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**16 POSSIBLE FACTORS FOR
SWEDEN'S HIGH COVID DEATH RATE
AMONG THE NORDICS**

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16 Possible Factors for Sweden's High Covid Death Rate among the Nordics

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Abstract: What accounts for Sweden's high Covid death rate among the Nordics? One factor could be Sweden's lighter lockdown. But we suggest 15 other possible factors. Most significant are: (1) the "dry-tinder" situation in Sweden (we suggest that this crystal-clear factor alone accounts for 25 to 50% of Sweden's Covid death toll); (2) Stockholm's larger population; (3) Sweden's higher immigrant population; (4) in Sweden immigrants probably more often work in the elderly care system; (5) Sweden has a greater proportion of people in elderly care; (6) Stockholm's "sport-break" was a week later than the other three capital cities; (7) Stockholm's system of elderly care collects especially vulnerable people in nursing homes; (8) Stockholmers might travel more to the Alpine regions. Other possible factors are: (9) the Swedish elderly and health care system may have done less to try to cure elderly Covid patients; (10) Sweden may have been relatively understocked in protective equipment and sanitizers; (11) Sweden may have been slower to separate Covid patients in nursing homes; (12) Sweden may have been slower to implement staff testing and changes in protocols and equipment; (13) Sweden elderly care workers may have done more cross-facility work; (14) Sweden might have larger nursing homes; (15) Sweden might be quicker to count a death "a Covid death." We give evidence for these other 15 possible factors. It is plausible that Sweden's lighter lockdown accounts for but a small part of Sweden's higher Covid death rate.

Keywords: Coronavirus, pandemic, lockdown, elderly care, nursing home.

JEL codes: I18, I38, H4

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16 Possible Factors for Sweden's High Covid Death Rate among the Nordics

An [article](#) (07-07-20) in the *New York Times* is titled, “Sweden Has Become the World’s Cautionary Tale.” The subhead says: “Its decision to carry on in the face of the pandemic *has yielded* a surge of deaths without sparing its economy from damage — a red flag as the United States and Britain move to lift lockdowns” (emphasis added). A similar [article](#) in the *Financial Times* is titled: “A Very Swedish Sort of Failure.” And *Project Syndicate* [published](#) “The Grim Truth about the ‘Swedish Model,’” which says that whether Sweden’s low-scale lockdown “speaks to a unique strength of Swedish society, as opposed to bad judgment, can be determined by comparing Sweden’s COVID-19 rate with its neighbors.” In the future more journalists and researchers will point to Sweden’s high Covid death rate among the Nordics and implicate Sweden’s lighter lockdown.

The implication has a certain plausibility: Lockdowns reduce social interaction, resulting in less acquisition and transmission, and fewer Covid deaths.

We believe, however, that lighter-lockdown — Sweden’s relative refraining from *restricting liberties and closing in-person government services* — does not greatly account for Sweden’s high Covid death rate among the Nordics. We suggest that in a complete causal account, the lighter-lockdown counts for less than, oh, say, 25 percent. Put differently, we believe that if Sweden (SE) had done what Denmark (DK), Norway (NO), or Finland (FI) did, in terms of the measures and timing of their lockdown measures, Sweden’s Covid death rate (as of 10 August 2020, say) would be at least 75 percent of the actual. Heavy lockdown, as done in DK/NO/FI, would not have prevented the outsized Covid death rate in Sweden.

The Latin expression *post hoc ergo propter hoc* means “after this, therefore because of this.” The cited *New York Times* and *Financial Times* articles reason in that fashion. Such reasoning would be justified if we felt confident that the “*hoc*” that happened in Sweden was the only thing different about Sweden. Another Latin expression is *ceteris paribus*, meaning “other things equal.” Superficially, Sweden might be thought of as otherwise just like Denmark, Norway, or Finland — after all, aren’t the Nordics all the same? But in reality, Sweden is not otherwise just like any of those other countries.

To address the question of what some other causal factors might be, we pondered Nordic experience, focused on Sweden, reading widely but also talking to friends and fellow researchers, bona fide creatures of Nordic affairs. Throughout the Scandinavian Spring and Summer of 2020, the question “So, why the high death rate in Sweden?,” has been a familiar topic of conversation, and friends and research associates have floated different insights and hypotheses. Our exploration has led us to suggest 15 other possible causal factors. Many of the

ideas are clearly real and important, most notably the “dry-tinder” factor. But that is not the only other important causal factor. The 15 other factors are enumerated at the end of the paper, with asterisks (*, **) showing our assessment of significance.

Our orientation and framing of the exploration

From the onset of Covid, we have been highly skeptical of lockdown measures. That’s not to say that we would oppose any restriction; but our broad sensibilities are (classical) liberal. We applaud and admire Sweden for bucking the international consensus toward lockdowns and facemasks. By the time of this writing (mid-August 2020) it had become altogether clear to us that Sweden was right not to lockdown more than they did (though perhaps excepting some specific targeted measures or timing thereof).

Most of those whose death was recorded as a Covid death have been old and frail. Those who had been in Stockholm nursing homes had a life-remaining median somewhere in the range of 5 to 9 months ([Stern and Klein 2020](#), 17). The policy response and judgment of success must be held in proper perspective.

Lockdown measures damage the human spirit and the moral and political fabric of society. Ronald Coase told us to be responsible to “[the total effect](#).” Instead of single-minded focus on one or two facets of the decision, everything must be put into the scale. Numerous writings have described the heavy costs of lockdowns ([1](#), [2](#), [3](#), [4](#), [5](#)). Lockdown harms in ways other than does the disease, but harms all the same, and harms children the most ([Robertson et al. 2020](#)).

But we do not think that locking down would have shrunk Sweden’s Covid death rate by very much. If we can persuade the reader of that, we might be closer to persuading the reader that heavy lockdowns were bad policy.

The causal relation between lockdown and the Covid death rate is a question that extends beyond the Nordic region, and different commentators have advanced different opinions about it. One of us has completed [a statistical study](#) of the 24 countries covered by [Eurostat](#), on the relationship between severity of lockdown and Covid death rates, and finds no evidence of a relationship. Likewise, [The Lancet](#) recently published a paper finding no effect of lockdowns. In this paper, however, we do not make much use of the broader learning about the causal relation between lockdown and the Covid death rate. We explore SE versus DK/NO/FI. The spirit of our exploration is to show that there is good reason *not* to pin the death-rate differential chiefly on lockdown policy.

In comparing SE and DK/NO/FI, there are two sorts of counterfactuals that one might employ. One would be: Suppose that DK/NO/FI had enacted a Swedish style lighter-lockdown: Would their Covid death rates have been a lot higher? The other counterfactual is the one we pursue: Suppose that Sweden had enacted the somewhat heavier lockdowns of DK/NO/FI:

Would its death rate have been a lot lower? We employ that one because it limits the would-have-beens to Sweden.

We have said that in comparing SE and DK/NO/FI, the *ceteris paribus* assumption does not hold. An adversary might readily admit that, but reply with a different rationale for reasoning in the fashion of *post hoc ergo propter hoc*. For instance:

“Your exploration has generated 15 other possible factors for Sweden’s high Covid death rate. But one could also generate 15 possible factors that drove it *down*, relative to the other countries. There are a slew of factors going in one direction, and a slew of factors going in the other direction. Why shouldn’t we figure that all those other factors roughly balance out, and so put a large weight on the lockdown factor?”

That the other factors should balance out is hardly assured, so any such inference would be made under a great cloud of uncertainty. Secondly, the wider international comparison—think of Belgium, Italy, Spain, UK—indicates that one cannot chalk it up principally to lockdown (e.g., again [Bjørnskov 2020](#)). Broad heuristic reasoning strongly suggests that the *other* factors must be tipped against Sweden—even if the reader will disagree with us as to the causal weight of light-lockdown.

We exclude Iceland. The population of Sweden is 28 times that of Iceland. Furthermore, Iceland is an island, a remote one at that. For the same reason we exclude the Faroe Islands and Greenland, which are also Nordic.

Statistics about the four countries and their capital cities

If you have ever traveled on Scandinavian Airlines (SAS) and connected in Copenhagen, you might have gotten the impression that Copenhagen is the most prominent Scandinavian city.

