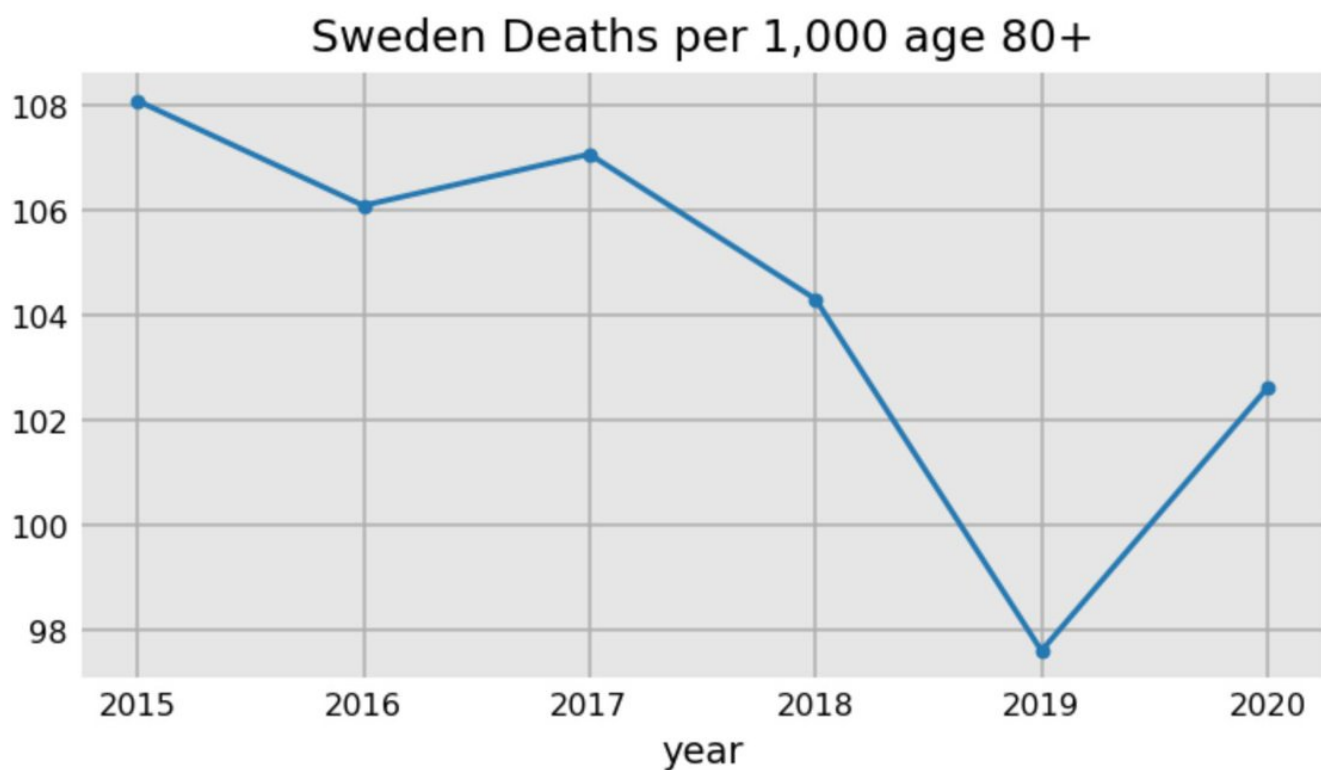# Twitter Thread by Ted Petrou

Ted Petrou
@TedPetrou

Sweden's elderly in 2020 recorded one of the lowest mortality rates in history.

