25 September, 2020

Indicators of demographic context and territorial expression of the COVID-19 pandemic in Portugal

COVID-19: a territorial view on demographic context and territorial expression of the pandemic

The expression of the pandemic on national territory continues to be characterised by a high degree of heterogeneity. Some of the results obtained in this context:

- Since the beginning of March, the preliminary number of deaths in 2020 for the country as a whole, as measured over the last four weeks, has remained higher than in the same reference period (average for the same period in 2018 and 2019). In 179 of the 308 Portuguese municipalities, where 68% of the population lives, the number of deaths between 17 August and 13 September 2020 was higher than the corresponding reference value.
- The upward trend in the number of new cases of COVID-19 has continued since the end of August - values above 4,000 new cases since September 13 (cumulative figures for the last 7 days), reaching 4,760 new cases (corresponding to 4.6 new cases per 10,000 inhabitants) on September 23.
- Continued reduction in the territorial concentration of new cases since mid-June - the highest level of territorial dispersion in the analysed series was reached on 20 September (reference date of the latest data released by Directorate-General of Health at municipal level).
- On September 20, for every 10 thousand inhabitants, there were 4.5 new cases of COVID-19 (last 7 days). In 55 municipalities, this ratio was higher than the average, with AML's municipalities standing out, namely: Amadora (9.4), Sintra (9.0), Lisbon (8.8), Odivelas (8.1), Cascais (7.3), Loures (7.2) and Oeiras (6.9).
- In the seven days ending on 20 September, the AML represented 43% of the new cases in the country (28% of the population). The analysis focused on the last weeks suggests an increase in the number of new cases in the AML at a higher rate than in the country: in the week ending in 6 September the growth rate was +21.3% (+8.9% in the country) and in the week ending in 20 September, this rate was +31.7% (+12.6% in the country).

In addition, the analysis (see box in page 12) of the territorial expression of establishments with 50 or more persons employed, in order to assess the impact of the public policy measure on workers' different arrival and exit times, showed that:

- Establishments with 50 or more employees had about 1.2 million people at work, which represented 30% of the total.
- The metropolitan areas of Lisboa and Porto were the sub-regions with the highest volume of persons employed in these establishments, representing 37.4% of the people employed in AML and 32.5% in AMP.
- In 12 municipalities of AMP and in eight of AML, more than ¼ of the persons employed worked in establishments with 50 or more employees.

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The first cases diagnosed with COVID-19 in Portugal were reported on March 2nd 2020 and the first death as a result of COVID-19 was recorded on March 16th 2020. The WHO (World Health Organization) declared the outbreak of COVID-19 as a pandemic on March 11th 2020. On March 19, the first period of the State of Emergency was declared in Portugal, which would be renewed on April 3 and April 18. On May 3rd, the State of Calamity was declared, which was followed by three phases of deconfinement. On July 1st, the State of Alert was declared for most of the country, the State of Contingency for the Metropolitan Area of Lisboa and the State of Calamity for 19 parishes of five municipalities in the Metropolitan Area of Lisboa. On August 1st the State of Alert for the whole country was maintained and the State of Contingency was declared for the whole territory of the Metropolitan Area of Lisboa. On September 15th it was declared a State of Contingency throughout the country, establishing specific rules for the organisation of work for the metropolitan areas of Lisboa and Porto.

This press release is organized in two sections. The first section includes the usual analysis of the results of general mortality, based on the data of deaths (all causes of death) that occurred in the national territory up to September 13th. Information on deaths is obtained through the Civil Register collected under the Integrated Civil Registration and Identification System (SIRIC) until September 22nd. This time lag prevents the disclosed information from being subjected to considerable revisions. Even so, the information is preliminary and will be subject to further updates.

The second section analyses the situation of the pandemic in Portugal, focusing on the scale of the municipality and the territorial differentiation of the incidence of the disease and its most recent evolution, based on the number of cases confirmed with COVID-19 disseminated by the Directorate-General for Health (DGS). This highlight incorporates the information available up to September 24 (data on the situation up to September 23 for the country and up to September 20 for municipalities).

This press release, taking advantage of information from the Integrated Business Accounts System (SCIE), presents an analysis of the territorial expression of workers in establishments with 50 or more persons employed, allowing for an assessment of the impact that the measure on the mandatory differentiation of workers' arrival and exit times will have on the territories that may be identified by a Resolution of the Council of Ministers (see **Box 1**). In addition, within the framework of Statistics Portugal's **Statslab**, this press release also presents data on population mobility provided by Facebook's "Data for Good" initiative (see **Box 2**).

I. Demographic and territorial context indicators

Since the beginning of March, the preliminary number of deaths in 2020 for the country as a whole, measured over the last four weeks, has remained higher than in the same reference period (average for the same period in 2018 and 2019), reaching in the four weeks from 6 July to 2 August a number of deaths 1.3 times higher than in the reference period [Figure 1].

In the last four weeks (17 August to 13 September), the preliminary number of deaths in 2020 was higher than the reference period in all NUTS 2 regions, with figures above the national average in the Norte region and the Região Autónoma dos Açores. At the beginning of March (weeks 2 to 29 March), only the autonomous regions and the Algarve registered a preliminary number of deaths slightly lower than the one observed in the reference period [Figure 2].

Figure 1 - Ratio between deaths in the last 4 weeks and deaths in the same reference period, Portugal and NUTS 2, weeks from 2 to 29 March and from 17 August and 13 September

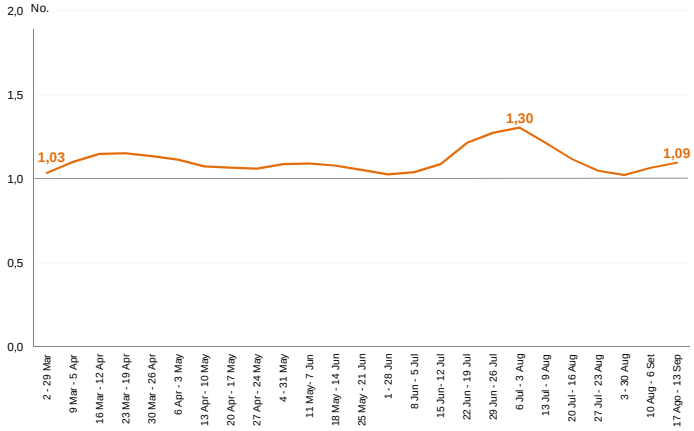
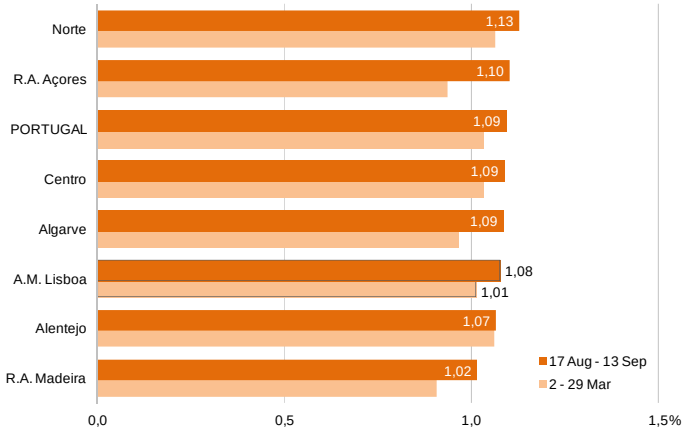


Figure 2 – Ratio between deaths in the last 4 weeks and deaths in the same reference period, Portugal, weeks from 2 to 29 March to weeks from 17 August and 13 September

