# UK - Death and Disability Trends for Malignant Neoplasms, Ages 15-44

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## Summary

In this study we investigate the UK trends in death rates and disabilities for malignant neoplasms for individuals aged 15 to 44 by computing excess death rates and excess disability claims, which are the difference between observed deaths/disability rates and a given baseline for expected death rates/disabilities. We measure changes in the behaviour of morbidity and mortality before the Covid-19 pandemic with the post-pandemic period, for malignant neoplasms.

We show a large increase in morbidity (disabilities) and mortality due malignant neoplasms that started in 2021 and accelerated substantially in 2022. The increase in disability claims is consistent with the increase in excess deaths in 2022, and both are highly statistically significant (extreme events). The results indicate that from late 2021 a novel phenomenon leading to increased malignant neoplasm deaths and disabilities appears to be present in individuals aged 15 to 44 in the UK.

# Contents

# 1. Introduction

Beginning in early 2020, the world changed due to the emergence of a global pandemic caused by the SARS-Cov2 virus which, in some individuals, manifested in the form of Covid-19 viral disease. The Covid-19 crisis led to alterations in individuals' lifestyles and perceptions of relative and absolute risk, which impacted their day-to-day decision-making. To add to the social changes, governments added to the hysteria with the introduction of unprecedented measures of social engineering such as control of media communications, the introduction of pandemic lockdowns for healthy individuals, and from 2021, mass inoculations based upon experimental mRNA-based vaccine technology. All these factors led to a break in individuals' behaviours from 2020 onwards.

In this context, Phinance Technologies researchers performed several analyses showing excess mortality (all cause) since 2020, from Europe to the US. We published a methodology report to explain our estimates for excess mortality, which is based on measuring excess death rates instead of excess deaths[1]. By accurately measuring, and then tracking excess mortality trends, we can have a clearer picture of the implications of the different stages of Covid-19 pandemic, as mentioned above.

The purpose of this study is to go into more detail and measure the changes in death rates and morbidity due to malignant neoplasms. We focus our research on younger individuals, aged 15-44, currently a topic of particular interest due to the rise in anecdotal evidence of many unexplained aggressive and unusual cancers (turbo cancers) occurring in the population, particularly in younger individuals. The focus of this study is not to examine individual claims and anecdotes, but instead to provide a statistical analysis at a population level and clarify if the anecdotal evidence is abnormal or not.

The relationships that we uncover in our analysis offers a basis for a reality check for health professionals to understand underlying trends in individuals' health.

[1] https://phinancetechnologies.com/HumanityProjects/Resources/Report%20on%20measuring%20death%20rates%20-%20V4%20-%20UK.pdf

# 2. Data

## 2.1. Cause of Death Data

The data used in this analysis is the number of deaths that occurred in England and Wales between 2010 and 2022, by underlying cause code (ICD-10), sex, and age group (up to 90+). The source is the UK Office for National Statistics (ONS). The direct links to the mortality data by cause for 2010 to 2021 and 2022 are listed below:

**Link to the 2022 data source:** Death occurrences by sex, five year age group and underlying cause (ICD-10 code) England and Wales: 2022 - Office for National Statistics (ons.gov.uk)

**Direct link to the source file:**
https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/adhocs/1050deathoccurrencesbysexfiveyearagegroupandunderlyingcauseicd10codeenglandandwales2022/deathoccsengwal2022final.xlsx

**Link to the 2010-2021 data source:** Death occurrences by sex, five year age group and underlying cause (ICD-10 code) England and Wales: 2010 to 2021 - Office for National Statistics (ons.gov.uk)

**Direct link to the source file:**
https://www.ons.gov.uk/file?uri=/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/adhocs/1017deathoccurrencesbysexfiveyearagegroupandunderlyingcauseicd10codeenglandandwales2010to2021/deathsoccsengwal20102021finalnew.xlsx

## 2.2. Registered Deaths (All Deaths)

Registered deaths are all the deaths registered in England and Wales, independently whether a cause of death has been attributed. The investigation of deaths and attribution of ICD10 codes with a cause of death can take up to 2 years to be performed.

UK Monthly Registered Deaths (All Cause): Deaths registered monthly in England and Wales - Office for National Statistics (ons.gov.uk)

## 2.3. Disability Claims

For investigating the changes in disability claims, we use data from the Personal Independence Payment (PIP) system of the Department of Work and Pensions (DWP). We analyse changes in PIP clearances for new claims to the system, as explained in our previous analysis, published on our website[2].

**Source for PIP data (from DWP): Personal Independence Payment statistics**

**Stat-Xplore system for DWP data: Stat-Xplore databases**

[2] https://phinancetechnologies.com/HumanityProjects/PIP%20Analysis-Systems.htm

# 3. Methodology

In this study, we investigate the trends in **death rates** and **disability claims** for the selected cause: malignant neoplasm (or oncologic causes for PIP disability claims). We investigate these trends using yearly data and therefore we do not have to perform a seasonal adjustment to the data.

In general terms, to measure trends in these variables we use a methodology of computing **excess rates**, which are the difference between the actual **observed rates** and a given **baseline** (expected rates). Because we want to measure the impact of the Covid-19 pandemic and post-pandemic periods relative to the prior state of the world, our baselines are based upon the estimation of the trend for a period prior to the pandemic.

In this study we will use method 2C, as described in our report on methodologies for measuring excess deaths[3] in the population. Method 2C is based on computing the trends in death rates (deaths adjusted by the population) instead of deaths, as the baseline for estimating excess mortality. This method significantly reduces the noise of the estimation (as it adjusts for population growth or decline) and considers the prior trend in death rates, which tend to decline over time (over the last 100 years) as the population grows healthier and different risk factors are better managed.

## 3.1. Method 2C for Estimating Excess Death Rates

$$ExcessDeaths_{ti}^{AG} = Deaths_{ti}^{AG} - Baseline_{ti}^{AG} \qquad Eq.\ 1$$

Equation (1) is a general expression for estimating the excess absence rates relative to a given baseline. We use the subscript "AG" to indicate a given population age cohort which could refer to an age range, region, sex, or underlying cause of death.

For estimating the baseline for "normal or expected" death rates we use a simple linear fit:

$$Baseline(t_i) = \hat{b} + \hat{a}(t_i - t_0) \qquad Eq.\ 2$$

Where $\hat{a}$ and $\hat{b}$ are the estimated coefficients of the death rate trendline from 2010 to 2019. It should be noted that for the UK disability data (Personal Independence Payment (PIP) system) the estimation period we use is from 2016 to 2019. The data before 2016 is unreliable due to the transition from a prior system Disability Living Allowance (DLA) to the PIP system in 2013, which only stabilised after 2015.

## 3.2. ICD10 Code List of Selected Causes of Death for: Malignant Neoplasms

For this analysis we selected all the ICD10 codes from category I, namely C00 to C99 which refer to deaths attributed to malignant neoplasms.

The detailed list that was extracted from the ONS cause of death database shows the codes and description that were aggregated for the purpose of our analysis. The list is shown in Appendix 7.1.

