

# Analysis of the rip.ie deaths vs the reported deaths

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Paul

[eirecovidresearcher@gmail.com](mailto:eirecovidresearcher@gmail.com)

This reported with be updated as covid continues.

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## All Deaths from Rip.ie 2018 to 2021

Data in Figure 1 was extracted from <https://rip.ie>. The data from rip.ie contained lots of duplicates for persons that might have moved from different counties, these duplicates were cleaned and only a single entry for a duplicated user was left. There were also deaths on rip.ie from the 6 counties in Northern Ireland, these were removed as these deaths are linked to the UK not the Republic of Ireland.

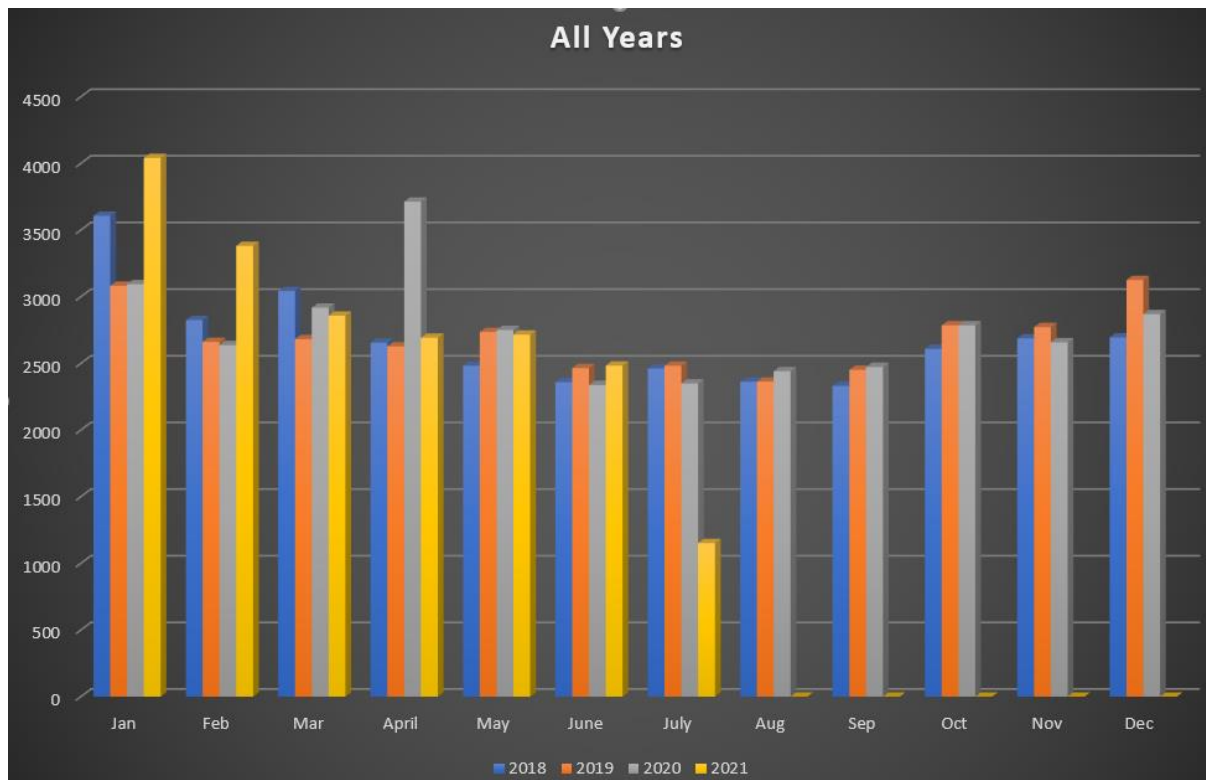


Figure 1 - All Deaths

The first observation of this chart is that January, February, and March 2018 seem to have deaths like the pandemic levels we see for Jan-2021, Feb-2021, Mar-2021. All other months from the pandemic years besides April-2020 are identical to non-pandemic. 2019 months after April have the same of more deaths compared to 2020 with was a pandemic year.

