



Excess deaths in Bradford District 16th March – 14th April 2020

21st April 2020

1. Background

During the COVID-19 pandemic, partners in Bradford District have used intelligence to underpin their strategic response. As part of this the CBMDC public health team has produced daily public health updates to inform Council Gold meetings each week day. These briefings contained data on deaths from COVID-19. As more data have become available the daily public health update has refined what it reports.

- From 23rd March the update used NHSE data to report deaths daily. However these data are only deaths from people in hospital who had tested positive for COVID-19.
- From 9th April the daily public health briefings included data from the CBMDC Registration Services Manager. These data include deaths in all places, not just hospitals and also deaths where COVID 19 is suspected, not just confirmed cases.
- From 14th April we stopped including data from NHSE and report only on CBMDC registered deaths.
- In the evening of 14th April the Office for National Statistics released England and Wales Deaths registered weekly in England and Wales, provisional: week ending 3 April 2020. These data showed there were 6,082 more deaths recorded that week compared to the 5 year average from previous years. Of these deaths 3,475 mentioned “novel coronavirus COVID-19”. This means there were 2,607 unexplained excess deaths. (source: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsregisteredweeklyinenglandandwalesprovisional/weekending3april2020>)
- On 15th April the public health team enquired with the Registration Services Manager if they were experiencing higher number of deaths on top of the COVID-19 deaths they had been registering. Their experience was they were.

2. Questions

The national data on unexplained excess deaths, and the anecdotal experience of the Registration Services Manager raised questions:

- Are more people dying in Bradford than expected after accounting for COVID-19 deaths?
- Can we tell if these are from people not accessing NHS care?
- Are there some deaths which could be COVID-19 not recorded as such?

3. Methodology

CBMDC Registrar Services shared data on all deaths from 16th March to 14th April with the CBMDC Public Health Intelligence Team – these were provided in pdfs for registered deaths each day. The team analysed the data to ascertain date of death, place of death, age of the deceased and cause of death. These data were compared with historic deaths data held by within Public Health via the Primary Care Mortality Database. Deaths have been compared from 16th March and 14th April for both 2019 and 2020.

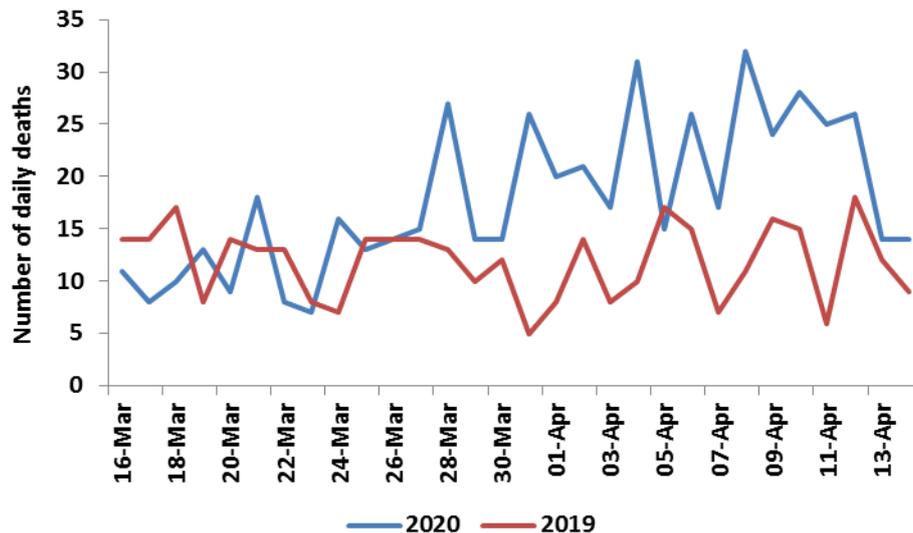
4. Results

4.1 Total numbers of deaths

In 2019 a total of 356 deaths occurred between the 16th March and 14th April, ranging between 5 and 18 deaths per day. In 2020, between the same time period a total of 533 deaths occurred,

