

JSNA - NOVEMBER 2023
EXCESS MORTALITY IN 2022

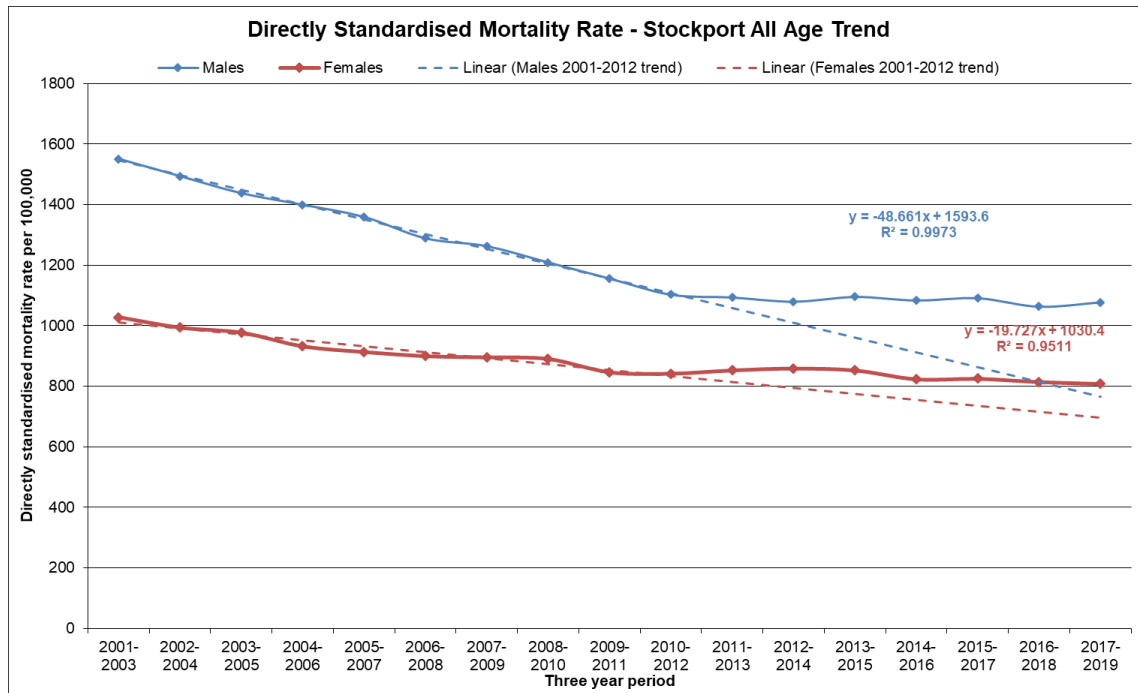
1. INTRODUCTION AND PURPOSE OF REPORT

- 1.1. Local and national data is showing that Stockport and the UK are in a period of excess mortality, and numbers of deaths registered in 2022 are higher than in 2021, although levels in 2022 are still lower than in 2020 when the COVID-19 pandemic lead to the highest number of deaths recorded in the Borough since 1993.
- 1.2. The cause of this recent excess is not completely clear - though what is clear is that this is no longer wholly being driven directly by COVID-19.
- 1.3. This report sets out Stockport data about the trends in mortality, and about possible reasons for the excess deaths in 2022.
- 1.4. It should be seen in the context of changes to the long term trends in mortality that were noted in the 2020 JSNA, when a change in the long term trend for mortality rates in England and Stockport was reported (see section 2).

2. BACKGROUND – CHANGING MORTALITY IN THE 2010S

- 2.1. In 2011 the rate of decline in mortality (the improvement) significantly slowed and life expectancy improvement from this year onwards stalled. The Office for National Statistics (ONS) concluded in 2018 and 2019 that a “statistically significant slowdown in the long-term improvement in age-standardised mortality rates for England and Wales took place around early 2010sⁱ ” ⁱⁱ.
- 2.2. Local mortality rates in Stockport followed this pattern, until 2010/12 the rate of decline for both males and females was consistent and followed a linear trend, from this point until 2019 the all-cause mortality rates for both males and females stopped falling and have instead held steady. Figure 1 below shows these trends.

Figure 1: 2001-2019 Directly Standardised Mortality Rate in Stockport (all ages) showing a change in pattern in 2010-2012 when improvements stalled