Some ICD10 codes, such as C27 with the generic description of "Malignant neoplasms" refer to ICD10 codes that were not used in the UK from 2010 to 2022.

[3] Https://phinancetechnologies.com/HumanityProjects/Resources/Report%20on%20measuring%20death%20rates%20-%20V4%20-%20UK.pdf

# 4. Yearly Analysis of Excess Death Rates

In this section we perform a yearly analysis of the death rates for England and Wales, using the ONS cause of death data. In this analysis we use the 2010-2019 trend in death per 100,000 (death rates) as the baseline estimate for excess death rates. Excess death rates for the 2010-2019 period are in-sample while the rates for 2020, 2021, and 2022 are out of sample computations.

The analysis is performed for all the deaths from a particular range of underlying causes of death, as described by the list of ICD10 codes in section 3.2, which refer to all deaths from malignant neoplasms.

## 4.1. Deaths for All Causes Versus Registered Deaths

When analysing the ONS data for cause of death we noticed that there are discrepancies between the number of deaths which have a cause of death and the number of registered deaths for a year. This is particularly the case for deaths in 2022 (the most recent year) and younger individuals where there are significant discrepancies between both these datasets.

The reason for the discrepancy is that death certificates for younger individuals take longer as each death is thoroughly examined and, on many occasions, post-mortems need to be performed. For older individuals, the discrepancies are small. In this report we only investigate deaths for individuals aged from 15 to 44. For this age group, we show the differences between registered deaths and all the causes of deaths in Figure 1.

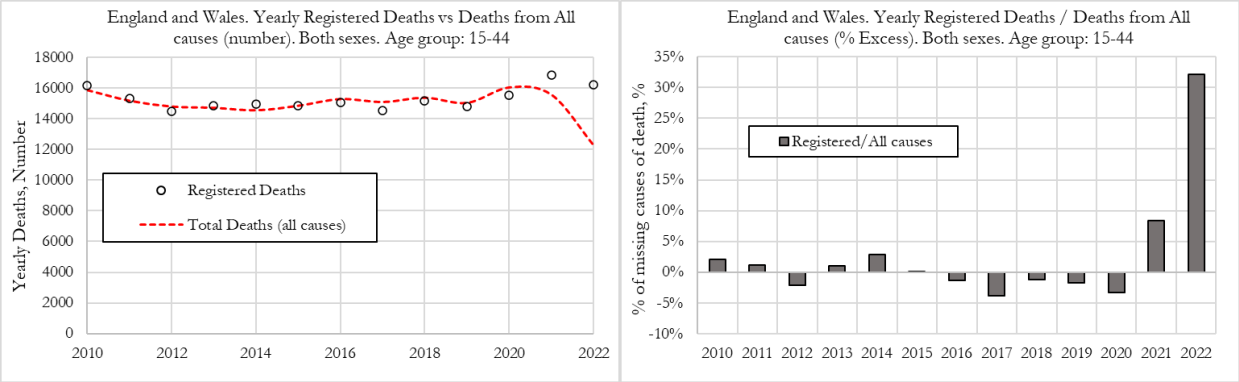


*Figure 1- England and Wales, registered deaths versus deaths from all causes in the ONS deaths by cause data table for age group 15 to 44. Left: Yearly numbers. Right: % missing cause of death relative to registered deaths.*

We can observe that the discrepancy between registered deaths and the sum of all deaths by cause ranges between -3% to +3% from 2010 to 2020. We consider these normal discrepancies between these databases as there are many factors that could lead to these discrepancies, including if the deaths occurred within England and Wales or abroad, or if they occurred with individuals that were temporary stays in England and Wales.

For 2021, however, we observe about 8% more registered deaths than the sum of the deaths from all causes. In 2022, there are still about 32% of registered deaths without a final cause of death. This is a large discrepancy that needs to be corrected.

To correct for the discrepancies in registered deaths compared to deaths from all causes, we scale the deaths for each ICD10 code by the ratio R=(registered/all cause deaths). This adjustment is significant for 2022 and

assumes that the proportion of deaths from the different ICD10 codes will remain the same after the final figures are published (in 1 or 2 years). This may not be the case and, therefore, the results need to be taken with a degree of caution.

In summary, to estimate the trends in death rates for different causes, we use Adjusted Deaths (Adj-deaths) which refers to the deaths from a particular cause or range of causes adjusted by the ratio defined above. Adjusted death rates are computed based on adjusted deaths.

## 4.2. Death Rates for Age Group 15-44

In this section we investigate the trends in death rates in England and Wales for the 15-44 age group. We compare all-cause mortality (registered deaths) with deaths from malignant neoplasms, with ICD10 codes ranging from C00 to C99. When computing death rates, we chose to show the numbers as deaths per 100,000 as death rates for younger age groups are very low.

### 4.2.1. Unadjusted (Raw) Death Rates for Age Group 15-44 from Malignant Neoplasms (C00-C99)

The first analysis that we perform is the analysis of the unadjusted (raw) deaths from malignant neoplasms. Before starting the analysis, it needs to be reiterated that as mentioned in section 4.1, there are a significant number of missing records for recorded causes of death relative to registered deaths in 2021 and 2022. This is because younger individuals are not expected to die from natural causes and, consequently, those deaths need to be investigated to understand the underlying causes.

In section 4.1 we observed that for the 15-44 age group, there are about 8.3% of missing records in 2021 in the ONS cause of death dataset, and 32% for 2022. The missing records for 2022 are about a third, which means that when analysing the raw numbers of deaths (without adjustment) for malignant neoplasms, they will likely underreport actual deaths by that amount.

With these caveats in mind, Figure 2 shows the deaths (right) and death rate per 100,000 individuals (left) for malignant neoplasm deaths in England and Wales from 2010 to 2022. Even with a large number of missing records, we can already observe a clear signal in above-trend malignant neoplasm deaths in both 2021 and 2022.

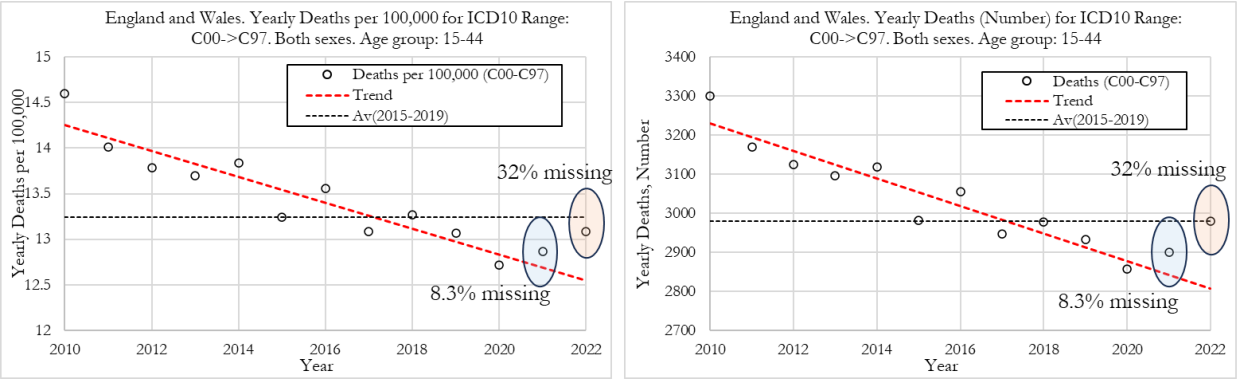


*Figure 2 - Yearly unadjusted (raw) deaths from malignant neoplasms in England and Wales. The red dashed line shows the average from 2010 to 2019. The dotted line shows the 2015-2019 average death rate. Left: Deaths per 100,000. Right: Deaths (number).*

### 4.2.2. Registered Deaths

The analysis of the registered deaths allows us to have a context by which we can then compare the death rates for malignant neoplasms. Figure 3 shows the death rate per 100,000 individuals for all registered deaths in England and Wales from 2010 to 2022. We can observe that registered deaths per year had been trending slightly lower from 2010 to 2019.