Deaths in April 2020 are clearly higher than all previous years for that month. 2021 Jan and Feb deaths are much higher than 2019 and 2020 but not much higher than 2018 levels (Non pandemic year)

### Rip 2018 vs 2020 deaths

2018 has a similar death rate to 2020 which was a pandemic year. April again stands out

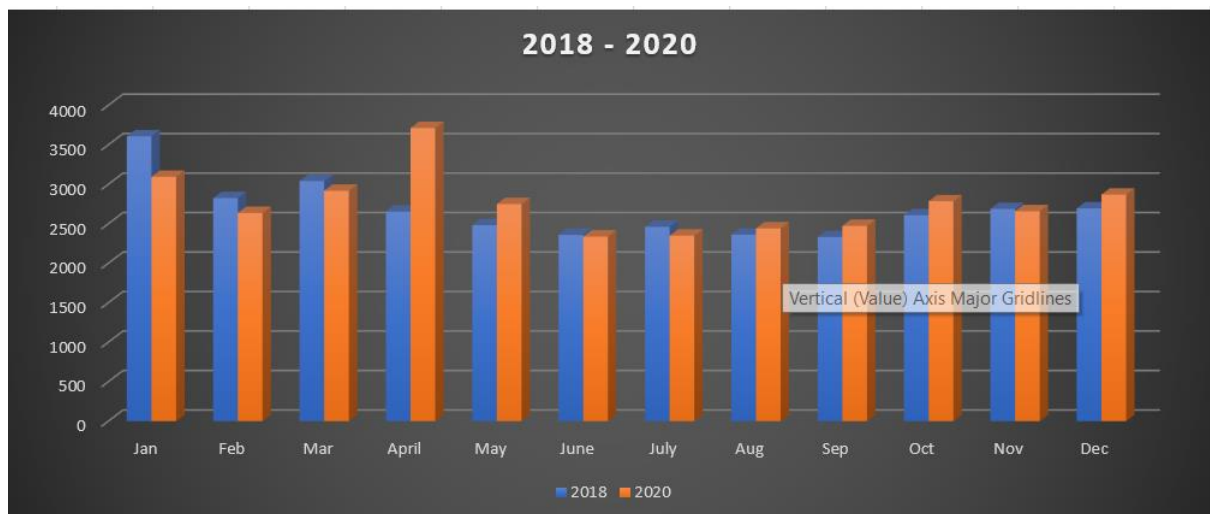


Figure 2 - 2018 vs 2020

### Rip 2019 vs 2020 Deaths

Besides the spike in April 2020 these years are almost identical. 2019 had higher deaths on average after April.