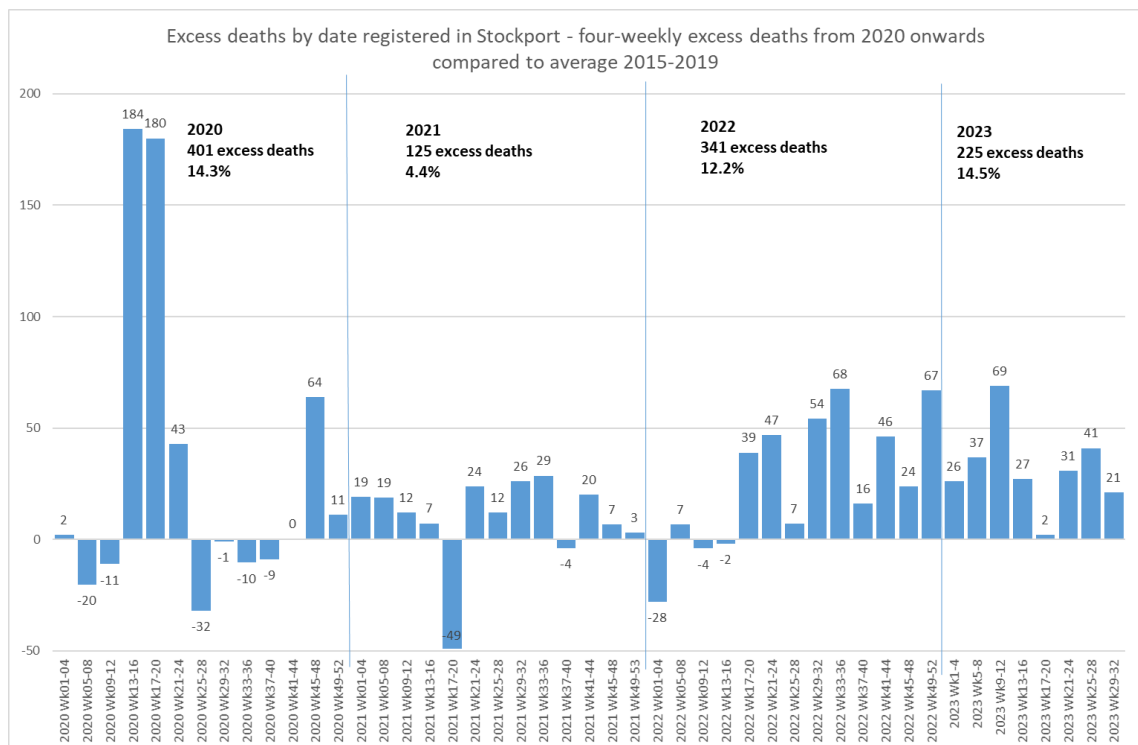


- 2.3. This change was particularly driven by deaths for older people, and especially for those over 90, although mortality improvements also slowed down for younger age groups. The changes were also felt most significantly in the deprived areas, particularly for female under 75 years, reinforcing existing inequalities. These patterns were seen both in Stockport and nationally.
- 2.4. There were many suggestions about the possible causes of this change, including flu infections, cold weather, the impact of austerity, NHS pressures and cohort effects; and it is possible that a number of these factors combined to contribute to the trend. There was no national consensus about the causes of this change and it was hotly debated until the pandemic started.ⁱⁱⁱ

3. STOCKPORT EXCESS MORTALITY 2020-2022

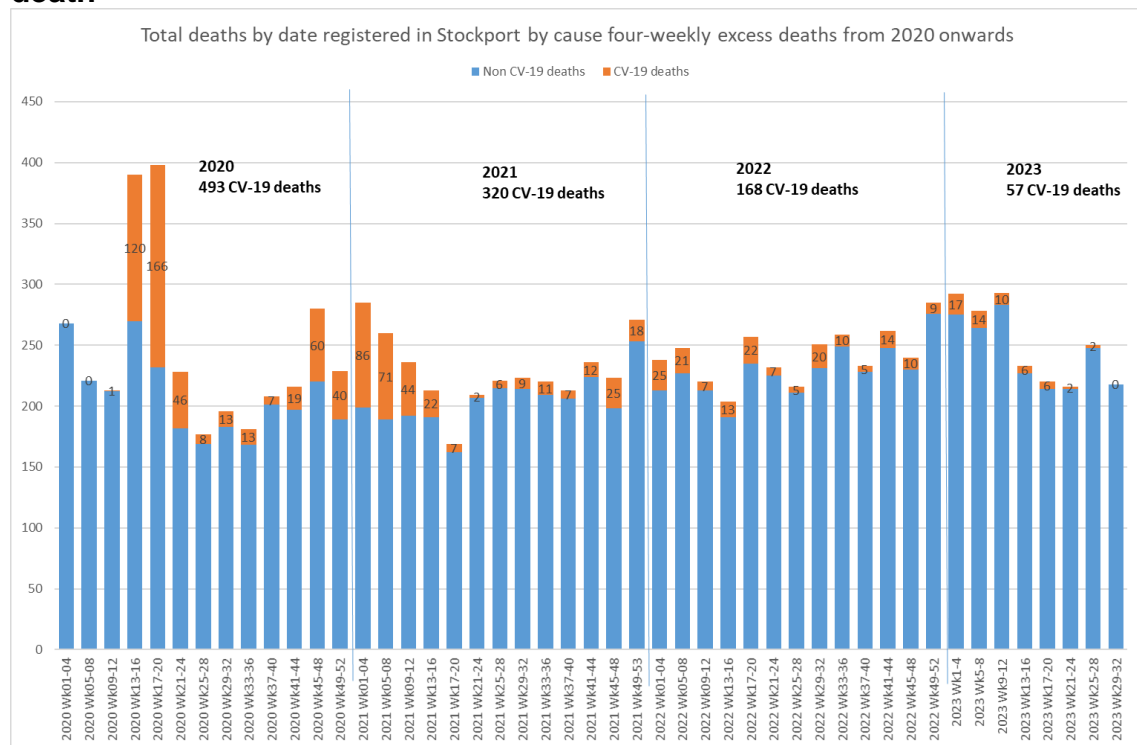
- 3.1. The COVID-19 pandemic had an immediate impact on the mortality rates in Stockport, with mortality peaking throughout the spring of 2020 as the first wave of the infection reached the Stockport population. In 2015-2019 (a period where mortality levels were stable) there were an average of 2,850 deaths registered each year, in 2020 rates rose 14.3% higher than this baseline with 401 excess deaths registered (see figure 2).

