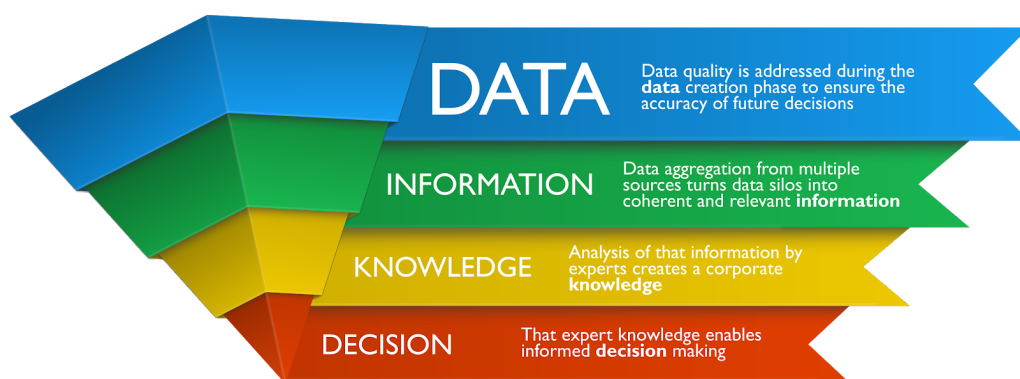


ONS data raises important questions about non COVID-19 deaths by occupation

Why have non COVID-19 related deaths in the hairdressing industry risen by 30%?

Following a freedom of information request on the 25th January 2021, The Office of National Statistics (ONS) released the dataset: *Coronavirus (COVID-19) related deaths by occupation, England and Wales.*¹

The summary accompanying the dataset concluded that *“those working in close proximity to others continue to have higher COVID-19 death rates when compared with the rest of the working age population.”*²



1

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/bulletins/coronavirusCOVID19relateddeathsbyoccupationenglandandwales/deathsregisteredbetween9marchand28december2020>

2

“Today’s analysis shows that jobs with regular exposure to COVID-19 and those working in close proximity to others continue to have higher COVID-19 death rates when compared with the rest of the working age population. Men continue to have higher rates of death than women, making up nearly two thirds of these deaths.”

Ben Humberstone, ONS, Head of Health Analysis and Life Events, 25th January 2021

Non Covid-19 deaths by occupation - a closer look

This data is clearly vital in understanding the impact of lockdown legislation on COVID-19 deaths and informs the growing conjecture about the disease's disproportionate impact on workers with low, or irregular incomes.



Without doubt, we are fortunate in this country that the ONS provides such valuable insight to enable us to make sense of what is happening. However, the summary drew no conclusions about the increases in non COVID-19 related deaths by occupation, prompting the author to take a closer look. It highlighted a worrying increase in non COVID-19 deaths in one particular occupation – hairdressing.

Delving deeper into the deaths by occupation data

The ONS dataset provides context to the deaths including COVID-19 against the average “expected” deaths over the same period for the past five years.³

The main media commentary following the release of the dataset focused on the fact that more men than women of working age had COVID-19 recorded on their death certificates. Overall, the excess deaths for women in the period covered by the dataset was 1,891. The deaths of women attributed to COVID-19 was 1,742, so no significant statistical difference. However, that total figure hides a range of outcomes across the 369 occupations listed in the dataset. When you look at the dataset in more detail some interesting numbers emerge.

In Table 1 at the end of this article (adapted from table 9 of the ONS report), I have added two extra columns: **Non COVID-19 excess mortality 2020**; and **Percentage change Non COVID-19 excess mortality 2020**.

3

The dataset covers deaths involving COVID-19 and all causes by sex (those aged 20 to 64 years), England and Wales, for deaths registered between 9th March and 28th December 2020.

Deaths are defined using the International Classification of Diseases, 10th Revision (ICD-10). Deaths involving COVID-19 include those with an underlying cause, or any mention, of ICD-10 codes :

- U07.1 (COVID-19, virus identified) or
- U07.2 (COVID-19, virus not identified).

All causes of death is the total number of deaths registered during the same time period, including those that involved COVID-19.

Table 9 in the dataset breaks the figures down by occupation. Occupation is defined using the Standard Occupation Classification (SOC 2010). The table lists 369 occupations. Table 9 breaks the dataset down further by male and female.

The three columns of figures supplied in the dataset are titled:

- Deaths involving COVID-19;
- All causes of death;
- Average all-cause mortality (2015 to 2019)

Non Covid-19 deaths by occupation - a closer look

At the “top” of the table, now sorted by percentage of non COVID-19 deaths, are hairdressers with an increase in **Non COVID-19 excess mortality** of 30%. But what accounts for such a marked increase and what are the leading causes of these excess deaths?

