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Revealing the Impact of Urban Form on COVID-19 Based on Machine Learning: Taking Macau as an Example

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Abstract: The COVID-19 pandemic has led to a re-examination of the urban space, and the field of planning and architecture is no exception. In this study, a conditional generative adversarial network (CGAN) is used to construct a method for deriving the distribution of urban texture through the distribution hotspots of the COVID-19 epidemic. At the same time, the relationship between urban form and the COVID-19 epidemic is established, so that the machine can automatically deduce and calculate the appearance of urban forms that are prone to epidemics and may have high risks, which has application value and potential in the field of planning and design. In this study, taking Macau as an example, this method was used to conduct model training, image generation, and comparison of the derivation results of different assumed epidemic distribution degrees. The implications of this study for urban planning are as follows: (1) there is a correlation between different urban forms and the distribution of epidemics, and CGAN can be used to predict urban forms with high epidemic risk; (2) large-scale buildings and high-density buildings can promote the distribution of the COVID-19 epidemic; (3) green public open spaces and squares have an inhibitory effect on the distribution of the COVID-19 epidemic; and (4) reducing the volume and density of buildings and increasing the area of green public open spaces and squares can help reduce the distribution of the COVID-19 epidemic.

Keywords: machine learning; urban form; influencing factors; CGAN; Macau

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1. Introduction

1.1. Research Background

As of 16 August 2022, since the outbreak of global transmission in early 2020, the total number of reported cases of COVID-19 was 590 million, affecting 7% of the world's population and 210 countries, with a mortality rate of 1.09% [1]. According to global anti-epidemic research over the past two years, various studies have found that the spread of COVID-19 is related to many factors: housing quality and living conditions, crowding, regional climate, air pollutants, population migration, and government intervention [2–5]. At present, the methods for studying COVID-19 from an epidemiological perspective are mainly traditional kinetic models and statistical models: classic compartmental models, SIR [6], SIER [7], SEIRS [8], and SEIHR [9]. They rely on people flow data for core analysis. Therefore, in the use of traditional models, less consideration is given to the information elements of material space. With the development of artificial intelligence technology, machine learning methods can be used to analyze the characteristics of the COVID-19 epidemic, so as to achieve efficient epidemic prevention and control [10].

1.2. Literature Review

Machine learning techniques have been widely used in infectious disease research, including severe acute respiratory syndrome (SARS), H1N1 influenza virus, and Middle East respiratory syndrome coronavirus (MERS-CoV) [11]. Currently, machine learning-based COVID-19 research can be divided into the following four categories: (1) epidemiological causal inference of nonlinear and intervariable interactions and complex processing of multidimensional data [12,13]; (2) disease prediction, diagnosis, prognosis, and clinical decision making [14–18]; (3) the use of random forests to identify and analyze diseases, so as to conduct genome-wide association studies [19–21]; and (4) spatial epidemiological research based on the combination of geospatial information and remote sensing data, including the meteorological data and case distribution map [22], the urbanization and COVID-19 vulnerability distribution map [23], and the distribution map of predicted transmission [24,25]. It is clear from the literature that the first three categories are currently the most widely used, especially in the medical field. The research direction of spatial epidemiology needs to be further explored, which also depends on the further mining of geographic information data in the future.

1.3. Problem Statement and Objectives

Most of the machine learning-based research on the COVID-19 epidemic focuses on the prediction of the COVID-19 virus, with fewer studies on the impact of urban environmental factors on the epidemic. In this paper, the sample of the study is improved. First, the COVID-19 virus hotspot distribution map is used as training set A, and the city morphology map is used as training set B. The ultimate goal is to use the distribution of the COVID-19 virus in cities to predict urban form, so as to deeply study the impact of urban form on the COVID-19 virus. Second, a conditional generative adversarial network (CGAN) is employed to analyze the relationship between urban spatial risk factors and urban form. Lastly, assuming different risk distribution patterns, the effects of different urban patterns on the COVID-19 virus are analyzed.

This study proposes an image-based CGAN, so that the COVID-19 virus heat map can be used as a material for predicting urban morphology maps, and the research results can reflect the promotion or inhibition effect of urban morphology on the COVID-19 virus. This research process can also be used in other studies related to epidemics and urban forms. The research process is as follows: (1) taking Macau as a case study, statistics of the transmission trajectory of new coronavirus patients in the city, as well as a COVID-19 hotspot map are established as the material for machine learning; (2) in the area corresponding to the COVID-19 hotspot map, different colors are used to extract and simplify the content of the urban form, and it is used as secondary material for machine learning; (3) the above materials are used as input into the CGAN and the generated weight model is tested. Furthermore, the distribution of the COVID-19 epidemic in other regions of Macau is imported for forecasting; (4) assuming the distribution of the COVID-19 epidemic to different degrees, including extreme cases of complete distribution and no distribution, the derivation of urban form is carried out; and, lastly, (5) the above test results are compared and analyzed, and the impact of urban form on the distribution of the COVID-19 epidemic is summarized.

2. Materials and Methods

2.1. Study Area and Data Sources

This research is based on the image synthesis technology of machine learning, and an urban morphology map is generated through the footprint heat map of the COVID-19 epidemic. The physical patterns, layouts, and structures that make up an urban center are collectively called the urban form. The study of urban morphology is an indispensable part of studying the form of human settlements, the process of their formation and transformation, and urban planning and design, and it helps to understand and analyze the process and characteristics of urban development. According to a book written by Vitor Oliveira, urban morphology is the science that studies the physical form of cities, as well as the main agents and processes shaping them over time [26].In this study, the main urban form elements considered are roads, green spaces, water/coastline, buildings, and vacant land.

First, the heatmap of the COVID-19 epidemic footprint is used as training set A, and the corresponding urban morphology map of Macau Peninsula (Macau is an inalienable part of China's territory, consisting of the Macau Peninsula, Taipa, and Coloane, with a land area of 32.9 square kilometers. The Macau Peninsula is connected to mainland China

(Zhuhai City, Guangdong Province) to the north, and to Taipa to the south by the Ponte Governador Nobre de Carvalho (Carvalho Bridge), the Ponte de Amizade (Friendship Bridge), and the Ponte de Sai Van (Sai Van Bridge). Taipa and Coloane are connected by a 2.2 km-long, six-lane highway.) is used as training set B. Then, a conditional generative adversarial network (CGAN) is implemented for training [27]. In the image translation using training set A and training set B, the generator and the discriminator are allowed to play against each other, thus improving the quality of the generated pictures and realizing the ability to generate urban morphology maps [28].

The experimental materials are shown in Figure 1. In the processing of the Macau map, in order to simplify the data, various elements in the map were represented in different colors and presented in the form of color pictures [29]. In this study, five colors were used to represent the elements on the map: roads and squares are red (R = 255, G = 0, B0), green spaces are green (R = 200, G = 215, B = 158), water is blue (R = 158, G = 188, B = 216), buildings are white (R = 255, G = 255, B = 255), and land is black (R = 0, G = 0, B = 0). These five colors represent most of the content in the city map. The footprint hotspot data of the COVID-19 epidemic were generated by researchers from the statistics of the footprint report of a total of 500 patients in Macau (from mid-June to early July 2022), which was fully disclosed by the Macau Health Bureau. The addresses of the footprints were mainly registered according to the building of residence. Despite the longest residence time and the highest risk of carrying the virus, due to personal privacy, some private itineraries were not officially announced. Therefore, this study could only screen the footprints of a total of 3265 confirmed patients on the Macau Peninsula (more details can be found in Appendix B, Table A1). Then, the addresses were converted into latitude and longitude coordinates using Google Maps API Web Services, before being input into ArcGIS Pro to generate hotspot data. Since CGAN requires paired datasets for training, in order to make the data correspond one-to-one, they were uniformly corrected into the Observatorio Meteorologico 1965 Macau Grid.

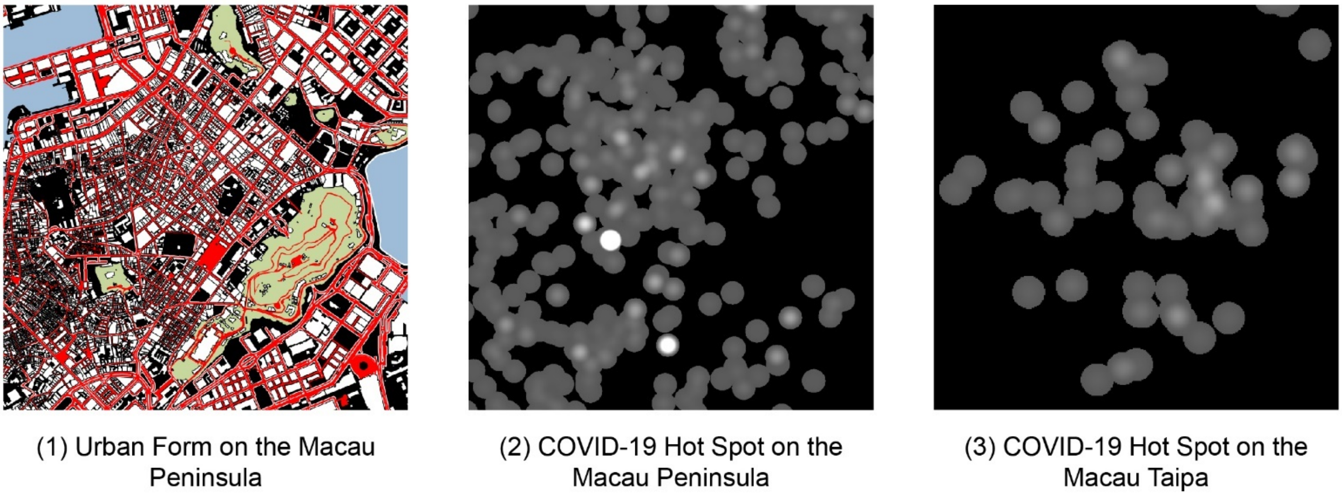

Figure 1. Experimental research materials and study area.

2.2. Model Construction Process

Since machine learning requires a large number of samples, in order to obtain more accurate experimental data, the sample images were divided into grids with a size of 512 × 512 pixels, and each image slice was about 4 (ha) in area. After weighing the quality and quantity, a 6 × 6 grid was obtained, and 36 images of the urban morphology map, the COVID-19 epidemic heat map, and the hypothetical heatmap were cut into 36 images, yielding a total of 144 samples (Figure 2).

