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The impact of COVID-19 on long term care facilities

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For those who live in long term care facilities the impacts of the COVID-19 pandemic have been particularly devastating. For the September 2020 Map of the Month we explore the impacts on long term care facilities in Gauteng by mapping the known cases in these facilities across the province.

Long term care facilities are specialised live-in facilities that provide ongoing care to residents who need medical or non-medical support with a chronic illness, disability or advanced age. These include retirement villages, rehabilitation centres and specialised facilities for people with mental and physical disabilities. They typically have many shared amenities, services and common spaces which would make social distancing difficult. Residents in these facilities are often already isolated from the rest of society, even before COVID-19. Many of the residents within these facilities would also have comorbidities and conditions that would make them particularly vulnerable to COVID-19. Data from around the world has shown that long term care facilities have been disproportionately affected by the pandemic with high death rates.

Many, if not most, long term care facilities across Gauteng have had cases of COVID-19. Most of these have been in retirement and frail care facilities, but facilities for people with mental and physical disabilities have also been affected.



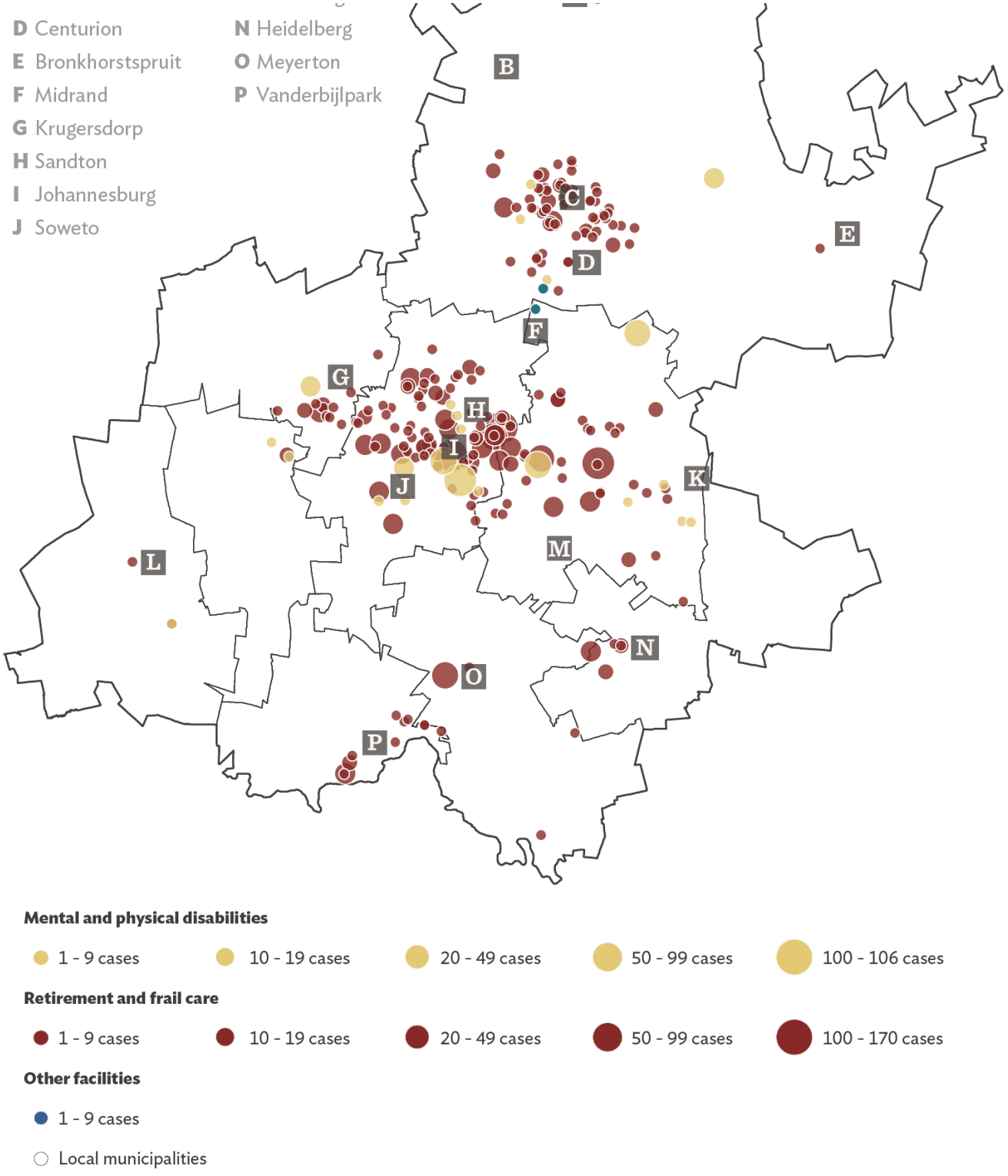


Figure 1: COVID-19 cases identified in long term care facilities (data from Gauteng Department of Health reported between 06/03/2020 and 13/09/2020)