Figure 2: 2020 onwards trends in registered mortality compared to the 2015-2019 baseline in Stockport showing the initial wave of mortality linked to COVID-19 and the sustained excess mortality through 2022 and the first half of 2023



- 3.2. As expected COVID-19 was the major cause of excess mortality in in 2020, in Stockport 493 deaths were registered in this year as having an underlying cause of death of COVID-19 (see figure 3), meaning the excess deaths in this year can be attributed to the direct consequences of the disease. The figure for the direct COVID-19 deaths is higher than the excess mortality as some of those who died of COVID-19 in this year were approaching the end of their lives, and would have been expected to die of another cause in year had they not contracted COVID-19.
- 3.3. In 2021, there were 125 excess registered deaths (4.4% above the 2015-2019 baseline) with 320 deaths with an underlying cause of COVID-19 (see figures 2 and 3). Again the excess mortality in this year can be directly attributed to COVID-19, and the charts show how the direct COVID-19 death levels fell significantly once the COVID-19 vaccine had been rolled out to significant proportions of the population from the spring of 2021 (see figure 3).

Figure 3: 2020 onwards trends in registered mortality in Stockport by cause of death

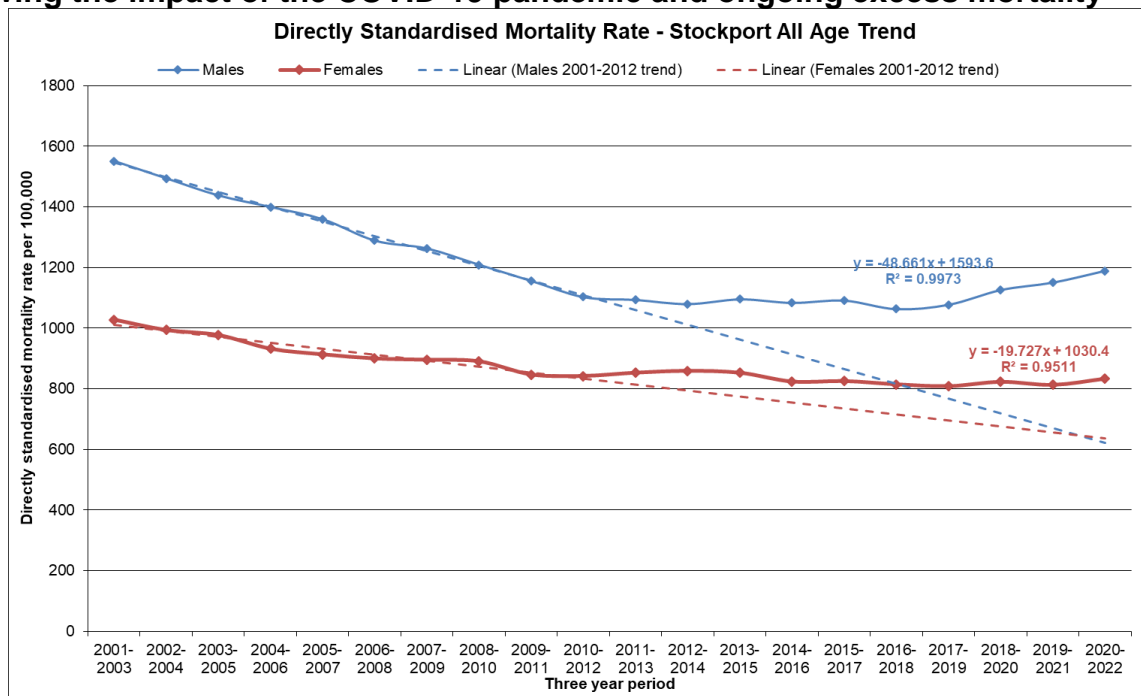


