

Weekly deaths – preliminary data

Weeks 1 to 38 of 2020

Mortality in Portugal in the context of the COVID-19 pandemic

Between March 2nd, when the first cases of COVID-19 were diagnosed in Portugal, and September 20th, there were 64,105 deaths in the national territory, an increase of 7,144 deaths in 2020 when compared to the average number of deaths during the same period over the past five years. 1,920 of these deaths, a little over ¼ of the total, were due to COVID-19. In the last 4 weeks (August 24th to September 20th) there were 1,015 more deaths than the average from the same period between 2015-2019. In that period there were 119 registered deaths from COVID-19.

Of the total deaths recorded between March 2nd and September 20th, 31,568 were of men and 32,537 were of women, an increase of 2,970 and 4,174 deaths, respectively, compared to the average of deaths observed in the same period between 2015-2019.

More than 70% of deaths were of people aged 75 years or over. Compared to the average number of deaths observed in the same 2015-2019 period, another 6,218 people aged 75 and over died, of which 4,865 were aged 85 and over.

The largest increase in the number of deaths in relation to the 2015-2019 average was registered in the Norte region, with the exception of the last week of June and the first of July, when this increase was higher in the Área Metropolitana de Lisboa region. In week 38 the Área Metropolitana de Lisboa was once again the region with the highest contribution to the overall number of deaths.

Of the total deaths recorded between March 2nd and September 20th 2020, 38,060 occurred in a hospital and 26,045 outside a hospital, corresponding to an increase of 2,758 deaths and 5,561 deaths, respectively, when compared to the average number of deaths in the same 2015-2019 period.

Despite the circumstances determined by the COVID-19 pandemic, Statistics Portugal asks for the best collaboration from companies, families and public entities in responding to Statistics Portugal's requests. The quality of official statistics, particularly its ability to identify the impacts of the COVID-19 pandemic, depends crucially on this collaboration that Statistics Portugal thanks in advance.

In this press release Statistics Portugal provides preliminary information regarding the evolution of weekly deaths that occurred in national territory up to the 38th week of 2020 (September 14th to 20th) and provides a comparison with the average number of deaths for the same period from the last five years (2015-2019).

Information on deaths is obtained through the Civil Register collected under the Integrated Civil Registration and Identification System (SIRIC) until September 29th. This time lag prevents the disclosed information from being subjected to considerable revisions. Even so, the information referring to 2020 is preliminary and will be subject to subsequent update.

One of the most dramatic consequences of the COVID-19 pandemic concerns the increase in the total number of deaths. The number of COVID-19 deaths provides only a partial measure of these effects. A more comprehensive measure of the impact on mortality may be provided by the difference between the total number of deaths observed in

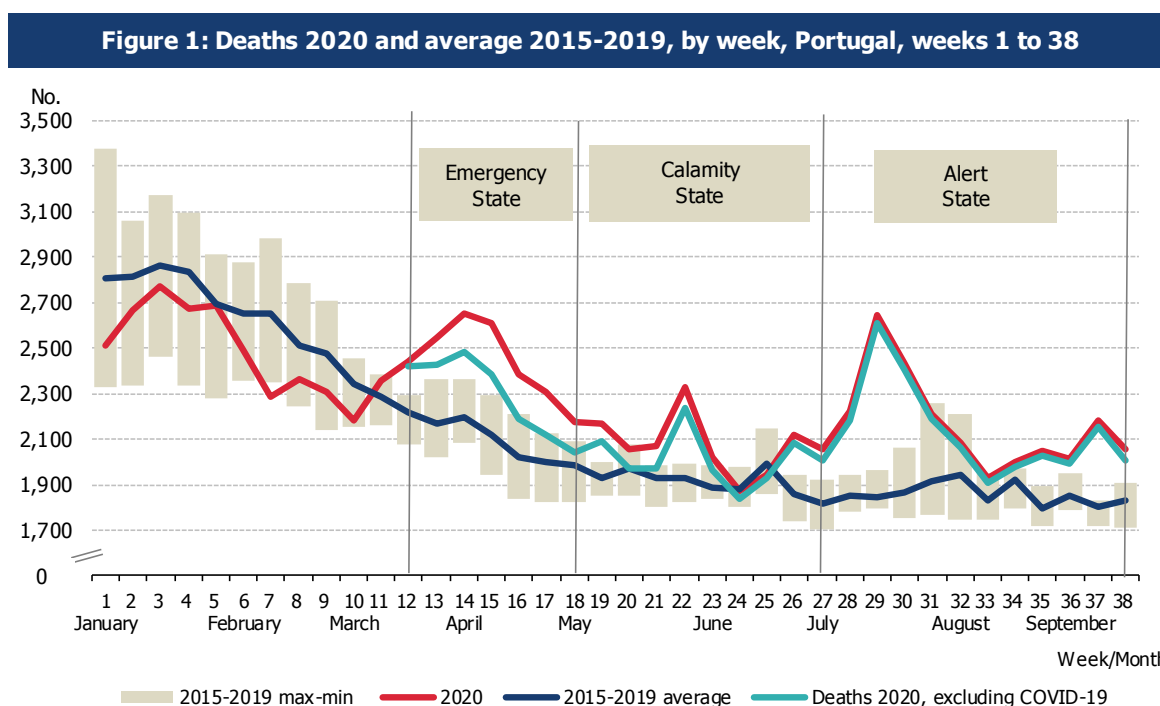
2020, by all causes of death, and the average number of deaths for the last five years (2015-2019)¹, even though there are other known effects on mortality, such as seasonal flu and spikes or hot or cold waves.