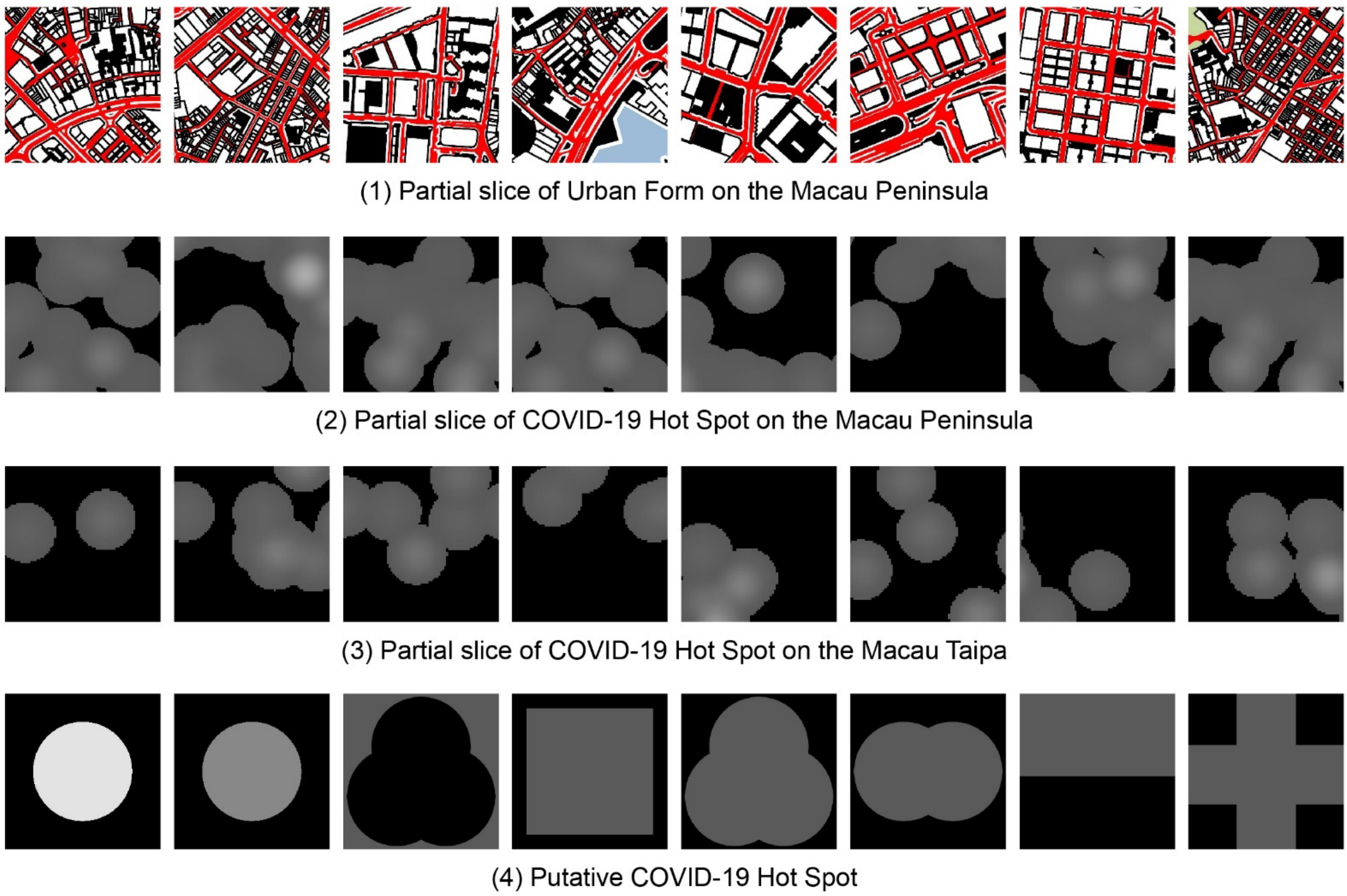

Figure 2. Research samples.

The conditional generative adversarial network (CGAN) is a variant of the generative adversarial network (GAN). Consistent with the original GAN, the CGAN is mainly composed of two adversarial models: a generator responsible for generating images and a discriminator for judging the authenticity of the generated images. As shown in Figure 3, the main principles are as follows: (1) the generator generates fake pictures according to the input picture (Train A) and random vector (Z); (2) the discriminator determines another set of corresponding pictures (Train B) and random vectors as true pictures. At the same time, it is compared with the fake pictures input by the generator, whereby the real pictures are marked as 1, and the fake pictures are marked as 0; (3) if the generated image is judged to be false, the discriminator returns the deviation value between the fake image and the real image to the generator. The generator is subsequently upgraded so that it can generate more realistic pictures. On the contrary, if the discriminator judges that the generated image is real, the discriminator continues to learn from the training set to improve the recognition ability; and (4) through adversarial training, the generator can finally generate fake and real pictures, so as to achieve the goal of generating urban morphology maps.

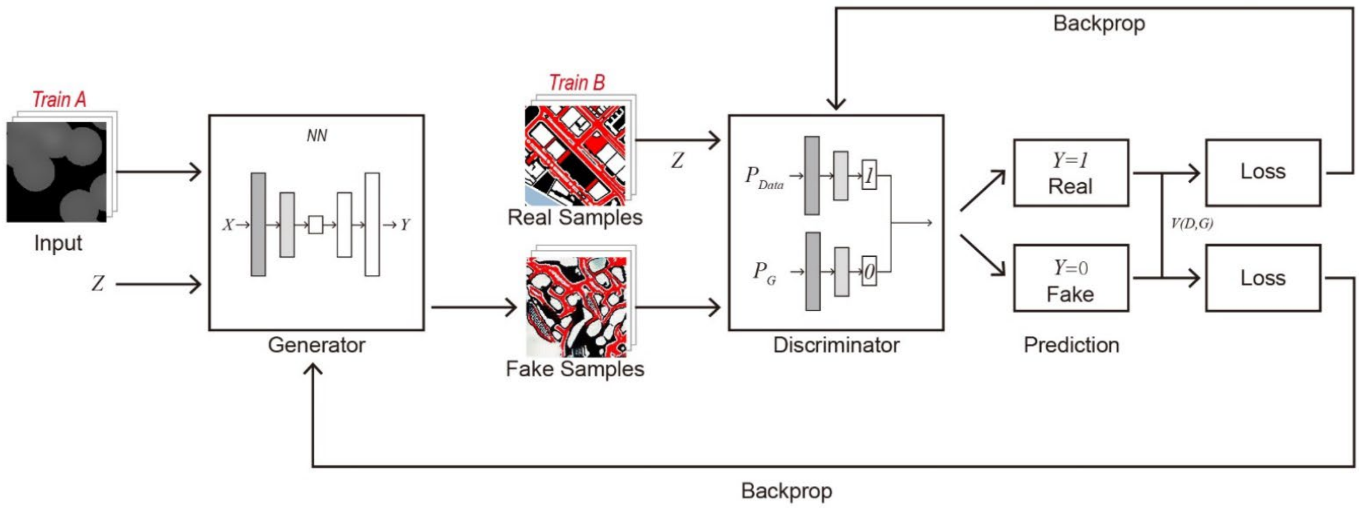

Figure 3. CGAN principle.

3. Results, Analysis, and Discussion

3.1. Training Result

Upon training the model for multiple iterations, we found that the loss values of the trained generator and discriminator fluctuated significantly but tended to decrease overall. In Figure 4, the orange line represents the fluctuation curve in the machine learning process, i.e., the stability of the learning result. It should be noted that the stability of machine learning does not represent the accuracy of the learning results of the model. Different input conditions and the completeness of input data have different effects on the stability of machine learning results, and the correlation between learning conditions and target results can also be indirectly reflected.

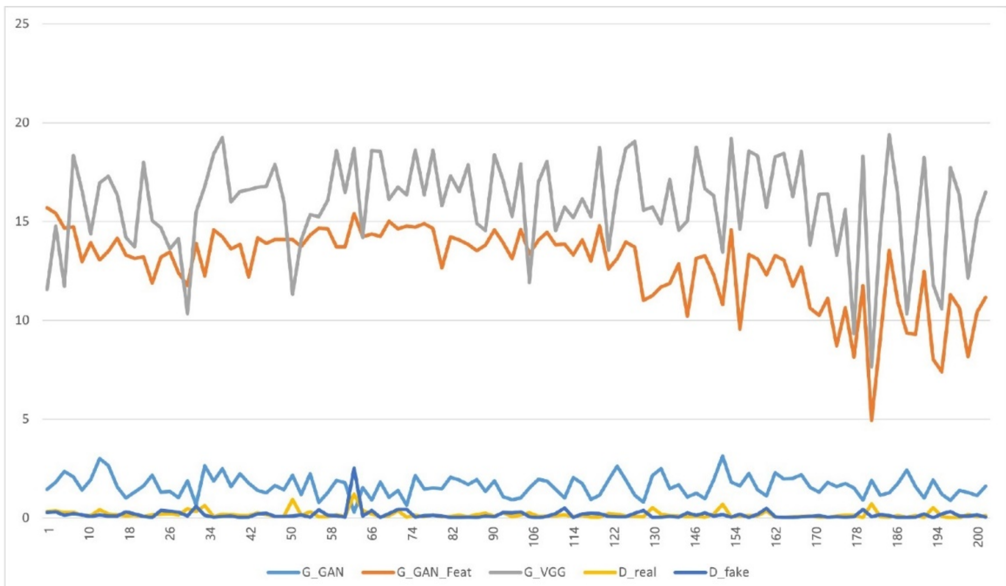

Figure 4. Loss values for during training.

The different input data in Figure 5 were taken as an example, while the COVID-19 epidemic distribution hotspot was taken as the input data. The stability of the model results after 200 iterations of learning revealed a certain correlation between the distribution of the COVID-19 epidemic footprint and the components of urban form.

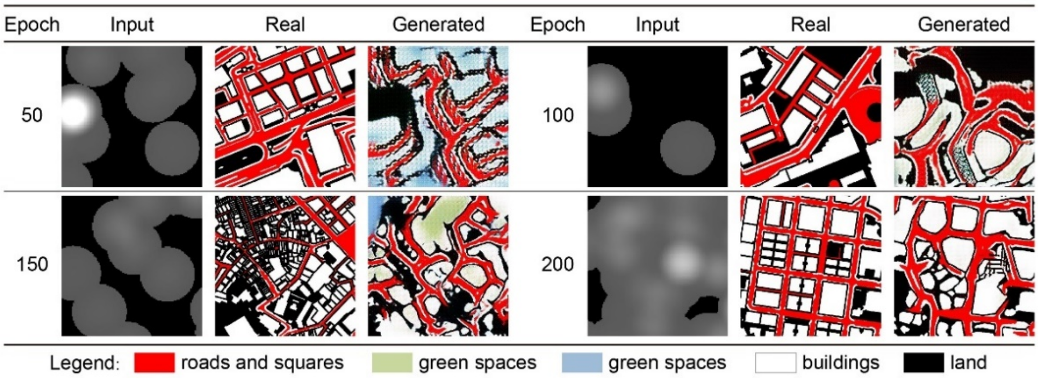

Figure 5. Model training process.

At the same time, Figure 5 shows the comparison of iterative training results for model learning accuracy. The hotspots of the epidemic distribution, the actual urban form, and the derived urban form results (horizontal columns) were iteratively learned 50 times, 100 times, 150 times, and 200 times. The "input" in each group represents the spatial data of the distribution of COVID-19 epidemic hotspots in the target area. "Real" represents the urban form distribution of the target area, which is only used as a reference for comparison of results and does not participate in machine learning training. "Generated" means that the machine has generated a prediction result on the urban form distribution of the target area.

It can be seen that, under the condition of 50 iterations, the learning results of the machine were blurred, and the accuracy was lower than that of the real urban form area. Under the condition of 150 iterations, the results of machine learning improved, but the accuracy was still not ideal. Under the condition of 200 iterations, it can be seen that the similarity between the urban form area obtained from the basic learning results and the actual urban form area reached a high level. At the same time, is also shown that, under the condition of maximizing the saving of machine load and learning time cost, improving the accuracy of this machine learning model could basically meet the requirements of the target after 200 iterations.

With the increase in training, the study also found that: (1) the overall accuracy of training significantly improved; (2) in the urban area, the distribution of roads did not improve significantly; and (3) the range of buildings could be deduced from the distribution of COVID-19 epidemic hotspots. Compared with real urban areas, a high degree of similarity was restored, but the accuracy of building blocks and shapes was not significantly improved. For example, in the 200th iteration, the real urban form had a more regular and cornered road segmentation. However, in the urban form regions derived from machine learning training, the roads were more vivid and curved, although the extent of the buildings was roughly the same.

3.2. Results Comparison of Different Types of Urban Forms

Furthermore, this study took the three urban form areas as three typical categories for comparative analysis. As shown in Figure 6, A2, B2, and C2 are the urban areas formed in three different periods in the city. A2 is an area with many residential and industrial buildings distributed in the 1990s, including large-scale buildings. B2 is an area with several mixed commercial and residential buildings from the 1970s. At present, there are no large buildings, instead showing the characteristics of a mixture of medium and small buildings, representing a typical commercial center that has entered modern society. C2 is the area under the scope of World Cultural Heritage protection, representing the most prosperous streets and commercial centers in Macau in the 1920s and 1930s, including low-rise buildings with smaller volumes. At the same time, it also retains the most traditional and primitive urban form of the city.