Delving deeper still – some concerning increases in several causes of death of hairdressers

Following a request for more detailed information on the mortality rate of the “top” group – hairdressers - the ONS responded very promptly on the 12th February, publishing a new dataset breaking down the leading causes of death.⁴



The total deaths, for men and women, was 398, an increase of 37% compared with the average number of deaths over the past five years covering the same reporting period. COVID-19 accounts for 20 of those deaths.

Table 2 at the end of this article (adapted from table 1 of the second ONS report) shows the top ten causes of death (out of 63) showing dramatic increases in **suicide** and **accidental poisoning** among hairdressers, as well as a startling rise in deaths from **breast cancer** and **strokes**.

Questions we should ask next

This paper was specifically written to draw attention to a trend overlooked by most commentary on the original dataset release, namely a steep rise in non COVID-19 related deaths in certain professions, and in particular hairdressers.

As more datasets are released covering longer periods of time, new trends in the data will become apparent. It is still too early to draw definite conclusions, and whilst we must always be careful to remember that correlation does not imply causation, these datasets do raise the imperative to ask more questions, such as:

4

<https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/causesofdeath/adhocs/12888numberofdeathsamonghairdressersandbarbersthoseaged20to64yearsbyleadingcausesofdeathsdeathsregisteredbetween9marchand28december2020englandandwales>

Non Covid-19 deaths by occupation - a closer look

- **Why is it that, during this pandemic, COVID-19 was responsible for less than 7% of the 37% increase of deaths in hairdressers?**
- **What is driving the increase in nine of the top ten causes of deaths among hairdressers?**
- **Breast cancer deaths among hairdressers are up by 44%. Is this figure an outlier, if not, what is driving this increase?**
- **What is behind the doubling of deaths from strokes among hairdressers?**
- **Deaths from suicide and accidental poisoning are up nearly 50%, and together, are more than double the deaths from COVID-19. Why?**

Increased deaths across this many categories in a single occupation cannot simply be dismissed as an outlier, or a one-off event. There will almost certainly be an underlying cause.

Many hairdressers are self-employed and have been unable to work for long periods since March 2020. A lot of money was spent by these businesses to make their salons safe when they reopened after the first lockdown.

There has been a lot of recent commentary in the media about how many excess deaths may have been caused as a result of the lockdown policies. Is this an early indicator of this effect? Certainly, the rises in accidental poisoning and suicides in this - generally low paid - occupation is extremely worrying.

The original dataset, published in January, lacked the context of the occupation size and the median income of each occupation. Obtaining these additional data elements may tell us more about the anecdotal evidence that it is the poor, or those with irregular incomes, who are suffering disproportionately from the lockdown. Perhaps the ONS will add these data fields to the next release.

Hopefully, the NHBF, the trade body for hairdressers, will also study this dataset in more detail and work with their membership to reduce some of the tragic, avoidable deaths in these categories.

Acknowledgement: Open data and the Office for National Statistics

We are very fortunate to have the ONS and an open data policy in the UK. I would like to thank the ONS for their prompt response to my request, and the great work they do in regularly publishing datasets that allow us to examine for ourselves what is really happening. This open data policy allows anyone to delve beyond the headlines we see every day.

About the author:

Peter Eales is chair of KOIOS Master Data, a provider of cloud-based data quality software. KOIOS also provides data quality consultancy and training services based on International Standards for data quality. Peter is an internationally recognised expert in the field of characteristic data exchange, and industrial data quality. Peter is a member of a number of International Organization for Standardization (ISO) working groups drafting International Standards in these areas.

Peter has a daughter who is a self-employed hairdresser.

Non Covid-19 deaths by occupation - a closer look

Tables modified from the original ONS data

Table 9 (modified): Deaths for women involving (ten or more instances of) COVID-19 and all causes by individual occupations (those aged 20 to 64 years), England and Wales, deaths registered between 9th March and 28th December 2020. This table also shows the average number of registrations from all causes of death for the same time period between 2015 and 2019. The analysis presented here is based on provisional data, and findings could change as more deaths are registered.