Number of deaths in 2020 higher than in previous years

According to preliminary data on deaths, up to September 20th 2020, 86,178 deaths were registered in national territory, an increase of 5,648 deaths compared to the average number of deaths for the 2015-2019 homologous period.

In the first two months of 2020, the number of deaths was, in general, lower than the values observed in the last five years. However, while in previous years mortality continued to decrease in subsequent months, in March 2020 the number of deaths started to increase. In week 11 (9th to 15th March 2020), the number of deaths exceeded the average values recorded in recent years. In Figure 1, the shaded bars, defined by the minimum and maximum values of deaths recorded per week in any of the five years between 2015 and 2019, provide an indication of the range of variation in the number of deaths in the considered period. It shows that the number of deaths in 2020 was, from the beginning of March, in general, above the upper limit of this range of values.

Between March 2nd, when the first cases of COVID-19 disease were diagnosed in Portugal, and September 20th, that is, between weeks 10 (March 2nd to 8th) and 38 (September 14th to 20th) there were 64,105 deaths, 7,144 above the average number of deaths observed in the same period from 2015-2019.



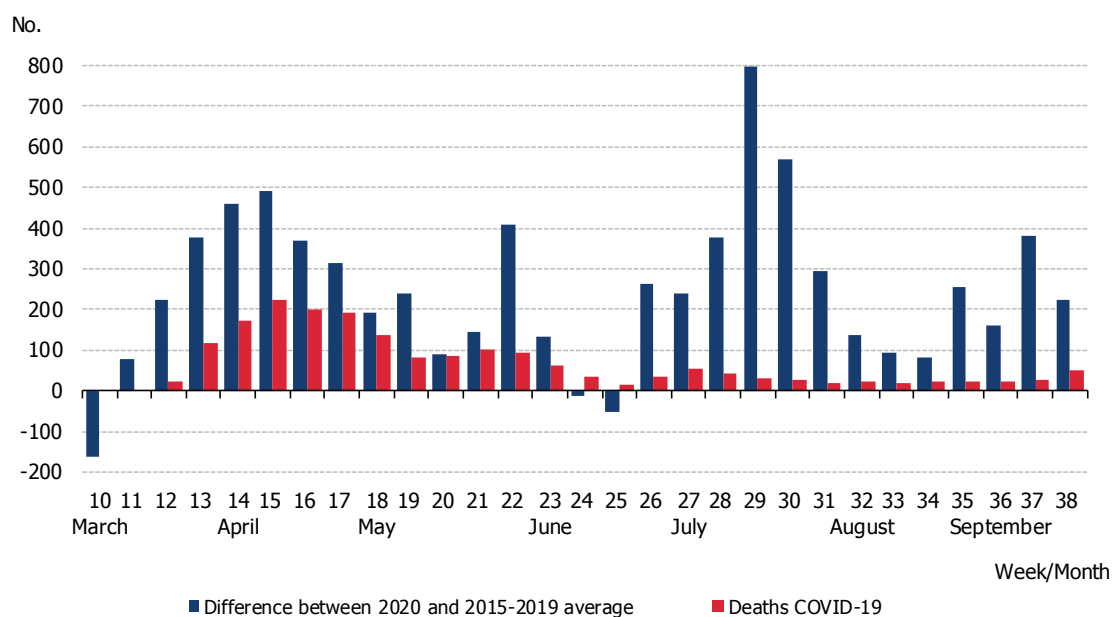
Source: Statistics Portugal, Deaths. Directorate-General of Health, Daily COVID-19 Status Report.

