



**The International Conference "New Challenges of
Demographic. Epidemiological and Medical-
Technological Development: Search for New Models of
Healthcare Development"**

Demographic consequences of COVID-19 epidemic in Russia

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Human losses of Russia in 2020

Drop in life expectancy in 2020 compared to 2019, years	
Russia	1,8
Spain	1,6
USA	1,5
Bulgaria	1,5
Poland	1,4
Lithuania	1,4
Italy	1,2
Belgium	1,1
Slovenia	1,0
Luxembourg	0,9
Slovakia	0,9
Switzerland	0,8
Croatia	0,8

Russia belongs to the group of countries with the greatest losses from the COVID-19 pandemic among countries with reliable demographic statistics. This is irrespective of the loss estimation method.

In my opinion, the main reasons why Russia is losing more from COVID-19 than most Western European countries are as follows.

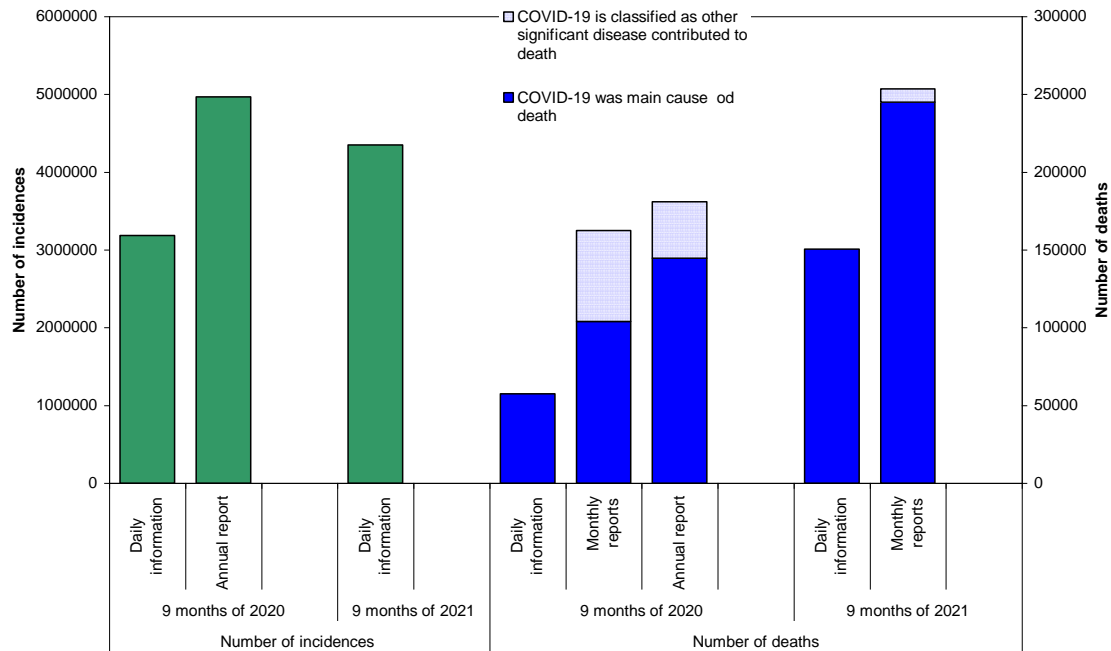
1. The health care system in Russia despite the enormous progress over the past twenty years significantly lags behind the systems in the countries of Western Europe.

2. Russia still lags behind Europe in the dedication to healthy living standards.

3. Due to the influence in Russia of the first and second reasons for a long time in the past the health status of the elderly population is generally worse than that of their peers in Western Europe.

I am sure that the reliability and availability of information about the pandemic in Russia is also very important.