Danes and Swedes have for centuries rivaled one another. But dibs to the most prominent Scandinavian city should go to Stockholm. Perhaps SAS’s largest hub developed in Copenhagen for other reasons, including positioning, as Kastrup airport is about 550 km southwest of Arlanda.

	Population (Jan 1, 2020)	Covid deaths (3Aug20)	Covid death rate (per 100,000)
Sweden	10,348,730 (SCB)	5,744 (FHM)	55.5
Denmark	5,822,763 (Danmarks Statistik)	616 (Danish Health Authority)	10.58
Norway	5,367,580 (Statistisk Sentralbyrå)	256 (FHI Norge)	4.77

Finland	5,525,748 (Statistics Finland)	329 (THL)	5.95
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Table 1: The four Nordic countries and Covid.

Epidemics are regional in nature. Stockholm county (*län*) accounts for 41.5 percent of the Swedish Covid deaths ([3Aug20](#)). Many of the points in this paper focus on Stockholm (city or county). Table 2 provides information about the four capital cities – each of which is the nation’s largest city. The table provides three different measures of the larger metropolitan region.

	City-proper Population	Metro area I* (million)	Metro area II* (million)	Metro area III* (million)
Stockholm	975,904	2.38	2.34	1.44
Copenhagen	794,128	1.85	2.05	1.32
Oslo	694,657	1.17	1.31	0.81
Helsinki	650,058	1.19	1.67	1.28

Table 2: The four Nordic capitals.

Note *: Measure I is municipalities included in the greater metropolitan regions correspond to the standard treatment of that nation’s statistical agency: [Finland: ‘Huvudstadsregionen’/‘Pääkaupunkiseutu’ (Helsinki, Espoo, Vantaa, Kauniainen); Sweden: Stockholms *län*; Denmark: Region ‘Hovedstaden’ (Byen København, København Omegn, Nordsjælland, Bornholm); Norway: ‘Tettstedet Oslo’ (Oslo, Bærum, Asker, Lillestrøm, Lørenskog, Nordre Follo, Nittedal, Lier, Rælingen)]. Measure II is Metro Area 2019 from [Eurostat](#); Measure III is Wendell Cox’s 2019 “[built-up urban area](#)” measure.

By any of the measures, Stockholm is clearly largest. Moreover, its Covid death rate is four or five times that of Copenhagen’s (depending on which column one uses), and much higher than those of Oslo and Helsinki.¹

Public transportation utilization is a pathway for transmitting Covid. Here we compare ridership of the Stockholm metro (*tunnelbanan*) with those of Copenhagen, Oslo, and Helsinki:

Stockholm metro annual ridership (2017):	353 million (Wikipedia)
Copenhagen metro annual ridership (2019):	79 million (Wikipedia)
Oslo metro annual ridership (2018):	118 million (Wikipedia)
Helsinki metro annual ridership (2015):	63 million (Wikipedia)

¹ As of August 25, 2372 people (100 per 100,000 inhabitants) have died with Covid-19 in Stockholms län. The corresponding number for the Copenhagen Region by the same date was 363 deaths (20 per 100,000 inhabitants).

If one compares [a map](#) of Stockholm's entire rail system with like maps for the other cities ([Copenhagen](#), [Oslo](#), [Helsinki](#)), one will notice that the Stockholm system is more elaborate and extensive.

Lockdown: Reason #1

The first of 16 reasons is lockdown: Sweden's light-lockdown is one possible factor in explaining the country's high Covid death rate among the Nordics.

An index of government response stringency, the Oxford COVID-19 Government Response Tracker, was created and updated by a large research team at Oxford University.² The data-gathering and visualization site [Our World in Data](#) provides the following graph for the Nordic countries:

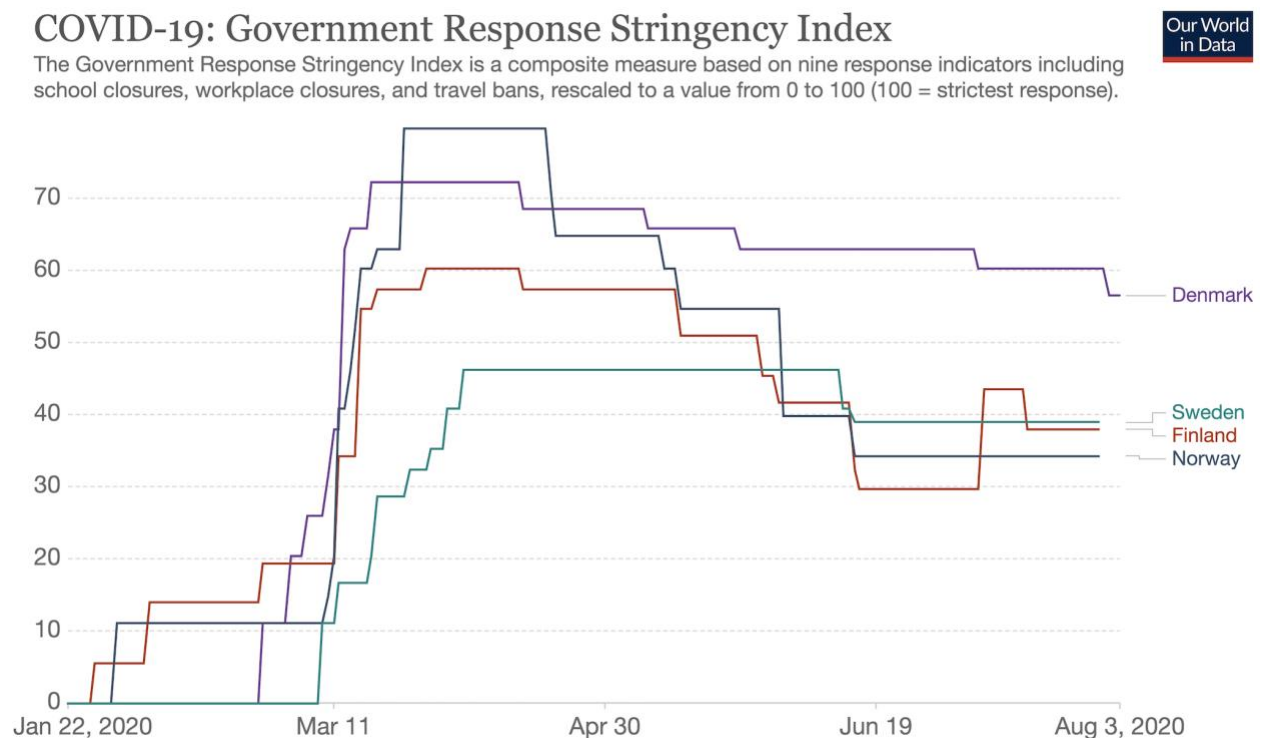


Figure 1. Government response stringency index.

Source: Oxford COVID-19 Government Response Tracker (OxCGRT) via [Our World in Data](#).

In the other three countries, significant lockdown enhancements occur through March 24. Here, we frame our counterfactual by focusing on a single day. We chose March 12. On that day, Sweden had a OxCGRT score of 16.67. On April 4 its score went to 46.30 and leveled off until mid-June. Noticeably, the other Nordic countries enacted stricter policies than Sweden did, and somewhat earlier.

² <https://www.bsg.ox.ac.uk/research/research-projects/coronavirus-government-response-tracker>
Hale et al (2020)

Throughout Europe – apart from Italy, which acted earlier – the days around March 12 were the days of lockdown. Even in the countries where the virus was most advanced, such as Spain, Netherlands, and Belgium, heavy lockdown [came](#) only around March 12 and thereafter, as countries copied each other’s policies regardless of their virus and mortality development (Sebhatu et al. 2020).

The counterfactual we suggest is the following: Suppose that from **March 12** Sweden had jumped to patterns like the other three countries from March 12—thus significantly greater stringency after March 12.

What constitutes such “stringency”? What are the practical differences between Sweden’s lockdown policy and that of the other three Nordic countries? The principal lockdown measures of each country are summarized in the following textboxes.