¹ In this press release, a simple measure was adopted to quantify the increase in the number of deaths compared to previous years, taking as a basis of comparison the average of deaths in the last five years (2015-2019). This measure should therefore not be confused with the *excess mortality* indicator published in some studies, in particular through the EuroMOMO platform.

The increase in deaths in 2020 compared to the 2015-2019 average peaked at week 15 (April 6th to 12th), gradually decreasing until the end of the State of Emergency period (May 3rd). At the end of May (week 22: 25th to 31st May), there was a new peak in mortality. In weeks 24 and 25 (June 8th to 21st) mortality returned to the values of previous years. From week 26 (June 22nd to 28th) there was an increase in mortality in 2020 compared to the average of the same period, reaching its highest point in week 29 (July 13th to 19th), with an additional number of around 800 deaths, which cannot be dissociated from the fact that the month of July 2020 was extremely hot, with several hot waves. In the following weeks, until week 34, there was a lower increase in the number of deaths, approaching the average of the last five years. In the last four weeks, the number of deaths has increased again compared to the 2015-2019 average.

The increase in mortality from March onwards in relation to the average of the last five years is only partially explained by the number of deaths caused by COVID-19. In Figure 2, the bars represent the total weekly death differential relative to the 2015-2019 average for the same period and the number of COVID-19 deaths.

Figure 2: Difference between deaths 2020 and 2015-2019 average, by week, Portugal, weeks 10 to 38



Source: Statistics Portugal, Deaths. Directorate-General of Health, Daily COVID-19 Status Report.

Portugal in the European context

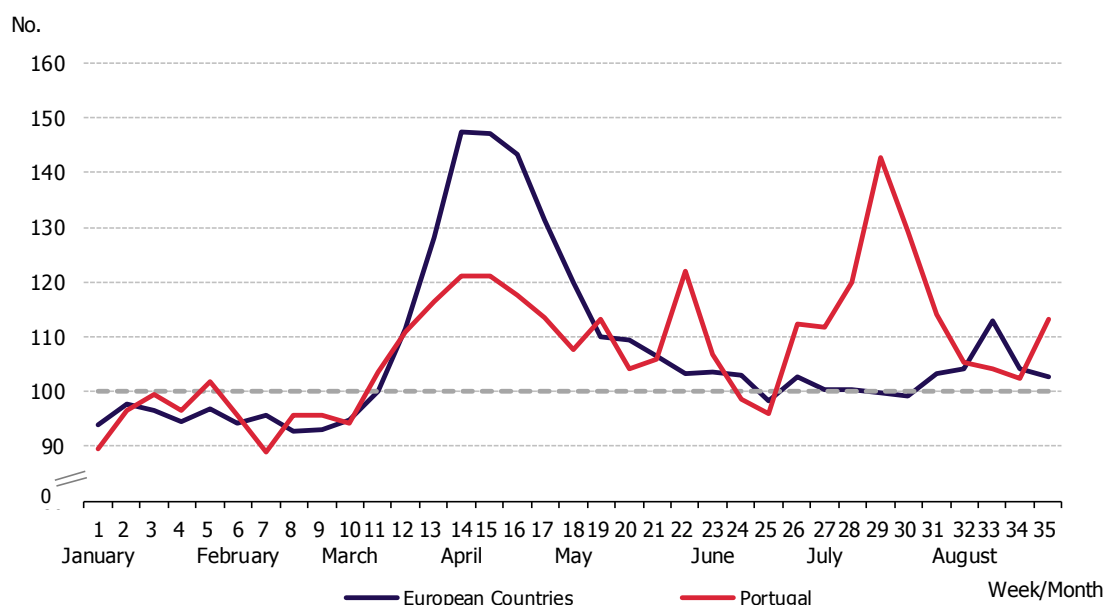
Considering as a basis for comparison the information on 19 European countries² that submitted data to Eurostat on the number of deaths per week until week 35 and for all weeks of years 2016 to 2019³, the mortality in the first weeks of 2020 was below the average values observed over the 2016-2019 period. From the beginning of March 2020, contrary

