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Mr. Michael Swinwood
237 Argyle Ave
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Dear Mr. Swinwood,

I have read the affidavit of Dr. Matthew Hodge, dated May 14 2021. Although he does not directly address any element of my affidavit report, he does commit several of the mistakes I have previously outlined. I go through these mistakes below.

I. Optimal Policy Requires a Consideration of All Costs and Benefits.

1. The fundamental principle of optimal policy decisions is that all costs and benefits must be considered. There can be leeway on what methods are used to calculate costs and benefits, but there is no escaping the logic that consideration of only a partial list of costs and benefits, or worse a consideration of only costs *or* benefits, is guaranteed to lead to a wrong conclusion.

2. Throughout the past year multiple Covid-19 studies, media reports, and public health announcements have made this fundamental error, and the affidavit of Matthew Hodge provides yet another example.

3. Dr. Hodge almost starts down the right path in ¶7, where he notes that his opinions are informed by a "burden model." This model is not elaborated on, but from the paragraph he states "it is generally appropriate to implement more restrictive public health measures when an infectious disease imposes a higher burden." This paragraph suggests that Dr. Hodge may consider costs and benefits.

4. Unfortunately, this extremely vague expression is never supported in sufficient detail. Without knowledge of i) the levels of burden and restrictions, ii) the increase in costs of increased restrictions, and iii) the reduction in burden caused by increased restrictions, the claim of appropriate health measures does not logically follow. It is nothing more than an assertion.

5. The logic of Dr. Hodge's affidavit can be summarized as follows: i) Covid-19 causes two harms: increased mortality and hospital over-capacity; ii) Ontario has experienced increased mortality and hospital over-capacity; iii) restaurants contribute to Covid-19 harms; *Ergo,* restaurants should be closed down.

6. It should be plainly obvious that the conclusion does not follow. Consider the following argument: i) sudden impacts cause two harms: increased mortality and hospital over-capacity; ii) Ontario has experienced increased mortality and hospital over-capacity; iii) automobiles contribute to sudden impacts; *Ergo,* automobiles should be made illegal.

7. What is missing entirely from Dr. Hodge's affidavit is any attempt to measure *all* of the costs of restrictions against all of the benefits. His conclusion that "... in my opinion temporarily limiting restaurants to take-out service is a public health measure which contributes to reducing COVID-19 transmission and harms from COVID-19" completely ignores the costs of such an action. Therefore, whether Dr. Hodge's conclusion is true or false is irrelevant to the question of whether or not the restrictions on restaurants is appropriate or not.

8. By ignoring the costs of lockdown restrictions, the affidavit of Dr. Hodge is logically incoherent. However, I will also demonstrate other problems with Dr. Hodge's affidavit.

II. Failure To Provide Evidence.

9. In ¶8 Dr. Hodge states: "COVID-19 is a deadly infectious disease that has killed thousands of Ontarians and tens of thousands of Canadians to date." In making a claim about lethality, Dr. Hodge is stating something about a *death rate*, and presumably in comparison to some other type of disease. But Dr. Hodge does not discuss how Covid-19 relates to other diseases.

10. According to a research bulletin of the WHO from October 2020 that surveyed 74 seroprevalence studies across 51 locations, the median infection fatality rate (IFR) was 0.27%, and for people under 70 the median infection fatality rate was just 0.05% (Ioannidis, October 2020). The IFR for people under 70 is close to the average IFR for seasonal influenza. Dr. Hodge does not address the question of whether the burden of Covid-19 for those under 70 justifies a universal lockdown restriction.