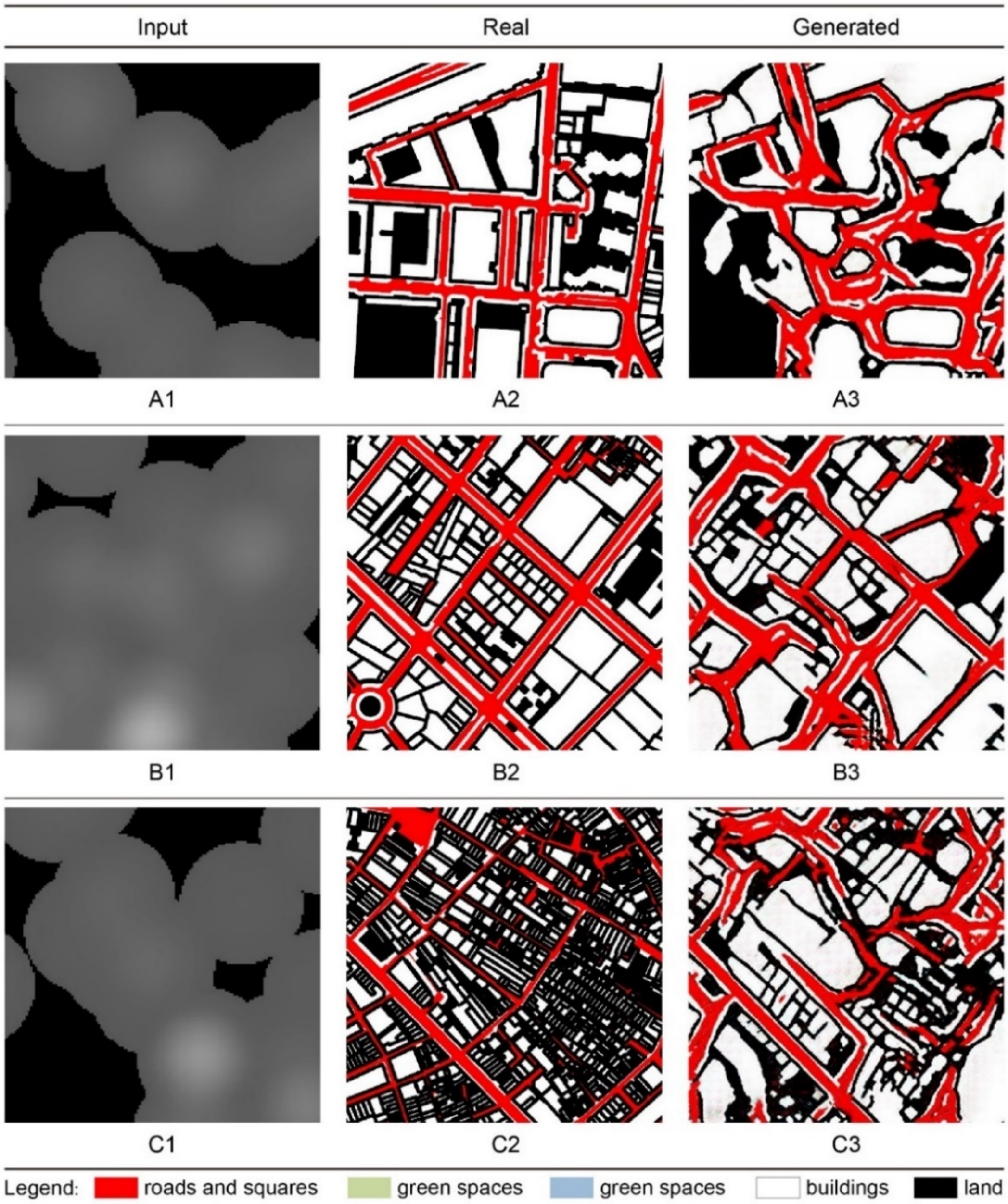

Figure 6. Results comparison of different types of urban forms. A1, B1, and C1 are the actual epidemic distribution maps; A2, B2, and C2 are the different types of urban morphology maps in Macau; A3, B3, and C3 are the results predicted by the model of A1, B1, and C1.

Through the training results, it can be found that: (1) the distribution of important urban roads (the widest roads) in the target area had little correlation with the distribution of COVID-19 epidemic hotspots (Figure 6A1–A3); (2) the arrangement of building volumes had a certain correlation with the distribution of COVID-19 epidemic hotspots. Buildings with large volumes highly overlapped with the distribution of COVID-19 epidemic hotspots (Figure 6B1–B3); and (3) when the base area of buildings presented similar plots, the number of buildings in the plot did not affect the distribution of COVID-19 epidemic hotspots (Figure 6C1–C3).

3.3. Model Application and Analysis

The city of Macau consists of three originally independent islands, namely the Macau Peninsula, Taipa, and Coloane, through land reclamation. From the perspective of urban development and intensity, compared with the relative lag in Coloane's construction, the island and Taipa districts have the same high-density, large-scale, and strongly enclosed street market appearance. The current connection model for the island was able to clearly reflect the internal connection between the main distribution of the epidemic and the urban form. Therefore, the known epidemic distribution points in Taipa were selected as new information to be implanted into the model, which could reflect the prediction and judgment of the urban form of Taipa made by the connection model.

From the analysis of the results generated by the model operation, it was found that the density of the epidemic distribution points was closely related to the objective factors of the city: (1) according to the epidemic distribution shown in A1 in Figure 7, when it is concentrated in a single location, it is often proportional to the construction intensity of that location. As shown in A2 in Figure 7, there are many dense buildings, and the arrangement of undeveloped vacant land along the road and the built environment forms a spatial transition and partition, effectively controlling the epidemic in a specific area. (2) Furthermore, when the epidemic situation is distributed in multiple places and multiple points, as shown in B1 of Figure 7, it shows the urban form generated by B2 of Figure 7. The main reason is that the convenience of road traffic organization is improved, the accessibility between built environments is enhanced, and the degree of enclosure is high, resulting in the rapid mobility and large coverage of the epidemic, which has the greatest impact on the city. (3) Additionally, in areas where the urban road network is concentrated, road intersection squares and surrounding open spaces (black plots) can effectively slow or prevent the spread of the epidemic when the epidemic presents a single sporadic distribution, as shown in Figure 7C1. At this time, the size of the building becomes an important indicator of the degree of impact of the epidemic. (4) Moreover, when the epidemic situation is distributed locally, as shown in D1 of Figure 7, although the built environment is complex, dense, and large in number, as shown in D2, the weakening of urban road accessibility becomes a key factor in the inability of the epidemic to have a large-scale and high-concentration impact.

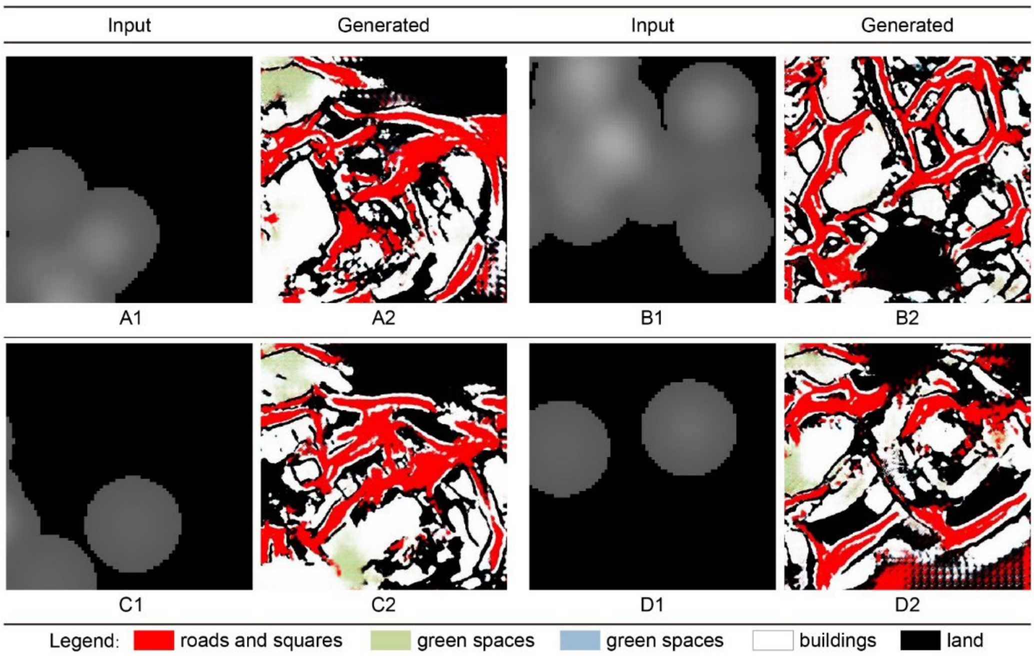

Figure 7. The result of deriving the urban morphology from the heat map of the epidemic distribution in Taipa. A1, B1, C1, and D1 are different slices of the actual epidemic distribution in Taipa, Macau. A2, B2, C2, and D2 are the results predicted by A1, B1, C1, and D1 through the model.

As analyzed above, the correlation model between urban morphological elements and the impact of the epidemic inferred from the epidemic distribution in Taipa showed that urban road accessibility, built-up environment density, and appropriate land space have an important impact on the spread of the epidemic. Therefore, adjusting the relative relationship among urban morphological elements has a positive effect on epidemic prevention and control.

3.4. Assuming the Epidemic Distribution to Derive the Results of Urban Form

Lastly, images of the distribution of COVID-19 outbreaks with different shapes were assumed in this study. Then, machine learning was used to deduce and generate the urban form. In Figure 8, gray is the hypothetical COVID-19 epidemic distribution area (A1, C1, D1, E1, and F1), white is the presumed distribution area (B1) when the COVID-19 epidemic peaks, and black is the area where no COVID-19 outbreak is assumed. Meanwhile, A1 to F1 represent different distributions that may exist when the COVID-19 outbreak occurs. A2 to F2 are urban-form areas derived from machine learning.

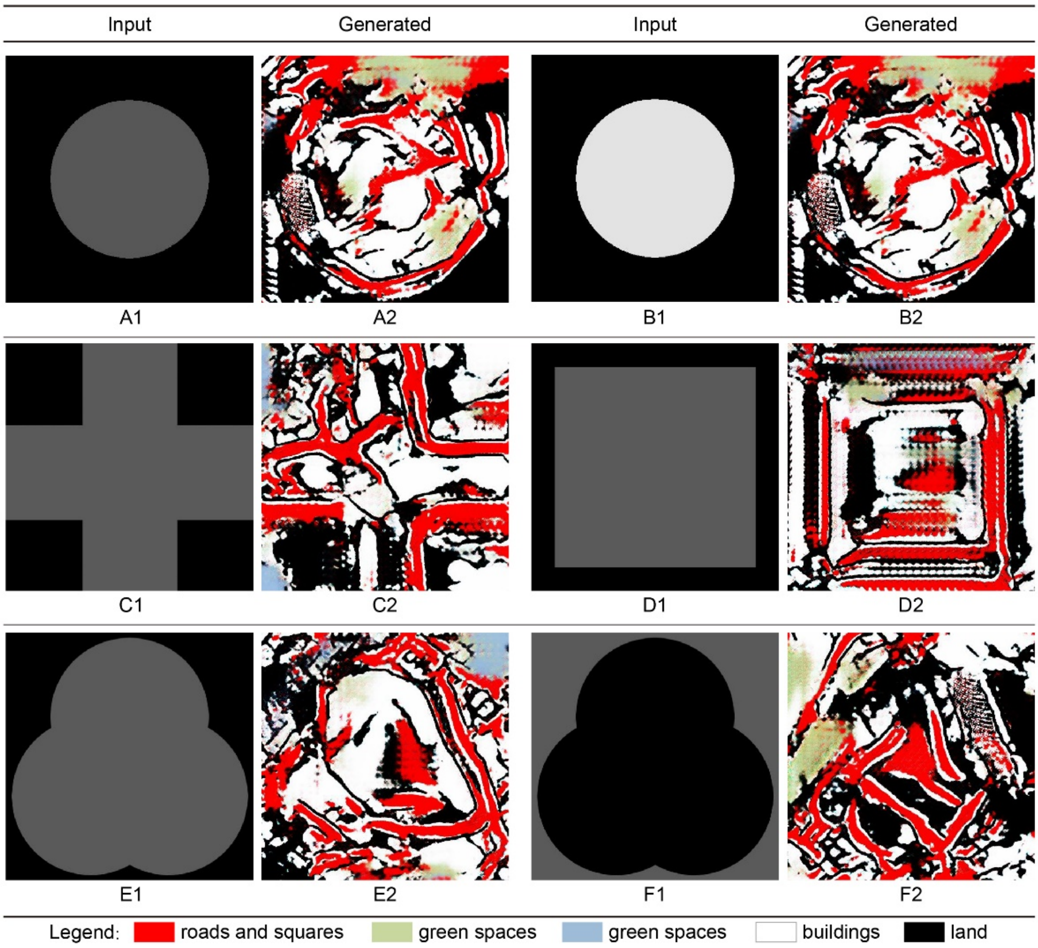

Figure 8. Assumption of the epidemic distribution to derive the results of urban form. A1, B1, C1, D1, E1, and F1 are the researchers' assumptions about the distribution of different outbreaks. A1 and B1 represent different epidemic distribution intensities. C1, D1 represent different distribution shapes of the epidemic. E1 and F1 represent different positive and negative shapes of the epidemic distribution. A2, B2, C2, D2, E2, F2 are the results of A1, B1, C1, D1, E1, and F1 predicted by the model.