² Considered countries: Belgium, Bulgaria, Denmark, Germany, Estonia, Spain, France, Latvia, Lithuania, Hungary, Malta, Austria, Portugal, Finland, Sweden, United Kingdom, Liechtenstein, Norway and Switzerland. Note that the countries considered in this press release are not the same of the previous press release (September 18th), as such the results are not comparable. In the current press release there were included United Kingdom and Malta, which were not included in the previous, and Czech Republic, Italy, Netherlands, Luxembourg, Poland, Slovakia and Iceland were removed because they did not send information to Eurostat in a timely manner.

³ It should be noted that 2015 was not included in the base comparison period due to the lack of data for some of the countries.

to what has been observed in recent years, there was a significant increase in the number of deaths, reaching a peak in week 14 (March 30th to April 5th), with 47% more deaths than in the same weeks of 2016-2019. Mortality in Portugal followed a similar pattern, however showing a lower difference in relation to the 2016-2019 average, just under 25% more deaths. In the following weeks, mortality in Europe was closer to the average. In Portugal, despite an initial period where there was a reduction in mortality, it increased again, remaining far from the average until week 23 (June 1st to 7th). While in European countries mortality tended to remain close to the average of recent years, between the weeks 26 and 31 (from June 22nd to August 2nd) the increase in the number of deaths in Portugal was very significant when compared to the average, reaching 43% in week 29 (July 13th to 19th). In the last few weeks, mortality in Portugal has decreased, reaching lower values than those of the European countries as a whole in weeks 33 and 34 (August 17th to 30th). At the beginning of September, in the comparison with the average for the 19 European countries, Portugal shows another increase in mortality in.

Figure 3: Deaths in 2020 compared to 2016-2019 average (2016-2019 average = 100), by week, Portugal and 24 European countries, weeks 1 to 35



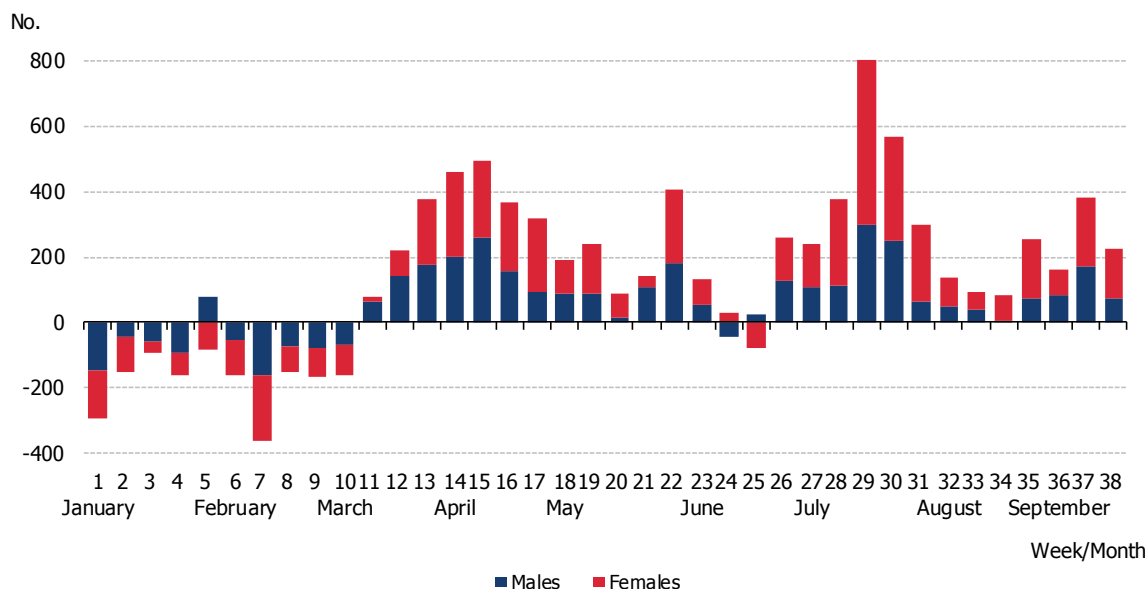
Note: 19 countries: Belgium, Bulgaria, Denmark, Germany, Estonia, Spain, France, Latvia, Lithuania, Hungary, Malta, Austria, Portugal, Finland, Sweden, United Kingdom, Liechtenstein, Norway and Switzerland.
Source: Statistics Portugal calculations based on Eurostat's online database (extracted on 29/09/2020).