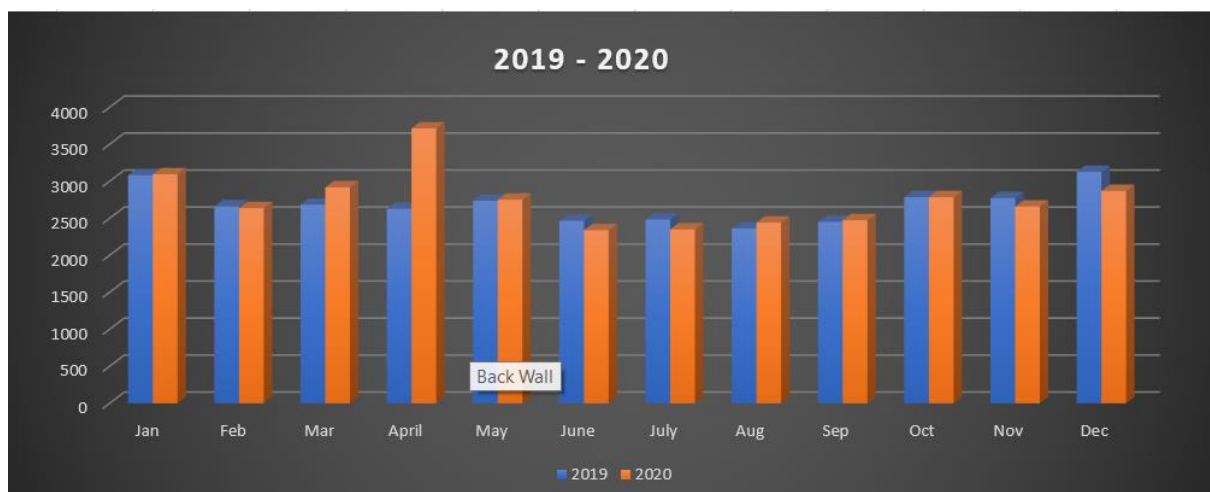


Figure 3 - 2019 vs 2020

### Rip 2018 vs 2021 deaths

In 2021 we see a lot of deaths in Jan, Feb, and March. 2018 had close to pandemic level deaths. July 2021 column is to be ignored as the data from this column is not in yet (15/07/2021 report date)