- 3.4. In 2022, there were 341 excess registered deaths (12.2% above the 2015-2019 baseline) with 168 deaths with an underlying cause of COVID-19 (see figures 2 and 3). This is a different pattern to that seen in 2020 and a significant increase on the levels seen in 2021. It is likely that the indirect consequences of the pandemic are now being seen.
- 3.5. These trends are sustaining into 2023, where by the mid-year point excess mortality registrations were running at 14.5% (225 deaths) with 57 directly due to COVID-19.
- 3.6. Direct comparisons from national data on this four weekly basis are not available, but data for the period March 2020 to December 2022 for England and Wales shows an overall excess mortality of 11.1%, with the Stockport comparison from the same data source being 11.2%. In other words Stockport is experiencing excess mortality levels similar to the national average.
- 3.7. In the next section we explore our local data in more detail, looking at the demographic trends in mortality.

4. TRENDS IN GENDER, AGE AND CAUSE

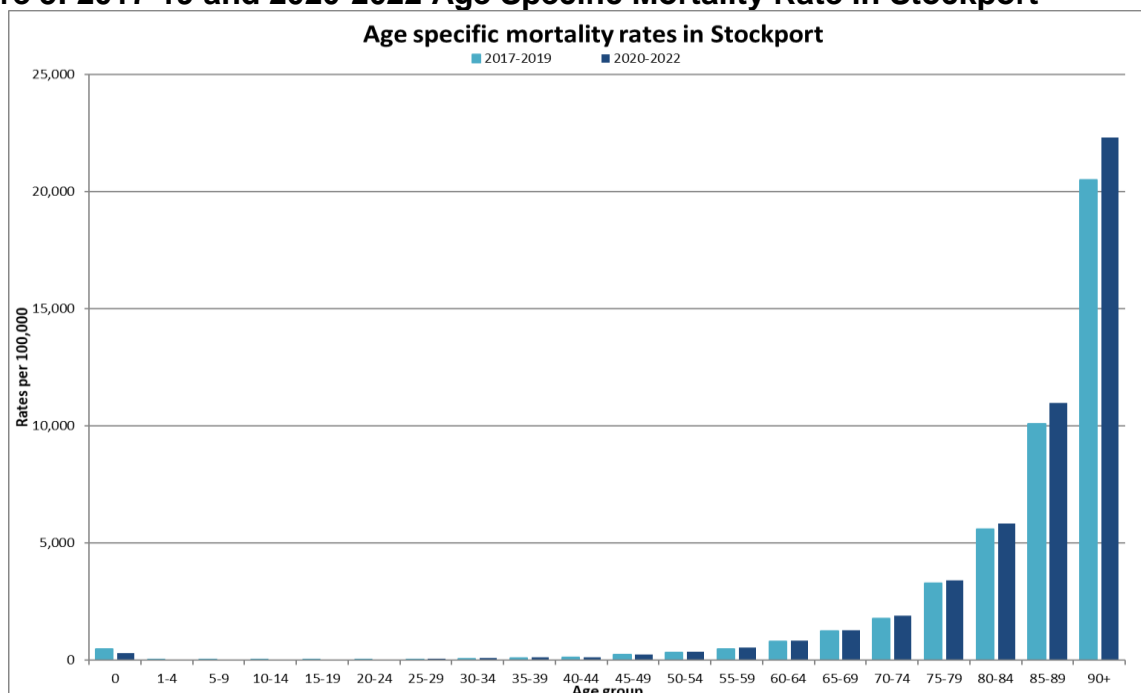
- 4.1. Adding the data for the three years 2020 to 2022 to the analysis shown in figure 1 shows (see figure 4) that the impact has been especially significant for males. While the age standardised mortality rate in 2020-2022 is overall 6.4% higher than in 2017-2019 (note different to the crude count proportion above due to age standardisation), the male rate is 10.4% higher and the female rate 3.0% higher. This is similar to the trends seen nationally.

Figure 4: 2001-2022 Directly Standardised Mortality Rate in Stockport (all ages) showing the impact of the COVID-19 pandemic and ongoing excess mortality