The GCRO has supported Gauteng Provincial Government's COVID-19 response planning by providing analysis and data insights into key issues. A key area of support has been mapping and understanding the spatial trends of COVID-19. Some anonymised data on COVID-19 infections in Gauteng is provided to the GCRO by the Gauteng Department of Health. This data includes age, gender and addresses for cases. In order to see if there are clusters

of infections at places such as long term care facilities, we have analysed this data to look for multiple cases at the same address. The task is complicated by the fact that geocoding is constrained where incomplete or no address information is given, or the address of the testing facility is given rather than the home address of the positive patient.

For this Map of the Month address data for COVID-19 cases reported between 6 March and 13 September 2020 was mined to find multiple cases of COVID-19 recorded at the same address, which we have called single address clusters. Figure 2 shows where clusters of 10 or more cases exist at the same location. The largest 'clusters' are recorded at testing facilities where the physical address of the testing facility is often recorded rather than the home address. These testing station 'clusters' were removed from the dataset. The remaining clusters are overwhelmingly located at long term care facilities.

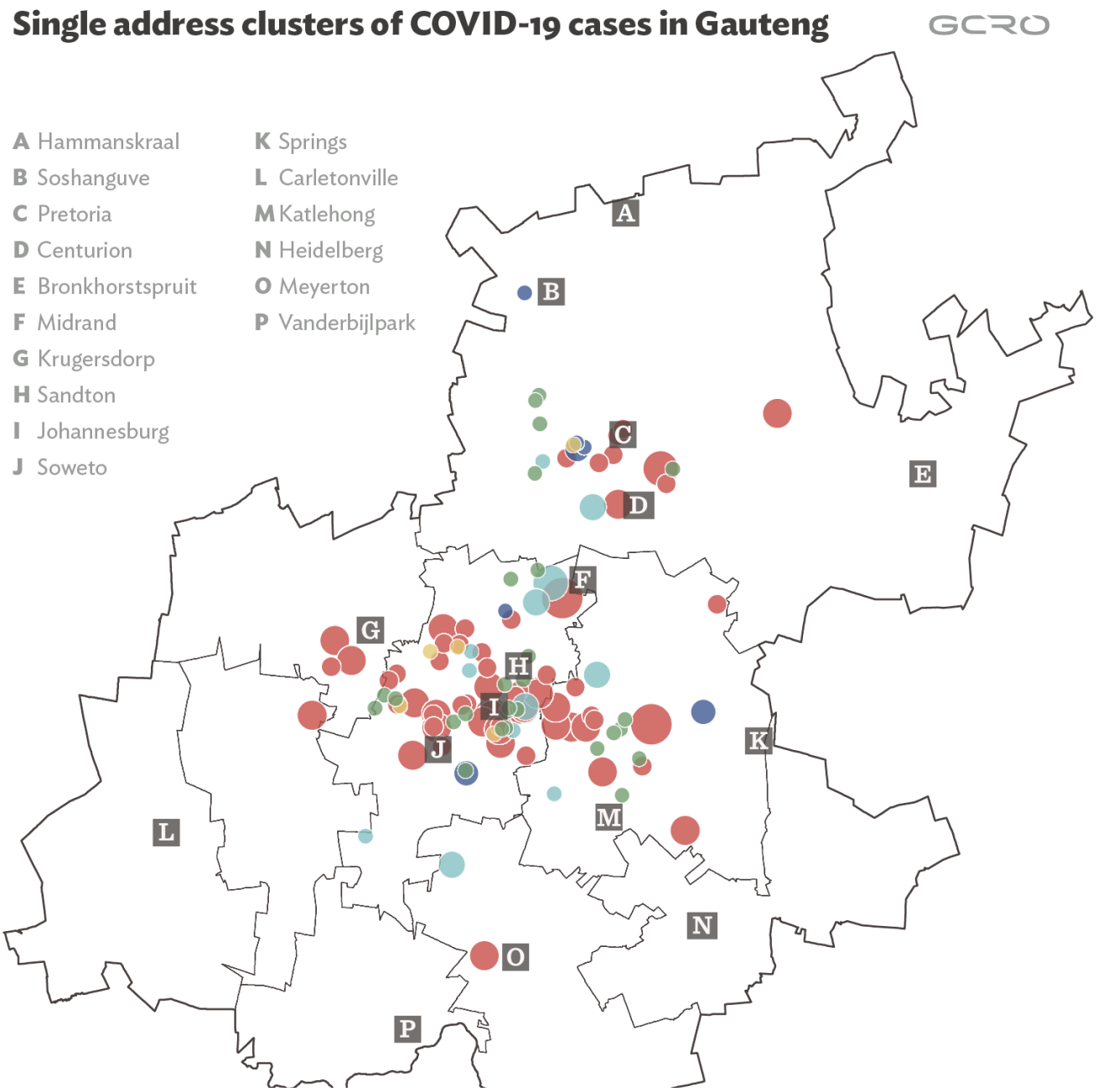




Figure 2: Clusters of 10 or more COVID-19 cases at the same location (data from Gauteng Department of Health reported between 06/03/2020 and 13/09/2020 and geocoded by ESRI South Africa)

Once it became clear that many clusters of COVID-19 cases were occurring in care facilities we began to investigate further to determine the extent of the impact. In this process GCRO worked together with clinicians in the Gauteng Provincial Command Centre (the 'War Room'), and officials in the Gauteng Departments of Health and Social Development. A database of long term care facilities was developed by mining the address field data for clusters as well as by using a data set of the addresses of known facilities kept by the provincial Departments of Health and Social Development.