Overall mortality rates in Sweden by age were excellent in 2020 and better than the 2015-2018 average mortality rates for nearly all age groups.
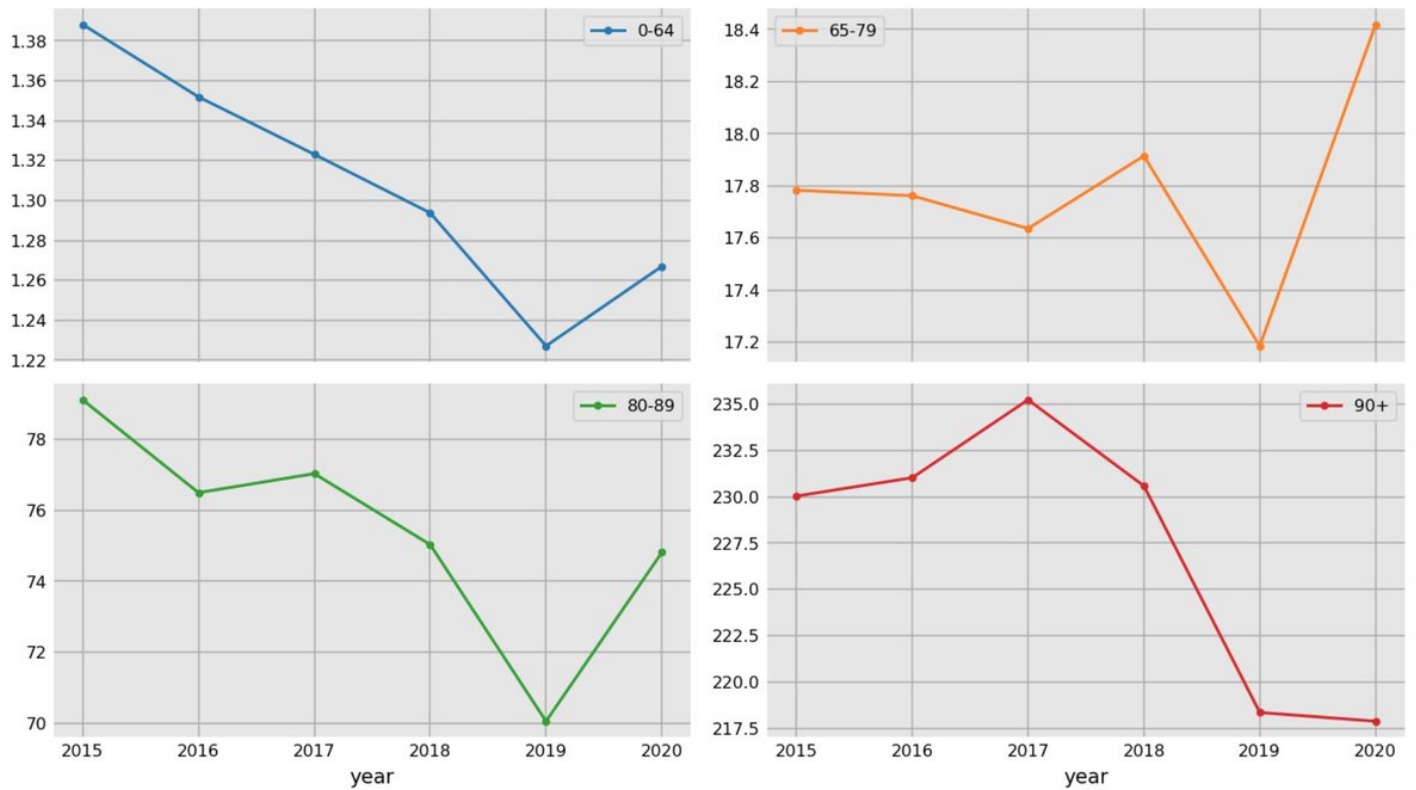
A deep dive into why ■■■

Overall death numbers are meaningless without stratifying by age. Below, we have mortality rates from 2015-2020 by age groups 0-64, 65-79, 80-89, and 90+. The 65-79 group fared worst with ~3% inc. over 2015-18 average.