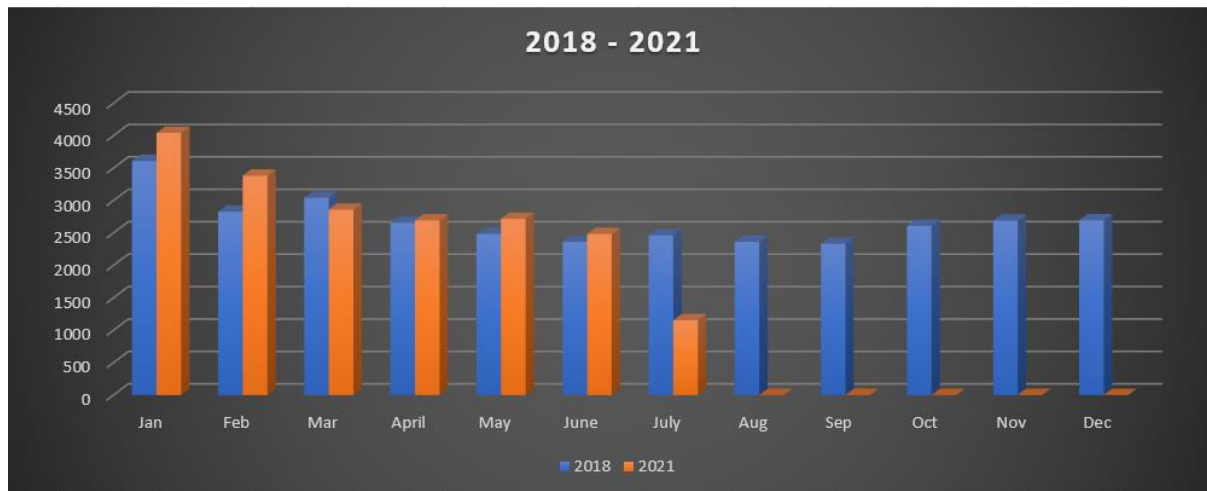


Figure 4 - 2018 - 2021

### Rip 2019 vs 2021 deaths

2021 Jan and Feb a big difference can be seen compared to 2019. Other months are almost the same levels.

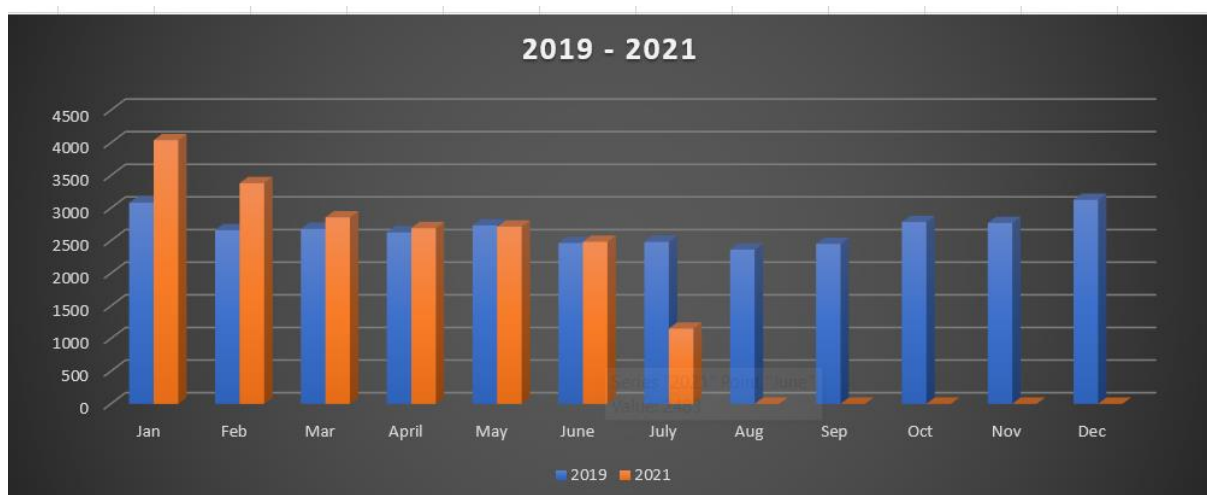


Figure 5 - 2019 vs 2021

## Determining the overcount of non-covid deaths

The data from John Hopkins comes in a time-series format, so deaths are appended to the previous day. To get the deaths for each month I would remove the previous deaths to get the exact number for that day, all these days would then be summed together to create the death count for that month.

<https://github.com/CSSEGISandData/COVID-19>

To get the overcount of Covid deaths, the reported deaths for each month in the John Hopkins dataset were removed from the rip.ie data for that year/month. For example, if Jan 2020 had 500 deaths reported on rip.ie and John Hopkins reported 100 deaths,  $500 - 100 = 400$  deaths were not counted as covid from the rip.ie dataset. This was done for all months in 2020 and 2021. Once this was complete the rip.ie deaths for years 2020 and 2021 should match closely with the rip deaths for 2019. (Figure 6)

Now that we have the rip.ie deaths for 2020 and 2021 minus the reported deaths, they can be compared against 2019 which was not a pandemic year.

This table is the reported deaths from John Hopkins for Ireland. This data is bias and helps minimize the overcount of non-covid deaths, the reason for this is, the data is not up to date as the reported 5018 deaths reported in Ireland (15/07/2021). This means the overcount of non-covid can be slightly more if we use the real reported death count.

Total Deaths 4895

John Hopkins 2020						John Hopkins 2021					
Deaths 2170						Deaths 2725					
	Country	Month	Confirmed	Death	Recovered		Country	Month	Confirmed	Death	Recovered
0	Ireland	Jan	0	0	0	0	Ireland	Jan	103015	1059	0
1	Ireland	Feb	1	0	0	1	Ireland	Feb	22039	1002	0
2	Ireland	Mar	3234	71	5	2	Ireland	Mar	15581	368	0
3	Ireland	Apr	17165	1147	13381	3	Ireland	Apr	12270	198	0
4	Ireland	May	4157	387	8703	4	Ireland	May	12606	35	0
5	Ireland	Jun	411	86	1275	5	Ireland	Jun	9528	57	0
6	Ireland	Jul	588	25	0	6	Ireland	Jul	6269	6	0
7	Ireland	Aug	2702	14	0	7	Ireland	Aug	0	0	0
8	Ireland	Sep	7130	27	0	8	Ireland	Sep	0	0	0
9	Ireland	Oct	24859	107	0	9	Ireland	Oct	0	0	0
10	Ireland	Nov	10542	138	0	10	Ireland	Nov	0	0	0
11	Ireland	Dec	18981	168	0	11	Ireland	Dec	0	0	0

## Rip.ie Data

Year	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total Deaths
2018	3607	2825	3042	2655	2482	2359	2462	2362	2331	2608	2688	2695	32116
2019	3082	2661	2682	2627	2735	2464	2482	2363	2451	2785	2772	3125	32229
2020	3094	2637	2918	3713	2750	2338	2349	2441	2473	2785	2658	2869	33025
2021	4041	3381	2857	2692	2716	2483	1152	0	0	0	0	0	19322

Rip.ie deaths 2018, 2019, 2020, 2021 (2020 & 2021 have reported deaths removed)

It is obvious from this chart that the deaths in 2020 and 2021 have fewer deaths compared to 2018 and 2019 for a lot of months. Looking at Figure 7, JH-2020 (Rip deaths for 2020 minus the reported covid deaths) is a lot less than the total death count of 2018 and 2019, this indicates that the deaths for 2020 were below average after the reported covid deaths were removed.