Sweden’s notable lockdown measures:

- Feb 24: travel advice, be careful ([FHM](#))³
- March 6: FHM + State Department (UD) [recommend](#) against traveling to northern Italy⁴
- March 11: FHM (Advise) + Gov mandates⁵ = No gatherings above 500 people⁶
- March 16 (Advise): elderly, above 70, should limit contacts with others⁷
- March 17 (Advise): High schools + Universities do lectures online⁸
- March 24 (FHM mandate): stricter policies at bars and restaurants⁹
- March 27 (Gov mandate): limit gatherings to 50 people¹⁰

Denmark’s notable lockdown measures:

- Feb 27 (Advise): virus information for passengers from China¹¹; first case reported.¹²

³ <https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/februari/information-till-resenarer-om-det-nya-coronaviruset/>

⁴ <https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/mars/folkhalsomyndigheten-har-rekommenderat-avradan-fran-resor-till-norra-italien/>

⁵ <https://www.regeringen.se/artiklar/2020/03/forordning-om-forbud-mot-att-halla-allman-sammankomster-och-offentliga-tillstallningar/>

⁶ <https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/mars/forslag-inga-allman-sammankomster-med-fler-an-500-personer/>

⁷ <https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/mars/personer-over-70-bor-begransa-sociala-kontakter-tills-vidare/>

⁸ <https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/mars/laerosaten-och-gymnasieskolor-uppmanas-nu-att-bedriva-distansundervisning/>

⁹ <https://www.folkhalsomyndigheten.se/nyheter-och-press/nyhetsarkiv/2020/mars/nya-regler-for-restauranger-och-krogar/>

¹⁰ <https://www.regeringen.se/artiklar/2020/03/forbud-mot-allman-sammankomster-eller-offentliga-tillstallningar-med-fler-an-50-deltagare/>

¹¹ <https://www.sst.dk/da/Nyheder/2020/Rejsende-til-danske-lufthavne-faar-information-om-ny-coronavirus-COVID-19>

¹² https://www.sst.dk/da/Nyheder/2020/Foerste-dansker-med-COVID-19-har-det-godt_-og-er-i-hjemmeisolation

- March 3: If you return from certain zones, you must self-isolate for two weeks.¹³
- March 11: (Gov mandate): Schools close; museums and libraries; public servants not doing critical functions
- March 11: (Advise): private sector work from home + stricter visitations to elderly
- March 13: All schools, kindergartens and universities close, all non-essential public employees are sent home, no gatherings above 100 people, people are required to keep a distance of two meters in public¹⁴
- March 14: foreigners may not enter (w/o valid documentation)¹⁵
- March 18: Restaurants, malls, hairdressers etc all close; gatherings of max 10 people.¹⁶

Norway's notable lockdown measures:

- Jan 31: centralized report of cases mandatory (special gov agency)¹⁷
- March 4: school children feeling ill no longer need documentation from doctors
- March 10: Advise not to use public transport,¹⁸ events with above 500 participants are cancelled.
- March 12: (Gov mandate): close schools, kindergartens and universities (child care still available for critical professions: defense, police, insurance, pharmacy etc)
- March 12: closing gyms, swimming pools, athletic events, bars and restaurants may only open to serve food and must keep 1m+ distance¹⁹
- March 12: health care workers may not go abroad.
- March 14: (Gov mandate/advise): Utenriksdepartementet (State dept) advise against all travel abroad.²⁰
- March 15: self-quarantine for anyone arriving from abroad
- March 17: quarantine extended to those travelling from Finland/Sweden

Finland's notable lockdown measures:

- March 2: gatherings above 500 banned²¹
- March 12: self-quarantine if returning from high risk area and advice against foreign travel²²

¹³ <https://www.sst.dk/da/Nyheder/2020/Nye-anbefalinger-fra-Sundhedsstyrelsen-om-at-blive-hjemme-i-to-uger>

¹⁴ https://www.stm.dk/_p_14930.html

¹⁵ <https://www.oresunddirekt.se/se/nyheter/de-danska-granserna-stangs-paa-grund-av-coronavirus-covid-19>

¹⁶ <https://politi.dk/coronavirus-i-danmark/seneste-nyt-fra-myndighederne/foerste-trin-i-kontrolleret-genaabning-af-det-danske-samfund>

¹⁷ <https://www.regjeringen.no/no/aktuelt/koronavirus-blir-meldepliktig-sykdom/id2688415/>

¹⁸ <https://www.helsedirektoratet.no/nyheter/anbefaler-tiltak-for-a-redusere-antall-reisende-i-rush-tiden>

¹⁹ <https://www.helsedirektoratet.no/nyheter/helsedirektoratet-har-vedtatt-omfattende-tiltak-for-a-hindre-spredning-av-covid-19>

²⁰ https://www.regjeringen.no/no/aktuelt/alle_reiser/id2693564/

²¹ <https://www.vasabladet.fi/Artikel/Visa/354173>

²² <https://valtioneuvosto.fi/sv/-/10616/hallitus-paatti-suosituksista-koronaviruksen-leviamisen-hillitsemiseksi>

- March 14: State dept advise against *all* foreign travel²³
- March 17: max 10 people gathering²⁴ and schools close, universities move to online learning ²⁵
- March 22: only cross-border workers in certain regions allowed to enter country.

The chief lockdown measures of DK/NO/FI came between March 12 and March 16. Now we turn to question of the virus's prevalence in Sweden on March 12.

On March 12 the virus was far more widespread in Sweden

In a report based on cases with symptom onset from March 21-30, Folkhälsomyndigheten (FHM) [provides](#) (p. 26) the following figure:

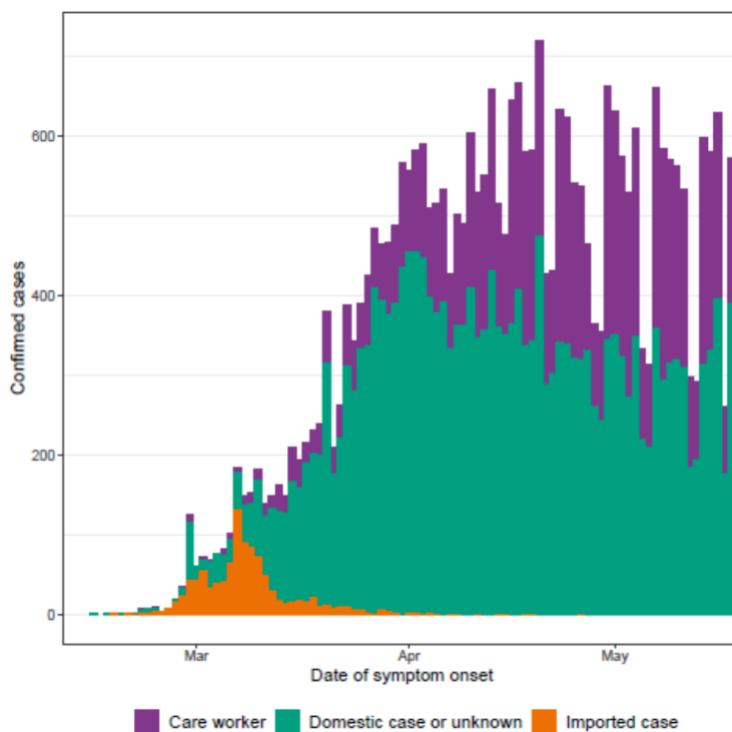


Figure 2: Epidemic trajectory by case type in Sweden

Source: [FHM](#), p. 26.

²³ <https://valtioneuvosto.fi/sv/-/ulkoministerio-ala-matkusta-ulkomailla-2>

²⁴ <https://valtioneuvosto.fi/sv/-/1410869/suomen-rajaliikennetta-aletaan-rajoittaa-elakkeella-olevia-rajavartijoita-japoliiseja-voidaan-kutsua-toihin>

²⁵ <https://www.helsinkitimes.fi/finland/finland-news/domestic/17445-finland-declares-emergency-conditions-over-coronavirus-daily-lives-of-all-to-change.html>

The figure indicates that the majority of the cases showing symptoms up to March 12 were “imported,” or from exposure abroad.

According to the FHM [report](#) (p. 29), the mean number of days between onset of symptoms and death is 12 days. Meanwhile, the number of days from exposure to onset of symptoms “is commonly around five to six days but can range from 1-14 days,” [according](#) to WHO. As a short-hand, we use **18 days** as the mean number of days from exposure to death.

We speak of March 12 simply because that is the median date of the chief lockdown measures of DK/NO/FI. Remember, the counterfactual is: Suppose SE did what DK/NO/FI did, and when they did it.