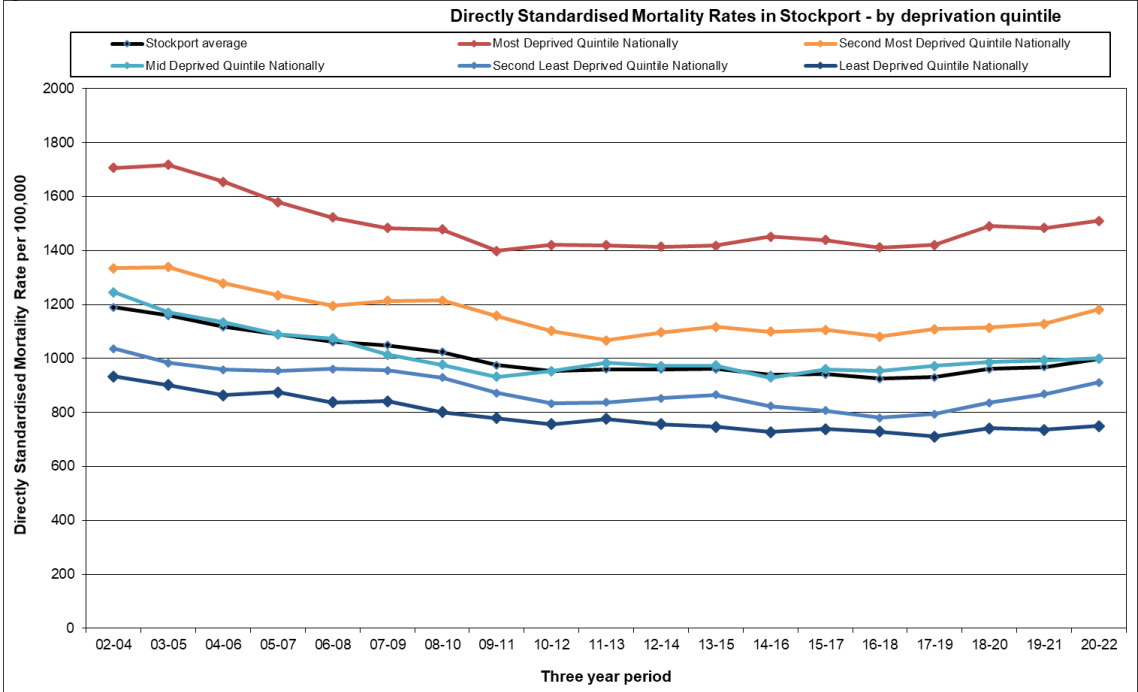
- 4.2. Analysis shows that all adult age groups have seen an increase in mortality rate over the last three years, the majority of the excess deaths have occurred in those aged 85+ years with an average increase in rates of 8.7% in these older age groups, COVID-19 had a particular impact on the older population whose health vulnerability was higher pre-pandemic and this is likely to be what's driving this trend. Rates rose less significantly for deaths for those aged 60 to 84 years where the average increase was 4.7%. Mortality rates for children have not changed significantly. It is as yet difficult to isolate the age groups impacted by the non-COVID-19 excess mortality due to the lower numbers, this may become clearer after a further years data.

Figure 5: 2017-19 and 2020-2022 Age Specific Mortality Rate in Stockport



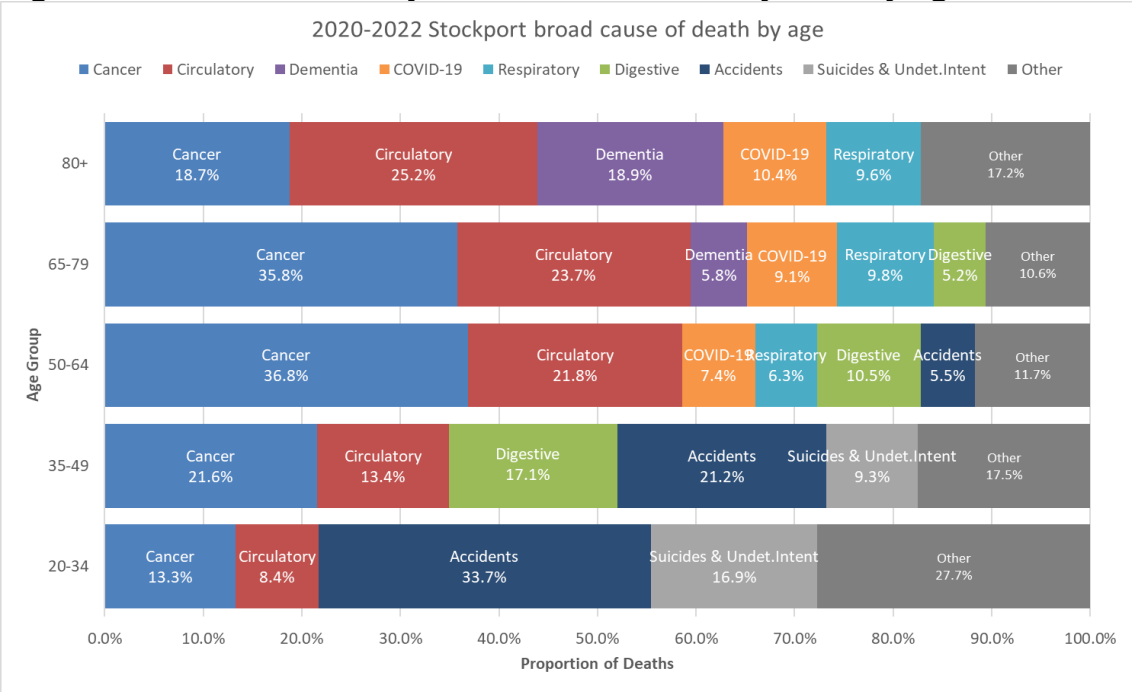
4.3. Analysis by deprivation quintiles (figure 6) shows that mortality has risen in all parts of Stockport, but the gap in mortality rates between the most and least deprived areas of Stockport has also grown, with the absolute gap growing by 61.1 per 100,000 (7.3%) as the pandemic has exacerbated existing inequalities.