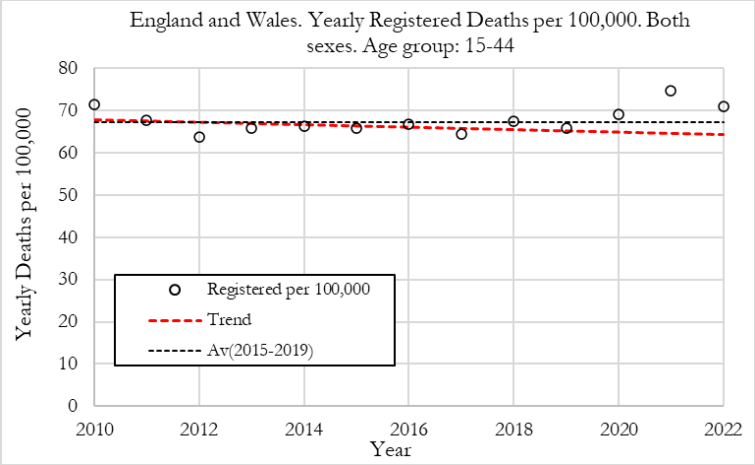


*Figure 3 - Yearly registered deaths per 100,000 for England and Wales. The red dashed line shows the average from 2010 to 2019. The dotted line shows the 2015-2019 average death rate.*

In 2019, the death rate was about 67 per 100,000 individuals aged 15 to 44. The death rate increased in 2020 to about 69 per 100,000 and then again in 2021 to 75 per 100,000. In 2022 the death rate dropped slightly to about 71 per 100,000, the same level as observed in 2010 and still above the 2020 level.

### 4.2.3. Adjusted Deaths from ICD10 Codes C00 to C99 (Malignant Neoplasms).

We now investigate adjusted[4] deaths for all malignant neoplasms (ICD10 codes C00 to C99). Figure 4 (left) shows the death rate per 100,000 individuals for malignant neoplasms deaths (adjusted for under-reporting) in England and Wales from 2010 to 2022. We can observe that deaths per year from malignant neoplasms have been trending lower from 2010 to 2019, with a significant downward slope. In 2010 the deaths rate was 15 per 100,000 and in 2019 it was around 12.8 per 100,000, a 14.7% drop.

[4] Deaths adjusted for the missing causes of death relative to registered deaths.

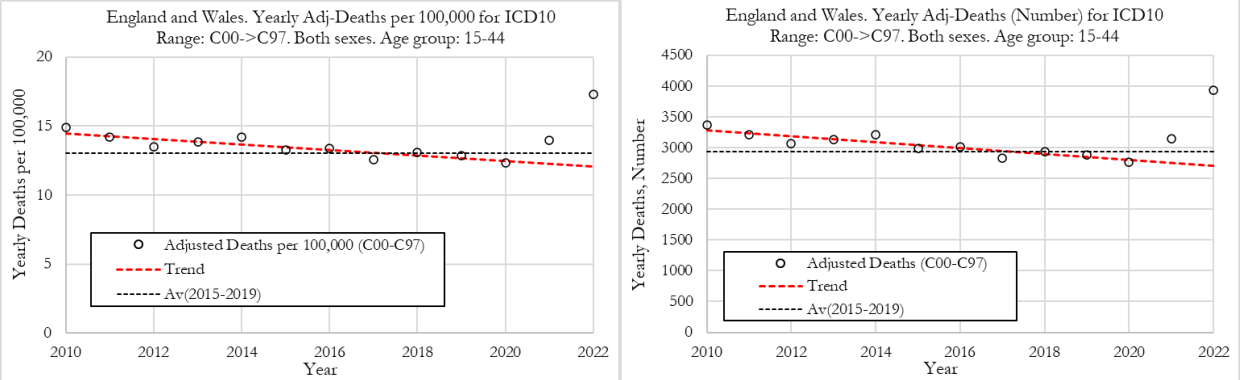


*Figure 4 - Yearly adjusted deaths for diseases by malignant neoplasms in England and Wales. The red dashed line shows the average from 2010 to 2019. The dotted line shows the 2015-2019 average death rate. Left: Adj-Deaths per 100,000. Right: Adj-Deaths (Number).*

The death rate dropped in 2020 to about 12.5 per 100,000 and then rose to 14 per 100,000 in 2021. In 2022 the death rate increased again to about 17.5 per 100,000, a level that is 11.7% higher than observed in 2010. The death rate in 2022 was about 4.7 deaths per 100,000 above the 2015-2019 average.

When translating these numbers into the absolute number of deaths for diseases from malignant neoplasms, shown in Figure 4 (right), we can observe that the 5-year average deaths from 2015 to 2019 was about 3000 deaths. In 2020, malignant neoplasm deaths were about 2,800, 200 less than the prior 5-year average. In 2021 there were about 3200 deaths, which was 200 more than the 2015-2019 average. In 2022, the number increased to 4000, 1000 more than the 2015-2019 average.

### 4.2.4. Relative Deaths from ICD10 Codes C00 to C99 (Malignant Neoplasms) Versus All Causes.

In our study we also analyse the trends in the relative incidence of malignant neoplasm deaths relative to all other causes, which provides a different type of information related to breaks in the normal pattern of deaths in this age group.

For this purpose, in Figure 5 we plot the fraction of deaths from all causes that are attributed to malignant neoplasms. We observe that there was a slightly declining trend in deaths due to malignant neoplasms from 2010 to 2019. In 2010, deaths attributed to malignant neoplasms accounted for 21% of total deaths, while in 2019, the fraction was only 19.5%.

In 2020 the fraction of deaths due to malignant neoplasms dropped to about 17.5% of total deaths. The fraction then increased to 18.5% in 2021 (on top of the 2010-2019 trendline) and then jumped to about 24.5% in 2022, which is significantly above the 2010 level.