11. Again, from ¶8 Dr. Hodge states: "Based on Ontario's COVID-19 experience,

4.8% of people with COVID-19 will require hospital-based care, typically oxygen at a minimum and often, ICU-level care." Note that Dr. Hodge doesn't state how many are actually in ICU, nor does he state what the actual hospital/ICU capacity is for Ontario. Knowing the total number of cases and deaths simply tells us nothing about hitting a capacity constraint on ICU beds.[1]

12. In ¶10 Dr. Hodge asserts that "VOCs are reported to be more transmissible and cause more severe illness ...." Neither his Exhibit "H" nor Exhibit "I" support this claim. Exhibit "J" states that there is evidence that the VOCs are more transmissible, but also states that "Our estimates of severity are uncertain and are consistent with anything from a moderate decrease to a moderate increase in severity." (p. 1). The lack of evidence for VOCs being more severe is supported by Davies *et al* (April 2021) who found that the B.1.1.7 VOC was more transmissible, but they "saw no clear evidence for a change in disease severity...."(p. 1). Even the latest CDC statement on VOCs only states that "These variants seem to spread more easily and quickly ...".[2] The claim of more severe illness is an assertion by Dr. Hodge, and one that is inconsistent with the actual evidence.

13. In ¶11 Dr. Hodge simply provides information on the number of cases in Ontario, and states that Ontario has the "lowest rate of hospital beds per 1000 population compared to the rest of Canada." No citation is given for this assertion, but the real question is "what is the actual capacity of hospital beds in Ontario and to what extent was it reached by Covid-19 patients?"

14. According to the Financial Accountability Office of Ontario, there are around 34,700 hospital beds in Ontario. In April the Covid hospitalizations reached 2360 according to Dr. Hodge. Whether this number of cases placed an undo threat on hospital capacity is something that Dr. Hodge should have demonstrated; however, it is clear that there literally was plenty of capacity to use. My point is mostly that this is simply another case where Dr. Hodge is not providing sufficient evidence to make any type of reasonable argument. The total number of cases, without any hospital capacity context, is quite meaningless.[3]

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[1] At the bottom of this paragraph he states that "The number of cumulative cases of Covid-19 in Ontario is likely higher than the number of recorded cases since some individuals who acquire Covid-19 are not tested and diagnosed." Of course, this *reduces* the lethalness of the disease.

[2] https://www.cdc.gov/coronavirus/2019-ncov/transmission/variant.html.

[3] Dr. Hodge also presents information inconsistent with his conclusion. At the end of ¶11

15. ¶13 repeats the earlier problems of only reporting total numbers and changes in these totals. There is nothing in this paragraph that addresses the problem of hospital over-capacity which is the burden that supposedly justifies lockdown restrictions.

16. ¶20 claims that the government of Ontario implemented a "bundle of public health measures" to "protect persons from mortality and morbidity from Covid-19 and to reduce the likelihood the acute care system is not overwhelmed." This is presented as fact, but is simply an assertion that has been refuted by data. In my affidavit I document the multitude of studies that show lockdowns have had virtually no effect on cumulative deaths. Section D. of Dr. Hodge's affidavit doesn't cite a single source for his claims. In his next section he also asserts that capacity limits are "grounded in the science" and yet again there is no "science" presented.[4]

II. Failure To Recognize Endogenous Behavior.

17. As I note in my affidavit, the most significant assumption made by epidemiologists is the assumption that behavior (and the measures of behavior) remain constant with respect to the virus. This assumption (essentially treating humans like inanimate objects) is what generates the wild counterfactual estimates of deaths and cases in typical epidemiology models.

18. We see this in ¶12 of Dr. Hodge's affidavit where he provides a little bit of analysis. He's speculating on what might happen to the number of future cases in the near future. He states "Applying the 4.8% hospitalization rate ...." Why would he assume this is the hospitalization rate? Ontario is vaccinating approximately 150,000 people per day. People in Ontario are also well aware of the third wave and, based on the research cited in my affidavit, the people of Ontario will voluntarily take appropriate precautions. To use a hospitalization rate that includes the cases from last spring is inappropriate and misleading.

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he states that "Ontario's response to the need for COVID hospitalization has involved moving substantial numbers of patients from the hospital to which they presented to one with an available bed, often far from their community." This is *exactly* what should be done. A hospital system's capacity is not fixed as many proponents of lockdowns assume. Hospital capacity can be increased by moving patients to new locations, shifting other patients across time, creating field hospitals, and hiring new positions, equipment, and locations.