Figure 6: 2020-2022 Directly Standardised Mortality Rate in Stockport (all ages) by deprivation



4.4. Analysis of cause of death is more complex, as small numbers mean it is difficult to interpret the one year trends for 2022 to understand the causes of death in excess in this year as the direct impact of COVID-19 deaths lessens, figure 7 shows the main causes of death in the period 2020-2022 by age group in Stockport.

Figure 7: 2020-2022 Directly Standardised Mortality Rate by age and cause



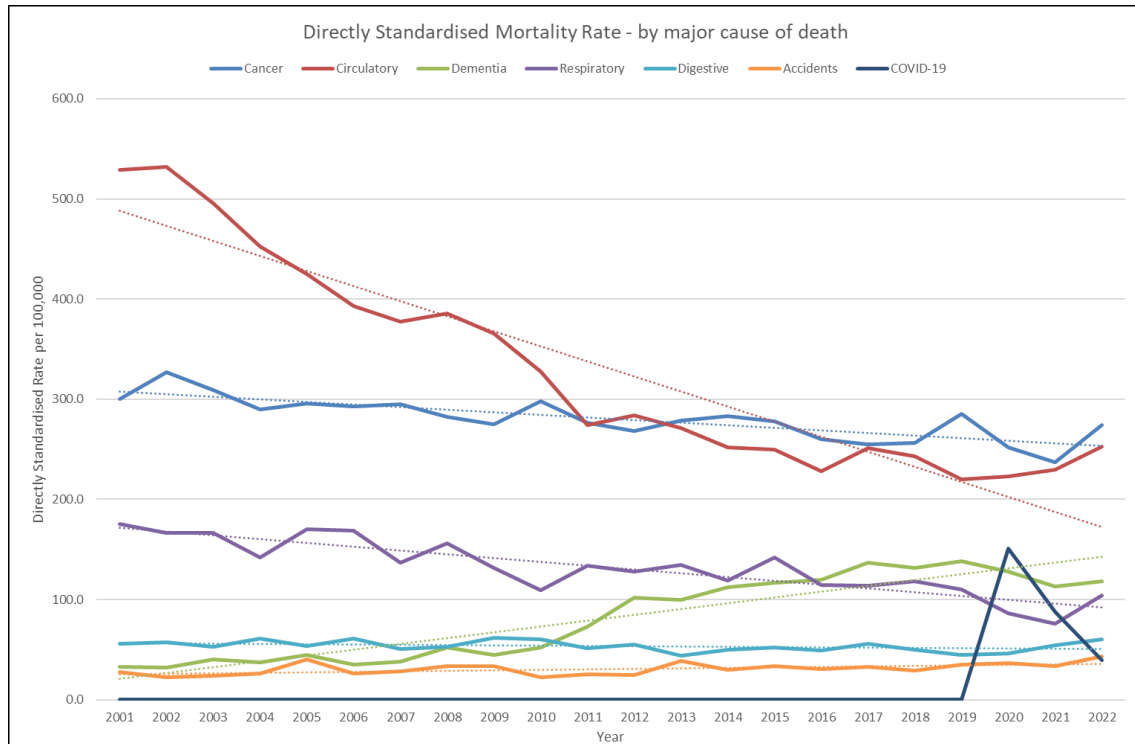
- 4.5. This illustrates how the causes vary by age, with cancer the major cause of death between that ages of 50 to 79 years, and the circulatory being the major cause of death from age 80 years onwards and dementia becoming increasingly common.
- 4.6. Due to the small numbers involved deaths by cause are usually analysed over a three year period to smooth out some of the random variation, however for the following analysis (to be therefore treated with caution) the single year data is used to try and identify the causes other than COVID-19 contributing to the excess mortality in Stockport in 2022.
- 4.7. Table 8 below shows the annual trends in mortality by cause over the last three years compared to the 2017/19 baseline, this shows that COVID-19 although with a significantly lower rate in 2022 than 2020 or 2021 is still a significant cause of death and is contributing to the excess seen in 2022, but also shows how deaths from cancer, circulatory disease, digestive (such as liver disease) and accidental causes are all also higher in 2022 than in 2017/19.