Number of incidences and deaths from COVID-19 in Russia according to different data sources



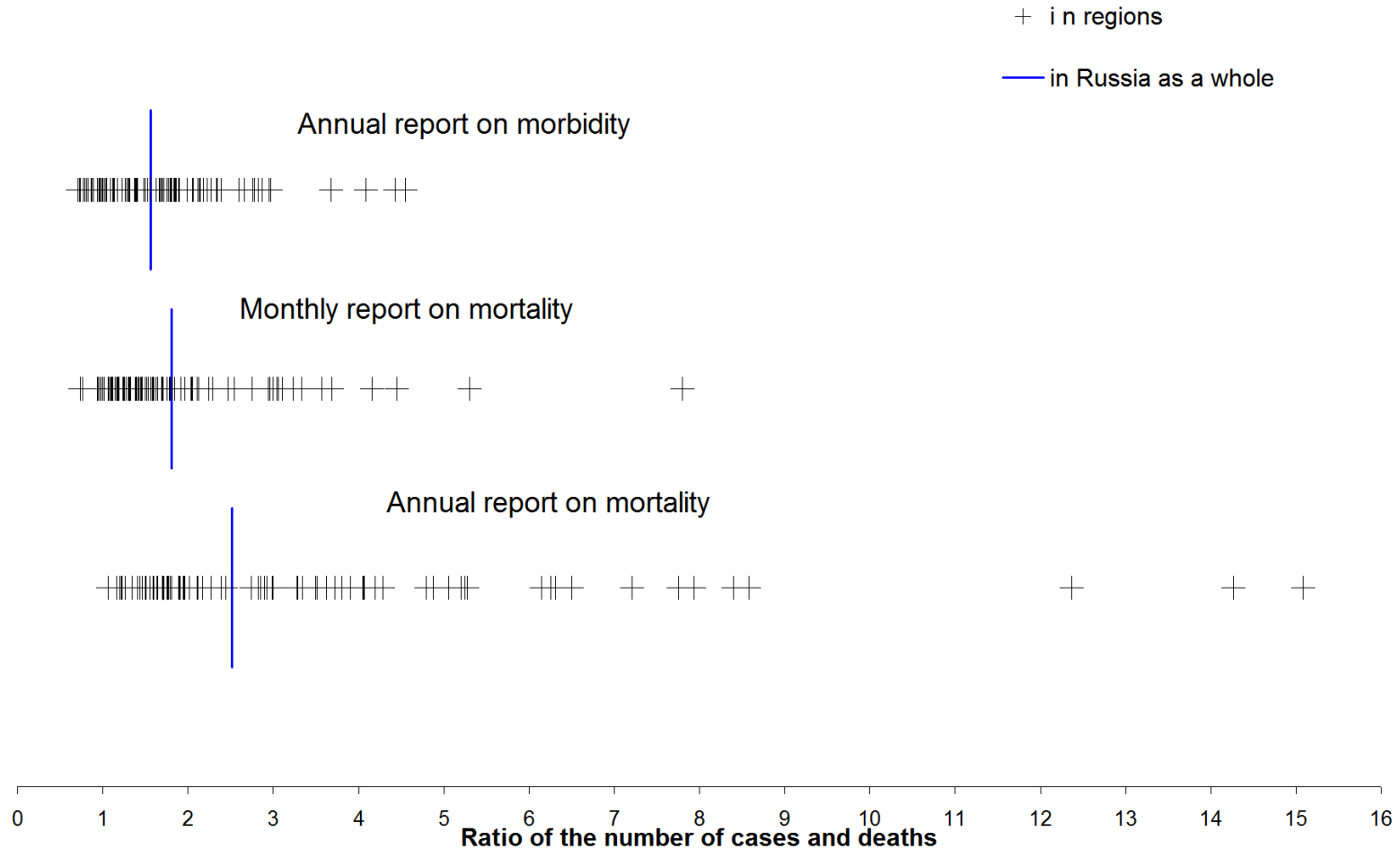
There are 3 data sources on morbidity and mortality from COVID-19 in Russia. The information of the “Operational Headquarters to prevent the spread of coronavirus” includes the daily number of cases and deaths from covid-19 in Russia and its regions.

The monthly report of Rosstat includes numbers of deaths from COVID-19 registered during the previous month in Russia and its regions (the report also includes total number of deaths from all causes combined).

The annual report of medical institutions contains the number of COVID-19-incidences in Russia and its regions.

The annual report of Rosstat contains the number of deaths by sex, age, cause of death and other characteristics for the year in Russia and its regions.

Ratio of the number of cases and deaths from COVID-19 according to annual or monthly data to the same indicators according to daily data in the regions and in Russia as a whole in 2020



Data reliability

It is difficult to understand how such a large difference between daily and monthly data on number of deaths from COVID-19 came about, as more than 93% of deaths from COVID-19 occurred in hospitals.