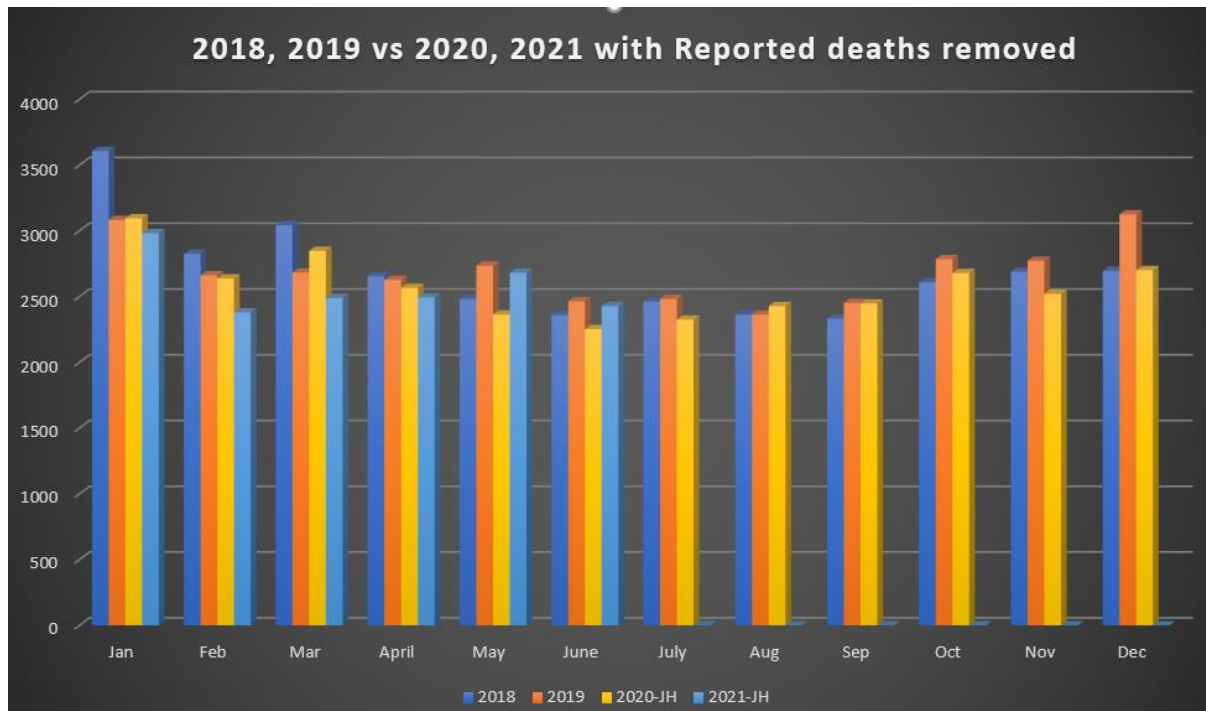


Figure 6 - Rip Deaths minus reported deaths.