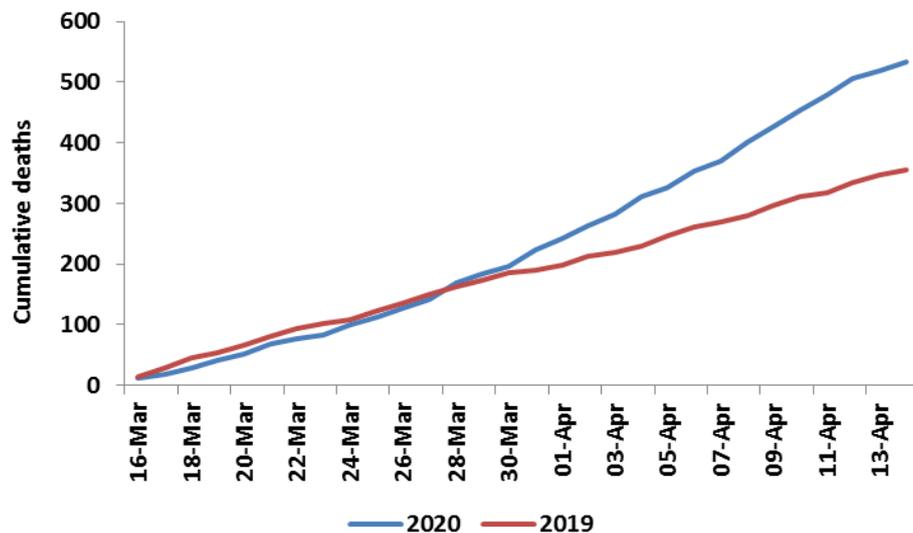
ranging between 7 and 32 deaths per day (Figure 1). Therefore in 2020 there were 177 additional deaths recoded between 16th March and 12th April. This is based on date of death rather than date of registration of death so these figures will be different to those included in the daily public health update for now.

Figure 1: Daily deaths 16th March to 14th April, 2019 & 2020



Looking at the daily figures cumulatively shows that the number of deaths occurring started behaving differently at around the 30th March (Figure 2).

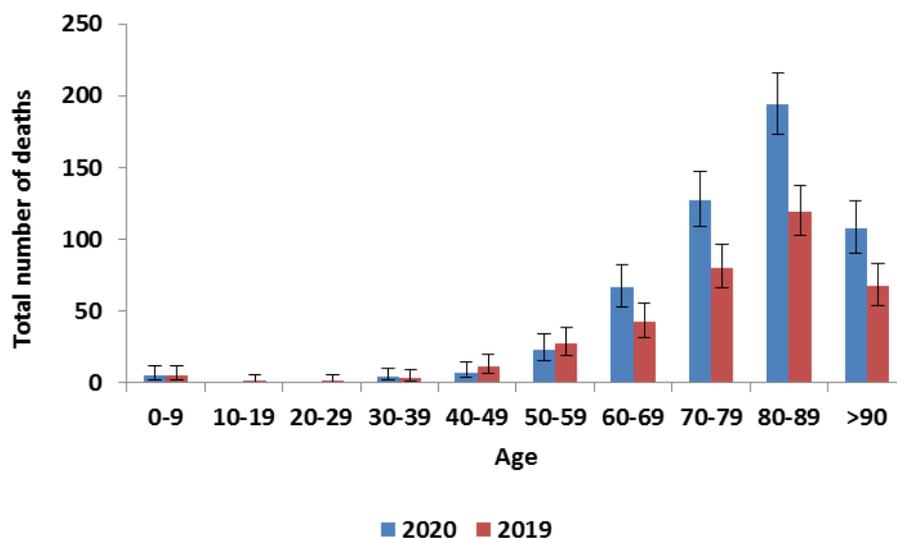
Figure 2: Cumulative deaths 16th March to 14th April, 2019 & 2020



4.2 Age of people dying

Comparing ages between the two years shows there are significantly more deaths occurring in people aged 70 years and over in 2020 (Figure 3). Deaths are also higher in people aged between 60-69 years of age, for all other ages number of deaths are relatively similar.