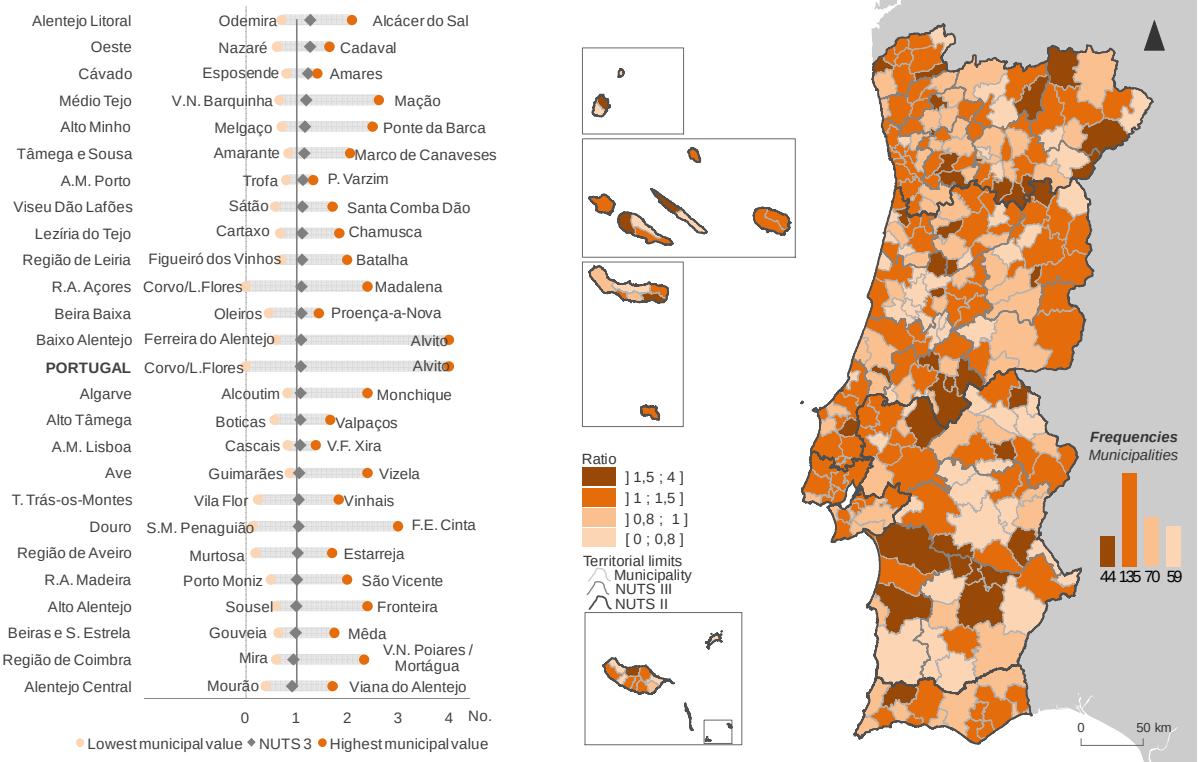


Source: INE, I.P., Statistics on Deaths (Preliminary (2020) and Final Results (2018 and 2019)).

In 179 municipalities the number of deaths between 17 August and 13 September was higher than the corresponding reference value

In 179 of the 308 Portuguese municipalities, the number of deaths in the last four weeks (between 17 August and 13 September 2020) was higher than the corresponding reference value (average for the same period in 2018 and 2019). Of this total, 44 municipalities stood out with a number of deaths 1.5 times higher than in the reference period. For the remaining 129 municipalities, the number of deaths in the last four weeks was equal to or less than that observed in the reference period [Figure 3].

Figure 3 - Number of deaths in the last four weeks (17 August to 13 September) per deaths in the same period of reference, Portugal, NUTS 3 and municipality



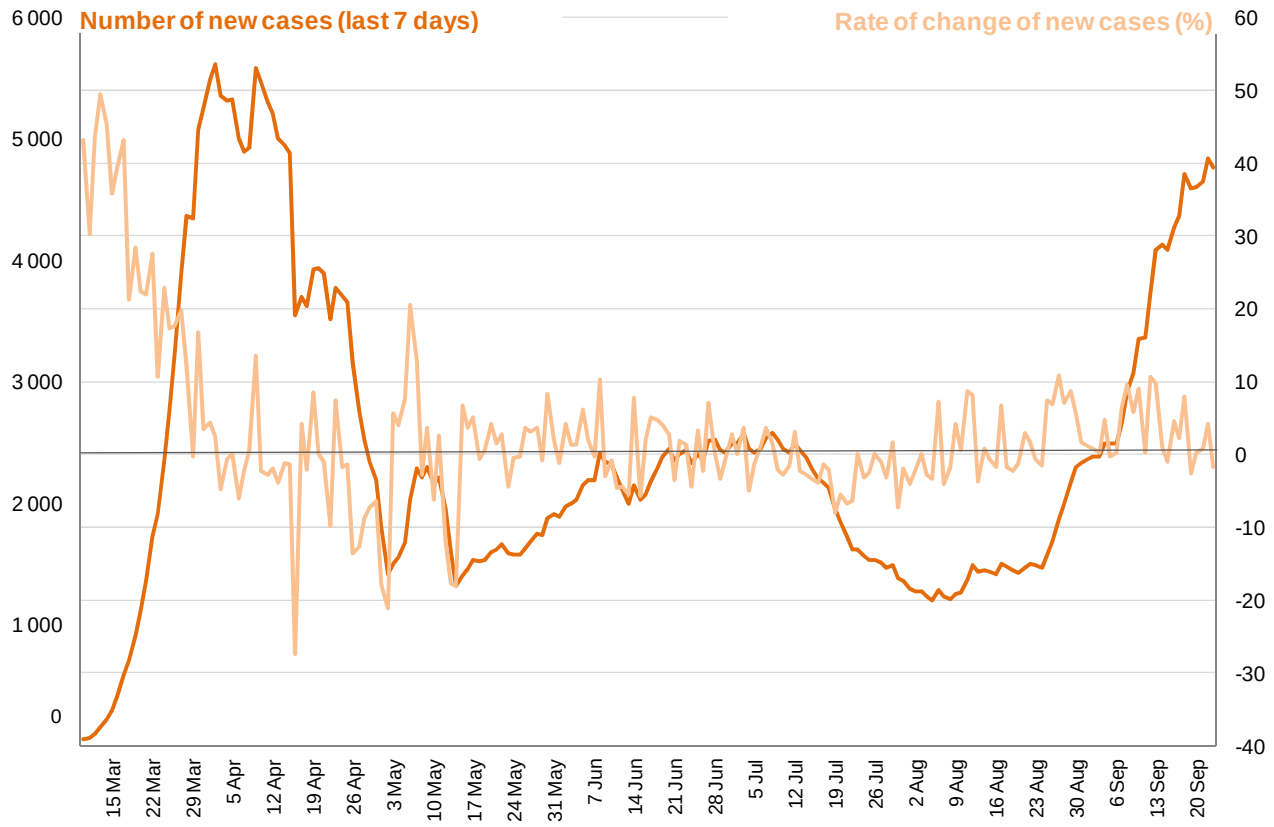
Source: INE, I.P., Statistics on Deaths (Preliminary (2020) and Final Results (2018 and 2019)).

II. The expression of the pandemic in the municipalities

Based on the data released daily of the total of confirmed cases of COVID-19, it is possible to analyse the evolution of the new cases of COVID-19 disease (last 7 days) since the beginning of March until the present moment.

In the following figure, an exponential increase of new cases of COVID-19 can be observed initially, registering on April 2 (last 7 days) the highest value of new confirmed cases (5,618, corresponding to 5.5 new cases per 10,000 inhabitants). From that date until the end of August, the number of new cases was below or around 2,500 new cases. Subsequently, there was an upward trend, with figures above 2,500 new cases from September 7 and above 4,000 new cases from September 13, reaching 4,760 new cases (corresponding to 4.6 new cases per 10,000 inhabitants) on September 23.