It is not possible for actions taken on March 12 to undo the past, including infections that *had already happened*. Our decisions can alter the future, but not the past.

Data shows that as of March 12 the virus was much more pervasive in Sweden than in DK/NO/FI. It is conceivable that healthcare access or treatment are better in DK/NO/FI, but we find no grounds for thinking that. The following figure was created at [Euromomo](#), a statistical tool for monitoring European mortality, and it was inspired by a Twitter [thread](#) by author and sport scientist Jacob Gudiol:

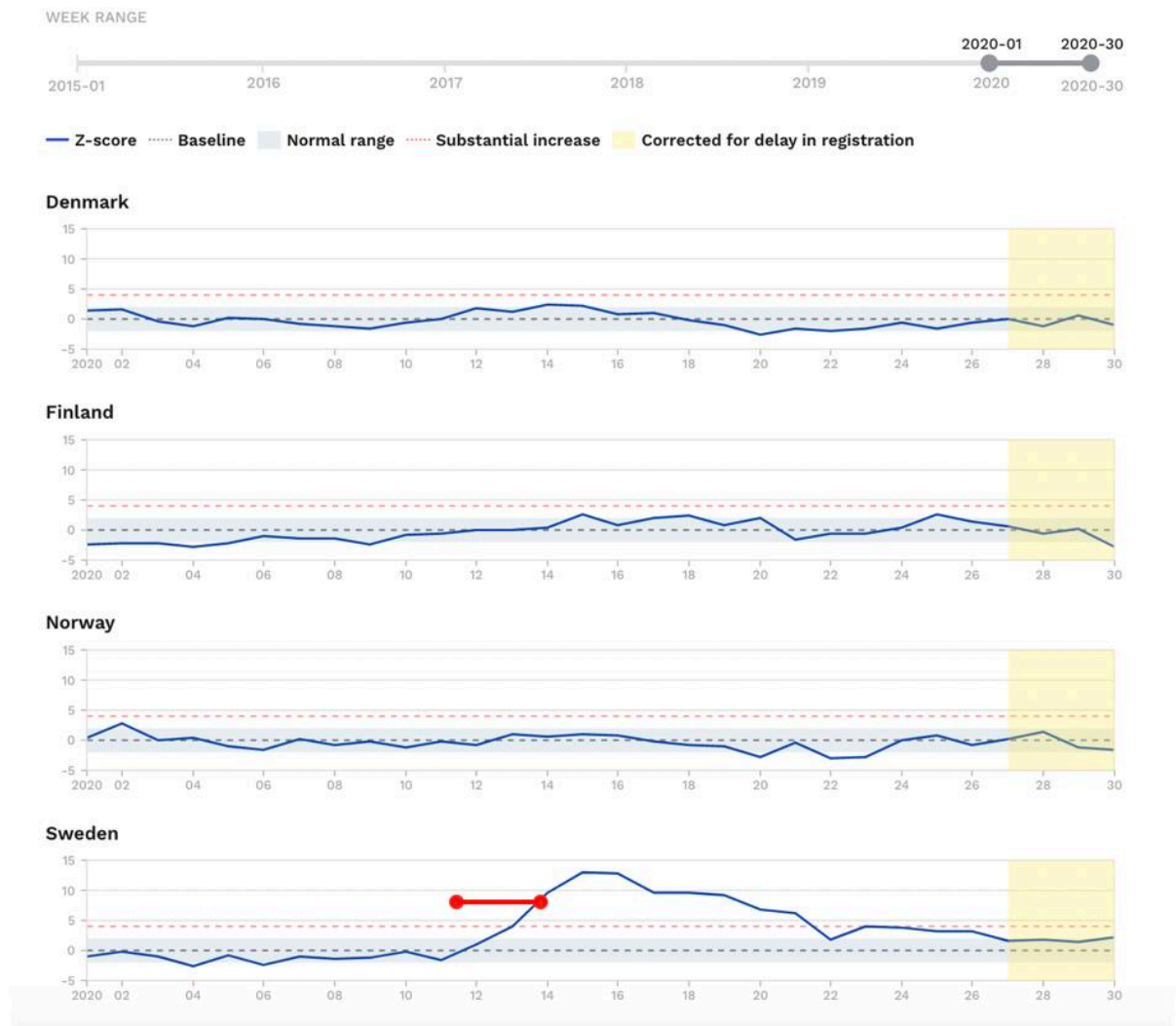


Figure 3: Z-scores for all-cause deaths.

Source: [Euromomo](https://euromomo.ec.europa.eu/momo/index.do)

The horizontal axes show weeks of 2020. Week 12 began on Monday March 16, so our date for the counterfactual, Thursday March 12, came in the middle of Week 11. The red bar in the Sweden panel spans 18 days, and starts on March 12 (thus, running from March 12 to March 30).

On the vertical axis is the z-score for daily *all-cause* deaths, normalized by the mean (over 2015-2019). The solid blue line shows 2020 (see [here for Euromomo z-score calculations](https://euromomo.ec.europa.eu/momo/index.do)). The method controls automatically for population size of the country.

We see Sweden's Covid catastrophe very clearly, the rise starting at about March 12. But the deaths during the ensuing 18 days *were largely baked into the cake*. We see clearly that Sweden was already in deep trouble on March 12; stricter lockdown measures would not have changed the past.

For Covid deaths, we see the same thing. Figure 4 reproduces Adam Altmejd's [figure](#) of Swedish Covid deaths. We insert a red bar spanning March 12 to March 30. Much of the eventual elevation had been scaled by exposures occurring *before* March 12.

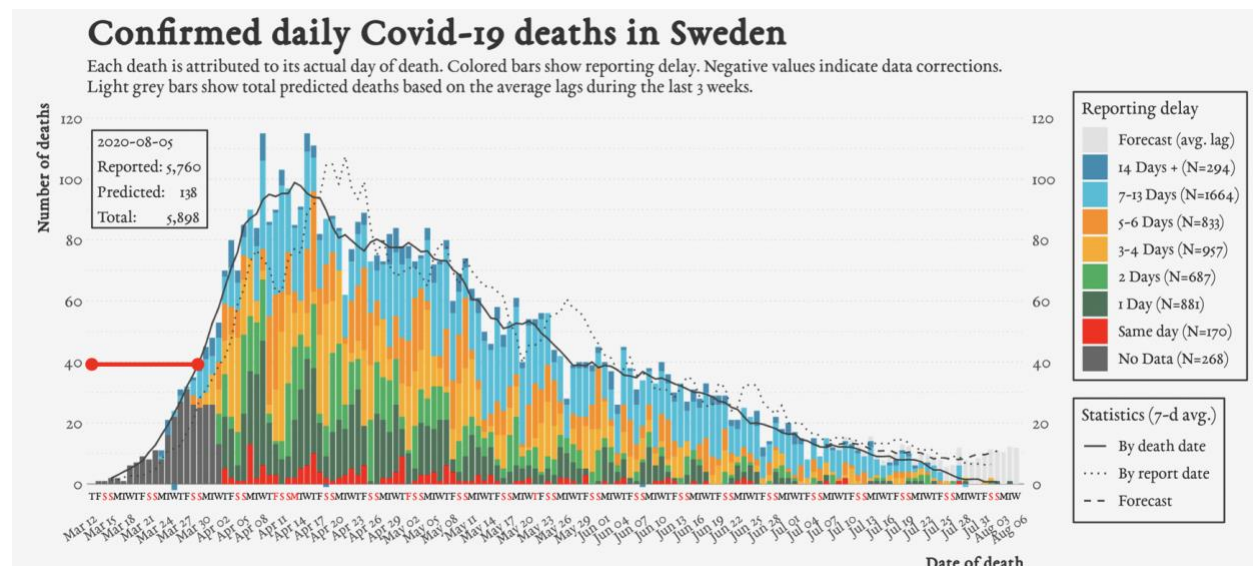


Figure 4: Sweden's Covid deaths
Source: [Adam Altmejd](#)

One may argue that had Sweden locked down on March 12 like the others, the whole hill would have been somewhat less tall and would have fallen off somewhat more quickly. But it is entirely clear that that Sweden was in a very different position than DK/NO/FI.

We turn now to explanatory factors for why Sweden had a much higher infection rate than DK/NO/FI on March 12.