Figure 8: Directly Standardised Mortality Rates by cause in Stockport changes

Cause of death	Period				Change 2017/19 to 2022	
	2017-19	2020	2021	2022	Difference	%
Cancer	265.4	252.2	237.4	274.2	8.7	103.3%
Circulatory	238.2	223.0	229.8	252.4	14.2	106.0%
Dementia	135.6	128.0	112.8	118.0	-17.6	87.0%
Respiratory	113.9	86.0	75.8	103.7	-10.2	91.1%
Digestive	49.9	46.0	54.3	60.6	10.7	121.4%
Accidents	32.2	36.6	33.7	42.9	10.7	133.3%
COVID-19	0.0	151.1	87.7	39.7	39.7	-
All other causes	95.8	110.0	102.9	113.8	18.0	118.8%

- 4.8. Circulatory disease has seen the largest mortality rate increase since 2017/19, increasing by 14.2 per 100,000 (an increase of 6%), digestive and accidental causes have both risen by 10.7 per 100,000 (note that that the accidental causes that are increasing are those linked to accidental drug misuse, and Public Health are currently investigating this issue) while cancer has risen by 8.7 per 100,000.
- 4.9. The longer term trends are illustrated in figure 9. Prior to 2019 all causes of death other than dementia were falling, though the rate of improvement had slowed for some causes.
- 4.10. This is most notable for circulatory disease mortality which fell rapidly between 2008 and 2011 and then fell more slowly to 2016 when rates began to stabilise before rising since 2020. Rates of circulatory disease mortality are now significantly higher than a straight line projection would suggest they should be.
- 4.11. For other causes of death the rises seen in 2022 could still be seen as a continuation of the long term trends, and more years of data will be needed before we can determine whether a genuine increase is occurring or whether this is post pandemic variation as our health and our health services recover.

Figure 9: Directly Standardised Mortality Rates by cause in Stockport long term trends



4.12. In the next section we explore some of the theories attempting to understand the causes of this increase.

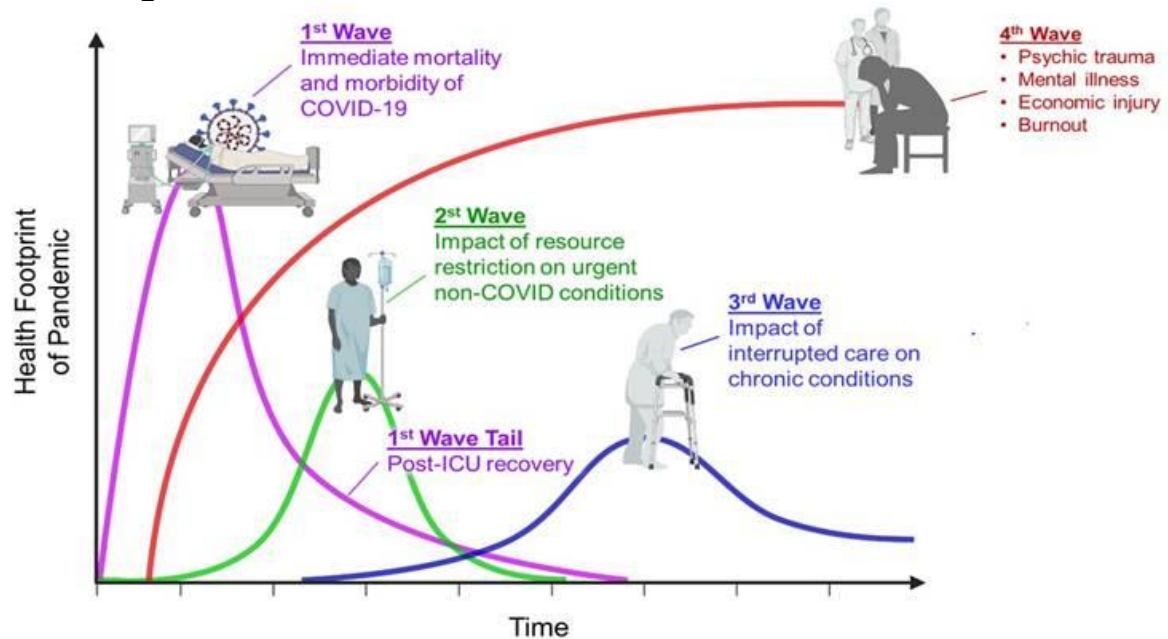
5. CAUSES OF EXCESS MORTALITY

5.1. At the outset of the COVID-19 pandemic models setting out expected impacts were updated and shared. Most rightly focused on the immediate impact on ICU and emergency care capacity and supporting the most vulnerable populations through lockdowns, however it was also important to understand the impacts of other areas of healthcare which had to reduce capacity and refocus on our health. Models looking at these knock on impacts described that there likely to be four “waves” to this pandemic (distinct from the waves of different variants of COVID-19):

- The immediate mortality and illness caused by COVID-19
- The impact on other health conditions due to restrictions on urgent care
- The impact on other health conditions due to interrupted chronic and preventive health care
- The impact on mental health and the wider determinants of health

[Dr Victor Tseung](#) illustrates this below

Figure 10: Possible waves of the COVID-19 Pandemic, modelled in early 2020, Dr Tseung