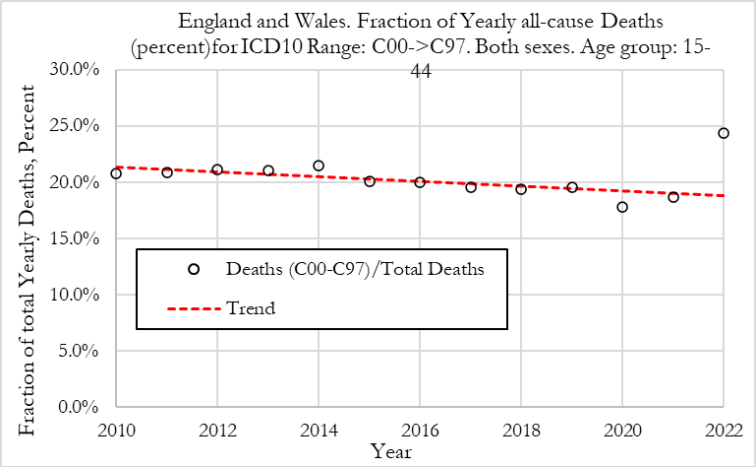


*Figure 5 – Fraction of all causes for yearly deaths attributed to malignant neoplasms, for England and Wales. The red dashed line shows the average from 2010 to 2019.*

## 4.3. Excess Death Rates for Age Group 15-44

In this section we investigate the trends in excess death rates in England and Wales for the 15-44 age group. We compare excess all-cause mortality (registered deaths) with excess deaths from malignant neoplasms, with ICD10 codes ranging from C00 to C99. We also compare excess deaths for males and females.

### 4.3.1. Excess Adjusted Deaths from ICD10 Codes C00 to C99 (Malignant Neoplasms).

Figure 6 compares the excess death rate for malignant neoplasms (adjusted for under-reporting) and excess registered deaths in England and Wales from 2010 to 2022. The figure on the Figure 6 (left) refers to relative deviations from the 2010-2019 trend, while Figure 6 (right) shows the Z-score (signal strength) for the deviations from trend.

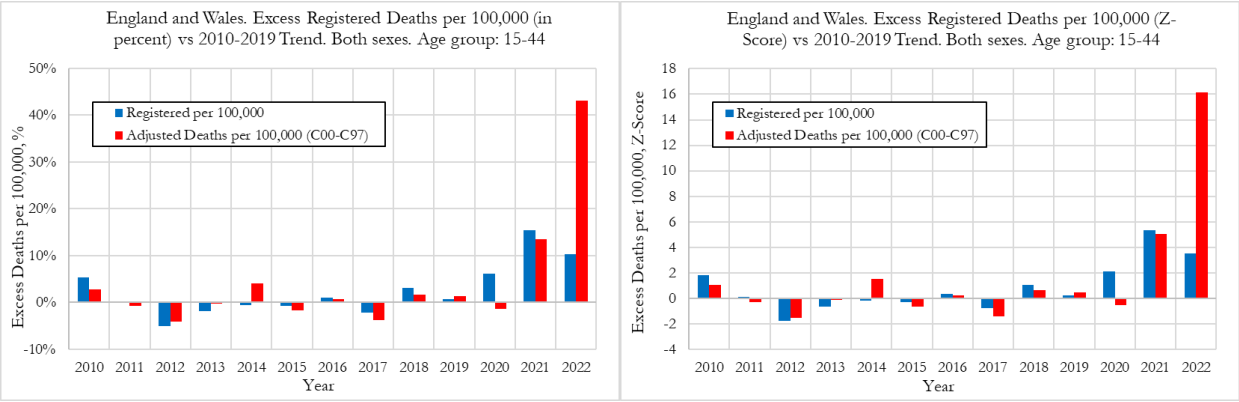


*Figure 6 - Excess adjusted deaths rates for diseases by malignant neoplasms versus excess death rates for all registered deaths in England and Wales. Left: Relative deviation from trend, percent. Right: Deviation from trend Z-Score.*

In Figure 6 (left) we can observe that the excess deaths rates from malignant neoplasms were close to zero in 2020, rose by about 13% in 2021, and about 43% in 2022. The excess mortality for all registered deaths was about 5% in 2020, 15% in 2021, and 10% in 2022. Interestingly, the drop in excess mortality for all registered

deaths from 2021 to 2022 was not mirrored in a drop in malignant neoplasm deaths. In fact, the opposite occurred, with a sharp acceleration in excess deaths due to malignant neoplasms.

In terms of statistical significance of the excess deaths, we observe from Figure 6 (right) that for all registered deaths, the Z-score in 2020 was only about 2, which is not a strong signal. However, in 2021, the Z-score was slightly above 5.0 which is a very strong signal. In 2022 the Z-score dropped to about 3.5, which still indicates that the excess deaths are statistically significant deviations from the 2010-2019 trend.

When looking at excess deaths from malignant neoplasms, the Z-score in 2020 was around 0, indicating that prior to the start of the vaccinations there was no signal pointing to an increase in malignant neoplasm deaths. That trend however accelerated substantially in 2021 and 2022 where we observe Z-scores of around 5 and 16, respectively. These are extreme events that we believe need a thorough investigation. Our previous work on measuring excess mortality and disabilities in the UK[5] points to the Covid-19 vaccines likely playing a significant role in the rise of mortality and morbidity. However, the pandemic rules, lockdowns, and Covid-19 could have played a role in the rise of malignant neoplasm deaths.

### 4.3.2. Excess Relative Deaths from ICD10 Codes C00 to C99 (Malignant Neoplasms) Versus All Causes.

A different perspective is to analyse the fraction of deaths from all causes that are attributed to malignant neoplasms and compare them with the absolute changes in death rates due to malignant neoplasms, as shown in Figure 7.

We observe that in 2020 and 2021 the fraction of malignant neoplasm deaths relative to all other causes did not deviate significantly from the 2010-2019 trend. In 2021, both registered deaths and malignant neoplasm deaths increased by similar amounts so that the fraction of neoplasm deaths remained unchanged. For 2022, we observe that in similarity with excess death rates, the fraction of neoplasm deaths jumped substantially, by about 30%.

When looking at the statistical significance of the signals, in 2022, the fraction of excess deaths due to malignant neoplasms had a Z-score of about 16, similar in magnitude than that for excess adjusted deaths rates. This reinforces the fact that deaths related to the malignant neoplasms are of particular concern for this age group and needs further investigation.