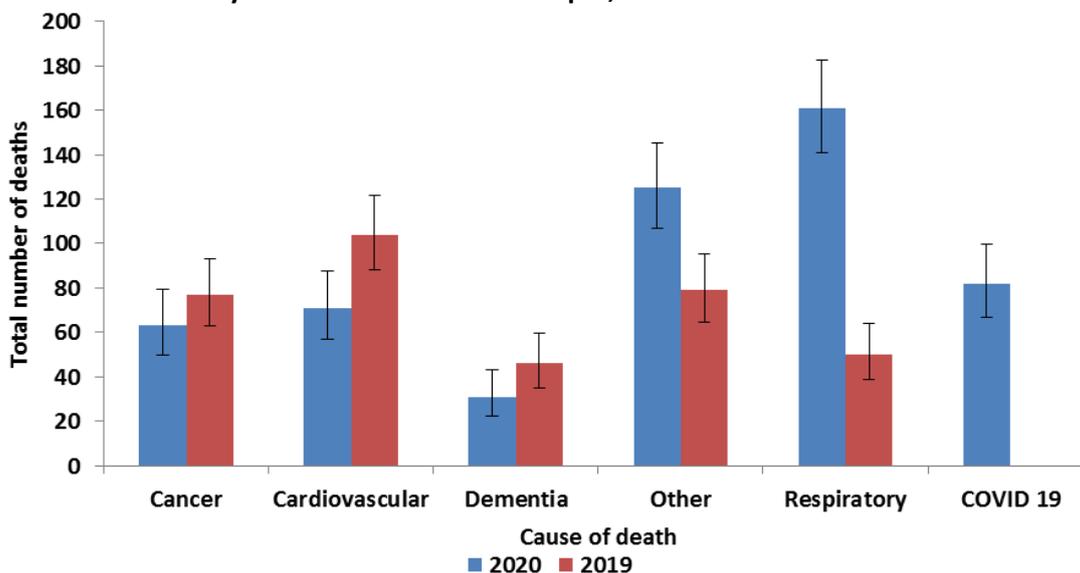
Figure 3: Total deaths by age 16th March to 14th April, 2019 & 2020



4.3 Cause of death

Cause of death shows there are a significantly higher number of deaths in 2020 recoded as respiratory disease and ‘other’ deaths when compared to 2019. Also of note, there are a fewer deaths recorded in 2020 compared to 2019 where the main cause of death was due to cardiovascular disease, cancer and dementia. Nearly half of the ‘other’ causes of death showed Old Age / Frailty as the main cause of death (see appendix 1 for a breakdown).

Figure 4: Total deaths by cause 16th March to 14th April, 2019 & 2020



4.4 Place of death

Between the 16th March and 14th April 2020 a significantly higher number of deaths occurred in the home, hospital and within care homes than over the same period of time in 2019 (Figure 5).

Figure 5: Total deaths by place of death 16th March to 14th April, 2019 & 2020

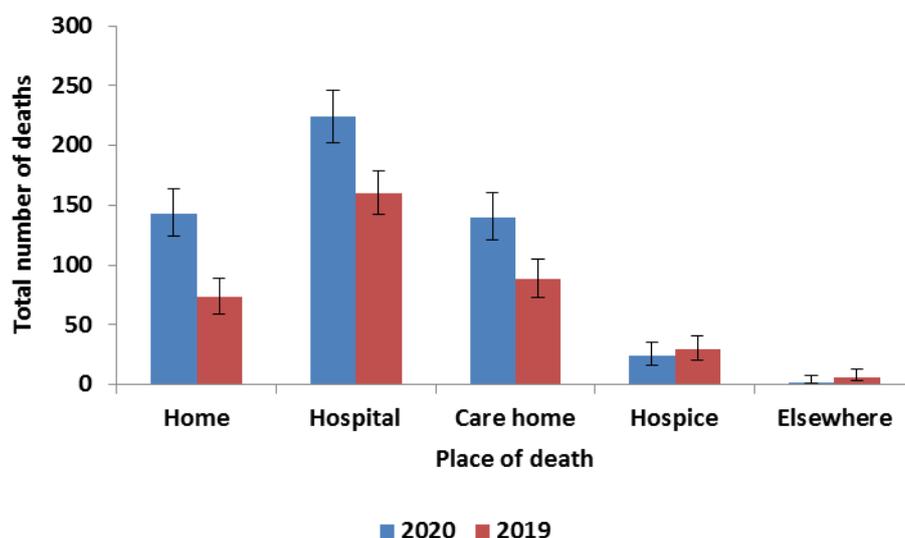


Figure 6 shows a breakdown of cause of death by place of death. Care homes have seen a higher proportion of deaths due to respiratory disease and all other causes of death, as have deaths that occurred within the home. For deaths that occurred within the hospitals have seen a higher proportion of deaths due to respiratory disease and fewer deaths due to cardiovascular disease.