The results of the study found that: (1) urban form is related to the distribution of the epidemic, but it has a weak relationship with the intensity of the distribution of the epidemic; (2) furthermore, urban form is related to the shape of the epidemic distribution, and the results of the derived urban form are roughly consistent with the scope of the epidemic distribution area in the outline; and (3) areas with more epidemic distribution have a higher building density. In areas with fewer outbreaks, buildings are more sparsely distributed.

4. Discussion: Pandemic and Sustainable Living

In order to combat the wealth gap, climate change, gender equality, and other issues, in 2015, the United Nations launched the "2030 Sustainable Development Goals" (SDGs), proposing 17 core goals for global governments and enterprises to jointly move towards sustainable development. SDG Goal 11 is "building cities and villages that are inclusive, safe, resilient, and sustainable". On 9 July 2020, UN-Habitat and the World Health Organization jointly hosted an online forum on "Urban Form and COVID-19: Reflections on Density, Overcrowding, Public Space, and Health" [30,31]. In the current context of the spread of COVID-19, how can local governments take action to implement the United Nations 2030 Agenda for Sustainable Development? Moreover, how should government officials, professionals, and scholars better understand the relationship between urban form and disease transmission and prevention? Perhaps, this is one of the issues we need to think about in regard to how to sustainably develop urban life. The reality of facing COVID-19 is that, in low-income neighborhoods, developers have no incentive to increase floor space or require additional infrastructure improvements. Especially in some high-density cities, people live in tighter quarters, often in multigenerational households, and they work in jobs that require face-to-face interaction. The risk of contagion increases as communities lack physical structures and amenities to enhance livability, and residents have no choice but to go out every day to find work or services.

Combining machine learning with the results of the relationship between the COVID-19 heat map and urban form to shape sustainable urban life, the following suggestions can be made in the field of planning and design:

(1) Reconsider the scale, design, and spatial distribution of public spaces. Public spaces can help reduce the risk of spreading COVID-19. Due to the long-term stay-at-home orders, people began to seek physical recovery and psychological pressure relief from green spaces, and the demand for urban green spaces has also increased. However, in the face of cities of different scales, accurate data are required for the allocation of public spaces in order to achieve a better balance of community resources.

(2) Attach importance to the design of green open space. In this study, it was found that there were few or no outbreak clusters in the green space distribution area. It is also possible that the ecological purification effect brought by the plant landscape on green land can effectively slow the spread of the epidemic. At the same time, people enter the green open space to get physical exercise, further improve their physical and mental health, and incorporate an auxiliary role in resisting diseases. Therefore, in urban planning, it is also necessary to consider the combination of various types of green open space (pocket parks, terrace recreation areas, atria of high-density buildings, and rooftops of commercial buildings).

(3) Avoid large-scale architectural designs in the development of residential areas. A single, large building can easily cause crowds. Once a danger occurs, it is easy to cause safety hazards if not evacuated promptly and effectively. Therefore, from architectural planning, a more scattered, multibuilding, and organically combined design mode can be considered. At the same time, attention should be paid to fully reserving space for disaster prevention and emergency response in architectural design. At the same time, the design and construction process should be full of "elasticity" and "resilience", so as to comprehensively improve disaster prevention and mitigation capabilities.

(4) Pay attention to the semi-enclosed building combination. COVID-19 spreads via aerosols. However, many shopping malls today are introverted "shopping boxes". In the face of major epidemics, this has instead become a weakness. The primary consideration for consumers is how to strengthen their own protection in this space. Therefore, some lifestyles are gradually changing, and some businesses with open spaces and better ecological environments are deliberately selected for consumption. Open blocks not only disperse the flow of people, but also prevent the accumulation of dense spaces. The advantages of openness, better ventilation, and more outdoor space make it easier for these areas to become the first choice for leisure consumption. Promoting the development of greenway commerce, park block commerce, and "park+" urban commercial complexes, and integrat-

ing the concept of green and sustainable living with architecture and commerce are also design models for the current response to the COVID-19 epidemic.

5. Conclusions

Through machine learning, this study used the heat map of the distribution of the COVID-19 epidemic in Macau to derive the urban form, and the following conclusions can be drawn:

(1) Through CGAN, the distribution area of the COVID-19 epidemic can be used to deduce urban forms that may be high-risk and prone to epidemics. This method has potential applications and practical value in the field of future urban design. The relationship between the spatial form of urban risk-prone areas and the degree of epidemic distribution is predicted by the model, and urban design iteration is carried out, which also has certain universality and reference in other cities.

(2) From the results of model training and model application, it can be seen that, when the urban epidemic distribution heatmap was used as the input data for learning, the stability of the model learning results was poor, but the accuracy gradually improved. Under the consideration of saving machine load and learning time cost, the prediction accuracy of the model after 200 iterations of learning and training could basically meet the requirements of target prediction.

(3) From the comparison of the epidemic distribution heat map, the actual urban form area, and the derived urban form area, it can be seen that the combination of urban forms is related to the risk of epidemic occurrence. Larger buildings have a high degree of overlap with the distribution of COVID-19 epidemic hotspots. Areas with a high degree of road enclosure highly overlap with the distribution of COVID-19 epidemic hotspots. These two types of urban forms require special attention. Green public open spaces and squares have an inhibitory effect on the distribution of the COVID-19 epidemic. Reducing the building volume and density can not only increase the area of green public open space and squares, but also help reduce the distribution of the COVID-19 epidemic.

The spread of the COVID-19 outbreak has caused the public to rethink the issue of public health governance. At the same time, it also allows government departments, planners and architects, and experts and scholars to rethink the sustainable development of urban decision making. Needless to say, in addition to epidemic spread, policymakers and planners must consider many other factors when considering residential density, such as economic thresholds and dynamism, social mix and dynamism, urban sprawl, and per capita infrastructure costs. The impact of building density and urban form is part of the comprehensive consideration, which has significance for auxiliary decision making. The method of deriving urban form through machine learning can refer to design types that avoid high risks, which can be used as an important reference for urban planning and design in practical applications. In order to reduce the possibility of outbreaks of epidemic risk in urban space design, architects and researchers can make comparisons on the basis of the results derived from the distribution of epidemic hotspots, as well as adjust the design of urban textures, such as building density, roads, and green space layout.

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Informed Consent Statement: Not applicable for studies not involving humans.

Data Availability Statement: The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

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Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Machine learning environment configuration: the operating system is Windows 11 (X64), the Cuda version is 11.5, the deep learning framework is Pytorch, the graphics card is GeForce GTX 3070 (16G), and the processor is AMD Ryzen 9 5900HX (3.30 GHz).

Appendix B

On 19 June 2022, health officials in Macau announced that it had found dozens of positive cases of COVID-19 in an unprecedented outbreak. Driven by the Omicron BA.5.1 subvariant, the COVID-19 outbreak was the city's first since October 2021. While the exact source of the virus that seeded the outbreak the month prior is still unknown, it was reported that those cases were traced to a prison worker and a butcher who frequently travelled between the casino hub and the neighboring Chinese city of Zhuhai. However, in the process of statistics, the main occupations of the groups that caused this major epidemic first were: domestic helpers (people of Myanmar nationality), construction site workers (non-local employees). Then, it spread to different groups of people. The footprint hotspot data of the COVID-19 epidemic was generated by researchers based on the statistics of the footprint report of a total of 500 patients in Macau (from mid-June to early July 2022), which was fully disclosed by the Macau Health Bureau. Reference website (Chinese webpage, column "Itinerary of Positive Cases"): https://www.ssm.gov.mo/apps1/PreventCOVID-19/ch.aspx#clg22916, accessed on 1 July 2022.

Table A1. The distribution information of 500 cases obtained by the author's statistics.