[5] See our work on excess deaths in the UK:
(https://phinancetechnologies.com/HumanityProjects/yearly%20Excess%20Death%20Rate%20Analysis%20-%20UK.htm).
and the analysis of PIP clearances: (https://phinancetechnologies.com/HumanityProjects/PIP%20Analysis-Systems.htm)

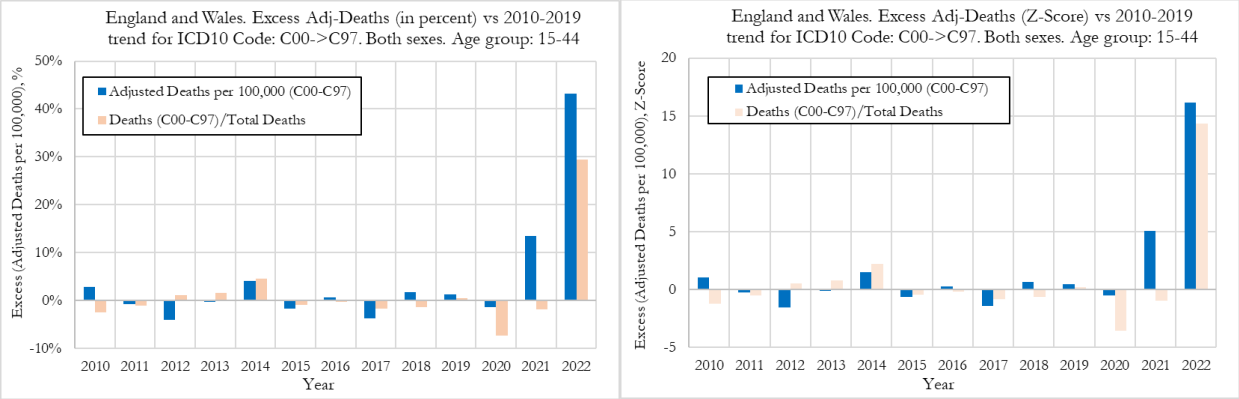


*Figure 7 – Excess adjusted deaths rates for malignant neoplasms versus excess fraction of all deaths that were from malignant neoplasms, in England and Wales. Left: Relative deviation from trend, percent. Right: Deviation from trend Z-Score.*

### 4.3.3. Excess Adjusted Deaths for Malignant Neoplasms for Males and Females.

When looking at deaths attributed to malignant neoplasms for males and females, shown in Figure 8, we observe that in 2020 neither group had any noticeable excess mortality (slightly negative), with respective Z-scores close to zero (low statistical significance).

However, we also observe that in 2021 men suffered slightly worse outcomes than women, with men experiencing a 16% deviation from trend, compared to about 10% for women. In 2022 men suffered much worse outcomes than women, with men experiencing a 52% deviation from trend, compared to about 31% for women. The signal strengths for both men and women were highly statistically significant, as shown in Figure 8 (right).

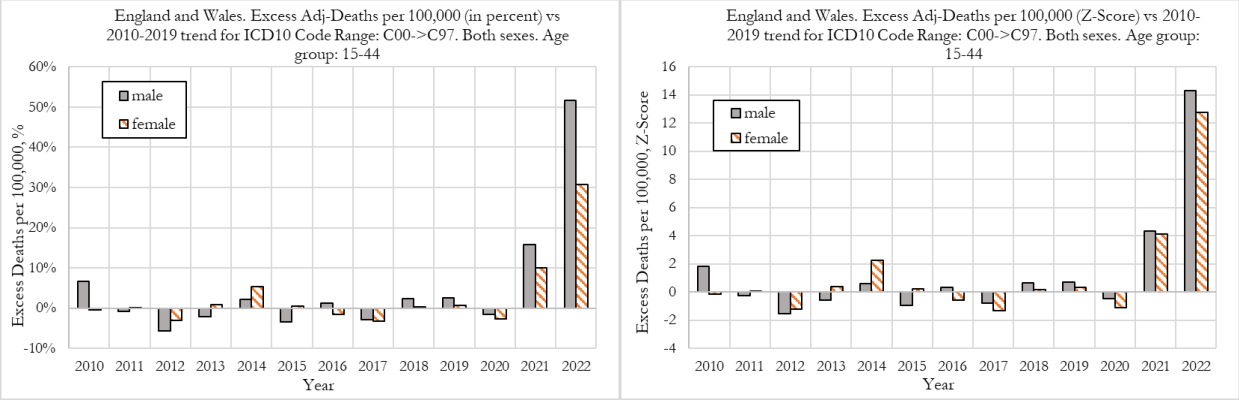


*Figure 8 - Excess adjusted deaths rates by malignant neoplasms for males and females, in England and Wales. Left: Relative deviation from trend, percent. Right: Deviation from trend Z-Score.*

## 4.4. Summary of the Analysis of Death Rates

We started our analysis of excess death rates due to malignant neoplasms by showing that the analysis needs to be performed with caution as not all deaths had a classified cause up to the time of publication of the ONS dataset. This issue is particularly relevant in younger age groups, which is the case of the present analysis, where we observe that in 2022 about 32% of registered deaths were still not classified with a cause (Figure 1).

We perform a correction to this problem by extrapolating the deaths in each year as if the proportion of each cause of death remained the same when the missing deaths are finally classified. This is an assumption that must be taken with care. To make sure that we are identifying an actual trend in the data, we also analyse the deaths from malignant neoplasms relative to all classified causes of death (Figure 7). The results show that the rise in deaths from malignant neoplasms in 2022 was similar to the relative rise in malignant neoplasms in relation to all other causes. We also analyse raw unadjusted deaths (Figure 2) which show that even without accounting for the missing records, 2022 already shows significant above-trend deaths.

Our analysis shows that the excess death rates from malignant neoplasms were close to zero in 2020, rose by about 13% in 2021, and about 43% in 2022. On the other hand, the excess mortality for all registered deaths was about 5% in 2020, 15% in 2021, and 10% in 2022. The drop in excess mortality for all registered deaths from 2021 to 2022 was not mirrored in a drop in malignant neoplasm deaths. The opposite occurred, with a sharp acceleration in excess deaths due to malignant neoplasms.

The excess mortality from malignant neoplasm deaths in 2021 and 2022 are highly statistically significant with Z-scores of 5 and 16, respectively. These are very strong signals. As mentioned above, these signals are corroborated by similar findings when measuring rises in the fraction of deaths from malignant neoplasms relative to all other deaths with classified causes.

When translating these numbers into the absolute number of deaths from malignant neoplasm, shown in Figure 4 (right) we can observe that in 2020, malignant neoplasm deaths were about 2,800, 200 less than the prior 5-year average. In 2021 there were about 3200 deaths, 200 more than the 2015-2019 average, and in 2022, 4000 (1000 more than the 2015-2019 average).

When comparing outcomes for men and women, shown in Figure 8, we observe that both had no significant changes in deaths from malignant neoplasms in 2020. However, in 2021 men suffered slightly worse outcomes than women, with men experiencing a 16% deviation from trend, compared to about 10% for women. In 2022 men suffered much worse outcomes than women, with men experiencing a 52% deviation from trend, compared to about 31% for women. The signal strengths for both men and women were highly statistically significant, as shown in Figure 8 (right).

In the future, we plan to expand our analysis to identify the individual causes of death (ICD10 codes) within the malignant neoplasms (ICD10 codes C00-C99) that were responsible for the acceleration in these deaths.

# 5. Analysis of UK Disabilities (PIP System)

In this section we investigate the trends in disability claims in the UKs Department of Work and Pension (DWP) Personal Independence Payment (PIP) system that replaced the previous Disability Living Allowance (DLA) system from 2013 onwards.

The analysis we present here refers to clearances from **new claims** to the system. It should be noted that clearances refer to decisions made, which can be positive or negative. The fraction of positive clearances (that lead to a grant allowance) is shown to be stable over time at a rate of about 40%.

