for medical treatment can go from 50% of hospital capacity to 200% due to disease progression and binomial expansion. You know the math and ideas, so there's no need to go into them. There is a need to closely consider how available tools are being used to mitigate an overwhelming of the health care system. I can tell you now that what needs to be done isn't being done and that the road we are on now will at most postpone crossing the threshold of 100% capacity. It will not achieve the desired result of distributing cases over a greater time period so that being overwhelmed is avoided.

Consider the curves:

The 'without protective measures' curve is the normal distribution as modeled by the binomial distribution. The 'with protective measures' distribution is what we want to achieve, although that would be foreign to an experimentalist. We don't want the number of cases to exceed capacity as indicated by the horizontal dotted line. If the 'protective measures' are social distancing, school closings, entertainment/sporting cancelations, restaurant closings, and hygiene and similar uniformly applied measures, the 'with' curve should have a shape similar to the 'without' curve, just shifted to the right, unless there is some unpartitioned factor interaction. The flattened curve WILL NOT RESULT because errors should be random and SAMENESS OF TREATMENT PRODUCES SAMENESS OF EFFECT. With UNIFORM application of measures the curve after application will still exceed a height showing the system capacity has been exceeded.