A careful analysis of the annual totals shows that the discrepancy between the monthly and annual data on number of deaths from COVID-19 was due to the significant number of repeated (second) medical death certificates for 2020 issued in February - March 2021, where the initial cause of death was replaced by COVID-19. As a result, the number of deaths with this diagnosis increased by about 25%. Such changes raise doubts about the accuracy of the statistics on deaths from COVID-19. It is more correct to focus on the overall change in mortality in 2020.

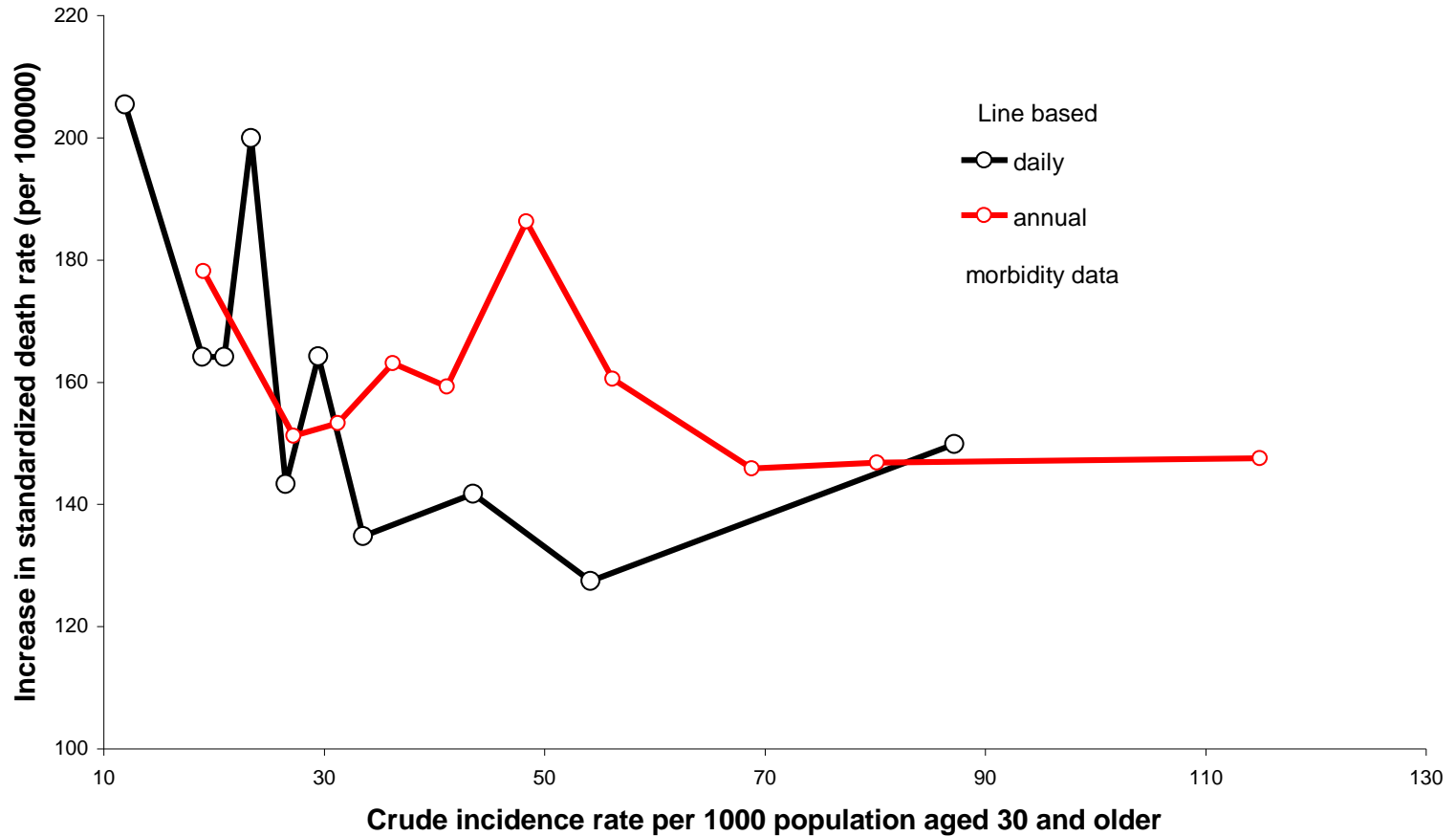
Structure of mortality growth in Russia in 2020

	Russian Federation	Moscow	Other regions
SDR from all causes			
2019	929.0	625.0	962.9
2020	1088.0	751.7	1126.3
Increase	159.0	126.7	163.3
Contribution to growth (%)			
COVID-19	46	74	43
CVD	28	8	30
Acute pneumonia	11	-1	12
All other causes	16	20	16

From 2005 to March 2020, mortality in Russia declined rapidly. Undoubtedly, COVID-19 is the reason for the trend reversal. In Moscow, it was reflected in the official statistics by cause of death mortality change, but outside, everything looks not so simple.