One must be aware that PIP replaced the UK's previous Disability Living Allowance (DLA) system in 2013 and therefore we observe sharp increase in cases/claims in the few years following the initiation of PIP, which has been explained as "capacity issues" by the DWP. For this reason, only cases after January 2016 are included in this set of analyses.

We perform the analysis for PIP clearances related to oncologic causes to compare these trends with the previous chapter on excess mortality due to the malignant neoplasms. On our website, we present the analysis of trends in PIP clearances for the different body systems[6] which include interactive charts where the user/researcher can change body system, age of the individuals and trend metric.

## 5.1. Methodology

The methodology we use to estimate excess clearances of new claims in the PIP system is similar to that on measuring excess mortality, described previously in section 3. We compare the 2016 to 2019 trendline in PIP clearances with actual claims and compute the deviation from trend in relative terms (percentage deviation).

## 5.2. Baseline PIP Clearances for New Claims for Oncological Causes.

Figure 9 shows the monthly PIP clearances for oncologic causes from January of 2016 to January of 2023. The dotted line refers to the cumulative Covid-19 vaccine doses as a percentage of the 16-44 age group.

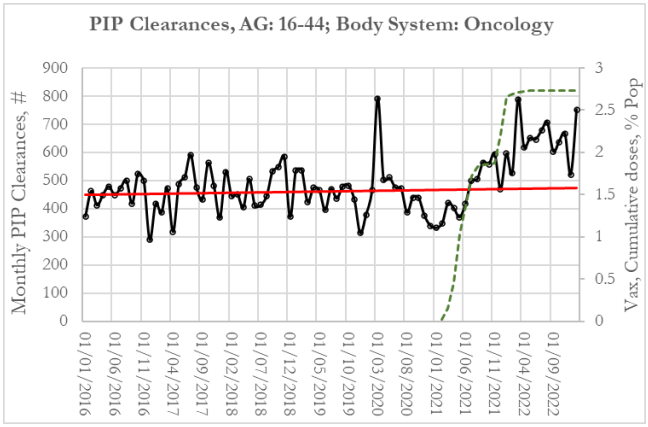


*Figure 9 –Monthly clearances (decisions) for new claims to the Personal Independence Payment (PIP) system in the UK, for oncological causes. The red line shows the 2016-2019 trend and the dotted line refers to the cumulative vaccinations for the 15-44 age group.*

[6] https://phinancetechnologies.com/HumanityProjects/PIP%20Analysis-Systems.htm

From 2016 to 2019 we observe that there was an average of about 200 new PIP clearances per month. During 2020, there was no noticeable change in new claims. However, from early 2021, we observe a systematic rise in the PIP clearances, reaching a peak of 600 in January of 2023.

The results above seem to corroborate the prior findings of increases deaths attributed to malignant neoplasms. However, the results can be better compared by performing a yearly analysis of the PIP clearances.

## 5.3. Excess Yearly PIP Clearances for New Claims for Oncological Causes.

When we compute the yearly PIP clearances from new claims for oncologic causes, shown in Figure 10, we observe that PIP clearances were very stable from 2016-2019, at around 5478 per year.

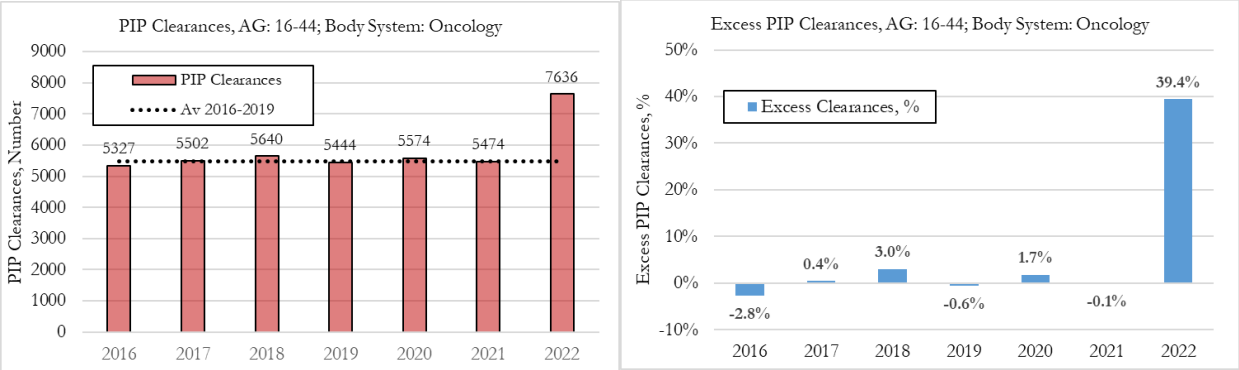


*Figure 10 - Yearly excess clearances for new claims to the Personal Independence Payment (PIP) system in the UK for oncologic causes for ages 16 to 44. The dotted line refers to the 2016 to 2019 average yearly number of new claims.*

In 2020 PIP claims increased by about 1.7%, which was a slight increase from the 2016-2019 average. In 2021, PIP clearances were 0.1% below the baseline. However, in 2022, PIP clearances jumped by about 39.4%, relative to the baseline. We should recall that for excess deaths from malignant neoplasms, we observed deviations from trend of -6.7% in 2020, +6.7% in 2021, and +33.3% in 2022.

We should note that there was a backlog in PIP clearances peaking in August of 2021 which led to claims taking up to 26 weeks to clear. The DWP mentions that the situation was normalised from early 2022 with PIP claims clearing in about 14 weeks[7]. Consequently, we must observe caution when directly comparing the timing of excess deaths with excess disability claims. However, on a yearly basis, these differences are smoothed out, as observed by the similarity of the trends in both excess deaths and excess disability claims for oncological causes.

## 5.4. Summary of the Analysis of PIP Clearances for New Claims

The analysis of PIP clearances for new claims where the underlying causes were oncological, is consistent with the analysis of excess deaths.

We observe that in 2020 and 2021 the fraction of malignant neoplasm deaths relative to all other causes did not deviate significantly from the 2010-2019 trend. We also show that in 2022 the rise in percentage terms, for disability claims was of similar magnitude to the equivalent rise in excess adjusted death rates.

[7] https://www.gov.uk/government/statistics/personal-independence-payment-statistics-to-january-2023/personal-independence-payment-statistics-april-2013-to-january-2023#clearance-and-outstanding-times

The results suggest that there is an underlying phenomenon that is causing large rises in mortality and morbidity due to malignant neoplasms. The explosion in malignant neoplasm deaths and disabilities occurred from late 2021 and accelerated in 2022, with a few months lag relative to the rollout of the Covid-19 vaccines.

The paper from Fraiman et al[8], shows that the combined rate of serious adverse events during the 2 to 3 months unblinded period of the Pfizer and Moderna clinical trials was 13.2 in 10,000 (vaccine arm relative to placebo arm of the clinical trial)[9]. This translates to vaccinated individuals having a rate of serious adverse events of about 1 per 760. This is an extraordinary signal which was present in the original clinical trials, and that we've shown in our US disabilities research[10], is on the scale of the rise in disabilities we observe at the population level.