Our data has identified 243 long term care facilities across Gauteng that together had at least 2606 cases of COVID-19 by mid-September 2020. This does not include staff who have also contracted COVID-19. The types of long term care facilities fall into three broad categories (1) retirement and frail care, (2) facilities for people with mental and physical disabilities and (3) other care facilities. Half of these facilities have had 3 or fewer cases noted, but there have also been a number of larger outbreaks. 30 facilities (or 1 in every 10) have recorded at least 20 cases and 4 facilities have recorded over 100 cases (3 of these are retirement homes). In many cases the infection is unwittingly brought into the care homes by staff members coming into work and is then spread amongst residents.

Table 1: Summary statistics of COVID-19 positive cases in long term care facilities

	Cases per month							Total cases	% of total cases	Median age	Gender (% female cases)
	March	April	May	June	July	August	September (12/09)				
Mental and Physical disabilities	-	1	1	90	286	122	1	501	19%	44	34%
Retirement and frail care	2	6	7	525	1324	182	41	2087	80%	80	68%
Other facilities	-	-	-	5	3	2	8	18	1%	77	56%
Grand Total	2	7	8	620	1613	306	50	2606			

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The first noted case in a long term care facility was reported on 24 March 2020, growing exponentially from June onwards, with the peak across all types of long term care facilities occurring during July. There was some variation in the pace of spread depending on the type of facility. The number of cases in retirement homes peaked towards the end of July and dropped off quickly in August. Cases in homes for people with mental and physical disabilities also peaked in July but did not reduce as quickly as in retirement homes resulting in 40% of August cases being in homes for people with disabilities. This was driven by a large number of cases in 3 facilities.