Since 2012, CVD mortality reduction was one of the main goals of the Russian health care system. It is therefore especially surprising that no one has explained the rise in CVD mortality in 2020.

Dependency of increase in standardized death rate from crude incidence rate



Empirical regression based on data for 85 territories divided into deciles by the values of the independent variable.

Regions with low and high morbidity level

The Kendall's tau_b coefficient of rank correlation between crude incidence rate and Increase in standardized death rate for 85 territories of Russia is -0.26, which is significant at the 0.01 level.

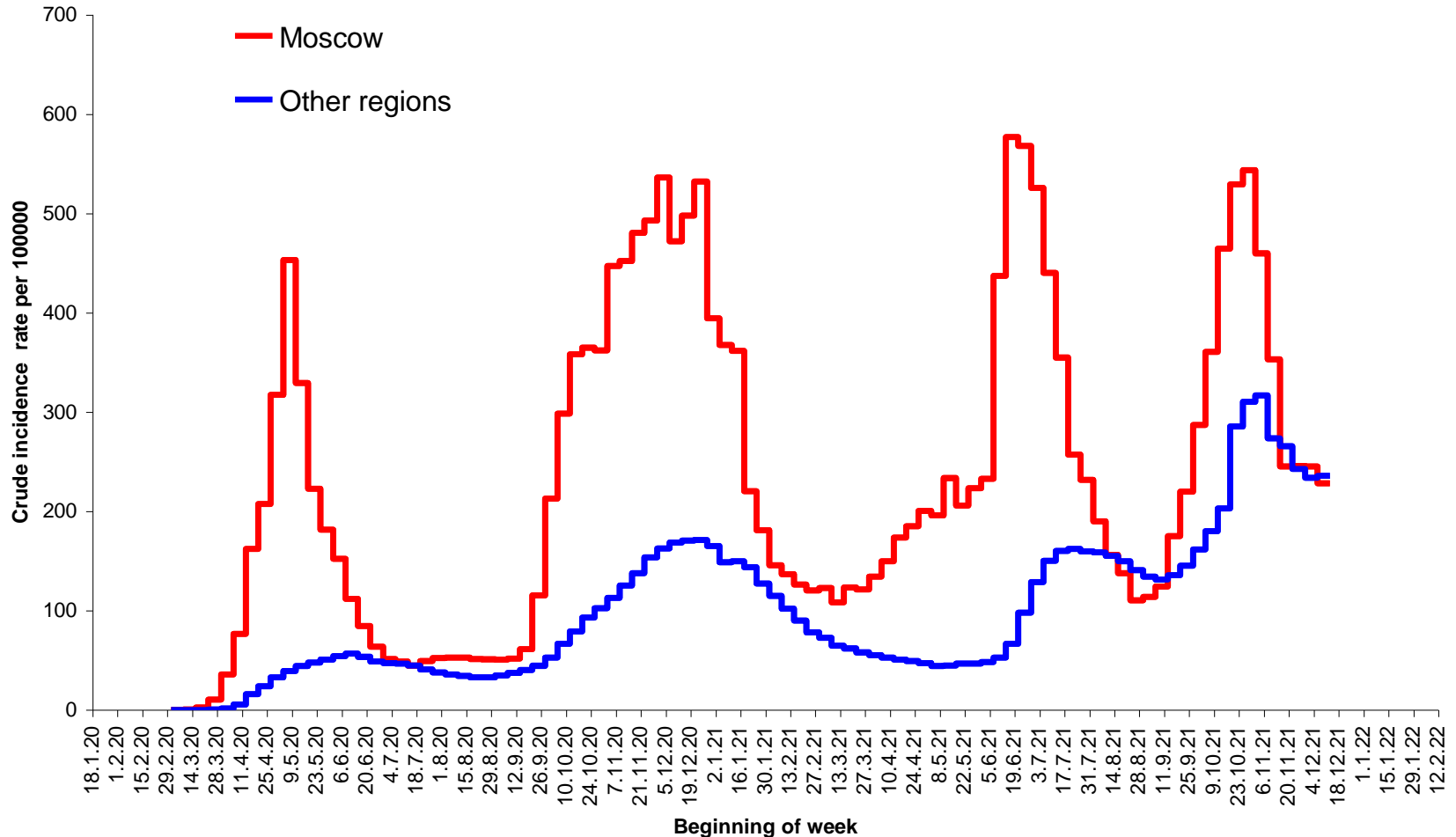


Regions were divided according to daily incidence data into two groups with an indicator below or equal to the median and above the median. It turned out that life expectancy in groups fell by the same 1.8 years compared to 2019

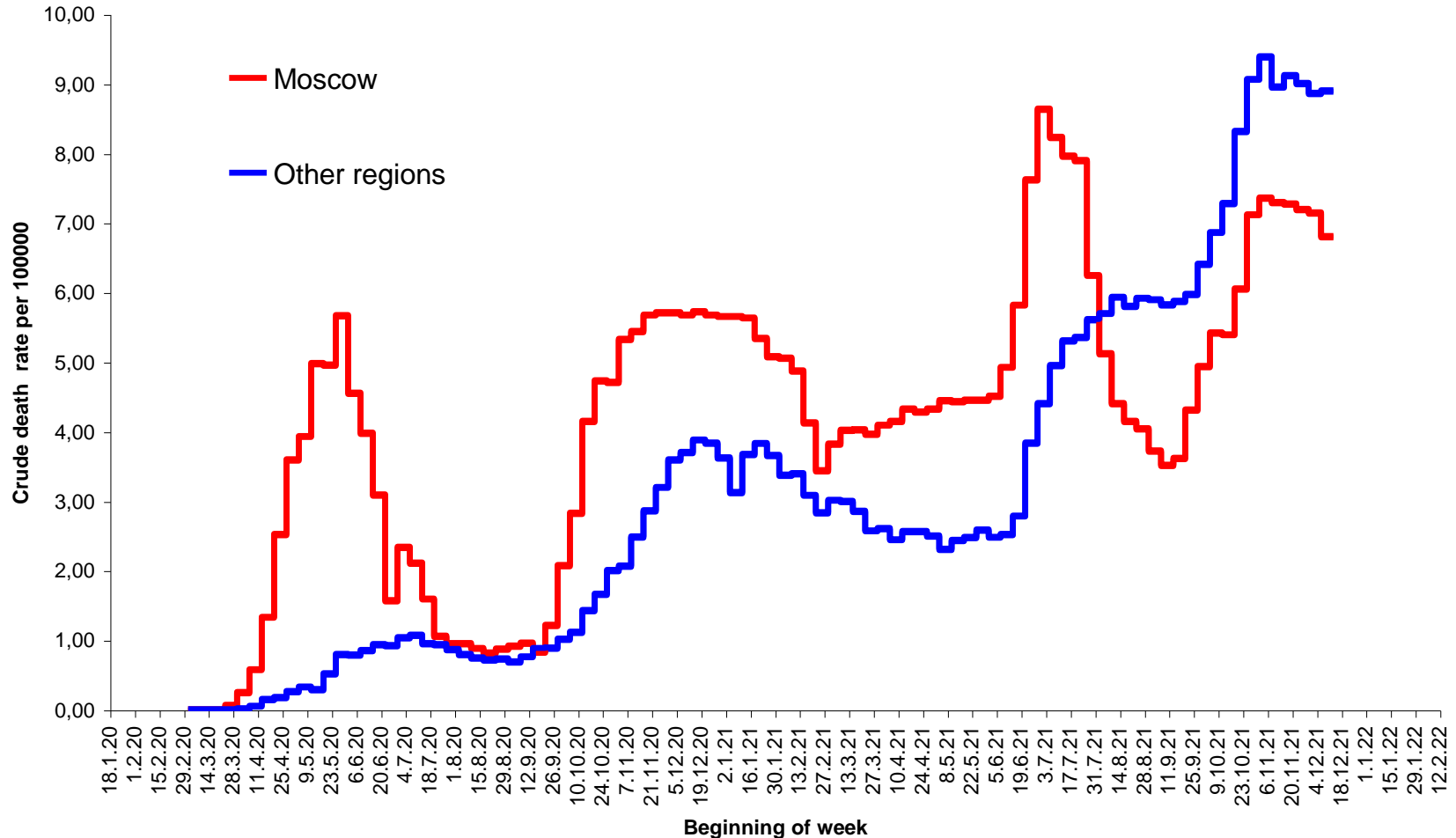
This procedure, based on annual incidence data, showed a drop of 0.05 years more for the low morbidity group.