Deaths of women with the greatest contribution to the increase in mortality

Between March 2nd and September 20th, that is, between weeks 10 (March 2nd to 8th) and 35 (September 14th to 20th), there were 31,568 deaths of men and 32,537 of women, an increase of 2,970 and 4,174 deaths, respectively, compared to the average of deaths observed in the same period of 2015-2019.

In weeks 11 and 12, the increase of mortality resulted mainly from the increase in male deaths. From that moment, the contribution of female deaths to the increase in the number of deaths was generally higher, especially in the month of July (weeks 28 to 32).

Figure 4: Difference between deaths in 2020 and 2015-2019 average, by week and sex, Portugal, weeks 1 to 38

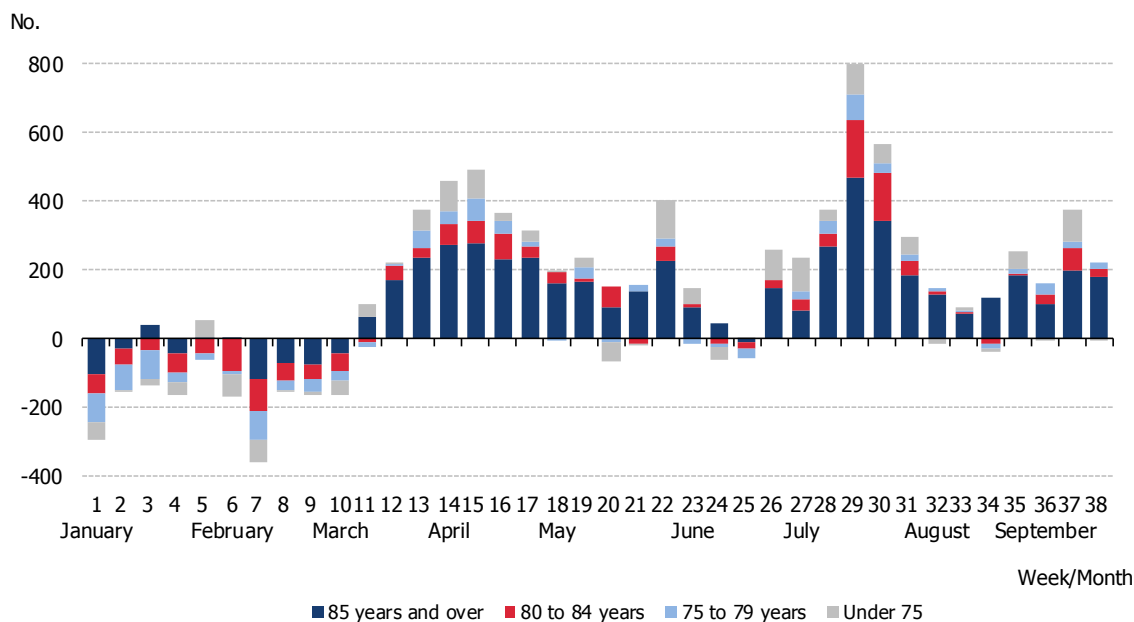


Source: Statistics Portugal, Deaths.

70% of deaths were from people aged 75 or over

Between March 2nd and September 20th 2020 (weeks 10 to 38), more than 70% of deaths (45,812 deaths) were of people aged 75 years and over and, of these, 60% (27,438) were of people aged 85 and over. Compared to the average number of deaths observed in the same period of 2015-2019, there was an increase of 6,218 deaths of people aged 75 and over, of which 4,865 were 85 or older.