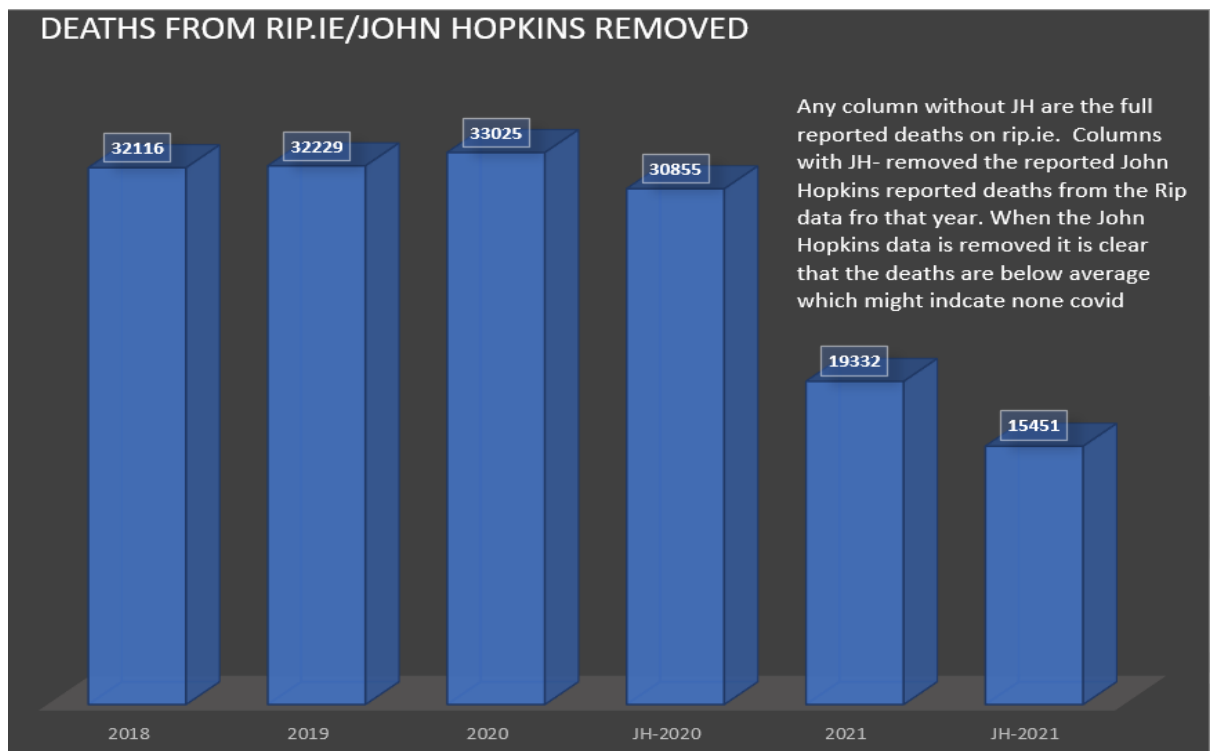


Figure 7 - Deaths with and with reported deaths

Looking at Figure 7 and the year 2021 (Rip deaths) column vs JH-2021 (Rip deaths minus reported deaths) there is a bigger gap than the deaths for 2021. Deaths from Jan to Jun are only included in 2021 and JH-2021 due to the report being on 15/07/2021.

Using 2019 as the baseline and subtracting the (2020, 2021) deaths for each month against the 2019 months, we end up with **1414** deaths less than average for 2020, and **885** less than average for 2021. The total number of deaths below average for 2020 + 2021 is **2299**. If we use the currently reported deaths as of 15/07/2020 which is **5018** and subtract **2299** the total deaths from covid are closer to **2719**. As stated earlier the John Hopkins deaths were slighter lower than the reported deaths, the real deaths would decrease even more with more accurate deaths from John Hopkins.