Figure 4- Number of new confirmed cases of COVID-19 (last 7 days) and corresponding rate of change, Portugal, per day



Source: Directorate-General of Health, Daily COVID-19 Status Report (released on September 24).
Note: The dates marked on the graph axis correspond to Sundays.

55 municipalities registered new confirmed cases of COVID-19 disease per 10,000 inhabitants above the national value

On 23 September 2020, for every 10 thousand inhabitants in Portugal, there were 4.6 new confirmed cases of COVID-19 (last 7 days). On 20 September 2020, the date of the last data update at municipality level, there were 4.5 new confirmed cases of COVID-19 (last 7 days) per 10 thousand inhabitants in the country.

The number of new confirmed cases of OVID-19 (last 7 days) per 10 thousand inhabitants was higher than national value in 55 municipalities. In the Norte region, 20 municipalities registered a value above the national average, highlighting six municipalities with values above 10 new cases per 10 thousand inhabitants - Vimioso in the sub-region of Terras de Trás-os-Montes; Sernancelhe and Mesão Frio in Douro; Terras de Bouro in Cávado; Póvoa de Varzim in the Metropolitan Area of Porto; and Valença in Alto Minho. In the Metropolitan Area of Porto, the municipalities of Vila do Conde, Arouca, São João da Madeira and Paredes also registered values above the national average.

In the Lisbon Metropolitan Area (AML), out of a total of 18 municipalities, 12 scored values above the national level: Amadora and Sintra, with nine or more confirmed cases per 10 thousand inhabitants, followed by the municipalities of Lisboa, Odivelas, Cascais, Loures, Oeiras, Vila Franca de Xira, Moita, Seixal, Almada and Alcochete.

With values above the national average, the following municipalities also stood out: seven municipalities in the Centro region (Aguiar da Beira in the sub-region of Viseu Dão Lafões; Vila Velha de Ródão and Penamacor in Beira Baixa; Penacova in the Region of Coimbra; Mação and Constância in Médio Tejo; and Mêda in Beiras e Serra da Estrela), 12 municipalities in the Alentejo region (Ourique in the sub-region of Baixo Alentejo; Redondo, Mora, Montemor-o-Novo and Reguengos de Monsaraz in Alentejo Central; Portalegre in Alto Alentejo; Golegã, Azambuja, Santarém, Coruche and Benavente in Lezíria do Tejo; and Santiago do Cacém in Alentejo Litoral) and four municipalities in the Algarve (Vila Real de Santo António, Lagos, Castro Marim and Albufeira) [Figure 5].

The location coefficient considering the new confirmed cases (last 7 days) calculated for April 19, May 17, June 14, July 12, August 9, September 6 and September 20 suggests higher levels of territorial concentration on June 14. Until that date the trend has been towards greater concentration of new cases, followed by a subsequent reduction in concentration. Considering the analysed series of location coefficients based on the new confirmed cases (last 7 days) estimated for all Sundays from 19 April to 20 September, the lowest level of concentration occurred on 20 September and the highest on 14 June [Figure 6].

Figure 5 - Number of new confirmed cases of COVID-19 (last 7 days) per 10 thousand inhabitants until September 20, 2020, by municipality

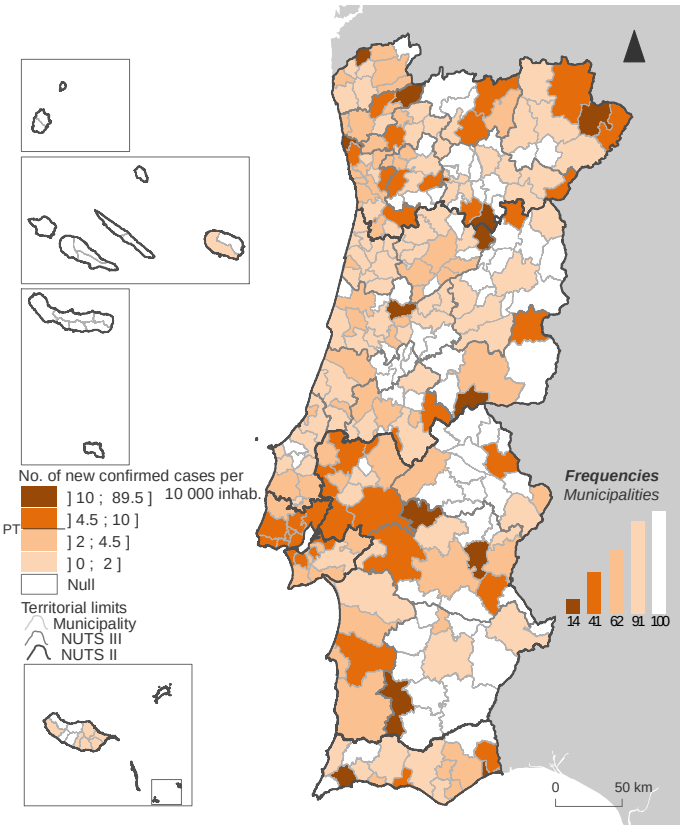
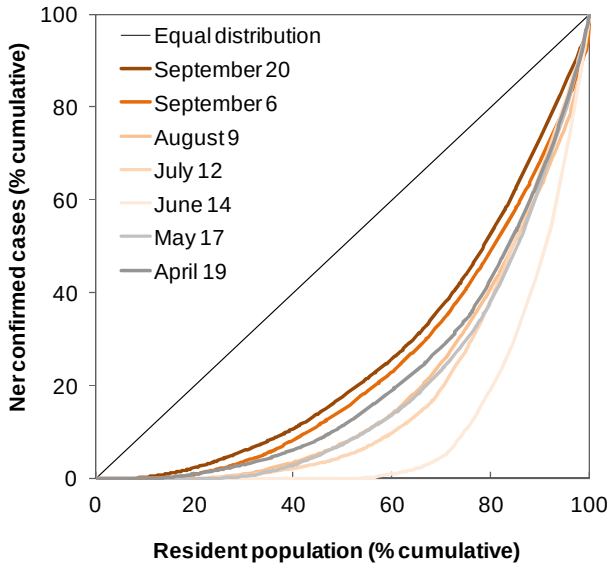


Figure 6- Territorial concentration of new confirmed cases of COVID-19 (last 7 days) on April 19, May 17, June 14, July 12, August 9 and September 6 and 20 in relation to the resident population, based on the distribution by municipality