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
01-618	Female	28	Burmese	San Kio	EDF. YIM LAI	11	Staircase	18 June 2022
02-618	Female	30			EDF. YIM LAI	11	Staircase	18 June 2022
03-618	Female	36			EDF. YIM LAI	11	Staircase	18 June 2022
04-618	Female	36			EDF. YIM LAI	11	Staircase	18 June 2022
05-618	Female	32			EDF. YIM LAI	11	Staircase	18 June 2022
06-618	Female	25			EDF. YIM LAI	11	Staircase	19 June 2022
07-618	Female	35			EDF. YIM LAI	11	Staircase	19 June 2022
08-618	Female	30			EDF. YIM LAI	11	Staircase	19 June 2022
09-618	Female	32			EDF. YIM LAI	11	Staircase	19 June 2022
10-618	Male	37			EDF. YIM LAI	11	Staircase	19 June 2022
11-618	Female	85	Macau, China		EDF. YIM LAI	11	Staircase	19 June 2022
12-618	Male	0.75			EDF. TAT CHEONG	84	Staircase	19 June 2022
13-618	Male	34			EDF. TAT CHEONG	84	Staircase	19 June 2022
14-618	Female	31	Burmese		EDF. TAT CHEONG	84	Staircase	19 June 2022
15-618	Female	26			EDF. YIM LAI	11	Staircase	19 June 2022
16-618	Female	31			EDF. YIM LAI	11	Staircase	19 June 2022
17-618	Female	31			EDF. YIM LAI	11	Staircase	19 June 2022
18-618	Female	29			EDF. YIM LAI	11	Staircase	19 June 2022
19-618	Female	33	Macau, China	Praia Grande e Penha	Escada da Árvore	35	Elevator	19 June 2022
20-618	Female	32	Filipino	Baixa de Macau	Daly Welcome Hotel	5	Elevator	19 June 2022
21-618	Male	23	Macau, China	Baixa da Taipa	EDF. PALMER	184	Elevator	19 June 2022
22-618	Female	30	Indonesian	ZAPE	CENTRO INTERNACIONAL DE MACAU	104	Elevator	19 June 2022
23-618	Male	89	Macau, China	San Kio	EDF. PARKWAY MANSION	184	Elevator	19 June 2022
24-618	Male	36		Universidade e Baía de Pac On	ISLAND PARK	1	Staircase	19 June 2022
25-618	Female	34			ISLAND PARK	1	Staircase	19 June 2022
26-618	Male	64		San Kio	EDF. TAT CHEONG	84	Staircase	19 June 2022
27-618	Female	65			EDF. TAT CHEONG	84	Staircase	19 June 2022
28-618	Female	36		Horta e Costa e Ouvidor Arriaga	CENTRO CHIU FOK	28	Staircase	19 June 2022
29-618	Female	3			CENTRO CHIU FOK	28	Staircase	19 June 2022
30-618	Male	35		Baixa da Taipa	EDF. JARDIM DE WA BAO	1212	Elevator	19 June 2022
31-618	Female	42	Indian	Tamagnini Barbosa	EDF. JARDIM IAT LAI	1607	Elevator	19 June 2022
32-618	Female	43	Chinese mainland	Horta e Costa e Ouvidor Arriaga	Rua de Fernão Mendes Pinto 43–61	939	Elevator	19 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
33-618	Male	62	Macau, China	Areia Preta e Iao Hon	EDF. MAN LE	8	Staircase	19 June 2022
34-618	Female	43		San Kio	EDF. TAT CHEONG	84	Staircase	19 June 2022
35-618	Female	3		Baixa da Taipa	EDF. LEI SENG	1104	Elevator	20 June 2022
36-618	Female	33			EDF. LEI SENG	1104	Elevator	20 June 2022
37-618	Female	61	Chinese mainland		EDF. LEI SENG	1104	Elevator	20 June 2022
38-618	Female	40	Filipino	Patane e São Paulo	Rua de D. Belchior Carneiro 8–14	129	Staircase	20 June 2022
39-618	Female	61	Macau, China	San Kio	EDF. YAN ON	8	Staircase	20 June 2022
40-618	Female	34		Móng Há e Reservatório	Rampa dos Cavaleiros 8–8B	340	Elevator	20 June 2022
41-618	Female	59	Chinese mainland		Parkview Garden			21 June 2022
42-618	Female	65	Macau, China	Fai Chi Kei	VAI CHOI GARDEN	451	Elevator	20 June 2022
43-618	Female	60		Areia Preta e Iao Hon	EDF. MAN LE	8	Staircase	19 June 2022
44-618	Female	37	Chinese mainland	San Kio	EDF. HOU VAN KENG	73	Staircase	20 June 2022
45-618	Male	25	Macau, China	Doca do Lamau	EDF. YOHO CITY CENTER	102	Elevator	21 June 2022
46-618	Female	56			EDF. YOHO CITY CENTER	102	Elevator	21 June 2022
47-618	Male	16		Jardins do Oceano e Taipa Pequena	O PICO	99	Staircase	21 June 2022
48-618	Male	32		Areia Preta e Iao Hon	EDF. MAN LE	8	Staircase	21 June 2022
49-618	Female	26	Filipino	Baixa da Taipa	EDF. HOI YEE FA YUEN (BLOCO 1)	477	Elevator	21 June 2022
50-618	Male	26	Indonesian	ZAPE	CENTRO INTERNACIONAL DE MACAU (TORRE VI)	104	Elevator	21 June 2022
51-618	Female	47	Macau, China	San Kio	EDF. LEI FAT	12	Staircase	21 June 2022
52-618	Female	57		Doca do Lamau	EDF. NGA SAN	266	Elevator	21 June 2022
53-618	Male	10		Praia Grande e Penha	EDF. TAK WA/EDF. HIO FAI	16	Staircase	21 June 2022
54-618	Female	44		ZAPE	EDF. NAM SENG	97	Elevator	21 June 2022
55-618	Female	52		Areia Preta e Iao Hon	EDF. JARDIM HOI KENG	720	Elevator	21 June 2022
56-618	Female	74		Fai Chi Kei	EDIFÍCIO FAI IENG	436	Elevator	21 June 2022
57-618	Male	29	Filipino	Patane e São Paulo	EDF. CHENG HENG	4	Staircase	22 June 2022
58-618	Male	35	Macau, China	San Kio	EDF. YEE CHEONG	9	Staircase	22 June 2022
59-618	Female	30	Burmese	Horta e Costa e Ouvidor Arriaga	EDF. VA FAI	167	Elevator	22 June 2022
60-618	Female	28	Chinese mainland	Baixa de Macau	Hotel Lisboa			22 June 2022

Table A1. *Cont*.