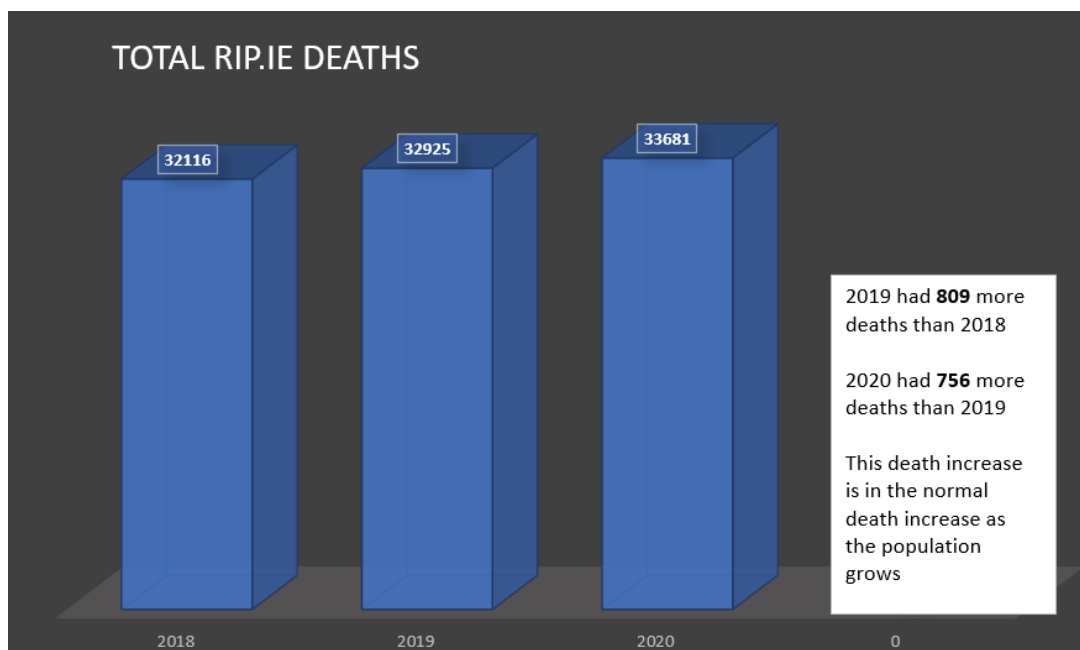
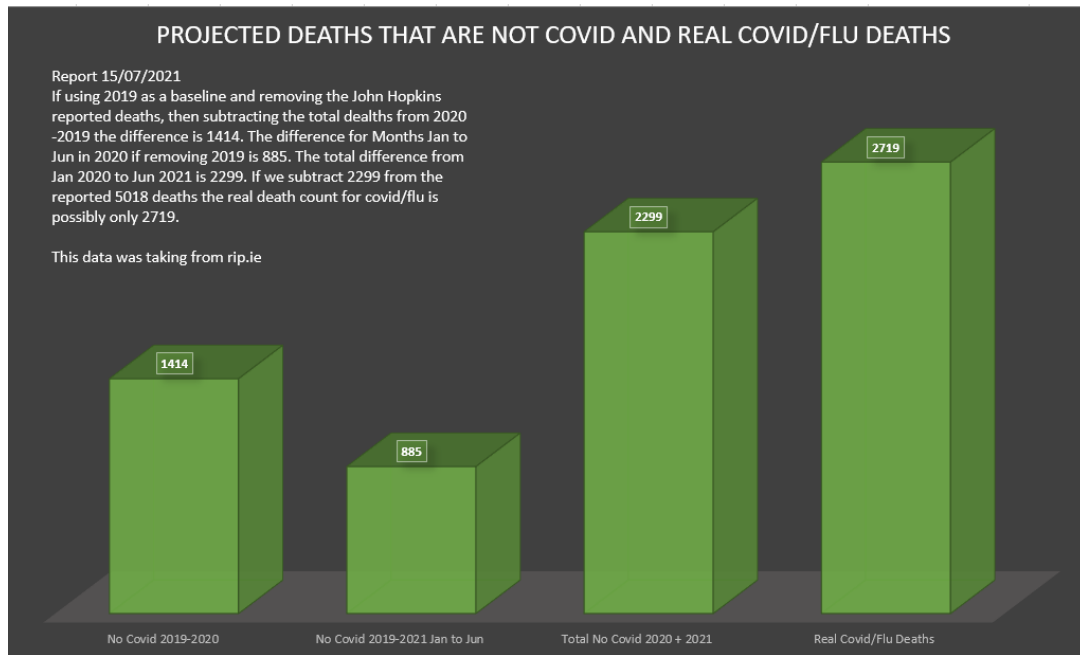


Figure 8 - Death total

## Conclusion

To the best of my knowledge, the data used from Rip.ie is the most accurate dataset used to date without having direct access to the rip.ie database.

The real number of deaths from covid is closer to **2700** and the possible non-covid deaths that were reported as covid are roughly **2200** or close to 45%. If 2018 is taken as an example, it can be seen that the 2020 and 2021 pandemic is much similar to that of a year with the seasonal flu. The large spike of deaths in April 2020 could be due to hospitals not knowing how to treat covid patients due to not knowing anything about the virus. A lot of deaths were also reported in care homes when the virus first hit in April. Knowing what we know now, many of these deaths could have been prevented. A

HIQA report from 07/2020 reports that there is excess mortality reported to the public than the real data for rip.ie which is much less. The difference in deaths between 2020 and 2019 is only **756**, if we account for the normal increase in deaths each year, **700** would be in the normal increase with a growing population. 2019 had **800** more deaths than 2018. The small difference in deaths between 2019 and 2020 indicates that 2020 is in line with a normal influenza season.