Figure 6: Breakdown of total deaths by place and cause of death 16th March to 14th April, 2019 & 2020

Cause of death	Care Home				Elsewhere				Home				Hospice				Hospital			
	2019		2020		2019		2020		2019		2020		2019		2020		2019		2020	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Cancer	7	8%	10	7%	1	17%	0	0%	19	26%	35	24%	24	83%	11	46%	26	16%	7	3%
Cardiovascular	18	20%	8	6%	3	50%	1	50%	28	38%	27	19%	1	3%	2	8%	54	34%	33	15%
COVID	0	0%	10	7%	0	0%	0	0%	0	0%	7	5%	0	0%	3	13%	0	0%	62	28%
Dementia	35	40%	25	18%	0	0%	0	0%	4	5%	5	3%	0	0%	0	0%	7	4%	1	0%
Other	16	18%	45	32%	2	33%	0	0%	13	18%	34	24%	3	10%	3	13%	45	28%	43	19%
Respiratory	12	14%	42	30%	0	0%	1	50%	9	12%	35	24%	1	3%	5	21%	28	18%	78	35%

5. Discussion

This analysis has been undertaken on data provided by the CBMDC Registrar Manager – “return of deaths to area health authority”. This is a different data set to the data the Registrar manager sends to the public health intelligence team daily. There is a difference in number of deaths attributed to COVID-19 between these data sets. The “return of deaths to area health authority” identifies 82 deaths from COVID-19. The daily COVID deaths data from 16th March to 14th April identifies 123 deaths, a difference of 41 deaths. It could be that these 41 deaths have not been registered yet. The final formal deaths data will be recorded in the Primary Care Mortality Database in around 5 months time, this may be delayed because of the workload created by the pandemic. A true comparison will only be able to be undertaken at that time between the same data source.

Given these caveats this analysis shows that more people are dying in hospital, care homes and home compared to this time last year. The data also show that more people are dying from respiratory causes and “other causes” – 49% of these are recorded as old age / frailty compared to this time last year. One conclusion could be that more people are dying at home and in care homes

than we would expect, attributed to frailty and respiratory disease. These deaths could be caused by COVID-19 in which case the deaths caused by this virus are higher than are currently reported. It also means that perhaps partners in Bradford District need to place more emphasis on supporting palliative care in the home and care home setting.

One concern was the excess deaths being experienced was from people dying from heart attacks and strokes. The data show deaths from cancer, cardiovascular disease and strokes are in fact lower compared with this time last year. This may be because people experiencing these long term conditions may be more susceptible to dying from COVID-19.

It is inappropriate to draw firm conclusions from the data because of the time lag between the data sources, the small numbers and the potential for statistical artefact from recording practices. However it is good to understand as much as we can what is happening with local data and to continue to explore this on a larger scale and in conjunction with other data sources.

6. Next steps

- Share this report with Council Gold and District Gold to discuss partner's response.
- Share this learning with colleagues across a West Yorkshire ICS footprint and analyse data on a larger scale to see if the same patterns are true.
- Ascertain postcode data for all people who died to explore the relationship between deprivation and deaths from COVID-19 and other causes.
- Triangulate these data with A&E activity data to explore the relationship between differences in access to emergency care and non COVID-19 deaths.

Appendix 1 – Breakdown of ‘other’ causes of death

Cause of death	Total	%
Old age / frailty	61	49%
Sepsis	11	9%
Multi organ failure	9	7%
Renal Failure	9	7%
Motor neurone disease	3	2%
Parkinson's Disease	3	2%
Urosepsis	3	2%
Chronic Kidney Disease	2	2%
Amyloidosis	1	1%
Anoxic Brain Encephalopathy	1	1%
Chromosomal Abnormalities Trisomy 21	1	1%
Chronic Alcoholic Liver Disease	1	1%
Cirrhosis of Liver	1	1%
Cirrhosis of the Liver, Idiopathic	1	1%
Corticobasal Degenerative Disease	1	1%
Decompensated Alcoholic Cirrhosis of Liver	1	1%
Extreme Prematurity 23 weeks Gestation	1	1%
Faecal peritonitis	1	1%
Gastrointestinal bleed	1	1%
Huntington's Disease	1	1%
Hypoxic Brain Injury	1	1%
Lewy body disease	1	1%
Liver Failure	1	1%
Lower gastrointestinal haemorrhage	1	1%
Paraneoplastic cerebellar syndrome	1	1%
Perforated Colon	1	1%
Perforated Gastric Ulcer (Spontaneous)	1	1%
Progressive Supranuclear Palsy	1	1%
Ruptured Abdominal Aortic Aneurysm	1	1%
Severe Hypoxic Ischaemic Encephalopathy	1	1%
Upper gastrointestinal haemorrhage	1	1%
Urinary Tract Infection	1	1%