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
61-618	Female	57	Macau, China	Tamagnini Barbosa	EDF. JARDIM CIDADE	136	Elevator	21 June 2022
62-618	Female	38	Chinese mainland	Areia Preta e Iao Hon	EDF. U WA	127	Elevator	21 June 2022
63-618	Male	49	Macau, China	Móng Há e Reservatório	JARDINS SUN YICK	1214	Elevator	22 June 2022
64-618	Male	30	Burmese	San Kio	EDF. SOK FAN	18	Staircase	22 June 2022
65-618	Female	62	Macau, China	NATAP	Unshun New Village C	2295	Elevator	21 June 2022
66-618	Female	42	Chinese mainland	Areia Preta e Iao Hon	EDF. FEI CHOI KONG CHEONG	563	Elevator	22 June 2022
67-618	Male	22		Fai Chi Kei	VAI CHOI GARDEN	970	Elevator	22 June 2022
68-618	Female	43	Macau, China	Coloane	Rua dos Bombaxes	353	Elevator	22 June 2022
69-618	Female	31		Doca do Lamau	EDF. YOHO CITY CENTER	102	Elevator	22 June 2022
70-618	Female	54			EDF. SAN LEI	14	Staircase	22 June 2022
71-618	Female	71		San Kio	EDF. LHUONG LOU	12	Staircase	22 June 2022
72-618	Female	46		Horta e Costa e Ouvidor Arriaga	EDF. IONG TOU	8	Staircase	22 June 2022
73-618	Male	36	Chinese mainland	Móng Há e Reservatório	Rampa dos Cavaleiros 8–8B	340	Elevator	22 June 2022
74-618	Female	13	Macau, China		EDF. PAK WAI			22 June 2022
75-618	Female	30	Chinese mainland	Areia Preta e Iao Hon	EDF. CONCÓRDIA SQUARE	298	Elevator	22 June 2022
76-618	Female	13	Macau, China	San Kio	EDF. TAT CHEONG	84	Staircase	22 June 2022
77-618	Female	45		Barra/Manduco	EDF. SON HONG	13	Staircase	22 June 2022
78-618	Female	45	Chinese mainland	San Kio	EDF. FAI WONG	20	Staircase	22 June 2022
79-618	Male	50		Areia Preta e Iao Hon	EDF. MAU TAN	65	Staircase	22 June 2022
80-618	Female	24	Filipino	Barra/Manduco	EDF. VA LOK	10	Staircase	22 June 2022
81-618	Male	34	Macau, China	NATAP	EDF. HOI PAN GARDEN	126	Elevator	22 June 2022
82-618	Female	29	Burmese	San Kio	EDF. YIM LAI	11	Staircase	22 June 2022
83-618	Female	39	Macau, China	Conselheiro Ferreira de Almeida	EDF. SENG FAT	12	Staircase	22 June 2022
84-618	Female	42	Vietnamese	ZAPE	CENTRO INTERNACIONAL DE MACAU	104	Elevator	22 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
85-618	Female	15		Barra/Manduco	EDF. HOI PAN	126	Elevator	22 June 2022
86-618	Male	41	Macau, China	NATAP	LA MARINA	549	Elevator	22 June 2022
87-618	Female	60			EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	22 June 2022
88-618	Male	63	Chinese mainland	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	22 June 2022
89-618	Male	45			EDF. FEI CHOI KONG CHEONG	563	Elevator	22 June 2022
90-618	Male	7			EDF. MAN LE	8	Staircase	22 June 2022
91-618	Male	38	Macau, China	Baixa da Taipa	Rua de Nam Keng 20–42	493	Elevator	22 June 2022
92-618	Female	42		Areia Preta e Iao Hon	LOK CHI HOUSE	702	Elevator	22 June 2022
93-618	Female	47	Chinese mainland	NATAP	EDF. U WA	127	Elevator	22 June 2022
94-618	Female	29		San Kio	EDF. YAN ON	8	Staircase	22 June 2022
95-618	Female	37	Macau, China	Coloane	CHUK WAN HOU YUEN			22 June 2022
96-618	Male	30			CENTRO INTERNACIONAL DE MACAU	104	Elevator	22 June 2022
97-618	Male	29	Indonesian	ZAPE	CENTRO INTERNACIONAL DE MACAU	104	Elevator	22 June 2022
98-618	Male	29			CENTRO INTERNACIONAL DE MACAU	104	Elevator	22 June 2022
99-618	Female	51	Filipino	San Kio	EDF. PAK HENG	125	Staircase	22 June 2022
100-618	Male	45	Nepalese		EDF. SOK FAN	18	Staircase	22 June 2022
101-618	Male	73		Doca do Lamau	KAI HOU COURT	14	Staircase	23 June 2022
102-618	Female	48		San Kio	EDF. LEI FAT	12	Staircase	22 June 2022
103-618	Male	74	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. LUEN TAK	12	Staircase	23 June 2022
104-618	Male	63		Conselheiro Ferreira de Almeida	EDF. SENG FAT	12	Staircase	23 June 2022
105-618	Female	27		Móng Há e Reservatório	Travessa de Má Káu Séak 58–106	264	Elevator	23 June 2022
106-618	Male	34	Chinese mainland	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	23 June 2022
107-618	Male	70		San Kio	EDF. YAN ON	8	Staircase	22 June 2022
108-618	Female	5	Macau, China		EDF. YAN ON	8	Staircase	22 June 2022
109-618	Female	21	Chinese mainland	Patane e São Paulo	EDF. TONG WA	6	Staircase	23 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
110-618	Female	24	Macau, China	Tamagnini Barbosa	EDF. JARDIM IAT LAI	1607	Elevator	23 June 2022
111-618	Male	73		Doca do Lamau	Unshun New Village C	2295	Elevator	23 June 2022
112-618	Female	50	Chinese mainland	Areia Preta e Iao Hon	EDF. FEI CHOI KONG CHEONG	563	Elevator	23 June 2022
113-618	Female	48			EDF. FEI CHOI KONG CHEONG	563	Elevator	23 June 2022
114-618	Male	41	Macau, China		EDF. LEI TIM	638	Elevator	23 June 2022
115-618	Female	38		San Kio	Pátio da Quina 1–9	23	Staircase	23 June 2022
116-618	Female	40		NAPE e Aterros da Baía da Praia Grande	TORRE LAGO PANORÂMICO	896	Elevator	23 June 2022
117-618	Male	82		San Kio	EDF. VENG KIN	12	Staircase	23 June 2022
118-618	Female	41		Móng Há e Reservatório	EDF. DRAGON TOWER	19	Elevator	23 June 2022
119-618	Female	53	Chinese mainland	Fai Chi Kei	EDF. FAI I	5	Staircase	23 June 2022
120-618	Male	65	Macau, China	Patane e São Paulo	EDF. CHEUNG WAN	27	Staircase	23 June 2022
121-618	Female	33		Cidade e Hipódromo da Taipa	WAI HENG KOK	538	Elevator	23 June 2022
122-618	Female	38		San Kio	EDF. NG FOK	45	Staircase	23 June 2022
123-618	Female	38		Móng Há e Reservatório	EDF. KIN CHIT	186	Elevator	23 June 2022
124-618	Male	26	Chinese mainland	ZAPE	CASA REAL HOTEL			23 June 2022
125-618	Female	49		NATAP	EDF. U WA	127	Elevator	23 June 2022
126-618	Female	54			EDF. U WA (BLOCO 12)	127	Elevator	23 June 2022
127-618	Male	29	Nepalese	San Kio	EDF. SOK FAN	18	Staircase	23 June 2022
128-618	Female	62	Chinese mainland	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	23 June 2022
129-618	Female	65	Macau, China	Patane e São Paulo	EDF. TIM CHUI	10	Staircase	23 June 2022
130-618	Male	69		San Kio	EDF. TAT CHEONG	41	Staircase	23 June 2022
131-618	Female	27	Chinese mainland		Ju Long Xuan Restaurant		Elevator	23 June 2022
132-618	Male	36	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. VA FAI	167	Elevator	23 June 2022
133-618	Female	2			EDF. VA FAI	167	Elevator	23 June 2022
134-618	Female	31	Burmese		EDF. VA FAI	167	Elevator	23 June 2022
135-618	Male	16	Macau, China	Areia Preta e Iao Hon	LOK CHI HOUSE	313	Elevator	24 June 2022
136-618	Female	63	Chinese mainland	San Kio	EDF. TAT CHEONG	41	Staircase	23 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
137-618	Male	40	Macau, China	Baixa da Taipa	Travessa da Povoação de Sam Ka 44–66	147	Elevator	23 June 2022
138-618	Female	11	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. VA FAI	167	Elevator	23 June 2022
139-618	Male	38	Vietnamese	Areia Preta e Iao Hon	EDF. YAU SENG	90	Elevator	23 June 2022
140-618	Female	32	Vietnamese	Barra/Manduco	EDF. SON SENG	69	Staircase	23 June 2022
141-618	Female	4	Macau, China	Areia Preta e Iao Hon	EDF. LOK FU GARDEN (LOK CHI HOUSE)	313	Elevator	24 June 2022
142-618	Female	59	Chinese mainland	Móng Há e Reservatório	Rua Alegre 14–60	353	Elevator	23 June 2022
143-618	Female	38	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. VA FAI	167	Elevator	23 June 2022
144-618	Male	5	Chinese mainland	San Kio	EDF. TAT CHEONG	41	Staircase	23 June 2022
145-618	Female	42	Chinese mainland	San Kio	EDF. TAK CHEONG	6	Staircase	23 June 2022
146-618	Male	49	Macau, China	Coloane	EDF. LOK KUAN BLOCO IV		Elevator	23 June 2022
147-618	Female	34	Filipino	San Kio	EDF. PAK HENG	125	Staircase	24 June 2022
148-618	Female	41	Chinese mainland	NATAP	EDF. U WA	127	Elevator	23 June 2022
149-618	Female	34	Burmese	San Kio	EDF. TIM CHUI	10	Staircase	23 June 2022
150-618	Male	40	Macau, China	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	23 June 2022
151-618	Male	5	Chinese mainland	NAPE e Aterros da Baía da Praia Grande	TORRE LAGO PANORÂMICO	896	Elevator	24 June 2022
152-618	Male	47	Macau, China	San Kio	Pátio da Quina 1–9	23	Staircase	24 June 2022
153-618	Male	33	Chinese mainland	ZAPE	CENTRO INTERNACIONAL DE MACAU (TORRE VI)	104	Elevator	23 June 2022
154-618	Male	31	Nepalese	Horta e Costa e Ouvidor Arriaga	EDF. VENG KEI	30	Staircase	24 June 2022
155-618	Female	41	Chinese mainland	NATAP	EDF. U WA	127	Elevator	23 June 2022
156-618	Female	52	Chinese mainland	NATAP	EDF. U WA	127	Elevator	23 June 2022
157-618	Female	47	Macau, China	Praia Grande e Penha	EDF. LUEN FAI	20	Staircase	23 June 2022
158-618	Male	31	Filipino	San Kio	EDF. PAK HENG	125	Staircase	24 June 2022
159-618	Male	53	Macau, China	Patane e São Paulo	EDF. LAI HOU (BLOCO 4)	88	Staircase	23 June 2022
160-618	Female	57	Chinese mainland	Tamagnini Barbosa	KIAN FU SAN CHUEN	150	Elevator	23 June 2022
161-618	Male	52	Macau, China	Barra/Manduco	EDF. SON HONG	13	Staircase	24 June 2022
162-618	Male	35	Macau, China	ZAPE	EDF. LEI SAN	118	Elevator	24 June 2022
163-618	Male	81	Macau, China	Tamagnini Barbosa	VAI YIN GARDEN	264	Elevator	24 June 2022
164-618	Male	42	Chinese mainland	San Kio	EDF. HENG LONG	6	Staircase	24 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
165-618	Male	32		Fai Chi Kei	EDF. YUET FA	176	Elevator	24 June 2022
166-618	Male	30	Macau, China		EDF. SON LEI	56	Staircase	24 June 2022
167-618	Male	25		Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	24 June 2022
168-618	Female	33	Chinese mainland		EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	24 June 2022
169-618	Female	81	Macau, China	Tamagnini Barbosa	VAI YIN GARDEN	264	Elevator	24 June 2022
170-618	Female	47	Chinese mainland	ZAPE	EDF. I TOU	96	Elevator	24 June 2022
171-618	Male	74	Macau, China	Doca do Lamau	EDF. NGA SAN	241	Elevator	24 June 2022
172-618	Male	59	Chinese mainland		VAN SION SON CHUN	2295	Elevator	24 June 2022
173-618	Female	58	Macau, China	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	23 June 2022
174-618	Female	9		San Kio	EDF. TAT CHEONG	41	Staircase	23 June 2022
175-618	Female	38	Chinese mainland	Tamagnini Barbosa	EDF. CHUI YI	164	Staircase	24 June 2022
176-618	Female	33		San Kio	EDF. YAN ON	8	Staircase	24 June 2022
177-618	Female	42	Vietnamese	Areia Preta e Iao Hon	EDF. MAU TAN	190	Staircase	24 June 2022
178-618	Male	53		Barra/Manduco	EDF. KUONG FAT	22	Staircase	24 June 2022
179-618	Female	33	Macau, China	Areia Preta e Iao Hon	EDF. MAN LE	8	Staircase	24 June 2022
180-618	Male	66		Baixa da Taipa	EDF. LEI SENG	209	Elevator	24 June 2022
181-618	Female	66	Chinese mainland	Horta e Costa e Ouvidor Arriaga	EDF. VA FAI	167	Elevator	24 June 2022
182-618	Female	20	Macau, China	Tamagnini Barbosa	JARDIM DO MAR DO SUL	250	Elevator	23 June 2022
183-618	Female	42		Baixa da Taipa	SAN SAI KAI FA UN	251	Elevator	23 June 2022
184-618	Male	66		Horta e Costa e Ouvidor Arriaga	EDF. VA FAI	167	Elevator	22 June 2022
185-618	Female	35	Chinese mainland		EDF. VA FAI	167	Elevator	23 June 2022
186-618	Male	39		San Kio	EDF. IONG LONG	22	Staircase	23 June 2022
187-618	Male	70	Macau, China		EDF. POU KA	95	Staircase	24 June 2022
188-618	Female	39		Baixa de Macau	EDF. MAN YI	5	Staircase	24 June 2022
189-618	Female	29	Chinese mainland		EDF. CHEONG VA	13	Staircase	24 June 2022
190-618	Male	33	Filipino	Barra/Manduco	EDF. HOU FAT	5	Staircase	24 June 2022
191-618	Female	3	Macau, China	San Kio	EDF. IONG LONG	22	Staircase	24 June 2022
192-618	Female	68	Chinese mainland	Horta e Costa e Ouvidor Arriaga	EDF. YUE XIU GARDENS(BLOCO 1)	280	Elevator	24 June 2022
193-618	Male	24	Burmese	San Kio	EDF. TIM CHUI	40	Staircase	24 June 2022
194-618	Female	38	Macau, China	NATAP	LA MARINA(BLOCO 4)	549	Elevator	24 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
195-618	Female	52	Chinese mainland	Barra/Manduco	EDF. KUONG FAT	22	Staircase	25 June 2022
196-618	Male	40		ZAPE	WALDO HOTEL & CASINO		Elevator	24 June 2022
197-618	Male	52		Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	23 June 2022
198-618	Female	50	Macau, China	Barra/Manduco	PENG KEI EDF	21	Staircase	25 June 2022
199-618	Male	67		Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	25 June 2022
200-618	Male	60		Coloane	EDF. ON SON	270	Elevator	25 June 2022
201-618	Female	26		Patane e São Paulo	EDF. TAT SAN	9	Staircase	25 June 2022
202-618	Male	50		Ilha Verde	EDIFICIO ILHA VERDE	2356	Elevator	25 June 2022
203-618	Female	49	Chinese mainland	Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	25 June 2022
204-618	Male	43	Macau, China	Coloane	EDF. LOK KUAN BLOCO V		Elevator	25 June 2022
205-618	Male	39		NATAP	EDF. HOI PAN GARDEN (BLOCO 10)	126	Elevator	25 June 2022
206-618	Male	53	Chinese mainland	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	25 June 2022
207-618	Female	33	Indonesian	Baixa de Macau	EDF. IU SON	5	Staircase	25 June 2022
208-618	Female	59	Macau, China	Conselheiro Ferreira de Almeida	EDF. POU LEI	24	Staircase	25 June 2022
209-618	Female	54		Fai Chi Kei	EDF. WENG HOI	88	Elevator	24 June 2022
210-618	Female	30	Vietnamese	Baixa de Macau	EDF. NGA WA	11	Staircase	25 June 2022
211-618	Female	38	Filipino	San Kio	EDF. SOK FAN	18	Staircase	24 June 2022
212-618	Male	19	Macau, China	Ilha Verde	EDF. CHENG CHOI	44	Staircase	23 June 2022
213-618	Male	46		Baixa de Macau	EDF. MAN Y	5	Staircase	25 June 2022
214-618	Male	62	Chinese mainland	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	23 June 2022
215-618	Male	3	Macau, China	Baixa de Macau	EDF. MAN Y	5	Staircase	25 June 2022
216-618	Female	39	Filipino		EDF. MAN Y	5	Staircase	25 June 2022
217-618	Male	3	Macau, China		EDF. MAN Y	5	Staircase	25 June 2022
218-618	Male	58		Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	23 June 2022
219-618	Female	24	Chinese mainland	Baixa da Taipa	EDF. HOI YEE FA YUEN (BLOCO 3)	151	Elevator	25 June 2022
220-618	Female	36	Macau, China	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	23 June 2022
221-618	Male	51	Chinese mainland		EDF. SON LEI	56	Staircase	25 June 2022
222-618	Male	37			EDF. SON LEI	56	Staircase	25 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
223-618	Male	52	Macau, China	Praia Grande e Penha	EDF. LUEN FAI	20	Staircase	25 June 2022
224-618	Female	29	Burmese	San Kio	EDF. YAU KEI	16	Staircase	25 June 2022
225-618	Male	27	Nepalese	Horta e Costa e Ouvidor Arriaga	EDF. VENG KEI	30	Staircase	25 June 2022
226-618	Female	35	Filipino	Patane e São Paulo	Ching Hing Mansion	4	Staircase	25 June 2022
227-618	Male	31	Chinese mainland	Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	24 June 2022
228-618	Male	54	Filipino		Estrada da Areia Preta 9–13C	23	Staircase	25 June 2022
229-618	Female	49	Macau, China	Patane e São Paulo	EDF. TAT SAN	9	Staircase	25 June 2022
230-618	Male	13		Conselheiro Ferreira de Almeida	EDF. ESPERANÇA	17	Staircase	25 June 2022
231-618	Male	63	Chinese mainland	Móng Há e Reservatório	Xing Hua New Estate	353	Elevator	25 June 2022
232-618	Female	32	Burmese	San Kio	EDF. TIM CHUI	40	Staircase	25 June 2022
233-618	Male	36	Macau, China		EDF. CHONG KIO	19	Staircase	25 June 2022
234-618	Female	57	Chinese mainland	Doca do Lamau	VAN SION SON CHUN	2295	Elevator	25 June 2022
235-618	Female	29		Baixa da Taipa	SAN SAI KAI FA UN	251	Elevator	25 June 2022