February skiing, vacation, and travel

The Swedes have a week-long “sport-break” (*sportlov*) from school and many families take time off work to travel. Many Swedes go skiing. Stockholm does not have downhill ski slopes. Traditionally, Swedes did their skiing mainly in their own slopes far north of Stockholm, at Åre, Sälen, Idre, and Vemdalen.

To prevent congestion among vacationers at Sweden's ski destinations (and elsewhere), the timing of the sport-break is staggered. Here is the timing for Sweden's three largest metropolitan areas:

Sport-break 2020 dates in Sweden

- Gothenburg: February 10-16 (Week 7)
- Malmö: February 17-23 (Week 8)
- Stockholm: February 24 – March 1 (Week 9)

It is our impression, however, that, with increasing wealth and worsening ski conditions in Sweden due to warmer winters (reducing demand especially at the [smaller slopes](#) closer to Stockholm), Swedes have increasingly traveled to the Alps to ski.

[Research](#) by FHM has ascertained that much of Sweden's early Covid infections came from Italy and Austria. Karin Tegmark Wisell of the FHM [said](#): "In our analyzes, we clearly see the enormous imports from Italy."

The timing of sport-break within Sweden might have been causal: The areas of Malmö and Gothenburg have throughout the pandemic had much lower death rates than Stockholm, and they had earlier sport-breaks. There are other differences, such as population density, but one thing that was not different was light-lockdown: Malmö and Gothenburg had the same policy as Stockholm.

What about the other three Nordic countries? They too have sport-break:

Sport-break 2020 dates outside of Sweden:

- Denmark ([all](#)): February 13-21
- [Oslo](#) and some other parts ([not all](#)) of Norway: February 17-21
- [Helsinki](#) and some other parts ([not all](#)) of Finland: February 17-21

Thus, while Stockholm had its break during Week 9, all of [Denmark](#), parts of Norway including [Oslo](#), and parts of Finland including [Helsinki](#) had their sport-break during Week 8 (February 17-23) or earlier. If they vacationed in the Alpine region, they would have been there when Covid was less widespread in northern Italy.

Furthermore, we believe that Swedes, particularly from Stockholm, do more international vacation travel than their counterparts in DK/NO/FI, and, especially, do much more travel to Alps for skiing. According to the World Bank (2020), Sweden has in recent years had 21.3 million international outbound tourist departures, which is 77% more departures per million people than in DK/NO/FI.²⁶

We believe that Danes are less avid downhill skiers. Denmark is an exceedingly flat country with no ski slopes to speak of, and no historic tradition of downhill skiing. One indication of a country's avidity for a sport is whether the societal ladder of activity and emulation rises to excellence. Here is the tally from [Wikipedia](#) of Olympic medal winners in Alpine (downhill) skiing, by nation:

²⁶ Two points here: First, the geography of Denmark means that many Danes are able to drive on vacation in Northern Europe whereas Swedes, Norwegians and Finns would fly. But second, many of southern Sweden would fly out of Copenhagen.








Rank ↕	Nation ↕	Gold ↕	Silver ↕	Bronze ↕	Total ↕
1	 Austria	37	41	43	121
2	 Switzerland	22	22	22	66
3	 United States	17	20	10	47
4	 France	15	16	17	48
5	 Italy	14	9	9	32
6	 Germany	12	7	7	26
7	 Norway	11	13	12	36
8	 Sweden	7	2	9	18
9	 Croatia	4	6	0	10
10	 Canada	4	1	6	11

Table 3: Olympic medals in downhill ski events

Source: [Wikipedia](#)

We have copied only the top ten. Denmark is not on the list at all, as it has never won a medal in downhill skiing. And Finland has won only one.

As for the Norwegians they are avid and outstanding in both downhill and cross-country skiing. But a number of factors make it reasonable to believe that they travel much less (per capita) to the Alps to ski: (1) Compared to the Swedes, the Norwegians have a much stronger interest in cross-country skiing; (2) Norway has excellent ski slopes of its own, many within two and a half hours by car from Oslo; (3) Partly due to the proximity of excellent slopes, Norwegians have a strong tradition of having a ski-home – whereas the vacation homes and cottages in Sweden are often in the country or archipelago – and thus Norwegians downhill skiers often go to a ski-home of their own or a relative or friend.

As for the Finns, it seems that, like the Norwegians, they lean more toward cross-country, and, like the Danes, they do not have a strong tradition of downhill skiing (see [responses](#) at Quora to “Is skiing a popular winter sport in Finland?”).

Foreign-born population

In an interview for [UnHerd](#), Sweden’s chief epidemiologist Anders Tegnell said: “Sweden is quite different from our neighbors,” and: “The population looks a lot more like the population in Netherlands, Belgium or the UK – with a high level of migrants and quite big areas of densely populated cities around Stockholm.”

In early April, it was [reported](#) in Swedish press that cases rates were significantly higher in [heavily immigrant](#) (p. 28) neighborhoods of Stockholm, and [subsequent research](#) has borne

out the reports. An [FHM investigation](#) (p. 7) of Covid by occupation lends heuristic support. In May, the [Danish Serum Institute](#) reported a similar situation in Denmark. Various explanations have been [given](#) for the higher rates among immigrants, including: denser living conditions with more intergenerational cohabitation, public-transportation usage, lesser health and access to healthcare, and language difficulties in understanding warnings or cultural differences in taking them seriously. Not only are case rates much higher among immigrants, but non-Western immigrants are also approximately 50% more likely to die from Covid than people of European descent.²⁷

Sweden is something of an outlier amongst the Nordic when it comes to its foreign-born population: [19.2](#) percent compared to roughly 14% in [Denmark](#) and [Norway](#), and less than 8 percent in [Finland](#). The differences are also significant when we look at non-Western communities, in particularly citizens born in Africa and Asia: [Sweden](#) 9.8 percent; [Denmark](#) 5 percent; [Norway](#) 7 percent; and [Finland](#) 3 percent.

Sweden's higher immigrant population interacts with the travel mechanism, because immigrants may travel back to or host visitors from their country of origin. Here again the timing of the "sport-break" must be kept in mind: Stockholm's break was a week later than the other three Nordic capital cities, and so travelers would have been making contact when prevalence of the virus was higher.

But the immigrant factor is also important for paths of transmission. In Stockholm, as in many other major European cities, taxicab drivers are frequently immigrants—and taxi drivers top the list in the [FHM investigation](#) on Covid by occupation (see also [here](#)). Imagine how a 45-minute ride in a closed cab in early March, such as from Arlanda airport to downtown Stockholm, might affect disease transmission.

But a more certain and significant path of transmission lies in elderly care.

Elderly care: Nursing homes and home-care

About 70 percent of Covid deaths in Sweden has been people in elderly care services, both nursing homes and "home-care" (*hemtjänst*) services (Klein and Stern 2020, 5; [Harald](#)). It is difficult to draw a direct comparison with DK/NO/FI, for a number of reasons,²⁸ but based on official data²⁹, the percentage in Denmark is about half of that in Sweden while for Norway and Finland it is perhaps comparable (but Covid deaths have been so few in Norway and Finland that there is little point comparing the percentages).

The disaster in Swedish elderly care involves vulnerability and nosocomial infection. The situation in Sweden may differ from that in DK/NO/FI in a number of ways. We believe that

²⁷ Williamson et al. (2020). <https://www.nature.com/articles/s41586-020-2521-4>

²⁸ Besides the differences in kinds of elderly care, there is the issue of whether the statistics capture only where the person *died* as opposed to whether the person had been receiving elder care before dying in a hospital.