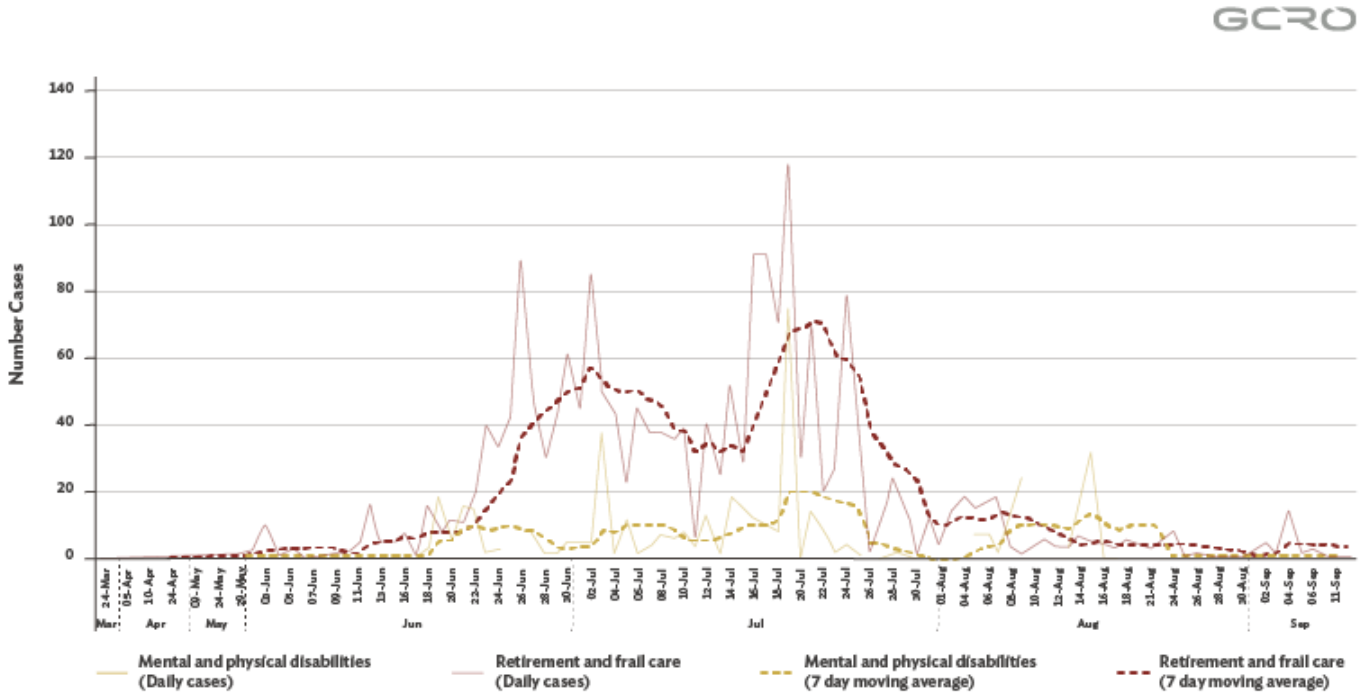


Figure 3: COVID-19 cases in long term care facilities over time (data from Gauteng Department of Health reported between 06/03/2020 and 13/09/2020)

Once initial cases are reported, infections tend to spread in care facilities, albeit with different patterns. The data shows three trends. The first is homes that report one or two cases and then no more, indicate that the infection was controlled and limited. In other homes individual cases are reported over a week or two and are followed by a large number of reported cases. This points towards targeted screening and testing after initial cases and shows COVID-19 spreading rapidly through the facility. Third, and in a limited number of facilities, there is a consistent reporting of new cases over many weeks pointing to a slow and continued spread throughout a facility.

Most retirement and old age facilities in Gauteng are in middle to higher income areas, catering to those who can afford to access these mostly private facilities. The elderly in poorer communities, already at risk due to age and pre-existing conditions, also have an additional burden of higher risk and vulnerability to maintaining social distance. Many also have had additional difficulties accessing medication and other essential services during lockdown. The number of care homes for people with mental and physical disabilities are limited but are distributed across Gauteng.

While the number of identified cases in care homes is low (2606) compared to all cases in Gauteng Province (214 799), the residents have been severely and disproportionately impacted. International reports and some local reporting show that deaths in these facilities are high. In the US up to 40% of COVID-19 deaths have been linked to nursing homes and 30-60% of deaths in European countries. Media reports in South Africa have indicated that the death rate has been high here as well, but consolidated data is not yet available.

Many long term care facilities were unprepared for the impact of COVID-19 with inadequate prevention measures in place. By now long term care facilities have been under lockdown for six months, with many residents isolated from family and friends. The move to level 1 and increased visitations to these facilities will be welcomed but comes at a high risk of new cases. Strategies and plans to open up these homes should be in place and high levels of vigilance needs to remain into the foreseeable future.

Data notes:

This work is a provisional analysis of cases in long term care facilities and has been done in collaboration with clinicians in the Gauteng Provincial Command Centre (the ‘War Room’), and officials from the Gauteng Department of Health and Gauteng Department of Social Development.

Cases in long term care facilities have been determined by mining address field data provided by Gauteng Department of Health Mpilo database for cases reported between 06/03/2020 and 13/09/2020 (data downloaded 17 September 2020). The data provided to the GCRO includes no personal information of the infection cases and is fully anonymised. The data was mined for phrases like ‘old age’, ‘retirement’, ‘care home’ as well as using data supplied in a database of registered retirement homes and homes for people with disabilities. All identified facilities were then verified and geocoded to determine their locations. Given that affected people do not always supply addresses, or addresses are not always well recorded, not all cases in old age and care homes can be identified from the data. In instances where care facilities are reporting on COVID-19 cases the number is usually higher than what can be mined from address data and includes infections noted in staff, but these cases are not included here.

The supplementary map was generated by using a database of geocoded addresses supplied by ESRI South Africa in partnership with Gauteng Department of Health. Because of various difficulties, including poor quality address entries, not all of this data can of course be geocoded. After cleaning, data was analysed to determine locations with

ten or more cases at the same coordinates. Each individual cluster was then verified to determine if it was a valid cluster or whether multiple addresses at the same location reflected, for example, testing stations.

Data has been anonymised to protect the identities of residents and staff in these facilities.

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