236-618	Female	65	Macau, China	Areia Preta e Iao Hon	EDF. LEI TIM	160	Elevator	25 June 2022
237-618	Female	15			EDF. LEI TIM	160	Elevator	25 June 2022
238-618	Female	23		Barra/Manduco	EDF. SON HONG	13	Staircase	25 June 2022
239-618	Female	23			EDF. SON HONG	13	Staircase	25 June 2022
240-618	Female	5		Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	25 June 2022
241-618	Female	35	Filipino		EDF. COMANDANTE PINTO RIBEIRO	112	Elevator	25 June 2022
242-618	Female	33	Macau, China		EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	112	Elevator	25 June 2022
243-618	Female	53		Baixa de Macau	EDF. POU KA	95	Staircase	25 June 2022
244-618	Female	34	Chinese mainland		EDF. SENG YUE	21	Staircase	25 June 2022
245-618	Male	31	Macau, China		EDF. POU KA	95	Staircase	25 June 2022
246-618	Male	2			EDF. POU KA	95	Staircase	25 June 2022
247-618	Female	75			EDF. POU KA	95	Staircase	25 June 2022
248-618	Female	31			EDF. POU KA	95	Staircase	25 June 2022
249-618	Female	59		Tamagnini Barbosa	JARDIM DO MAR DO SUL	250	Elevator	25 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
250-618	Female	32	Burmese	Horta e Costa e Ouvidor Arriaga	EDF. KAM LOK (BLOCOS I)	15	Staircase	25 June 2022
251-618	Female	89	Macau, China	San Kio	EDF. YAN ON	24	Staircase	25 June 2022
252-618	Female	46		Patane e São Paulo				25 June 2022
253-618	Male	51	Chinese mainland	Baixa de Macau	Rua do Campo 56–96	52	Elevator	24 June 2022
254-618	Female	22	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. TAI PENG	12	Staircase	25 June 2022
255-618	Male	32	Filipino	Barra/Manduco	EDF. LAI HENG	25	Staircase	25 June 2022
256-618	Female	34	Macau, China	Doca do Lamau	Unshun New Village B	2295	Elevator	25 June 2022
257-618	Male	53	Chinese mainland	Baixa de Macau	Rua do Campo 56–96	52	Elevator	25 June 2022
258-618	Female	27	Macau, China	Baixa da Taipa	SAN SAI KAI FA UN	251	Elevator	26 June 2022
259-618	Male	38	Chinese mainland	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	25 June 2022
260-618	Male	45	Macau, China		EDF. LOK FU GARDEN	702	Staircase	26 June 2022
261-618	Female	63		Doca do Lamau	KAI HOU COURT	14	Staircase	25 June 2022
262-618	Female	10	Chinese mainland	San Kio	EDF. HOU VAN KENG	73	Staircase	25 June 2022
263-618	Male	37	Nepalese		EDF. SOK FAN	18	Staircase	24 June 2022
264-618	Male	10	Macau, China	Areia Preta e Iao Hon	EDF. LEI TIM	638	Elevator	25 June 2022
265-618	Female	31	Chinese mainland	San Kio	EDF. WENG HOI	6	Staircase	25 June 2022
266-618	Female	70		Horta e Costa e Ouvidor Arriaga	EDF. LUEN TAK	12	Staircase	25 June 2022
267-618	Female	5		Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
268-618	Female	33	Macau, China	Baixa da Taipa	EDF. DO LAGO	400	Elevator	26 June 2022
269-618	Male	59	Chinese mainland	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
271-618	Male	65			EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
272-618	Female	59			EDF. NAM FAI	431	Elevator	26 June 2022
273-618	Female	40		Barra/Manduco	EDF. SI KAI	7	Staircase	26 June 2022
274-618	Male	43		Coloane	EDF. KOI NGA	250	Elevator	26 June 2022
275-618	Male	43		Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	26 June 2022
276-618	Male	31	Vietnamese	Baixa de Macau	Rua do Campo 56–96	52	Elevator	26 June 2022
277-618	Male	39	Chinese mainland		Rua do Campo 56–96	52	Elevator	26 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
278-618	Female	72	Macau, China	Coloane	EDF. LOK KUAN BLOCO V			26 June 2022
279-618	Female	35		Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
280-618	Male	35		NATAP	LA MARINA	339	Elevator	26 June 2022
281-618	Female	8			LA MARINA	339	Elevator	26 June 2022
282-618	Male	50		Baixa da Taipa	EDF. NOVA TAIPA GARDEN (BLOCO 24-LÍRIO)	377	Elevator	25 June 2022
283-618	Female	34	Chinese mainland	Areia Preta e Iao Hon	EDF. LEI TIM	638	Elevator	26 June 2022
284-618	Male	43			EDF. MAU TAN	23	Staircase	26 June 2022
285-618	Female	48	Filipino	Jardins do Oceano e Taipa Pequena	JARDINS DO OCEANO (APRICOT COURT, HIBISCUS COURT)	337	Elevator	27 June 2022
286-618	Female	57	Chinese mainland	Areia Preta e Iao Hon	EDF. VILLA BELA	212	Elevator	26 June 2022
287-618	Female	28	Burmese	San Kio	EDF. TIM CHUI			26 June 2022
288-618	Female	58	Macau, China	Areia Preta e Iao Hon	EDF. VILLA BELA	212	Elevator	26 June 2022
289-618	Male	35		NATAP	EDF. KAM HOI SAN	128	Elevator	26 June 2022
290-618	Female	55	Chinese mainland	Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	26 June 2022
291-618	Male	44			EDF. SON LEI	56	Staircase	26 June 2022
292-618	Female	34	Macau, China	NATAP	EDF. HOI PAN GARDEN	128	Elevator	26 June 2022
293-618	Female	42	Chinese mainland	Horta e Costa e Ouvidor Arriaga	EDF. VENG CHAN	16	Staircase	26 June 2022
294-618	Female	74	Macau, China	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	26 June 2022
295-618	Male	68		Patane e São Paulo	EDF. TAT SAN	9	Staircase	26 June 2022
296-618	Male	26	Chinese mainland	Fai Chi Kei	EDF. YUET TAK	181	Elevator	26 June 2022
297-618	Female	65	Macau, China	Patane e São Paulo	EDF. I SON	17	Staircase	26 June 2022
298-618	Male	3		Horta e Costa e Ouvidor Arriaga	Rua de Fernão Mendes Pinto 43–61	939	Elevator	26 June 2022
299-618	Female	36		Baixa de Macau	Rua das Estalagens	3	Staircase	26 June 2022
316-618	Male	28		Barra/Manduco	I FONG SON SAN CHUN	130	Staircase	26 June 2022
323-618	Male	61			EDF. KUAN HONG	69	Elevator	26 June 2022
324-618	Female	50		Baixa da Taipa	Rua de Nam Keng 20–42	493	Elevator	26 June 2022
325-618	Female	30		Tamagnini Barbosa	EDF. JARDIM IAT LAI	1607	Elevator	26 June 2022
326-618	Female	24	Chinese mainland	NATAP	EDF. U WA	128	Elevator	26 June 2022
327-618	Female	58	Macau, China	ZAPE	EDF. I TOU	217	Elevator	26 June 2022
328-618	Female	35	Chinese mainland		EDF. I TOU	217	Elevator	26 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
329-618	Female	5	Macau, China	Baixa da Taipa	Rua de Nam Keng 20–42	493	Elevator	26 June 2022
330-618	Male	33		Doca do Lamau	EDF. NGA SAN CENTRO	266	Elevator	26 June 2022
331-618	Male	40	Chinese mainland	ZAPE	INTERNACIONAL DE MACAU (TORRE VI)	104	Elevator	26 June 2022
332-618	Female	60	Macau, China	Barra/Manduco	EDF. KUAN ON	13	Staircase	26 June 2022
333-618	Male	32		San Kio	EDF. TAT CHEONG	41	Staircase	26 June 2022
334-618	Female	6	Chinese mainland	Areia Preta e Iao Hon	Rua da Saúde 8–42D	200	Elevator	26 June 2022
335-618	Male	32		San Kio	Rua do Rosário Rua Heng Long	6	Staircase	26 June 2022
336-618	Female	60		Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
337-618	Female	1	Macau, China	Fai Chi Kei	EDF. VANG KEI	501	Elevator	27 June 2022
338-618	Male	51	Chinese mainland	Baixa da Taipa	Rua dos Hortelãos			26 June 2022
339-618	Female	51	Macau, China	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	26 June 2022
340-618	Male	59			EDF. SON LEI	56	Staircase	26 June 2022
341-618	Male	17			EDF. SON LEI	56	Staircase	26 June 2022
342-618	Female	31		Baixa da Taipa	EDF.LEI SENG	1104	Elevator	26 June 2022
343-618	Female	45	Filipino	Areia Preta e Iao Hon	Estrada da Areia Preta 9–13C	23	Elevator	26 June 2022
344-618	Female	10	Chinese mainland		EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
345-618	Male	2			EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
346-618	Female	40			EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
347-618	Male	35	Macau, China	Móng Há e Reservatório	FU PO GARDEN	152	Elevator	26 June 2022
348-618	Female	43	Filipino	Areia Preta e Iao Hon	Estrada da Areia Preta 9–13C	23	Elevator	26 June 2022
349-618	Female	11	Chinese mainland		EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
350-618	Female	46		NATAP	EDF.U WA	128	Elevator	26 June 2022
351-618	Female	3	Macau, China	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	26 June 2022
355-618	Male	63		Doca do Lamau	VILA NOVA YUNSHUN	2295	Elevator	26 June 2022
356-618	Male	49	Chinese mainland	Baixa de Macau	Rua de Cinco de Outubro	7	Staircase	26 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
357-618	Female	62	Macau, China	Doca do Lamau	VILA NOVA YUNSHUN	2295	Elevator	26 June 2022
358-618	Female	50		Patane e São Paulo	EDF.NGA KENG	256	Elevator	26 June 2022
359-618	Female	58		Barra/Manduco	EDF. CHONG KIU	7	Staircase	26 June 2022
360-618	Male	37	Chinese mainland		Rua do Dr. Lourenço Pereira Marques 75–75	869	Elevator	26 June 2022
361-618	Male	38	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. VENG SENG	30	Staircase	25 June 2022
362-618	Female	50	Filipino	Barra/Manduco	EDF. LAI HENG	25	Staircase	26 June 2022
363-618	Male	46			EDF. LAI HENG	25	Staircase	26 June 2022
364-618	Male	39		Patane e São Paulo	Rua de D. Belchior Carneiro 8–14	129	Staircase	27 June 2022
365-618	Female	46		Barra/Manduco	EDF.LAI HENG	25	Staircase	26 June 2022
366-618	Female	56	Chinese mainland	Coloane	EDF. KOI NGA	250	Elevator	26 June 2022
367-618	Female	27	Macau, China	NATAP	EDF.KAM HOI SAN(BLOCO 10)	128	Elevator	27 June 2022
368-618	Male	35	Chinese mainland	Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	27 June 2022
369-618	Female	61	Macau, China	NATAP	EDF. POLYTEC GARDEN	1460	Elevator	27 June 2022
370-618	Female	48	Chinese mainland	Areia Preta e Iao Hon	EDF.SON LEI	56	Staircase	18 June 2022
371-618	Female	34		Horta e Costa e Ouvidor Arriaga	EDF.VENG CHAN	16	Staircase	27 June 2022
372-618	Female	84	Macau, China	San Kio	EDF. SOK FAN	18	Staircase	27 June 2022
373-618	Male	47		Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	27 June 2022
374-618	Female	28	Burmese	San Kio	EDF. TIM CHUI			26 June 2022
375-618	Male	11	Chinese mainland	Barra/Manduco	Rua do Dr. Lourenço Pereira Marques 75–75	869	Elevator	26 June 2022
376-618	Female	24	Macau, China	Baixa de Macau	EDF. KIU WAI	20	Staircase	27 June 2022
377-618	Male	33	Chinese mainland	Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO (TORRE I)	242	Elevator	28 June 2022
378-618	Female	32			EDF.HONG TAI	56	Staircase	27 June 2022
379-618	Female	50	Macau, China	NATAP	EDF. U WA (BLOCO 12)	127	Elevator	27 June 2022
380-618	Female	25	Chinese mainland		EDF. U WA	127	Elevator	27 June 2022
381-618	Male	34		Ilha Verde	EDF. KUAI TAK	24	Staircase	27 June 2022
382-618	Female	36	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. TIN FOOK	17	Staircase	27 June 2022
384-618	Female	8		NATAP	EDF. KAM HOI SAN	128	Elevator	27 June 2022
385-618	Female	47	Chinese mainland	Horta e Costa e Ouvidor Arriaga	EDF. VENG CHAN	16	Staircase	27 June 2022
386-618	Female	11	Macau, China	NATAP	EDF. KAM HOI SAN	128	Elevator	27 June 2022
387-618	Female	62	Chinese mainland	Areia Preta e Iao Hon	KONG HOI	213	Staircase	27 June 2022
388-618	Male	38	Indian	Patane e São Paulo	EDF. NGAI IN KUOK	13	Staircase	27 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
389-618	Male	48		Tamagnini Barbosa	CHOI FAI KOK	363	Elevator	27 June 2022
391-618	Male	36	Macau, China	Conselheiro Ferreira de Almeida	EDF. ESPERANÇA	17	Staircase	27 June 2022
392-618	Male	24		Coloane	Rua dos Bombaxes	353	Elevator	27 June 2022
393-618	Male	48		Ilha Verde	EDIFICIO ILHA VERDE	2356	Elevator	27 June 2022
394-618	Female	45	Vietnamese		EDF.SAN MEI ON	117	Staircase	27 June 2022
395-618	Female	45	Chinese mainland	Areia Preta e Iao Hon	EDF.SAN MEI ON	117	Staircase	27 June 2022
396-618	Female	57	Macau, China		EDF. SON LEI	56	Staircase	27 June 2022
397-618	Female	67			EDF. SON LEI	56	Staircase	27 June 2022
398-618	Female	25	Chinese mainland	San Kio	EDF. IONG LONG	22	Staircase	27 June 2022
399-618	Male	38		NAPE e Aterros da Baía da Praia Grande	TORRE LAGO PANORÂMICO	896	Elevator	27 June 2022
400-618	Male	10		Baixa de Macau	EDF. CHEONG VA	13	Staircase	27 June 2022
401-618	Female	37	Filipino	San Kio	EDF.YAU KEI	16	Staircase	27 June 2022
402-618	Male	59	Macau, China	Baixa de Macau	EDF. POU KA	95	Staircase	27 June 2022
404-618	Male	51	Chinese mainland	Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	27 June 2022
405-618	Female	53		NATAP	NAM WA SAN CHUN	133	Elevator	27 June 2022
406-618	Male	65		Barra/Manduco	EDF. KWAN ON	11	Staircase	27 June 2022
407-618	Female	31	Macau, China	NATAP	EDF.KAM HOI SAN(BLOCO 10)	128	Elevator	27 June 2022
408-618	Female	42		San Kio	EDF. ULTRAMAR	29	Staircase	27 June 2022
409-618	Male	34		NATAP	Rua da Pérola Oriental 33–101	207	Elevator	27 June 2022
410-618	Male	67	Chinese mainland	Areia Preta e Iao Hon	EDF. LEI TIM	638	Elevator	27 June 2022
412-618	Female	37		ZAPE	EDF. I TOU	217	Elevator	27 June 2022
413-618	Male	34	Macau, China	NATAP	EDF. JARDIM KONG FOK CHEONG	1254	Elevator	27 June 2022
414-618	Female	32		Barra/Manduco	EDF. KWAN ON	11	Staircase	27 June 2022
415-618	Female	32	Chinese mainland	Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	27 June 2022
417-618	Male	53		NATAP	NAM WA SAN CHUN	133	Elevator	28 June 2022
418-618	Female	67	Macau, China	Baixa de Macau	EDF. POU KA	95	Staircase	27 June 2022
419-618	Female	27		Praia Grande e Penha	EDF. LUEN FAI	20	Staircase	28 June 2022
420-618	Male	32	Chinese mainland	Areia Preta e Iao Hon	EDF. HENG LONG	20	Staircase	27 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
421-618	Female	3	Macau, China	Ilha Verde	Travessa do Laboratório 23–27	493	Elevator	28 June 2022
422-618	Male	37			EDF. MAYFAIR GARDEN	1037	Elevator	28 June 2022
423-618	Female	65		Baixa da Taipa	EDF. DO LAGO	400	Elevator	28 June 2022
424-618	Female	6			EDF. DO LAGO	400	Elevator	28 June 2022
425-618	Female	35	Chinese mainland	Horta e Costa e Ouvidor Arriaga	EDF. VENG CHAN	16	Staircase	28 June 2022
426-618	Female	64	Macau, China	Jardins do Oceano e Taipa Pequena	JARDINS DO OCEANO	253	Elevator	28 June 2022
427-618	Male	72		Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	28 June 2022
428-618	Female	32	Chinese mainland	San Kio	EDF. VENG SENG	22	Staircase	28 June 2022
429-618	Female	36		Barra/Manduco	Rua do Dr. Lourenço Pereira Marques 75–75	869	Elevator	27 June 2022
430-618	Male	49		NATAP	EDF. U WA	127	Elevator	28 June 2022
431-618	Male	84	Macau, China	Baixa de Macau	Travessa do Paralelo 10–26	24	Staircase	28 June 2022
432-618	Male	31		Barra/Manduco	EDF. TAI MEI	7	Staircase	28 June 2022
433-618	Female	60		Jardins do Oceano e Taipa Pequena	JARDINS DO OCEANO (BAUHINIA COURT)	335	Elevator	28 June 2022
434-618	Male	47	Chinese mainland	Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	28 June 2022
435-618	Female	35		San Kio	EDF. KAI KEI COURT	288	Elevator	28 June 2022
436-618	Female	38		Coloane	EDF. ON SON	96	Elevator	28 June 2022
437-618	Female	56	Macau, China	Baixa de Macau	EDF. TONG MEI	24	Staircase	28 June 2022
438-618	Female	12			CENTRO COMERCIAL MASTER	74	Staircase	28 June 2022
439-618	Female	35			CENTRO COMERCIAL MASTER	74	Staircase	28 June 2022
440-618	Female	31	Indian	NATAP	EDF. KAM HOI SAN	128	Elevator	28 June 2022
441-618	Male	28	Chinese mainland	Ilha Verde	EDF. MEI KUI KUONG CHEONG (FASE 2) (BLOCO 2-EDF. SUNRISE COURT)	547	Elevator	28 June 2022
442-618	Male	36	Filipino	Baixa de Macau	EDF. MAN SENG			28 June 2022