Location Curve



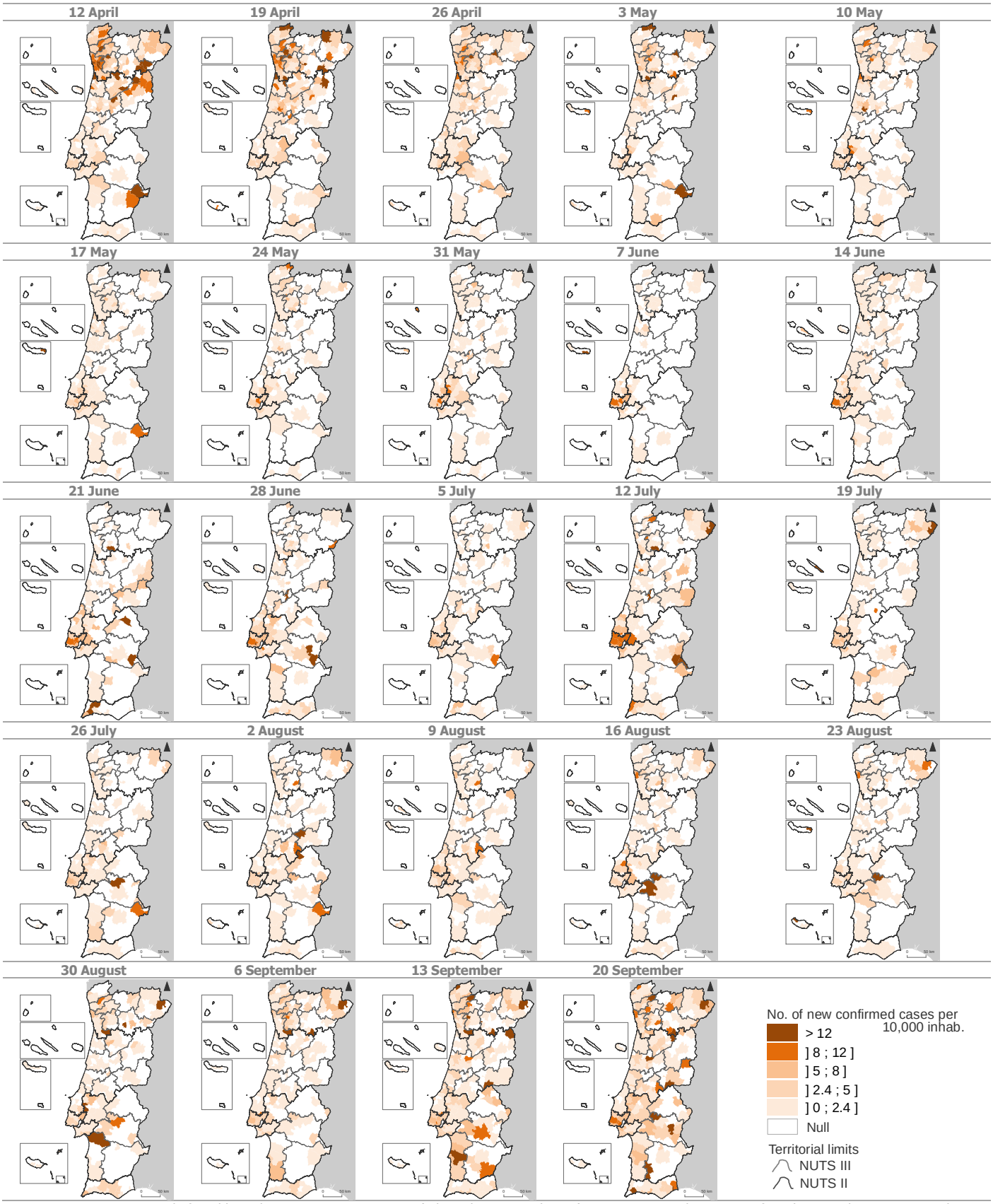
Location coefficient	
September 20 - Sunday	34.5
September 6 - Sunday	37.2
August 9 - Sunday	46.4
July 12 - Sunday	51.7
June 14 - Sunday	65.8
May 17 - Sunday	47.1
April 19 - Sunday	41.9

Source: Directorate-General of Health, Daily COVID-19 Status Report (released on September 24); INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: For the calculation of the location coefficients zero cases were considered for the municipalities with no value in the Directorate-General of Health report (0 or< 3 cases).

The following figure shows the number of new cases of COVID-19 (last 7 days) per 10,000 inhabitants per municipality for every Sunday from April 12 to September 20, allowing a visualization of the incidence of new cases in different municipal contexts over time. Thus, it is possible to observe a higher incidence of new cases in municipalities located in the Norte region in the month of April (12th, 19th and 26th) and then, in the months of June and July, there is a higher incidence of new cases in municipalities in the Metropolitan Area of Lisboa, particularly on July 12th. It is also important to highlight the occasional incidence of new cases in some municipalities scattered throughout the country, such as the situation in the municipality of Reguengos de Monsaraz in the week ending 28 June, Miranda do Douro in the weeks ending on 12 and 19 July, the situation in Mora on 16 and 23 August, Alcácer do Sal on 30 August and Sernancelhe on 6 September.

The most recent situation represented in the weeks ended on 13 and 20 September suggests an intensification of this occasional incidence of new confirmed cases in dispersed municipalities in the country - in the week ending on 13 September, 17 dispersed municipalities in the country registered more than eight new confirmed cases per 10,000 inhabitants, increasing this number to 26 in the week ended n 20 September.

Figure 7- New confirmed cases of COVID-19 (last 7 days) per 10,000 inhabitants, Sundays -12 April to 20 September, by municipality



Source: Directorate-General of Health, Daily COVID-19 Status Report (released on September 24); INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: The municipalities with no data correspond to municipalities with a case number of zero or less than 3.

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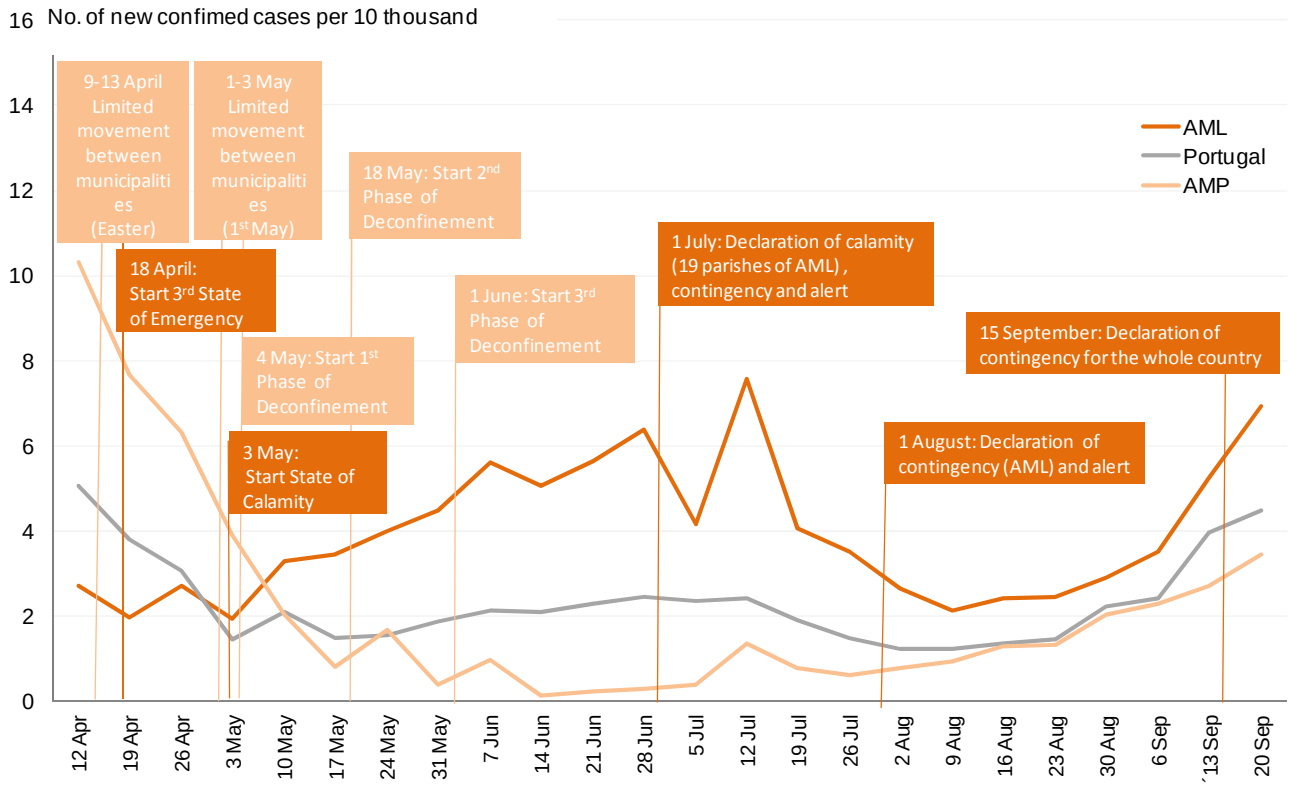
The following figure presents the new cases in the last 7 days per 10 thousand inhabitants for the total of the country and for the metropolitan areas of Porto and Lisboa on Sundays from 12 April to 20 September. The progressive slowdown of new cases in the Metropolitan Area of Porto should be noted and, in the opposite direction, the increase of new cases in the Metropolitan Area of Lisboa (AML), with this region registering figures above the national average since the week ending on 3 May.