Figure 5: Difference between deaths in 2020 and 2015-2019 average, by week and age group, Portugal, weeks 1 to 38



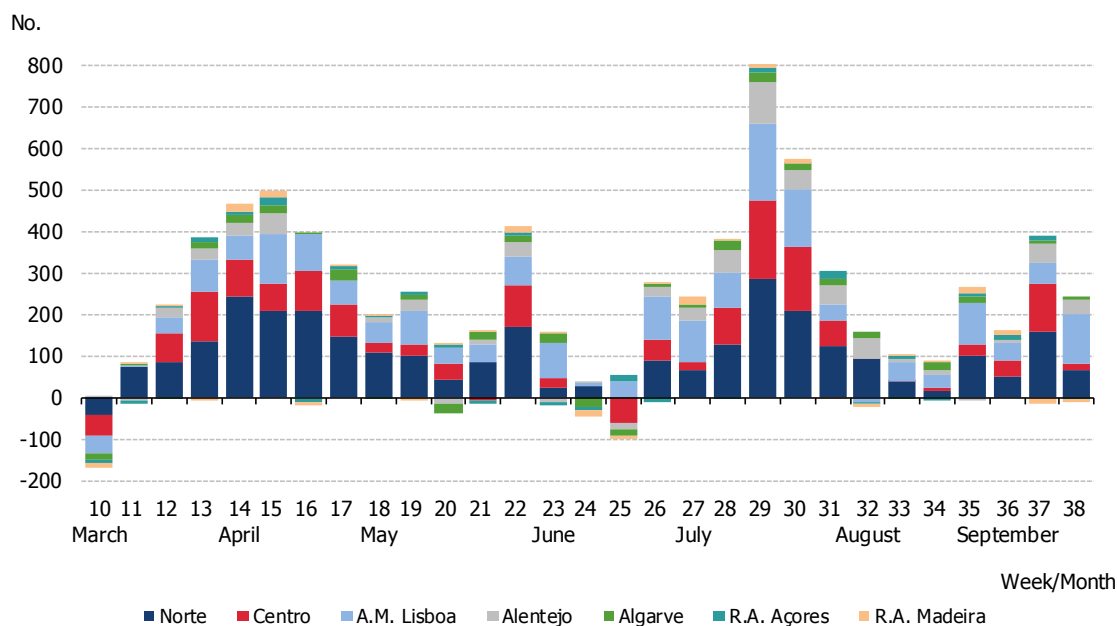
Source: Statistics Portugal, Deaths.

Norte, Centro and Área Metropolitana de Lisboa regions with the greatest contribution to the excess mortality

Between March 2nd and September 20th (weeks 10 to 38), compared to the average number of deaths observed in the same period of 2015-2019, the largest increase in the number of deaths was registered in the Norte region (+3,033 deaths), followed by Área Metropolitana de Lisboa Area (+1,839 deaths), Centro (+1,374 deaths), Alentejo (+620 deaths), Algarve (+240 deaths) and the autonomous regions of Açores and Madeira (+77 and +57, respectively).

Comparing the number of deaths per week with the average of deaths in the period 2015-2019, the excess of deaths recorded in week 11 (March 9th to 15th) is explained by the increase in deaths recorded in the Norte region. Although the Norte region remains the greatest contributor to the increase in the number of deaths between weeks 13 (March 23 to 29) and 22 (April 25 to May 31), the contributions of the remaining regions increased, in particular those from the Centro and Área Metropolitana de Lisboa regions. In weeks 23 and 25 to 27, the greatest contribution to the increase in the number of deaths was from the Área Metropolitana de Lisboa, and from this moment the Norte goes back to being the region with the highest contribution to the overall increase in the total number of deaths. In week 38 (September 14th to 20th) the largest contribution belonged to the Área Metropolitana de Lisboa.