[4] In reading the Hodge affidavit I was struck by the number of qualifiers (e.g., "may increase risks ...") and casual inferences (e.g., "It seems reasonable ..."), which seemed incongruent with the general "science" rhetorical assertions.

19. In section C. of Dr. Hodge's affidavit he considers risk factors for Covid-19 transmission which relies mostly on documents written early in the pandemic. As a result, he ignores (or is unaware) of the work showing that a critical change in behavior took place over the past year in *places of employment.* Mulligan (April 2021) shows that places of employment quickly adopted safety procedures to control the spread of Covid-19, making them *safer* on average than private homes. Thus, stay-at-home orders often increased transmission rates.

III. Non-Sequiturs

20. In ¶14 Dr. Hodge demonstrates a peculiar logic. He opens the paragraph with:

> Even if the incidence of new COVID-19 infections continues to decline, as is projected, hundreds of more people will require hospitalization in addition to those already hospitalized.

Dr. Hodge fails to recognize that people also *leave* hospitals, and open up beds. As infections fall, hospitalizations fall. His notion that hospitals are like the Hotel California (You can check-out any time you like, But you can never leave!) leads him to this conclusion:

> A health system in which every available bed is occupied by someone infected with COVID-19 has no way to respond to people with heart attacks, hip fractures or strokes, adding to the elevated mortality attributable to COVID-19.

21. Dr. Hodge seems to think that having every one of the 34,700 hospital beds in Ontario filled with Covid-19 patients is a likely reality in the next few weeks.[5]

IV. Misrepresenting Excess Deaths

22. In ¶15 Dr. Hodge references the March 2021 Statistics Canada news release on excess deaths for 2020. He correctly states that excess deaths were up by 5% over 2019, but fails to note that 2019 was a light influenza year and had a lower mortality than 2018. According to Statistics Canada, Table 13-10-0392-01 (see references), Canada's mortality per 100,000 population was 766.4 in 2018 and

[5] The last sentence in this paragraph is ironic. He notes that a hospital system filled with Covid-19 patients, leading to preventable deaths due to heart attacks, etc. should be considered another harm of Covid-19. Of course, the government created fear over Covid-19 infections in 2020 caused many people to avoid hospitals, and likely led to this very sort of preventable death.

756.5 in 2019. Using total deaths in 2020 from Dr. Hodge's Exhibit "N" the mortality rate in 2020 was 785.25. Using 2018 as a base year, the 2020 mortality is only 2.4% higher.

23. However, Dr. Hodge misrepresents the facts from Exhibit "N" further. He notes that in the fall of 2020 excess deaths among those over 65 declined and excess deaths among younger Canadians increased (true), but then states this "correspond[ed] to higher rates of infection among younger people." The implication being that younger Canadians were dying of Covid-19. Such an inference is wrong for two reasons.

24. First, the excess mortality numbers Dr. Hodge is referring to are for all cause mortality. Specific causes of death cannot be inferred from the numbers he is using. Second, Exhibit "N" explicitly states otherwise. Consider the following taken from Exhibit "N":

> As these shifts imply an increase in deaths not directly caused by COVID-19, it is important to note that some deaths may be due to the indirect consequences of the pandemic, which could include increases in mortality due to overdoses. For example, in British Columbia, the Chief Coroner's Office has reported increases in deaths due to overdoses since the start of the pandemic. Similarly, Alberta Health Services reported decreases in both the provision and use of substance use treatment programs as well as increases in opioid-related emergency responses and deaths since the onset of the pandemic. ... Based on data received to date, from March to June, the number of deaths from certain causes rose in several provinces compared with the same period in previous years. For example, the number of deaths caused by heart disease in Ontario rose from 4,125 in the spring of 2019 to 4,345 in 5/12/2021 The Daily ? Provisional death counts and excess mortality, January to December 2020 the spring of 2020, which was higher than in the spring of any of the previous five years. While overdose deaths across Canada appeared to decline in 2019 from highs in 2017 and 2018, there are early signs of an increase in 2020. For example, Alberta reported 220 deaths caused by overdoses from March to June 2020, compared with 170 overdose deaths during same time period in 2019. This could be an early indication of the indirect impacts of the pandemic, in advance of the period when excess mortality started to trend among younger age groups.