Source: Office for National Statistics

SOC individual occupation	Description	Deaths involving COVID-19	All causes of death	Average all cause mortality (2015 to 2019)	Percentage change	
					Non COVID-19 excess mortality 2020	Non COVID-19 excess mortality 2020
6221	Hairdressers and barbers	18	310	224	68	30%
6141	Nursing auxiliaries and assistants	54	379	275	50	18%
6240	Cleaning and housekeeping managers and supervisors	11	117	90	16	18%
6125	Teaching assistants	37	396	307	52	17%
5434	Chefs	13	174	140	21	15%
1242	Residential, day and domiciliary care managers and proprietors	16	111	83	12	14%
4161	Office managers	11	136	114	11	10%
2317	Senior professionals of educational establishments	12	91	74	5	7%
7219	Customer service occupations n.e.c.	17	128	104	7	7%
2231	Nurses	110	858	719	29	4%
6145	Care workers and home carers	240	1881	1588	53	3%
7111	Sales and retail assistants	111	1129	988	30	3%
9139	Elementary process plant occupations n.e.c.	25	230	200	5	3%
9233	Cleaners and domestics	95	951	836	20	2%
1190	Managers and directors in retail and wholesale	24	214	186	4	2%
2442	Social workers	25	141	114	2	2%
9244	School midday and crossing patrol occupations	18	169	149	2	1%
9272	Kitchen and catering assistants	36	343	306	1	0%
1254	Shopkeepers and proprietors: wholesale and retail	12	117	105	0	0%
4216	Receptionists	18	277	270	-11	-4%
4113	Local government administrative occupations	10	164	161	-7	-4%
6121	Nursery nurses and assistants	12	138	133	-7	-5%
8111	Food, drink and tobacco process operatives	11	104	99	-6	-6%
4122	Book-keepers, payroll managers and wages clerks	26	351	347	-22	-6%
4159	Other administrative occupations n.e.c.	58	657	646	-47	-7%
6122	Childminders and related occupations	18	116	106	-8	-8%
6231	Housekeepers and related occupations	14	110	104	-8	-8%
7112	Retail cashiers and check-out operators	15	132	127	-10	-8%
4123	Bank and post office clerks	15	152	149	-12	-8%
8137	Sewing machinists	14	177	184	-21	-11%
4112	National government administrative occupations	26	260	265	-31	-12%
5435	Cooks	10	136	145	-19	-13%
6144	Houseparents and residential wardens	13	78	75	-10	-13%
2315	Primary and nursery education teaching professionals	19	327	368	-60	-16%
4215	Personal assistants and other secretaries	30	324	375	-81	-22%
2314	Secondary education teaching professionals	23	156	173	-40	-23%
		1217	11534	10329	149	1%

Notes:

- Figures are for residents of England and Wales aged 20 to 64 years.
- Deaths were defined using the International Classification of Diseases, 10th Revision (ICD-10). Deaths involving COVID-19 include those with an underlying cause, or any mention, of ICD-10 codes U07.1 (COVID-19, virus identified) or U07.2 (COVID-19, virus not identified). All causes of death is the total number of deaths registered during the same time period, including those that involved COVID-19. Average all cause mortality refers to all causes of deaths, registered in the same time period 2015 to 2019.
- Figures are for the most recent death registrations available at the time of analysis, deaths involving COVID-19 registered between 9th March and 28th December 2020.
- Occupations defined using the Standard Occupation Classification (SOC 2010). Definitions of all groups and individual occupations can be found here: <https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2010/soc2010volume1structureanddescriptionsofunitgroups>

Table 1: Deaths for women by occupation involving ten or more instances of COVID-19

Non Covid-19 deaths by occupation - a closer look

Table 1 (modified): Number of deaths among hairdressers and barbers (those aged 20 to 64 years) by the top ten causes groupings including COVID-19, England and Wales, deaths registered between 9th March and 28th Dec 2020
1,2,3,4,5,6,7

Source: Office for National Statistics

ICD-10 codes	Cause of death groups	Mortality 2020	Average mortality (2015 to 2019)	Excess mortality by group 2020	Percentage increase in excess mortality 2020
I60-I69	Cerebrovascular diseases	20	10	10	100%
X40-X49	Accidental poisoning	23	14	9	64%
K70-K76	Cirrhosis and other diseases of liver	40	27	13	48%
X60-X84, Y10-Y34	Suicide and injury/poisoning of undetermined intent ²	19	13	6	46%
C50	Malignant neoplasm of breast	39	27	12	44%
I20-I25	Ischaemic heart diseases	24	18	6	33%
C33-C34	Malignant neoplasm of trachea, bronchus and lung	22	17	5	29%
	Other causes	55	43	12	28%
J40-J47	Chronic lower respiratory diseases	12	11	1	9%
U07.1-U07.2	Coronavirus	20	0	20	
	Totals	274	180	94	

Notes:

1. Excluding meningitis and meningococcal diseases (A39), sepsis due to haemophilus influenzae (A41.3), rabies (A82), certain mosquito-borne diseases (A83) and yellow fever (A95).
2. In England and Wales, a conclusion of suicide cannot be returned for children under the age of 10 years.
3. Deaths were defined using the International Classification of Diseases, 10th Revision (ICD-10). Deaths involving COVID-19 include those with an underlying cause of ICD-10 codes U07.1 (COVID-19, virus identified) or U07.2 (COVID-19, virus not identified).
4. Figures are based on the date a death registered rather than when a death was occurred. Deaths registered for year 2020 are based on provisional data.
5. Figures are for residents of England and Wales aged 20 to 64 years and based on boundaries as of Nov 2020.
6. Data for causes of death in England and Wales can also be extracted from the nomis website <https://www.nomisweb.co.uk/datasets/mortsa>
7. Occupations defined using the Standard Occupation Classification (SOC 2010). Definitions of all groups and individual occupations can be found here: <https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2010/soc2010volume1structureanddescriptionsofunitgroups>

Table 2: Top 10 causes of death among hairdressers