Fraiman et al.'s paper does not account for serious adverse events that might have originated some time after the Covid-19 inoculations. For instance, in our previous report on Cardiovascular deaths for 15 to 44 year-olds in the UK[11], we show that cardiovascular deaths increased over time and in 2022 reached its highest levels. This occurred more than 6 months after the main vaccination rollout for the 15-44 age group.

Similarly, it is possible that the rise in disabilities and deaths from malignant neoplasms has an underlying pattern that leads to a lag between the Covid-19 inoculations and the manifestation of the effect. Our results show that malignant neoplasms shot up later than cardiovascular deaths, mainly in 2022, while cardiovascular deaths had started to rise in 2021.

We have plans to research the trends in the main types of deaths and disabilities from individual ICD10 codes within malignant neoplasms, to have insights into the underlying phenomenon of action.

[8] J. Fraiman et al, "Serious adverse events of special interest following mRNA COVID-19 vaccination in randomized trials in adults", Vaccine, Vol. 40, Issue 40, 22 September 2022, pp 5798-5805.
[9] We analyse the paper on our website:
https://phinancetechnologies.com/HumanityProjects/SAE%20mRNA%20Clinical%20Trials.htm
[10] https://phinancetechnologies.com/HumanityProjects/US%20Disabilities%20-%20Part5.htm
[11] https://phinancetechnologies.com/HumanityProjects/UK%20Cause%20of%20death%20Project%20-%20Cardiovascular%20Deaths%2015-44.htm

# 6. Concluding Remarks

Table 1 summarises the yearly excess PIP claims for the oncologic system and compares them with the equivalent numbers of excess deaths. In the absolute number of deaths for diseases of the oncologic system, shown in Figure 4 (right) we can observe that the 5-year average deaths from 2015 to 2019 was about 3000 deaths. In 2020, malignant neoplasm deaths were about 2,800, 200 less than the prior 5-year average. In 2021, there were about 3200 deaths (200 more than the 2015-2019 average), and in 2022, 4000 deaths, which were 1000 more than the 2015-2019 average.

| | **Baseline (Av 2015-2019)** | **2020** | **2021** | **2022** |
|---|---|---|---|---|
| **PIP Clearances** | N=5,478 | N=5,574<br>(+96)<br>(+1.7%) | N=5,474<br>(-4)<br>(-0.1%) | N=7,636<br>(+2,158)<br>(+39.4%)<br>(Z=17.9) |
| **Excess Deaths** | N=3,000 | N=2,800<br>(-200)<br>(-6.7%) | N=3,200<br>(+200)<br>(+6.7%) | N=4,000<br>(+1,000)<br>(+33.3%)<br>(Z=16.1) |

*Table 1 - Summary for excess deaths and disabilities for malignant neoplasms in England and Wales (deaths) and the UK (PIP claims).*

The results shown in Table 1 indicate that there was a significant rise in both disability claims and deaths in the 15-44 age group in the UK.

We also observe that the relative changes in disabilities were more than double the equivalent rises in deaths, which points towards the risk of higher malignant neoplasm deaths in the coming years as these conditions remain unresolved.

The previous statement is furthermore supported by our analysis of excess mortality in the UK by analysing the time series of weekly registered deaths[12]. The current **annualised** excess mortality for 2023 is around 20% for the 15-44 age group, a substantial rise from the prior level in 2022, which was slightly above 10%. To us, this is a warning sign that we will observe yet another rise in excess mortality due to malignant neoplasms when the 2023 numbers are released.

We are currently in the process of pursuing further investigations into this issue in more detail. In particular, we will analyse the trends in deaths and disabilities for the most common individual ICD10 causes within malignant neoplasms, to gain insights into the underlying phenomenon of action.

## 6.1. The Overall Scenario for Malignant Neoplasms

In addition to finding a relationship between disability claims and deaths related to malignant neoplasms, it is of interest to build an image of the whole phenomenon to be able to understand the coming challenges to the resources of the health sector and to the risks for the overall population health.

[12] https://phinancetechnologies.com/HumanityProjects/yearly%20Excess%20Death%20Rate%20Analysis%20-%20UK.htm

For this purpose, in similarity to our macro analysis of all-cause excess mortality, disabilities and injuries, which we denominate as the V-Damage Project, in Table 2 we try to map the landscape of damage from malignant neoplasms, this is, V-Damage Project – Malignant Cancers.

Unlike cardiovascular diseases, where several papers have reported incidence rates of myocarditis and other heart conditions at a population level, we do not find equivalent surveys for malignant neoplasms, and consequently the "target" population for malignant neoplasms is unknown.

To obtain a rough estimate of the population under risk, we speculate that recipients of the Covid-19 inoculations who suffered (vaccine-related) adverse events could be more susceptible for experiencing malignant neoplasms in the future. The paper by Stephen J. Thomas et al.[13] that establishes the Pfizer vaccine efficacy based on the clinical trial data also provides us an estimate of the rate of adverse events in individuals who took the vaccines versus the placebo group.

The paper reports that the rate of adverse events related to the inoculations was 23,903 per 100,000 in the vaccine group versus 5,981 per 100,000 in the placebo group. We assume that the difference was the rate of individuals who had some adverse reaction due to the Covid-19 inoculation, which is (23,903-5,981)=17,922 per 100,000, which corresponds to 17.92% of the vaccinated group. For the 15 to 44 age group in the UK, the vaccination rate for individuals that took at least 1 dose is estimated to be about 68.8%[14]. **Consequently, the population at risk is estimated at 17.92x0.688=12.3% or 12,330 per 100,000.**

We understand that this is not a precise estimate, and there are reasons to believe it is an underreporting as well as over-reporting of the true estimate for the population aged 15-44 "at risk".

| | Possible pool | Excess events in 2021 | Excess events in 2022 |
|---|---|---|---|
| **Possible pool for malignant neoplasms[15]** | 12.3% (12,330 per 100,000) | | |
| **PIP Clearances** | | N=-4 **(-0.018 per 100,000)** | N=+2,158 **(9.5 per 100,000)*** ** |
| **Excess Deaths** | | N=+200 **(0.88 per 100,000)** | N=+1000 **(4.4 per 100,000)*** ** |

*Table 2 – Overall picture for damage from malignant neoplasms. Estimated rates for excess deaths and disabilities from malignant neoplasms in England and Wales (deaths) and the UK (PIP claims). Incidence rates are under investigation. ***Very high statistical significance.*

We observe that there were close to zero excess rate of disability claims in 2021, and only a rate of 0.88 per 100,000 excess deaths in 2021.

These rates shot up in 2022 with 9.5 per 100,000 excess disability claims and 4.4 per 100,000 excess deaths.

When comparing the rise in malignant neoplasms deaths and disabilities with those for the cardiovascular system[16], we observe that both showed an extremely strong signal in 2022. However, in 2021 while

[13] Stephen J. Thomas et al, "Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine through 6 Months", New England Journal of Medicine, 9/2021.
Link to paper: https://www.nejm.org/doi/full/10.1056/NEJMoa2110345#article_supplementary_material
Reviewed here: Humanity Project - US Disabilities - Part 6 (phinancetechnologies.com)

[14] https://coronavirus.data.gov.uk/

[15] We emphasise that this is not a precise estimate. There are reasons to believe it underreports the true population at risk, as well as there are arguments to affirm that this number is an over-reporting for the population aged 15-44 "at risk".