Figure 6: Difference between deaths in 2020 and 2015-2019 average, by week and regions Nuts 2, weeks 10 to 38

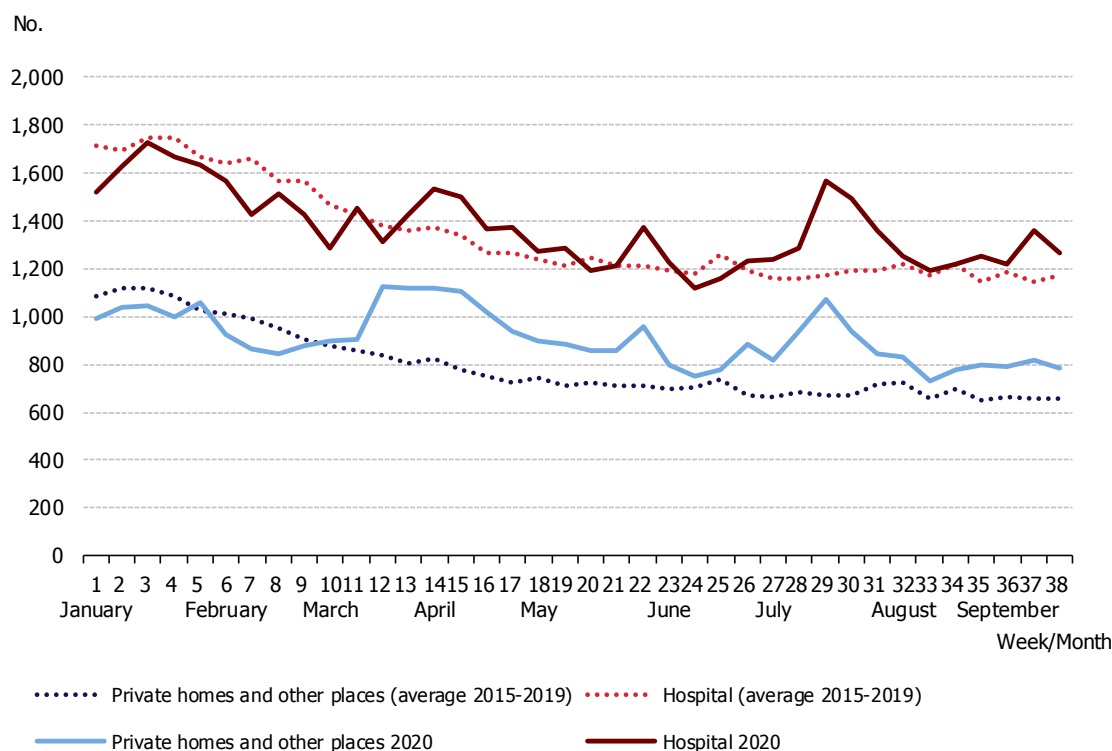


Source: Statistics Portugal, Deaths.

Mortality outside hospital (at private homes and other locations) was higher than in previous years

Of the 64,105 deaths recorded between March 2nd and September 20th 2020, 38,060 took place in a hospital and 26,045 occurred outside the hospital context, corresponding to an increase of 2,758 deaths and 5,561 deaths, respectively, compared to 2015-2019 average of deaths over the same period. The excess of deaths outside the hospital context is important throughout all weeks, especially until the beginning of June (week 23). In the last few weeks, the increase in deaths was more evenly distributed between the those that took place in a hospital and those which occurred outside the hospital context.

Figure 7: Deaths 2020 and 2015-2019 average, by week and place of occurrence, Portugal, weeks 1 to 38



Source: Statistics Portugal, Deaths.

TECHNICAL NOTE

Statistics Portugal releases the preliminary weekly deaths for 2020, based on the information registered in the Civil Register Offices until September 8th 2020.

Data on deaths is obtained from statistical operations of direct and exhaustive collection on live births and deaths in Portuguese territory using facts that are subject to compulsory civil registration (birth and death) in the Sistema Integrado do Registo e Identificação Civil (SIRIC).

In addition to administrative information obtained from Civil Register Offices, Statistics Portugal collects an additional set of variables identified as statistically pertinent to the National Statistic System (NSS) and the European Statistical System (EES).

Data is recorded and sent electronically, in compliance with the requirements set out by Statistics Portugal and laid down in liaison with the Instituto de Registos e Notariado (IRN) and the Instituto de Gestão Financeira e Equipamentos da Justiça (IGFEJ).

Definitions:

Death: The permanent disappearance of vital functions.

Detailed methodological information available at: www.ine.pt, option Products, Metadata system.

Detailed statistical information available at: www.ine.pt, option Products, Statistical data, database, theme Population, subtheme Mortality and life expectancy.