²⁹ <https://www.ssi.dk/sygdomme-beredskab-og-forskning/sygdomsovervaagning/c/covid19-overvaagning>

some of the following nursing-home points (labeled A through I) are quite significant in our comparison between SE and DK/NO/FI:

- A. We have said that Sweden has many more immigrants and that immigrants have been disproportionately hit by Covid. Moreover, [remarks](#) by Johan Giesecke, Professor at Karolinska Institute and the former state epidemiologist, suggest that staff people in Swedish elderly care are heavily immigrant. The work is quite low-pay and has a relatively low status. As a consequence, it is a labor market where immigrants often start their careers. Working in elderly care is *the most common job among refugees in Sweden*, even ahead of restaurant work or cleaning, with 12.1 percent of refugees reporting that their first job in Sweden was in elderly care (Vennberg and Videnord 2019, 112).
- B. A study by M. Keith Chen, Judith Chevalier, and Elisa Long (2020) uses tracking of cell phones of nursing home staff to discover causes of higher rates of Covid deaths at nursing homes in the United States. The study indicates that staff who work in multiple nursing homes is a large factor, concluding that “eliminating staff linkages between nursing homes could reduce COVID-19 infections in nursing homes by 44 percent.” Cross-facility work is certainly common in Stockholm’s elderly care, where many work by the hour and are called to different nursing homes to work, not only to care directly for the residents but to clean, cook, and so on. Also, home-care is very extensive in Stockholm (Stern and Klein 2020, 14): Caregivers help people in their private home, and in the dense population often go to many private homes in a single day (ib., 22). It is very likely that cross-location work by staff people is far more common in Stockholm than in any city in DK/NO/FI.
- C. The extensive use of home-care, as well as the larger size of Stockholm, gives rise to another possible factor (though not vis-a-vis Norway, it seems): That those who are living in nursing homes are especially vulnerable. People use the home-care service for a longer period, and are older and frailer by the time they go into a nursing home – admission is something they have to qualify for, based on need. The sorting mechanism and the population center of Stockholm means that many of the Sweden’s most vulnerable people were collected into facilities where nosocomial transmission was widespread (Stern and Klein 2020, 22; cf. [DA](#)).
- D. Another possible factor is the size of nursing homes. Johan Giesecke [suggested](#) that larger nursing homes – hence sites where a larger number of vulnerable people face the hazard of nosocomial infection – was one factor behind Sweden’s higher death rate. Some [data](#) about nursing homes in Copenhagen seem to indicate nursing home sizes comparable to those in Stockholm (for information on facility size in Stockholm city, see

Klein and Stern 2020, pp. 22-23). But Giesecke's claim might be true more generally for the whole of Denmark, and for Norway and Finland.

- E. More certain to us, and critical in light of the nosocomial problem in elderly care, is that Sweden has substantially more people in nursing homes. While approximately 40,000 Danes are in nursing homes ([SSI, 2020](#)), it appears that about 109,000 Swedes are in nursing homes.³⁰ Relative to the population, the Swedish nursing home population is thus almost 50% larger than the Danish equivalent.
- F. A controversy swirled in Sweden over “palliative care,” which means that care-givers in consultation with the patient and family decide to provide symptomatic relief without any aggressive actions aimed at cure and recovery. A *Wall Street Journal* article reported: “About 90% of nursing-home residents who succumbed to Covid-19 in Sweden were never admitted to hospital” (Pancevski 2020). That is partly because the nursing homes themselves provide some medical services. Many commentators in the press and media, however, have accused the whole system – including doctors and hospitals who might discourage transfers – of giving up too easily on very old and frail patients with Covid ([Neuding 2020](#); [Hofbauer 2020](#); for a response see [here](#)). It is possible that in Sweden, compared to DK/NO/FI, a comparative tendency toward palliative care meant that more people (proportionately) died with Covid as opposed to recovering from Covid and dying later not registered as a Covid death. The *Wall Street Journal* article reports: “In Sweden, an average of 21% of patients in intensive care were 70 or older during the period between February and early June. That compares with 49% for the same period in Denmark” (Pancevski 2020).
- G. In Stockholm during the onset, protective equipment and sanitizer was in short supply in the elderly care system ([SvD](#); [DN](#); Stern and Klein 2020, 20). Sweden failed to maintain an emergency stockpile of protective equipment. It seems that Denmark had its own [problems](#), not so much in having a stockpile but in putting nursing homes at the back of the queue. Finland, by contrast, had [maintained](#) a healthy stockpile. The basic problem of equipment at the critical scene at the critical time could have been an important difference between SE and DK/NO/FI generally.
- H. “[R]esidence homes are *people's homes*,” explains Barbro Karlsson, an administrator of the Stockholm elderly care system (Stern and Klein 2020, 20). It is understandable that a large administrative system, accustomed to looking to guidelines from FHM and elsewhere, might hesitate to uproot residence so as to separate out those infected with

³⁰ Boverket (2020) cites data from the Swedish national statistics suggesting that 2% of Swedes between 70 and 80, and 13% of all men and 20% women above the age of 80 live permanently in nursing homes. About 5% of Swedes between 60 and 70, and 27% of all men and 35% women above the age of 80 receive home services.

Covid. It seems that the Stockholm system was slow to respond here. We don't know whether DK/NO/FI were any quicker to implement separation, but it's a possibility.

- I. Similarly, the Stockholm system may have been a little slower in beating back nosocomial infection arising from elderly-care staff of all types—by testing staff and instituting new protocols in contact, schedules, equipment, and so on. Again, one lesson that comes from the interview with Karlsson is that the Stockholm system is highly accustomed to guidance from “above,” saying:

And it does not help that the PHA itself suddenly changes its recommendations, as they did recently regarding the use of face masks.³¹ When Tegnell then says “it is up to the municipalities” he seems to be avoiding possible blame and leaving it to the municipalities to take over responsibilities. The municipalities are accustomed to FHM guidance and are worried that FHM will disapprove of what they do. When that is what everyone is used to, it becomes a problem when the recommendations from FHM are fuzzy. (Karlsson quoted in Stern and Klein 2020, 21).

Sweden: Loaded with “dry tinder” in 2020

Suppose that Sweden had had in 2020 an exceptionally large amount of forest fire compared to the other Nordics. One possible explanation for the outsized conflagration might be that Sweden had an exceptionally large amount of dry tinder left over from previous years, because forest fires were down significantly.

We are sensitive about [borrowing](#) the “dry tinder” metaphor for the persons of human souls, but the metaphor is clarifying.

Jonas Herby has created a nice picture, zooming the vertical axis to show the dry tinder situation in Sweden:

³¹ There had been a controversy over mandating face masks in elderly care, see Swedish reporting [here](#).

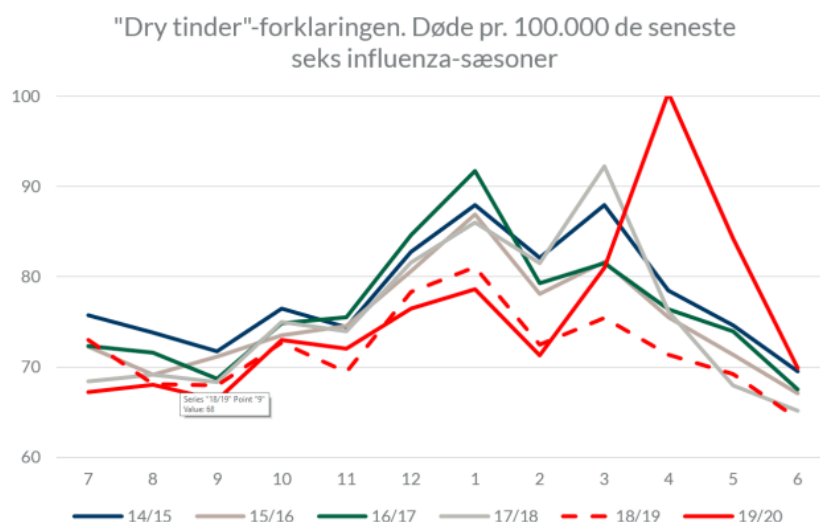


Figure 5: The dry-tinder situation in Sweden

Source: [Herby 2020](#), using data from [Statistics Sweden](#).

In Figure 5, the lines are deaths in Sweden, per 100,000 inhabitants, by month, for the year starting on July 1. The dotted red line shows the unusually light death toll during the year 2018/2019. Sweden was loaded with “dry tinder” when the coronavirus arrived.

In the next figure, Figure 6, the gold line in the following figure shows all-cause deaths per 1,000 inhabitants for 52-week cycles from Week 25. Notice the declines from 16/17 to 17/18 and from 17/18 to 18/19. Over the two years the all-cause deaths per 1,000 inhabitants drops from 9.3 to 8.7.