[16] https://phinancetechnologies.com/HumanityProjects/UK%20Cause%20of%20death%20Project%20-%20Cardiovascular%20Deaths%2015-44.htm

cardiovascular deaths were already high, malignant neoplasm deaths were not. We hypothesise that the medium to longer-term negative effects of the Covid-19 vaccine are starting to surface, first in the form of rising cardiovascular events and later with the rise of malignant neoplasms.

The observations above point to a worrying picture that we might see an even greater acceleration of malignant neoplasm deaths and disabilities in the coming years, which makes the investigation of the underlying causes of upmost importance.

# 7. Appendixes

## 7.1. Appendix 1 – ICD10 Code List for Malignant Neoplasms (C00-C99)

| ICD10 Code | Cause |
|---|---|
| C00 | Malignant neoplasm of lip |
| C01 | Malignant neoplasm of base of tongue |
| C02 | Malignant neoplasm of other and unspecified parts of tongue |
| C03 | Malignant neoplasm of gum |
| C04 | Malignant neoplasm of floor of mouth |
| C05 | Malignant neoplasm of palate |
| C06 | Malignant neoplasm of other and unspecified parts of mouth |
| C07 | Malignant neoplasm of parotid gland |
| C08 | Malignant neoplasm of other and unspecified major salivary glands |
| C09 | Malignant neoplasm of tonsil |
| C10 | Malignant neoplasm of oropharynx |
| C11 | Malignant neoplasm of nasopharynx |
| C12 | Malignant neoplasm of pyriform sinus |
| C13 | Malignant neoplasm of hypopharynx |
| C14 | Malignant neoplasm of other and ill-defined sites in the lip, oral cavity and pharynx |
| C15 | Malignant neoplasm of esophagus |
| C16 | Malignant neoplasm of stomach |
| C17 | Malignant neoplasm of small intestine |
| C18 | Malignant neoplasm of colon |
| C19 | Malignant neoplasm of rectosigmoid junction |
| C20 | Malignant neoplasm of rectum |
| C21 | Malignant neoplasm of anus and anal canal |
| C22 | Malignant neoplasm of liver and intrahepatic bile ducts |
| C23 | Malignant neoplasm of gallbladder |
| C24 | Malignant neoplasm of other and unspecified parts of biliary tract |

| | |
|---|---|
| C25 | Malignant neoplasm of pancreas |
| C26 | Malignant neoplasm of other and ill-defined digestive organs |
| C27 | Malignant neoplasms |
| C28 | Malignant neoplasms |
| C29 | Malignant neoplasms |
| C30 | Malignant neoplasm of nasal cavity and middle ear |
| C31 | Malignant neoplasm of accessory sinuses |
| C32 | Malignant neoplasm of larynx |
| C33 | Malignant neoplasm of trachea |
| C34 | Malignant neoplasm of bronchus and lung |
| C35 | Malignant neoplasms |
| C36 | Malignant neoplasms |
| C37 | Malignant neoplasm of thymus |
| C38 | Malignant neoplasm of heart, mediastinum and pleura |
| C39 | Malignant neoplasm of other and ill-defined sites in the respiratory system and intrathoracic organs |
| C40 | Malignant neoplasm of bone and articular cartilage of limbs |
| C41 | Malignant neoplasm of bone and articular cartilage of other and unspecified sites |
| C42 | Malignant neoplasms |
| C43 | Malignant melanoma of skin |
| C44 | Other and unspecified malignant neoplasm of skin |
| C45 | Mesothelioma |
| C46 | Kaposi's sarcoma |
| C47 | Malignant neoplasm of peripheral nerves and autonomic nervous system |
| C48 | Malignant neoplasm of retroperitoneum and peritoneum |
| C49 | Malignant neoplasm of other connective and soft tissue |
| C4A | Merkel cell carcinoma |
| C50 | Malignant neoplasm of breast |
| C51 | Malignant neoplasm of vulva |
| C52 | Malignant neoplasm of vagina |

| | |
|---|---|
| C53 | Malignant neoplasm of cervix uteri |
| C54 | Malignant neoplasm of corpus uteri |
| C55 | Malignant neoplasm of uterus, part unspecified |
| C56 | Malignant neoplasm of ovary |
| C57 | Malignant neoplasm of other and unspecified female genital organs |
| C58 | Malignant neoplasm of placenta |
| C59 | Malignant neoplasms |
| C60 | Malignant neoplasm of penis |
| C61 | Malignant neoplasm of prostate |
| C62 | Malignant neoplasm of testis |
| C63 | Malignant neoplasm of other and unspecified male genital organs |
| C64 | Malignant neoplasm of kidney, except renal pelvis |
| C65 | Malignant neoplasm of renal pelvis |
| C66 | Malignant neoplasm of ureter |
| C67 | Malignant neoplasm of bladder |
| C68 | Malignant neoplasm of other and unspecified urinary organs |
| C69 | Malignant neoplasm of eye and adnexa |
| C70 | Malignant neoplasm of meninges |
| C71 | Malignant neoplasm of brain |
| C72 | Malignant neoplasm of spinal cord, cranial nerves and other parts of central nervous system |
| C73 | Malignant neoplasm of thyroid gland |
| C74 | Malignant neoplasm of adrenal gland |
| C75 | Malignant neoplasm of other endocrine glands and related structures |
| C76 | Malignant neoplasm of other and ill-defined sites |
| C77 | Secondary and unspecified malignant neoplasm of lymph nodes |
| C78 | Secondary malignant neoplasm of respiratory and digestive organs |
| C79 | Secondary malignant neoplasm of other and unspecified sites |
| C7A | Malignant neuroendocrine tumors |
| C7B | Secondary neuroendocrine tumors |

| | |
|---|---|
| C80 | Malignant neoplasm without specification of site |
| C81 | Hodgkin lymphoma |
| C82 | Follicular lymphoma |
| C83 | Non-follicular lymphoma |
| C84 | Mature T/NK-cell lymphomas |
| C85 | Other specified and unspecified types of non-Hodgkin lymphoma |
| C86 | Other specified types of T/NK-cell lymphoma |
| C87 | of which malignant neoplasm of lymph/haematopoietic tissue |
| C88 | Malignant immunoproliferative diseases and certain other B-cell lymphomas |
| C89 | of which malignant neoplasm of lymph/haematopoietic tissue |
| C90 | Multiple myeloma and malignant plasma cell neoplasms |
| C91 | Lymphoid leukemia |
| C92 | Myeloid leukemia |
| C93 | Monocytic leukemia |
| C94 | Other leukemias of specified cell type |
| C95 | Leukemia of unspecified cell type |
| C96 | Other and unspecified malignant neoplasms of lymphoid, hematopoietic and related tissue |
| C97 | Malignant neoplasms |