The analysis focused on the last weeks highlights the increase in the number of new cases in the Metropolitan Area of Lisboa at a higher rate than in the country: in the week ending on 6 September the growth rate was +21.3% (+8.9% in the country) and in the week ending 20 September this rate was +31.7% (+12.6% in the country).

In the seven days ending on 20 September, the Metropolitan Area of Lisboa represented 43% of the new cases in the country (28% of the population in 2019) and the Metropolitan Area of Porto represented 13% (17% of the resident population in 2019). The new cases registered in the two metropolitan areas on 20 September thus accounted for more than half (56%) of the total new cases observed for the country.

Figure 8 - New confirmed cases of COVID-19 (last 7 days) per 10,000 inhabitants, Portugal, metropolitan areas of Lisboa and Porto Sundays -12 April to 20 September,

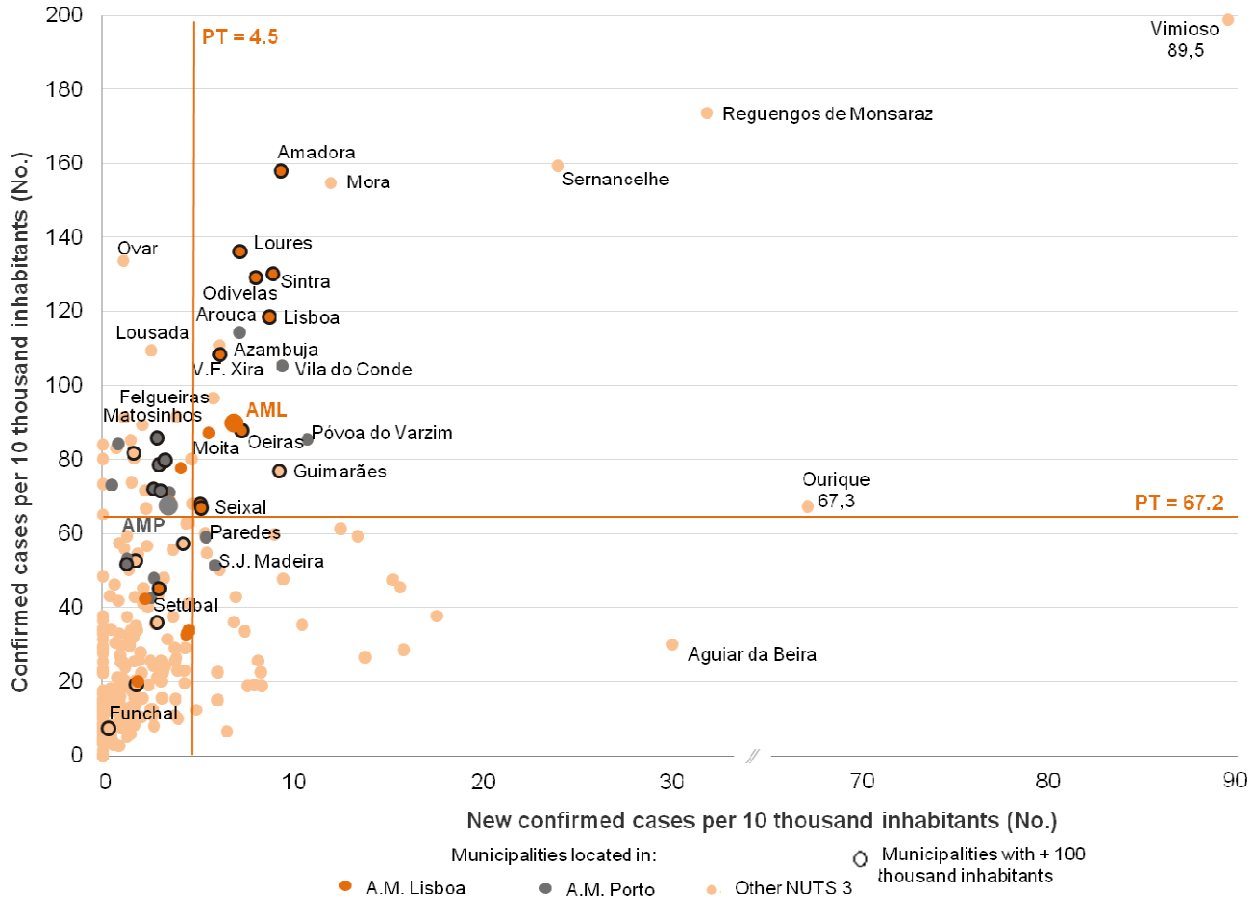


Source: Directorate-General of Health, Daily COVID-19 Status Report (released on September 24); INE, I.P., Annual estimates of resident population, 31 December 2019.

24 municipalities registered simultaneously a number of new cases per 10,000 inhabitants and a total of confirmed cases per 10,000 inhabitants above the national reference

The following figure illustrates the relationship between the total number of confirmed cases per 10 thousand by 20 September and the number of new cases registered per 10 thousand inhabitants on 20 September (last 7 days). Of the 48 municipalities with a number of confirmed cases per 10 thousand inhabitants above the national average, 24 also had values of new case per 10 thousand inhabitants above the national average, and of this group, 11 municipalities were located in the Metropolitan Area of Lisboa - Amadora (9.4 new cases per 10 thousand inhabitants), Sintra (9.0), Lisboa (8.8), Odivelas (8.1), Cascais (7.3), Loures (7.2), Oeiras (6.9), Vila Franca de Xira (6.2), Moita (5.6), Seixal (5.2) and Almada (5.1). In the 7-day period ending on 20 September, those municipalities represented 40% of the new cases in the country and 92% of the Metropolitan Area of Lisboa.

Figure 9 – Number of confirmed cases per 10 thousand inhabitants on September 20, 2020 and Number of new confirmed cases per 10 thousand inhabitants on September 20 2020 (last 7 days), by municipality



Source: Directorate-General of Health, Daily COVID-19 Status Report (released on September 24); INE, I.P., Annual estimates of resident population, 31 December 2019.

48 municipalities registered confirmed cases of COVID-19 disease per 10,000 inhabitants above the national value

On September 23 2020, in Portugal, for every 10,000 inhabitants there were 69.1 confirmed cases of COVID-19, which represents an increase of 15% compared to 9 September, the reference date of the previous press release.

On September 20 2020,, the date of the last data update at the municipality level, there were 67.2 confirmed cases of COVID-19 per 10 thousand inhabitants in the country. The number of confirmed cases of COVID-19 per 10 thousand inhabitants was higher than the national number in 48 municipalities, with the situation in the Norte region and the Metropolitan Area of Lisboa, where 26 and 13 municipalities respectively recorded a figure above the country, standing out [Figure 10].

Despite this differentiation, the estimated location coefficient[1] for April 5 and September 20 suggests a decrease in territorial concentration of cases, i.e., a progressive spatial dissemination throughout the country. The location curves graphically reflect this trend by the approximation to the straight line of equal distribution between the number of confirmed cases and the resident population in the municipalities [Figure 11].