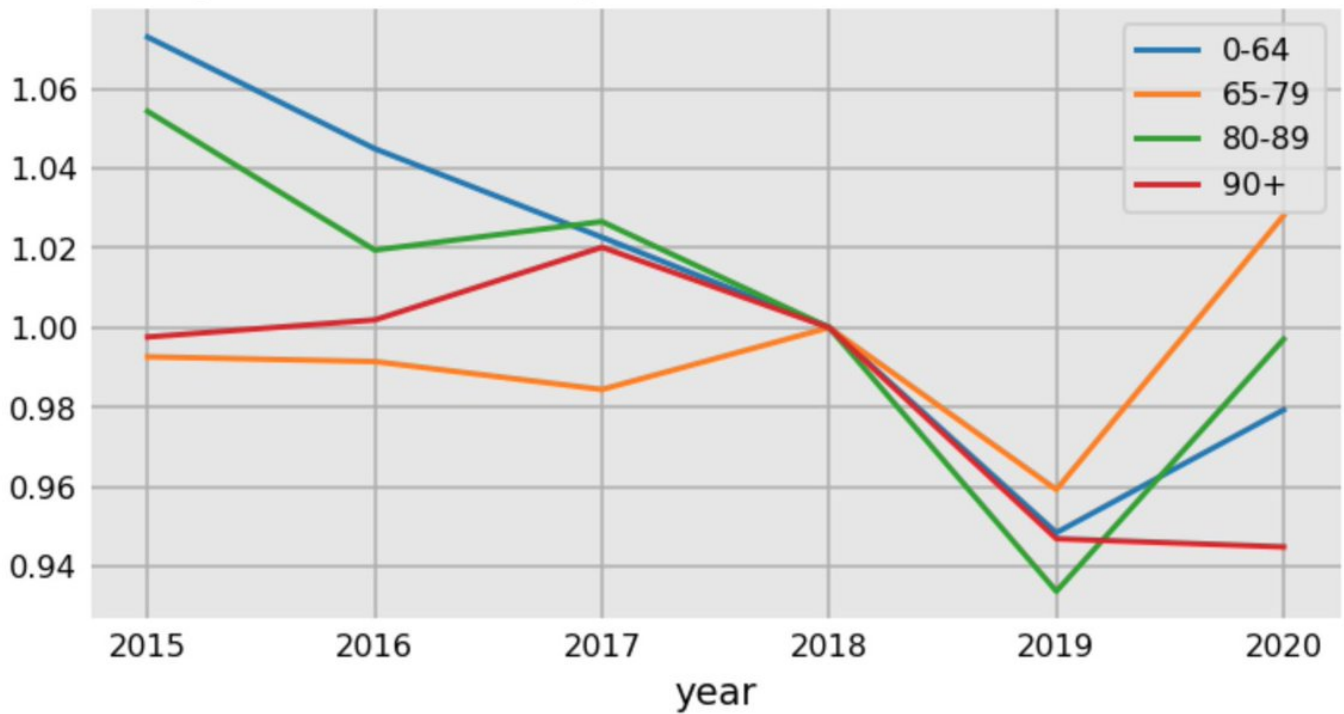Amazingly, the 90+ group had lower mortality in 2020.

Sweden Deaths per 1,000 by Age Group

All age groups can be plotted on the same graph, but must be standardized since the range of values is so large (1 for 0-64 vs 200 for 90+)

Here, mortality rates are shown relative to 2018.

Age Stratified Mortality in Sweden - 2018 used as baseline

The most interesting observation (imo) is the significant drop in mortality rate in 2019 in all age groups.

Around 60% of all deaths in Sweden come from the 80+ age group. When mortality rates dropped 5% in 2019, this left a much larger than normal 80+ pop alive in 2020.

This lead to a swelling of the 80+ population in 2020 by 6.6%. This was by far the biggest percentage increase in one age group over the 5 year period of data

Pop. Deaths
2018 - 522k 54k
2019 - 536k 52k
2020 - 572k 59k

Percent Change in Population by Age Group

age	0-64	65-79	80+
2016	1.4	1.7	1.0
2017	1.2	1.6	1.1
2018	1.0	1.3	1.8
2019	0.8	1.0	2.7
2020	-0.5	1.9	6.6

Looking at the extremes, the 100+ population increased by nearly 50%, from 2200 to 3100. The probability of death for a random 100 year old is 35%. So, this very small subset of the population (.03%) will be responsible for ~1.2% of all deaths in Sweden.

With this huge increase in 80+ population and a slight decline in the 0-64 population, Sweden was primed for a large increase in total deaths in 2020.

Total Deaths
2018 - 92185
2019 - 88766
2020 - 97811 (slight downward adjustment for leap year)

In conclusion, Sweden's total deaths increased by 10%, but their mortality rate by age was very similar to the 2015-2018 average. A substantial drop in mortality rates in 2019, left a much larger elderly population alive in 2020.

All data sources are from Sweden's official statistics page - https://t.co/mcvpPWfcdK

I used the June 2020 population estimate by age group for the analysis.

I've issued a correction to this. 2020 population numbers were slightly inflated, bringing mortality rates down to around the average of 2011-2020 and not lower than 2015-2018 average.

https://t.co/veHH4luKkF

The above analysis uses the same database for all years.

— Ted Petrou (@TedPetrou) January 28, 2021