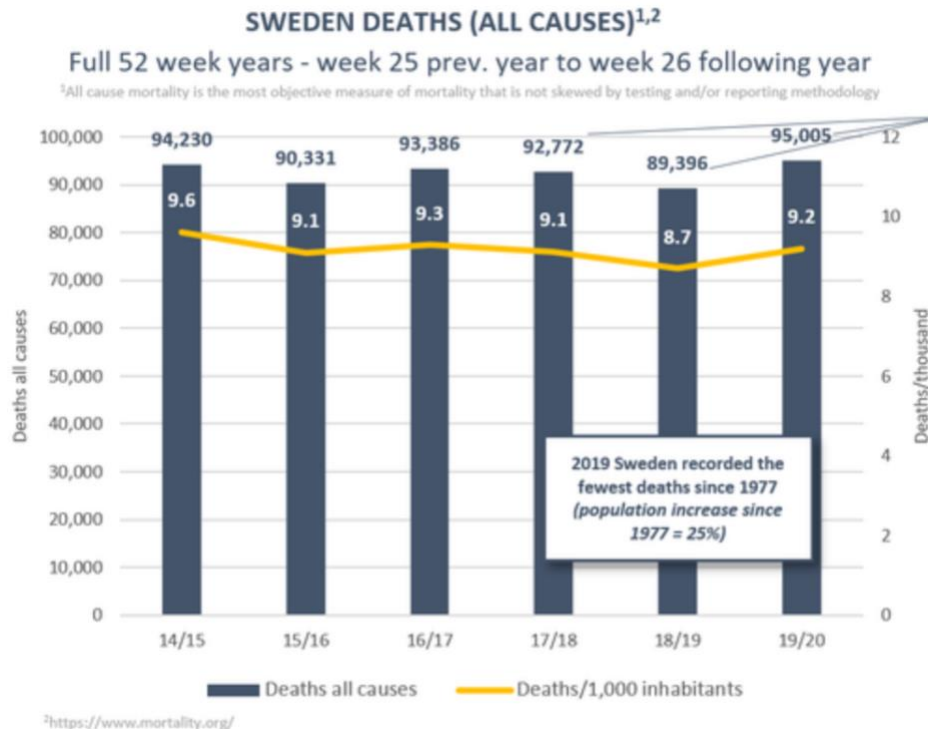


Figure 6: Sweden deaths (all causes)

Source: [@EffectsFacts](#), which cites as its source [mortality.org](https://www.mortality.org/).

Before we turn to a comparison with DK/NO/FI, notice that in 19/20 the rate is 9.2 deaths/1000 inhabitants. That rate is unexceptional compared to the previous five years. The Covid crisis has been overstated, and the overreaction has been more damaging than the virus itself.

The two-year span from 16/17 to 18/19 shows a drop from 9.3 to 8.7 – a drop of **0.6** deaths/1000 inhabitants. Now compare that with the like numbers for the other Nordic countries:

[Denmark](#): **0.0** deaths/1000 inhabitants
[Norway](#): **0.3** deaths/1000 inhabitants
[Finland](#): **0.1** deaths/1000 inhabitants

The difference is systematic and large. In the last two years, Sweden had fewer all-cause mortalities than their Nordic neighbors. Consider the following mathematics: Reckon Sweden's drop relative to the other Nordics at 0.4 deaths/1000 inhabitants, and a Swedish population of 10 million. That would work out to 4000 individuals. If we suppose that 16/17 is a fair baseline among the four Nordics, and, implausibly, that all of the 4000 people in Sweden who didn't die between 16/17 to 18/19 were highly-vulnerable people, that means that Sweden had an extra 4000 such people going into 2020. One final consideration: The median life-remaining for all entering nursing homes is 16 months, and only 9 months among those with bodily ailments (*somatiska*), as opposed to for example dementia (Sweco 2019, 45). This should be compared to

the average expected life of people entering nursing homes in Denmark of 32 months (Ældresagen, 2019). Pondering all this and relaxing the assumptions, it seems reasonable to us that the dry-tinder factor could account for 1500 to 3000 of Sweden's "Covid deaths" during the whole of 2020, or between 25 to 50 percent of Sweden's Covid death toll as of mid-August. The dry-tinder factor is probably one of the most important factors in explaining Sweden's outsized Covid death toll.

A Twitter user (EffectsFacts) used the Human Mortality Database by demographers from Max Planck institute and U.C. Berkeley to present the data in a number of ways. The following figure has a panel for each of the four countries. The critical thing in each panel is the 2018/2019 flu season peak straddled by two valleys. Look at the peak area compared to the two valley areas. It is graphically evident that Sweden's ratio of peak-area/two-valleys-area is by far the lowest. It had fewer forest fires in previous years. The result was much more dry tinder heading into 2020. Using these numbers, the medical device engineer Ivor Cummins provides a splendid [2-min pedagogical video](#) using the analysis from EffectsFacts.

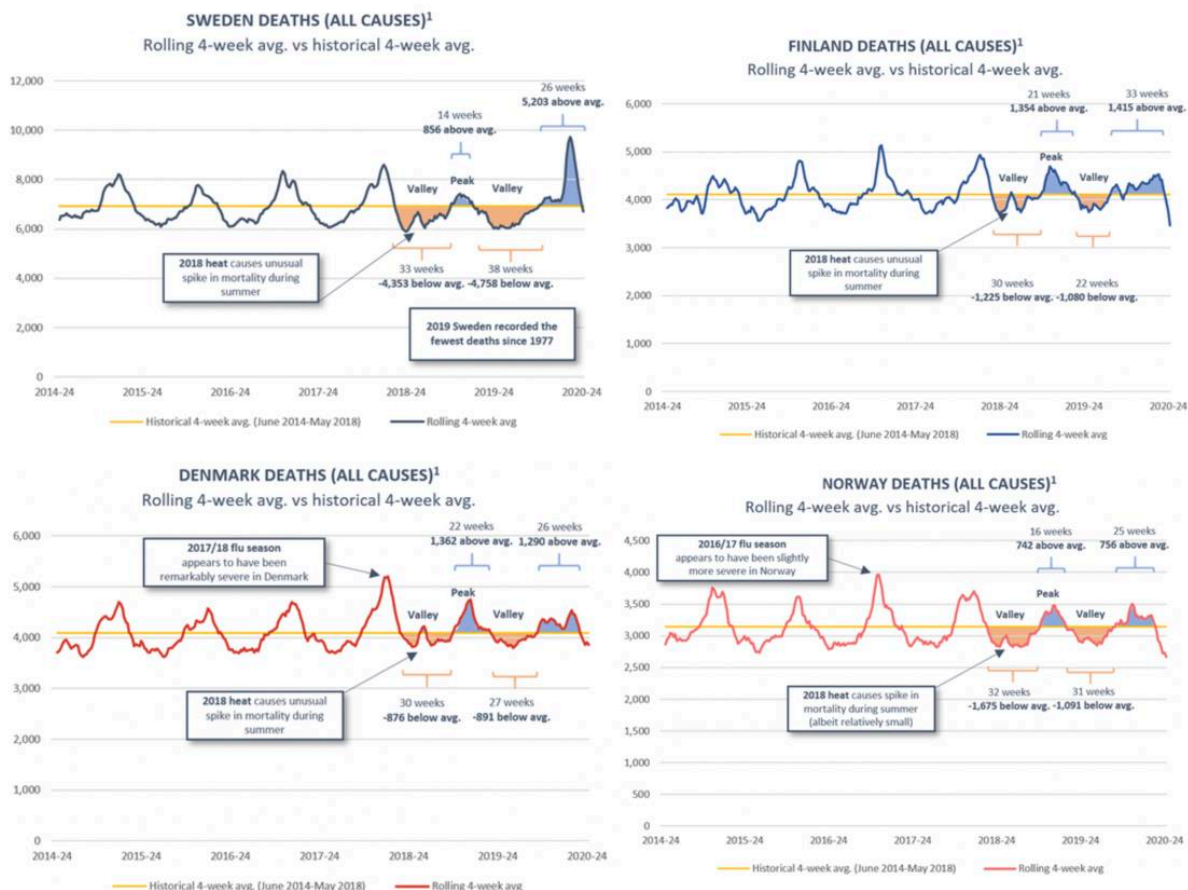
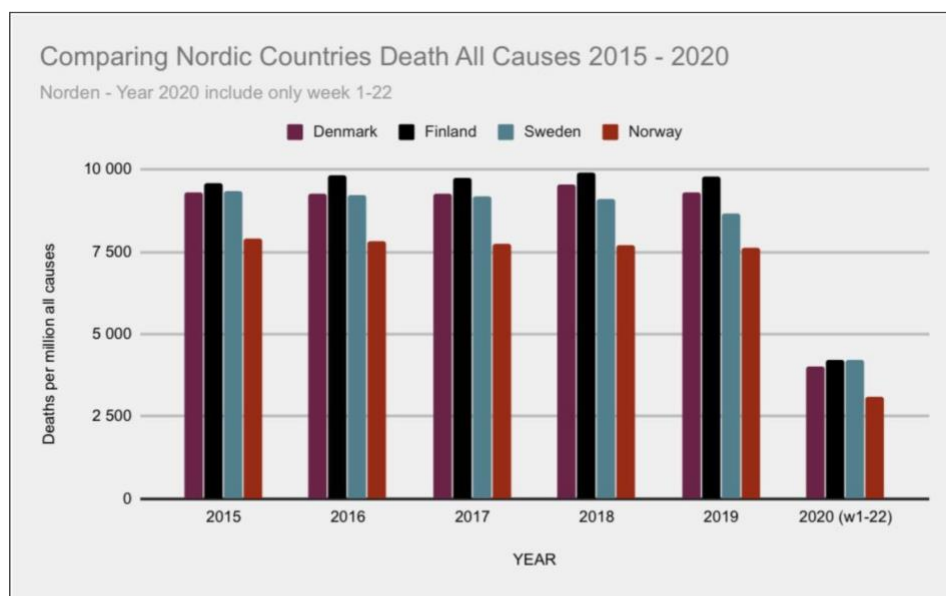