- 5.2. This model therefore suggests that we might be in a period of excess mortality due to the ongoing but less direct impacts of the pandemic COVID-19, linked to the knock on delays in urgent, chronic and preventative care in addition to the impact of long COVID-19 and post COVID-19 infection (especially for those who received ICU or other intensive care).
- 5.3. Additionally in 2022 we experienced an exceptional summer heat wave, which lead to an estimated 2,985 excess summer deaths^{iv} nationally, and the during the autumn and winter the NHS nationally experienced significant pressures and delay in emergency response times, with long waits for ambulances and in Accident and Emergency departments which some have linked to the increase mortality^v.
- 5.4. National analysis of COVID-19 and all-cause mortality rates by vaccination status show that the rise in mortality is not linked to the COVID-19 vaccine^{vi}.
- 5.5. As we saw with the explanation for the slowdown in improvements for mortality between 2011 and 2019 there will be no single cause of the current period of excess mortality, but instead a number of factors working in combination.
- 5.6. We cannot yet say what will happen to the trend in the mortality rate in the future, as there is not enough evidence to help predict whether and when it will return to its earlier trends or continue with current situation, although data for 2023 suggest that mortality rates are still higher than expected.

6. RESPONSES TO EXCESS MORTALITY

- 6.1. Excess mortality is a summary measure which gives a signal as to the state of the current health of the population and of the health and care system. We know that the factors contributing to the observed excess mortality are complex and multifactorial, including the ongoing impact of the COVID-19 pandemic both on people's health and

the disruption to health and care services (preventative and critical care), plus the impacts of the wider cost of living crisis and extreme weather events. Together these factors are impacting negatively on health and are particularly impacting health in the most deprived areas of the borough.

- 6.2. The plans and strategies that Stockport has already developed, including the One Stockport Borough Plan, emphasise the importance of the health of our people and set the ambition to improve healthy life expectancy and narrow inequalities. The current trends make these ambitions more challenging to achieve, however the work planned is evidence based.
- 6.3. For example the One Health & Care Plan, which is currently being refreshed, sets out plans for our local services and prevention including:
 - the work the Provider Partnership is leading delivering on the Stockport Prevention Framework. Over the last few months the partnerships has reviewed the evidence base for high impact actions which can be taken to improve health and narrow inequalities and is taking forward 5 projects to test collaborative provider led approaches to prevention in circulatory disease, diabetes, alcohol harm, falls and frailty pathways.
 - the developing neighbourhood & prevention programme, where each PCN is developing a population health plan for their area, working collaboratively to identify local communities with specific needs where local action can make a significant difference to the health of the population.
- 6.4. Partners in the wider system can continue to support the health of the borough through work including CAN (Climate Action Now), the ONE Stockport Economic Plan and Stockport Active Communities Strategy. These important programmes all contribute to improving the wider determinants of health and reducing health inequalities.
- 6.5. Public Health core services also continue to improve the population health through behaviour change, wellbeing support, early diagnosis and infection control, with proportionate universalism approaches ensuring that resources are targeted at those who need the most support.
- 6.6. Within the context of a health and care system under immense pressure, with increasing demand, partners remain committed to prioritising population health approaches to mitigate the national trends which lead to excess mortality and widening inequalities within our borough.

7. CONCLUSIONS AND RECOMMENDATIONS

- 7.1. The Health and Wellbeing board are recommended to discuss the data set out in this report, and consider the implications for health and care services, with this likely meaning continued higher levels of demand for health and care services.
- 7.1. The analysis shows the importance of continuing efforts to reduce the risk of mortality by addressing the underlying wider determinants of health (such as poverty) and by

reducing risk factors such as smoking, high blood pressure and obesity. Analysis suggests that circulatory disease prevention is in particular a priority. It also demonstrates how essential the collaborative ONE Stockport workstreams already underway are to the continued improvement of health for the people of Stockport.

- 7.2. The analysis by age and deprivation, highlight the need to support the most vulnerable in society, particularly older people and those in areas of deprivation, to minimise the impact of poverty and extremes of temperature and to address widening health inequality.

ⁱ<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/changingtrends inmortalityinenglandandwales1990to2017/experimentalstatistics>

ⁱⁱ<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/changingtrends inmortalityinenglandandwales1990to2017/1990to2018>

ⁱⁱⁱ<https://publichealthmatters.blog.gov.uk/2017/07/20/whats-happening-with-mortality-rates-in-england/>

ⁱⁱⁱ<https://www.kingsfund.org.uk/projects/mortality-rates-uk-why-are-improvements-life-expectancy-slowing-down>

^{iv}<https://www.gov.uk/government/publications/heat-mortality-monitoring-reports/heat-mortality-monitoring-report-2022#discussion>

^v<https://www.bbc.co.uk/news/health-64209221>

^{vi}<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsinvolvedwithcovid19byvaccinationstatusengland/latest>