[https://www.hiqa.ie/sites/default/files/2020-07/Analysis-of-excess-all-cause-mortality-in-Ireland-during-the-COVID-19-epidemic\\_0.pdf](https://www.hiqa.ie/sites/default/files/2020-07/Analysis-of-excess-all-cause-mortality-in-Ireland-during-the-COVID-19-epidemic_0.pdf)

“Excess mortality was found to be 1,072 (95% CI: 851 to 1,290) between 11 March 2020 and 16 June 2020 inclusive. The officially reported number of COVID-19 deaths for the same period was 1,709. Therefore, the estimated excess mortality is less than the officially reported COVID-19-related mortality by 637 cases.”

### How was the Rip.ie data got?

The rip data was got programmatically with a python script Figure 8. Getting this data was tricky because there had to be multiple HTTP GET calls for every day in each month of each year, the reason for this is, the rip.ie website only returns 40 entries per request. An example of this would be getting data for 15/Jan/2020, there might be 120 entries for that day but only 40 will be returned. Another 2 calls are needed to get the other 80 entries because of the 40 entries limit.

Here is a sample of the data returned from rip.ie. Names are blacked out. iTotalRecords gives the count for the date the data was requested for.

```
{
  "isarchive": 1,
  "iTotalRecords": "171",
  "iTotalDisplayRecords": "171",
  "aaData": [
    [
      "██████████",
      "",
      "Tipperary",
      "02/04/20",
      "",
      "418259",
      0,
      "██████████",
      "",
      "Irishtown",
      "02/04/20",
      "2020-04-04 00:00:00",
      "418364",
      1,
      "Jack",
      "",
      "",
      "",
      "0",
      "0",
      1,
      [
        "██████████",
        "Palmerstown",
        "Dublin",
        "02/04/20",
        "2020-04-04 00:00:00",
        "418364",
        1,
        "Jack",
        "",
        "",
        "",
        "0",
        "0",
        1,
        [
          "██████████",
          "Mullingar",
          "Westmeath",
          "02/04/20",
          "2020-04-04 00:00:00",
          "418360",
          0,
          "██████████",
          "Loughanstown",
          "8030D286-9",
          "██████████",
          "Cork",
          "02/04/20",
          "2020-04-04 00:00:00",
          "418280",
          0,
          "██████████"
        ]
      ]
    ]
  ]
}
```

After getting all the data from rip.ie it is converted into CSV format so it can be used with pandas. Pandas was used to remove duplicates and also remove counties related to Northern Ireland.

```

54
55 persons = []
56 offset = 40
57
58 print('pid,firstname,lastname,fullname,address,county,date,month,year')
59 while year <= 2018:
60
61     mth = 12
62     while mth <= 12:
63         start = 0
64         smth = f'0{mth}' if mth < 10 else f'{mth}'
65
66         i = 1
67         while i <= months[mth-1]:
68             day = f'0{i}' if i < 10 else f'{i}'
69
70             run = True
71             total, data = getres(year, smth, day, start, 100)
72             pos = total
73             while run:
74
75                 pos = pos - 40
76                 end = 100
77
78                 if pos == 0:
79                     run = False
80                 elif pos < 0:
81                     run = False
82                     end = 40 + pos - 1
83                     pos = 0
84
85                 total, data = getres(year, smth, day, pos, end)
86                 printcsv(data, year, strmonths[mth-1])
87                 time.sleep(1)
88
89             i += 1
90
91         mth += 1
92
93     year += 1

```

Figure 9 - Python Script

If you want to know more information or like the datasets used in this report, please contact Paul at:

[eirecovidresearcher@gmail.com](mailto:eirecovidresearcher@gmail.com)