Figure 10 - Number of confirmed cases of COVID-19 disease per 10 thousand inhabitants until September 20, 2020, by municipality

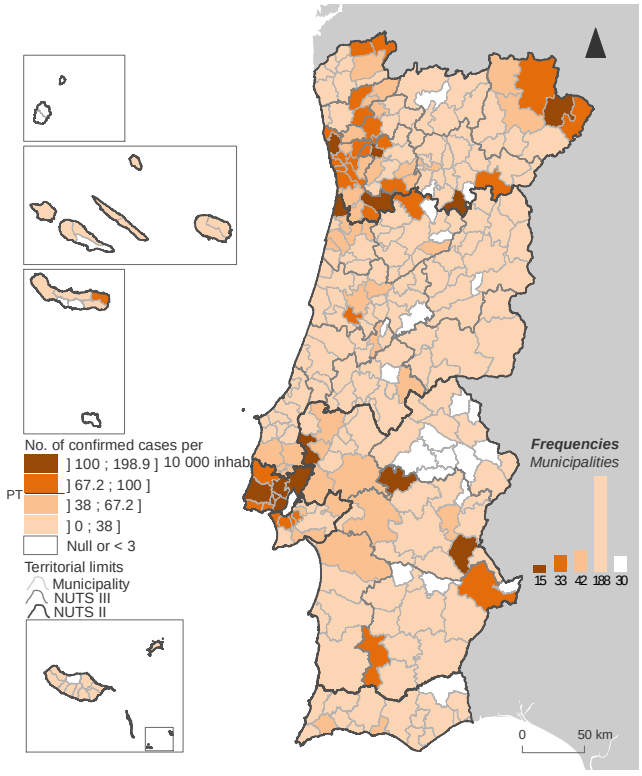
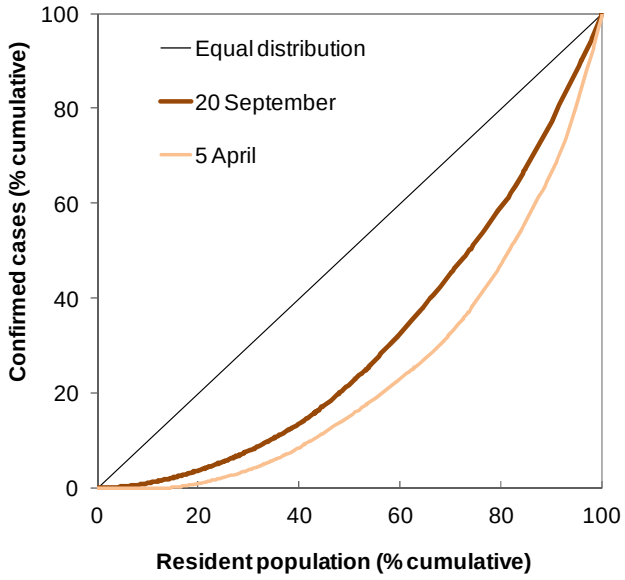


Figure 11 - Territorial concentration of COVID-19 confirmed cases until April 5 and September20 in relation to the resident population, based on the distribution by municipality

Location Curve



Location coefficient	
September 20 – Sunday	28.3
April 5 - Sunday	37.7

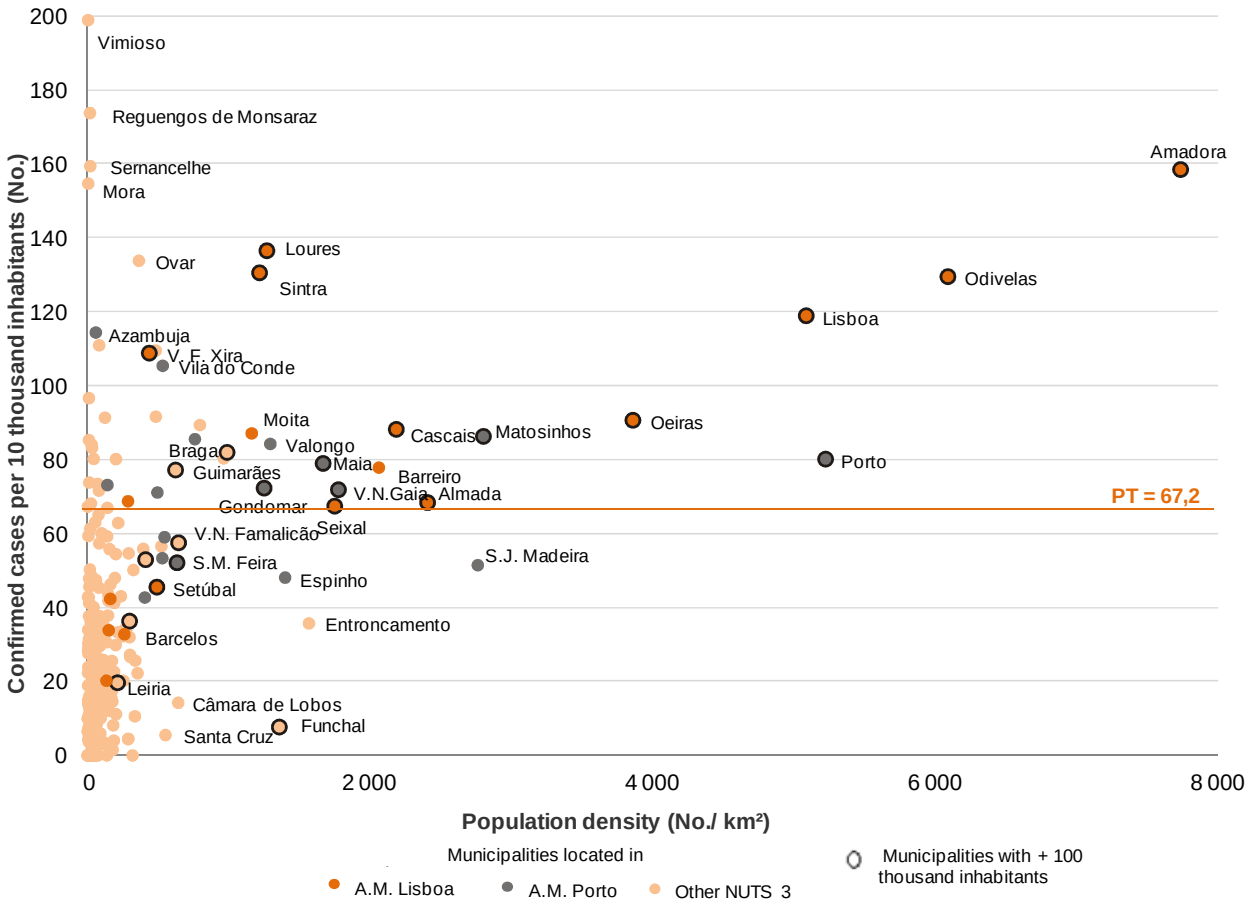
Source: Directorate-General of Health, Daily COVID-19 Status Report (released on September 24); INE, I.P., Annual estimates of resident population, 31 December 2019.
Note: For the calculation of the location coefficients zero cases were considered for the municipalities with no value in the Directorate-General of Health report (0 or< 3 cases).

[1] The Location coefficient varies between 0 and 100, with values closer to 100 reflecting greater inequality in the distribution of confirmed cases of COVID-19 against the total resident population.

32 municipalities registered both a number of confirmed cases per 10 thousand inhabitants and population density values above the national reference

The figure below illustrates the relationship between population density and the number of confirmed cases per 10 thousand inhabitants. Of the 48 municipalities with a higher number of confirmed cases per 10 thousand inhabitants than the country reference, 32 also had population density values above the national average. Of these 32 municipalities, Amadora (158.3), Loures (136.3), Sintra (130.4), Odivelas (129.3), Lisbon (118.7) and Vila Franca de Xira (108.6) in the Metropolitan Area of Lisboa, Ovar (133.8) in Região de Aveiro, Lousada (109.5) in Tâmega e Sousa, and the municipality of Arouca (105.4) in the Metropolitan Area of Porto stood out. It should also be noted that 180 of the country's 308 municipalities had a number of confirmed cases per 10 thousand inhabitants and population density below the national reference.