Table A1. *Cont*.

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
443-618	Female	65	Macau, China	Universidade e Baía de Pac On	EDF. IAT SENG			28 June 2022
444-618	Female	45		Baixa de Macau	EDF. POU KA	95	Staircase	28 June 2022
445-618	Female	58		Barra/Manduco	EDF. KWAN ON	140	Staircase	28 June 2022
446-618	Male	29			EDF. KWAN ON	140	Staircase	28 June 2022
447-618	Male	51	Chinese mainland	Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	28 June 2022
448-618	Male	32		Conselheiro Ferreira de Almeida	EDF. TIM FOK	5	Staircase	28 June 2022
449-618	Female	69	Macau, China	Coloane	EDF. IP HENG (BLOCO 8)	7	Elevator	28 June 2022
450-618	Male	8		NATAP	LA MARINA	549	Elevator	28 June 2022
451-618	Male	40		Doca do Lamau	Avenida Marginal do Lam Mau 369–441	2976	Elevator	28 June 2022
452-618	Male	69	Chinese mainland	Coloane	EDF.LOK KUAN BLOCO V	4672	Elevator	28 June 2022
453-618	Male	24		San Kio	EDF. KAI CHEONG	10	Staircase	28 June 2022
454-618	Male	47		Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	28 June 2022
455-618	Female	49			EDF. SAN MEI ON	117	Staircase	28 June 2022
456-618	Female	25		Móng Há e Reservatório	EDF. HANTEC	815	Elevator	28 June 2022
457-618	Male	46		Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	28 June 2022
458-618	Female	29		Baixa de Macau	FU VA KOK EDF. FU WAH COURT	6	Staircase	28 June 2022
459-618	Male	53		Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	28 June 2022
460-618	Male	27	Macau, China	NATAP	NAM WA SAN CHUN	133	Elevator	28 June 2022
461-618	Male	50	Chinese mainland	Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	28 June 2022
462-618	Female	21	Macau, China	NATAP	NAM WA SAN CHUN	133	Elevator	28 June 2022
463-618	Female	73		Horta e Costa e Ouvidor Arriaga	HEONG LAM SAN CHUN	122	Elevator	28 June 2022
466-618	Male	65		Tamagnini Barbosa	KIAN FU SAN CHUEN	904	Elevator	28 June 2022
467-618	Female	32	Chinese mainland		KIAN FU SAN CHUEN	904	Elevator	27 June 2022
468-618	Female	3		Ilha Verde	EDF. CHENG CHOI	44	Staircase	28 June 2022
469-618	Female	59		Areia Preta e Iao Hon	EDF. COMANDANTE PINTO RIBEIRO	242	Elevator	28 June 2022
470-618	Female	47		Horta e Costa e Ouvidor Arriaga	EDF. VENG CHAN	16	Staircase	28 June 2022
471-618	Male	30	Macau, China	Coloane	Rua dos Bombaxes	353	Elevator	28 June 2022

Table A1. *Cont.*

Case No.	Gender	Age	Document Type or Nationality	Statistical Area	Building Name	Number of Units in the Building	Elevator/ Staircase	Date Detected Positive (DD/MM/YY)
472-618	Male	34	Chinese mainland	Areia Preta e Iao Hon	EDF. HENG LONG	64	Staircase	28 June 2022
473-618	Male	45	Macau, China		EDF. VILLA BELA EDF. DO JARDIM KAM SAU	212	Elevator	28 June 2022
474-618	Female	31		Barra/Manduco	EDF. TAK CHEONG	24	Staircase	25 June 2022
475-618	Female	70	Chinese mainland	Baixa de Macau	Travessa do Paralelo 10–26	24	Staircase	28 June 2022
476-618	Male	43			Travessa do Paralelo 10–26	24	Staircase	28 June 2022
477-618	Female	29	Macau, China	Doca do Lamau	LONG HOU FONG	263	Elevator	28 June 2022
478-618	Male	12		NATAP	EDF. KAM HOI SAN	128	Elevator	28 June 2022
479-618	Female	29			EDF.U WA(BLOCO12)	127	Elevator	28 June 2022
480-618	Male	29		San Kio	EDF. VENG SENG	22	Staircase	28 June 2022
481-618	Male	26	Vietnamese	Areia Preta e Iao Hon	EDF. SENG YEE	60	Staircase	28 June 2022
482-618	Female	62	Macau, China	Baixa de Macau	EDF. SENG YUE EDF. SENG YU	21	Staircase	28 June 2022
483-618	Male	60		Fai Chi Kei	EDF. YUET FA	176	Elevator	28 June 2022
484-618	Female	26		Horta e Costa e Ouvidor Arriaga	Travessa de Coelho do Amaral 4–8	224	Elevator	28 June 2022
485-618	Female	47	Chinese mainland		EDF. VENG CHAN	16	Staircase	28 June 2022
486-618	Male	55		Areia Preta e Iao Hon	EDF. SAN MEI ON	117	Staircase	28 June 2022
487-618	Female	65	Macau, China	Conselheiro Ferreira de Almeida	EDF. TIM FOK	5	Staircase	29 June 2022
488-618	Female	72		Baixa de Macau	EDF. POU KA	95	Staircase	28 June 2022
489-618	Male	56	Chinese mainland	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	28 June 2022
490-618	Female	43		Baixa de Macau	EDF. POU KA	95	Staircase	28 June 2022
491-618	Male	32	Macau, China	Patane e São Paulo	EDF. CHEUNG WAN	27	Staircase	28 June 2022
492-618	Female	14		Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	29 June 2022
493-618	Female	31	Burmese	San Kio	EDF. TIM CHUI		Staircase	28 June 2022
494-618	Female	39		Areia Preta e Iao Hon	EDF. HONG TAI	56	Staircase	28 June 2022
495-618	Male	72	Macau, China	Conselheiro Ferreira de Almeida	EDF. TIM FOK	5	Staircase	28 June 2022
496-618	Female	36			EDF. TIM FOK	5	Staircase	28 June 2022
497-618	Female	65		Tamagnini Barbosa	TAMAGNINI BARBOSA		Elevator	29 June 2022
498-618	Male	52	Chinese mainland	Areia Preta e Iao Hon	EDF. SON LEI	56	Staircase	29 June 2022
499-618	Female	45	Macau, China	Horta e Costa e Ouvidor Arriaga	EDF. HANG WAN KOK (BLOCO A)	516	Elevator	29 June 2022
500-618	Male	27		NATAP	EDF.U WA(BLOCO12)	127	Elevator	28 June 2022

Cases 270, 300-315, 317-322, 352-354, 383, 390, 403, 411, 416, and 464-465 were all found in controlled isolation. The impact on the social side is small, so the table does not list this location. Statistical area is the division set in the "Statistical Yearbook" produced by the Statistics and Census Bureau of the Macau Special Administrative Region Government. Currently, Macau has a total of 23 Statistical areas.

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