Figure 7: Sweden had a much lower peak/valleys ratio.

Source: [@EffectsFacts](#)

Another data visualization is provided by [@HaraldofW](#). Comparing all-cause mortality for our four countries he illustrates Sweden's 2019 drop:



Data Sources: <https://ec.europa.eu/eurostat/web/covid-19/data>

<https://www.ssb.no/en/statbank/table/08425/>

http://pxnet2.stat.fi/PXWeb/pxweb/en/StatFin/StatFin_vrm_kuol/statfin_kuol_pxt_12af.px/

<https://www.dst.dk/en/Statistik/emner/befolkning-og-valg/doedsfald-og-middellevetid/doedsfald>

http://www.statistikdatabasen.scb.se/pxweb/sv/ssd/START_BE_BE0101_BE0101G/ManadFoddDod/

Figure 8: Comparing Nordic Countries Death All Causes 2015-2020

Source: [@HaraldofW](#)

Notice how the mortality rate drops in Sweden in 2019 much more than it does in the other three Nordics. And again, for 2020 (w1-22), Sweden's all-cause death rate is scarcely different in relation to the others than in previous years. The real Covid crisis has been in reaction to what is an unexceptional mortality rate. As Tegnell [put it](#) in late June 2020: "It was as if the world had gone mad."

Other basic statistics comport with the dry-tinder effect. For example at the end of 2019, [14.7%](#) of Sweden's [population](#) was 70 or older. The average for the other three countries is as follows: [14.3%](#) Denmark, [12.0%](#) Norway, [15.9%](#) Finland. We calculated the DK/NO/FI percentage, weighting by each country's population, and it comes to 14.2%. The difference with Sweden than is 0.5 percentage point, which applied to the Swedish population would be roughly 52,000 more Swedes 70 or older (than if Sweden also had 14.2%). These numbers alone would lead one to expect that the percentage of Covid deaths among those aged 70 or above is higher in Sweden than in Denmark and Norway, which it narrowly is.^{32, 33}

³² In Sweden (2020-07-30) [89%](#) of all those who died with corona were above the age of 70. In Denmark [88%](#), Norway [87%](#), Finland, [88%](#).

³³ Likewise, if we define "old people" as people at least 70 years, we also found that, as of 31 December 2019, Sweden had slightly older old people. The mean old-people age in Sweden was 78.04 and the other three were Denmark 77.0, Norway 77.93, and Finland 77.88.

A more recent [thread](#) by Harald (10 Aug 2020) reiterates many of the foregoing points of this section with newer data, and recent [tweet](#) by Cummins (18 Aug 2020) provides another visualization of Sweden's remarkably soft mortality during the preceding flu season.

The Swedish (especially Stockholm) elderly and health care systems have gotten an awful lot of flak. But the dry-tinder factor, which, again, we think is very important, puts the matter in a different light: It would be a successful and effective elderly/health care system that creates a dry-tinder scenario heading into 2020.

What is a Covid death?

How does a death get counted as a Covid death? In the interview on UnHerd, Tegnell [says](#) that Sweden is one of the countries that is most likely to count a death as a Covid death. He says that most of Sweden's Covid deaths "are not really caused by Covid-19." A [report](#) on a study of putative Covid deaths in Östergötland indicates that Covid was the direct cause of only 15 percent of those deaths.

Stern and Klein (2020, 5 n4) describe what they learned about how Sweden counts a death as a Covid death. It turns out that there are two official organizations generating a count of Covid deaths, one based on lab-confirmed infections and the other on doctors' reports, but the two organizations seem to come to roughly the same number, because each method counts some deaths that the other does not. But even with the description of methods, it is difficult to know how it really works—for example, how a doctor decides whether to list Covid as a cause, and if so as primary or contributory, and then how exactly the marked forms from doctors are then used by others to determine "a Covid death."

Covid deaths in Denmark are counted as deaths of persons who had tested positive for the virus during a 30-day period prior to the death. Everyone hospitalized with Covid-like symptoms were tested while it remains unclear how deaths outside of hospitals have been counted. We have not explored the methods in NO/FI. We see no particular reason for Sweden to want to inflate the number, nor for DK/NO/FI to want to deflate the number. It is entirely possible, however, that there are some important differences in stated methods and in how people actually carry out the stated methods.

Conclusion: 15 Other Possible Factors

When listing causal factors, one must take care that one of the listed factors does not presuppose or wholly imply another listed factor. In the following list, the factors sometimes interact, but for each there would still be some causation producing Swedish Covid deaths that is separate and distinct from the other listed factors. In the following list, the factors are listed roughly in the order in which we introduced them. As for the significance of a factor, there are a number of dimensions: Assessing the size of the cause, assessing proper confidence in the

existence of the cause, and assessing the size of the effect (presupposing the cause). Combining those dimensions, we mark some of the factors as follows:

- * Significant
- ** Very significant

- * 1. The Stockholm metropolitan area is significantly larger than any in DK/NO/FI, as reflected by population, the public transit system, and so on.
- * 2. Exposure of Stockholm travelers was greater because their sport-break was later than in the capital cities of DK/NO/FI.
- * 3. Stockholmers travel more to Alpine regions than do their counterparts in DK/NO/FI.
- * 4. Sweden has more immigrants, whose Covid infection rates and exposure were relatively high.
- * 5. Immigrants have a large presence in elderly care in Sweden, exacerbating the problem of nosocomial infection.
- * 6. The Stockholm elderly care system especially collects highly vulnerable residents, partly because of system's offering of home-care, acting as a sort of filter.
- 7. The Stockholm elderly care system might have larger nursing homes.
- * 8. Sweden seems to have significantly larger portion of their elderly population in nursing homes.
- 9. The Stockholm elderly care system might have more cross-facility workers.
- 10. The Swedish elderly and health systems may have done less to try to cure elderly Covid patients (the "palliative care" controversy).
- 11. Sweden may have been exceptionally understocked in protective equipment and sanitizers (especially as compared to Finland).
- 12. Sweden may have been slower to separate Covid residents in nursing homes.
- 13. Sweden may have been slower to implement staff testing and changes in protocols and equipage.
- ** 14. Sweden had a much larger inventory of highly-vulnerable people (the "dry-tinder" factor).
- 15. Sweden might be quicker to count a death as "a Covid death."

It makes sense for society to sacrifice resources and sometimes liberty to protect the vulnerable. But it does not make sense for society to sacrifice to protect the non-vulnerable. Such "protection" is misconceived.

Swedes sacrificed less liberty than most countries. This paper suggests that Sweden's relative protection of liberty did not come at a great cost to those most vulnerable to Covid.

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