Figure 12 - Number of confirmed cases per 10 thousand inhabitants on September 20, 2020 and Population density, by municipality



Source: Directorate-General of Health, Daily COVID-19 Status Report (released on September 24); INE, I.P., Annual estimates of resident population, 31 December 2019.

Where are the establishments with 50 or more employees?

The Council of Ministers' Statement of 17 September 2020 foresees the publication of a decree law establishing an exceptional and transitional regime for the reorganisation of work, with a view to minimising the risks of transmission of COVID-19 in the context of work relations. This law will establish in the territorial areas that the Government identifies through a Resolution of the Council of Ministers (RCM), the obligation to delay the entry and exit of workers in enterprises that have workplaces with 50 or more employees.

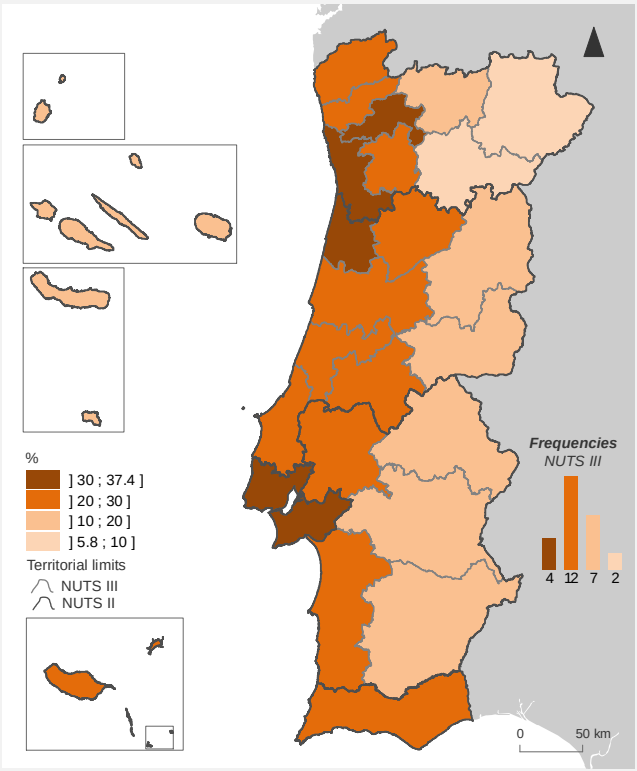
The Integrated Business Accounts System (SCIE) allows the structuring of information according to the local unit/establishment of enterprises, including the number of persons employed, allowing for an assessment of the impact that this measure will have on the persons working in the territories that will be identified by RCM.

According to the results of SCIE, in 2018, there were 1,336,122 establishments in Portugal, of which 7,874 had 50 or more employees (0.6%). The establishments with 50 or more employees had about 1.2 million people at work, which represented 30% of the total.

In 16 of the country's 25 sub-regions, more than 20% of the persons employed worked in establishments with 50 or more employees, with the metropolitan areas of Lisboa (37.4%) and Porto (32.5%) and two sub-regions contiguous to the Metropolitan Area of Porto - the Region of Aveiro (36.3%) and the sub-region of Ave (32.5%) standing out. The sub-regions of Trás-os Montes (5.8%) and Douro (7.8%) scored lower values in this indicator, less than 10%.

The metropolitan areas of Lisboa (18 municipalities) and Porto (17) were, in 2018, the sub-regions with the highest volume of workers in establishments with 50 or more employees (468,857 and 236,822 respectively) and concentrated 49.1% of the country's total volume in establishments of this size. The following figure gives a detailed analysis at municipality level for metropolitan territories.

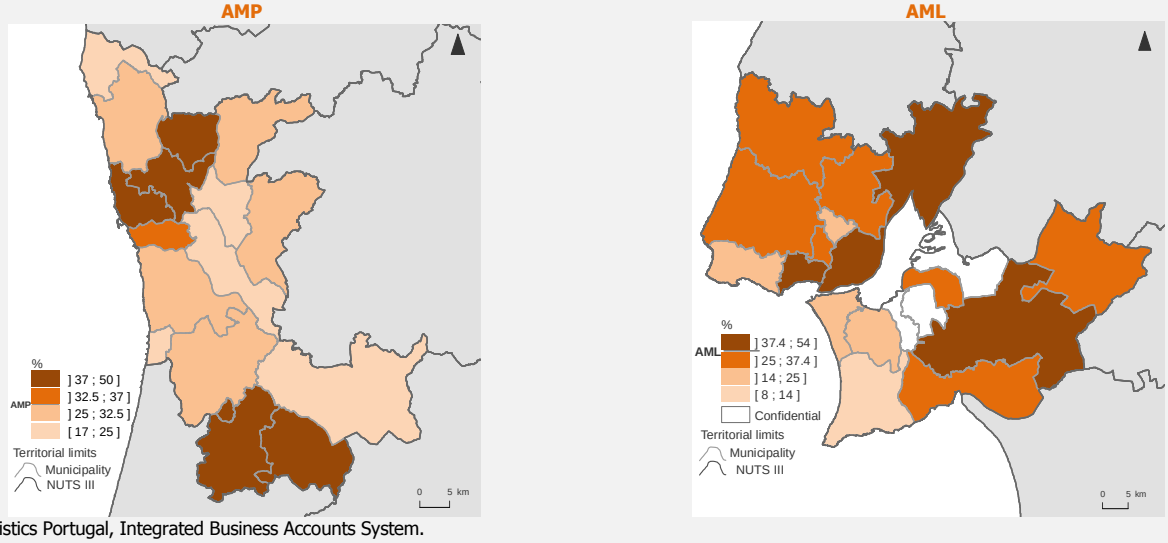
Figure 13 – Proportion of persons employed in establishments with 50 or more employees, Portugal and NUTS 3, 2018



Source: Statistics Portugal, Integrated Business Accounts System.

In seven municipalities of the Metropolitan Area of Porto (AMP) and four municipalities of Metropolitan Area of Lisboa (AML) the proportion of persons employed in establishments with 50 or more employees was higher than the average value recorded for the respective metropolitan territory, corresponding to the municipalities of São João da Madeira (49, 5%), Maia (46.2%), Trofa (41.8%), Oliveira de Azeméis (39.4%), Vale de Cambra (38.5%), Matosinhos (37.1%) and Porto (34.1%) in the AMP, and the municipalities of Palmela (53.0%), Oeiras (51.3%), Lisboa (45.4%) and Vila Franca de Xira (42.2%) in the Metropolitan Area of Lisboa. The results show that in 12 municipalities of Metropolitan Area of Porto and in eight of AML, more than ¼ of the persons employed, worked in establishments with 50 or more employees.

Figure 14 – Proportion of persons employed in establishments with 50 or more employees by municipality in AMP and AML, 2018



Source: Statistics Portugal, Integrated Business Accounts System.