Weekly crude COVID-19 incidence rate per 100 000 population aged 30+ at the beginning of 2021.

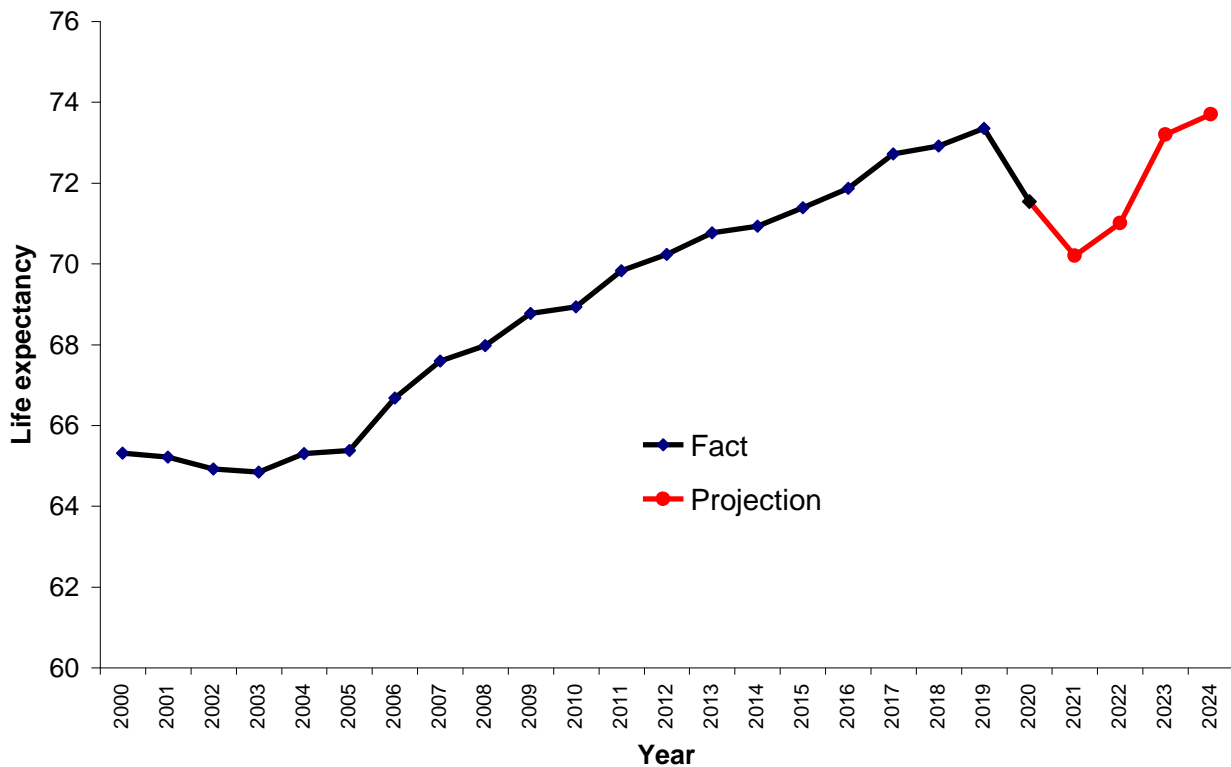
Weeks are indicated by dates of Mondays



Weekly crude death rate from COVID-19 per 100 000 population aged 30+ at the beginning of 2021. Weeks are indicated by dates of Mondays



Life expectancy projection for Russia



Year	LE
2020	71,5
2021	70,2
2022	71,0
2023	73,2
2024	73,7

Unified plan to achieve the national development goals of the Russian Federation for the period up to 2024 and for the planning period until 2030

Thank you!