25. Figure 1 shows the excess deaths in Canada over 2020 as reported by Statistics Canada. The red lines indicated the 95% confidence bound, and so any time the dark blue line leaves this bound there is a statistical excess death. The bulk of Canada's excess deaths came in April and May of 2020, and these deaths were concentrated among the elderly. It was not until November that excess

deaths returned, and many younger people were in these deaths. It has been documented around the world that the daily public health announcements and lockdowns have created a sense of fear, and that this fear prevented many from seeking out medical help when needed (e.g., Mulligan December 2020). Indeed, last spring hospitals across the country postponed regular surgeries to ensure hospital capacity would be available for the hundreds of thousands of predicted Covid-19 cases that never realized. The excess deaths that Dr. Hodge refers to then in the fall of 2020, are not evidence of how lethal the virus was, but rather they are evidence of how lethal lockdown restrictions were.

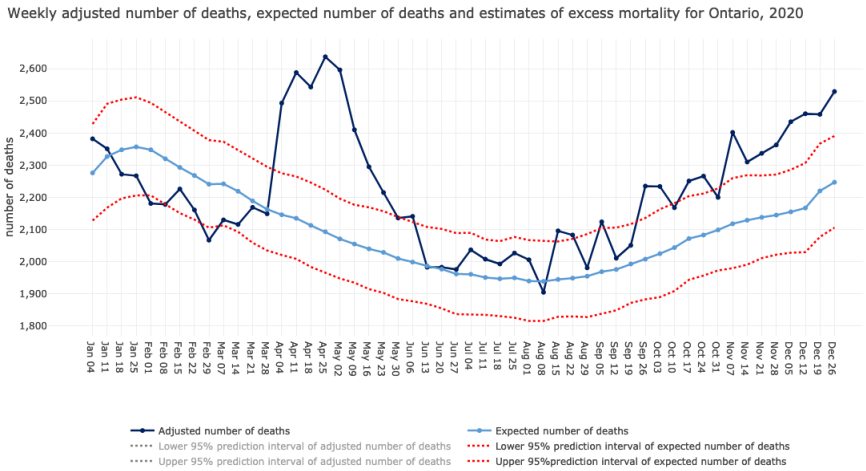

Figure 1: Excess Deaths in Canada Over 2020

26. Rather than acknowledge the source of these excess deaths, Dr. Hodge attributes them to "the pandemic in limiting health service provision and/or changing how people access services." However, nowhere in Canada has hospital capacity been reached, and certainly Dr. Hodge provides no evidence to show that this was the case.

27. ¶15 closes with another example of hyperbole substituting for analysis and evidence. Dr. Hodge notes that the increase in mortality "is the equivalent of 2 fully-booked Montreal-Toronto flights crashing with no survivors every week for a year. Such an unprecedented increase in mortality ...". In a country with close to 38 million people, the equivalent of 40 fully-booked flights a week crash. That's a sad reality of life, but it is hardly unprecedented. Canada has experienced a falling mortality rate for over 100 years. One only has to go back

to 1963 (and every year prior) to have a mortality rate equal to 2020.[6]

IV. Conclusion

28. Dr. Hodge's affidavit is an exemplar of how public health officials have argued over the past year with respect to Covid-19 and the efficacy of lockdowns. Despite the scientific rhetorical style, actual relevant evidence is lacking and replaced with assertions, illogical arguments are used, and a consideration of all costs and all benefits is missing. Dr. Hodge not only does not consider all costs and benefits, but he actually provided almost no meaningful evidence of costs *or* benefits to make a case for lockdown restrictions.

Douglas W. Allen

May 16, 2021

Date

[6] https://www150.statcan.gc.ca/n1/en/pub/11-516-x/pdf/5500093-eng.pdf?st=_EIGN7XV

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