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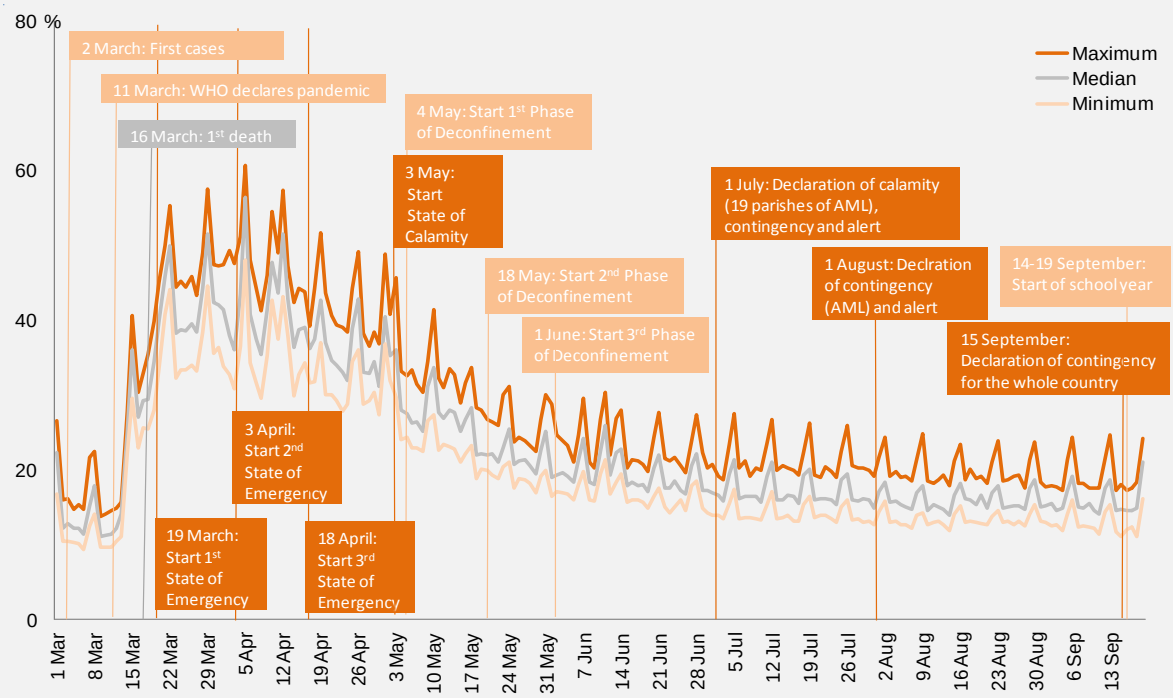
Population mobility indicators at regional level: an analysis based on information from Facebook's "Data for Good" Initiative

Taking advantage of Facebook's "Data for Good" initiative, the figure below shows the proportion of the population "staying put" between 1 March and 19 September, namely minimum, median and maximum values obtained from the 25 NUTS 3 sub-regions of the country. For a better contextualization of the information, the figure includes the main key moments associated with the COVID-19 pandemic in Portugal. Thus, it can be observed that the days corresponding to Sundays generally indicate less population mobility than the other days of the week. It should also be noted that after the first confirmed cases of COVID-19 and following the declaration of the first State of Emergency on 19 March, there is a reduction in the population's mobility levels, and that an increase of mobility can be observed following the implementation of the deconfinement measures, the first phase of which started on 4 May.

Figure 15 - Proportion of the population "staying put" between 1 March and 19 September – minimum, median and maximum values of NUTS 3



Source: Facebook's "Data for Good" Initiative. Data provided by Carnegie Mellon University. Note: The dates marked on the graph axis correspond to Sundays.

Technical Note

The mobility data from Facebook's "Data for Good" Initiative correspond to location updates collected from mobile devices of Facebook application users that have the "location history" option turned on. Only location accuracy (GPS) data of less than 200 meters is considered and if a user has multiple locations resulting from more than one associated mobile device, Facebook only considers the data with the highest location accuracy. Obtaining results for the NUTS 3 level implies a minimum of 300 unique users per sub-region. The proportion of the population "staying put" is measured by the number of Facebook users associated with a single 600mx600m reference grid during 8am and 8pm on day x, requiring at least three occurrences during that time period. The reference grid, as a "residence" proxy, is measured daily based on the largest number of locations observed between 8pm and midnight on day x-1 and between 0 am and 8 am on day x, requiring at least three occurrences during that time period. The information associated with the 600mx600m grids is allocated to the respective NUTS 3 sub-region. Since a grid can intercept more than one sub-region, 9 sample points are generated in each grid, assigning 1/9 of the grid population to each point in the sample.

Facebook's "Data for Good" initiative aims to provide data for research on humanitarian issues and has allowed results to be published in scientific articles particularly in the United States. Obviously, Statistics Portugal's use of this data source in the Statslab domain is not motivated by any publicity motive, but by the public interest of the information. Statistics Portugal thanks researcher Miguel Godinho Matos for his support in the analytical preparation of this information.

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Technical note

Data sources

Data on **Deaths** correspond to general deaths (all causes of death) occurring in the national territory since March 1st, 2020 and until the Tuesday of the week prior to publication. The information is preliminary and is obtained from statistical operations of direct and exhaustive collection on deaths occurring in Portuguese territory using facts that are subject to compulsory civil registration (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 relevant to the National Statistical System (NSS) and the European Statistical System (ESS). Data are 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).

Data on the number of confirmed cases are based on those published daily in the **Directorate-General of Health COVID-19 Status Report** for the entire country and by municipality. The confirmed cases are referenced to the municipality of occurrence and correspond to the total of clinical notifications in the SINAVE (National System of Epidemiological Surveillance) system. For the reference dates considered in this press release data by municipality corresponded, respectively, to 90% of confirmed cases in the national territory. This proportion reflects data confidentiality by municipality, but also limitations in the process of spatial referencing of information. In fact, when the confirmed cases by municipality are fewer than 3, for confidentiality reasons, data are not disclosed by the Directorate-General of Health.

Data on persons employed in establishments with 50 or more employees are based on information from the **Integrated Business Accounts System** (SCIE). The SCIE is the result of a process of integration of statistical information on enterprises, based on administrative data, with particular emphasis on the Simplified Business Information (IES). On the basis of this source, data are disseminated at enterprise and establishment level. Data at enterprise level considers all active business units located in national territory, performing an activity of producing goods and/or services during the reference period. The results are obtained according to the main activity and headquarters location. Data at establishment level considers all active business establishments located in national territory, performing an activity of producing goods and/or services during the reference period. The results are obtained by main activity of the establishment and according to its location. The scope of the economic activity of Integrated Business Accounts System excludes CAE-Rev.3 sections K, O, T and U.

This press release includes the resident population data as of December 31, 2019 released on June 15.

Disseminated Indicators

Ratio between deaths in the last 4 weeks per deaths in the same reference period

Proportion of persons employed in establishments with 50 or more employees

Number of new confirmed cases of COVID-19 disease in the last 7 days

Rate of change of new confirmed cases of COVID-19 disease in the last 7 days

Number of new confirmed cases of COVID-19 disease in the last 7 days per 10 thousand inhabitants

Number of confirmed cases of COVID-19 disease per 10 thousand inhabitants

Population density

Location coefficient

Proportion of resident population with 75 or more years old

The location coefficient (LC) is obtained using the following formula:

$$LC = \left(\frac{1}{2} \sum_{j=1}^{n} \left| x_j - y_j \right| \right) \times 100$$ where:

x_j corresponds to the ratio of the number of confirmed cases of COVID-19 in each municipality *j* to the number of confirmed cases of COVID-19 for the total country;

y_j corresponds to the ratio between the resident population in each municipality *j* and the total resident population in the country.

The Location coefficient varies between 0 and 100, with values closer to 100 reflecting greater inequality in the distribution of confirmed cases of COVID-19 against the total resident population and, in this sense, indicates situations of greater territorial concentration.

The location curve (or Lorenz concentration curve) corresponds to a graphical representation that relates the cumulative distribution of two variables. This representation also includes the straight line of equal distribution, and the greater the distance from it, the greater is the concentration of the variable represented in the ordinate axis (in this analysis, the confirmed cases of COVID-19, by period of reference) versus the variable represented in the abscissa axis (in this analysis, the total resident population).