

CORONAVIRUS DISEASE (COVID-19) PANDEMIC

A cluster of COVID-19 cases following the 2020 Matric Rage Festival in KwaZulu-Natal Province, South Africa, November – December 2020

On the weekend of 5 - 6 December 2020, the National Institute for Communicable Diseases (NICD) received an alert from a clinician from Hillcrest, KwaZulu-Natal (KZN) Province regarding a number of COVID-19 cases amongst young people who reported to have attended a Rage Festival in Ballito, KZN. This prompted an investigation to ascertain the existence of a COVID-19 cluster related to attendance of Rage Festival (Rage) and to provide epidemiological characteristics of the cluster.

We conducted a retrospective cohort investigation of 2 253 festival attendees (1 954 revelers and 299 crew). COVID-19 confirmed cases were identified retrospectively using multiple data sets, the Rage ticket purchaser record list obtained from the organizers, and the national COVID-19 laboratory-based confirmed cases line list obtained from the Notifiable Medical Conditions Surveillance System (NMCSS). A standardized questionnaire was created and circulated to 1 814 Rage attendees using Google Forms to determine COVID-19 risk factors. Inclusion criterion for this cohort was defined as any person who attended Rage in KZN between 27 November to 4 December 2020. A case was defined as any person within the cohort with a positive SARS-CoV-2 RT-PCR laboratory test results. A cluster was defined as the identification or presence of two or more laboratory confirmed COVID-19 cases in a group of people between 27 November to 27 December 2020 who were epidemiologically linked by Rage attendance.

Of the 2 253 Rage attendees, 848 (37.6%) laboratory confirmed COVID-19 cases were identified, of which 846 (99.8%) were revelers and two were crew (0.2%). Due to an inability to match negative test results to the list of ticket purchasers at the time of writing, the percentage negative cannot be reported with confidence. Age ranged from 16 to 58 years (Median: 18, IQR: 18-18). The 15-19-year-old age group accounted for 802 (94.6%) of the cases. Gender was known for 802 cases, of which 425 (53.0%) were males. Most cases were from Gauteng Province (66.2%, 561/848), followed by KwaZulu-Natal (30.0%, 254/848) Province (Table 3). An epidemiological curve shows a rapid increase in cases from 03 December 2020, with a peak observed on 07 December followed by a gradual decline from 09 December 2020 (Figure 5). Two confirmed cases identified amongst the Rage attendees (both revelers), were before the Rage with specimen collection date on 17 and 19 November 2020. Response on the investigation questionnaire was received from 19 of the 1 814 attendees (response rate: 1.0%) with only 13 giving consent to participate in the study and completed the questionnaire while 1 795 (99%) did not respond.

Rage is an annual South African electronic music festival held to coincide with the end of the South African final matric exam season. The official Rage took place on 28 November to 4 December 2020 at various venues (three outdoor events at Kings Park Stadium and a small pop-up bar at Rage Bar Ballito). A number of the Rage revelers reported to have attended other non-Rage related events and parties, such as The Litchi Party on the night of 27 November 2020 that took place in three different bars simultaneously and another large party on 25 November 2020, while other revelers attended privately organized parties amongst others. Although wearing of face mask was mandatory at Rage with hand sanitizers available, social distancing and mask wearing was compromised in most gatherings that took place before the Rage and also masks were not worn all the times during the Rage. Factors such as mass gathering without using appropriate personal protective equipment, crowded spaces, poor hygiene and ventilation, and increased social inhibition due to alcohol consumption, may have produced a conducive environment for transmission of SARS-CoV-2 during these gatherings. The investigation revealed that two of the Rage attendees had positive SARS-CoV-2 results before the Rage but still proceeded to attend the event. This indicate lack of discipline and irresponsible risk behaviours amongst revelers as there is little or no adherence to the recommended prevention measures. This was also demonstrated with the Tin Roof party "superspreader event" in the Western Cape in October. These kinds of entertainment gathering should be deemed unnecessary and be prohibited during the outbreak period as they influence and contribute to the increase in community transmission, undermining mitigation efforts put in place to contain the virus.

The limitations of the study included delayed circulation of questionnaire, which resulted in poor response rate (1%); lack of secondary attack rate data due to contact tracing activities being conducted at the provincial and districts levels and the information not available to the NICD investigation team; and the lack of clinical information for all identified cases, limited the analysis. Non-pharmaceutical interventions such as physical and social distancing, wearing of face mask, frequent hand washing with clean water and soap, and frequent hand sanitization are recommended effective mitigation measures to prevent the spread of the virus. Early identification of superspreader events and initiation of contact tracing to identify close contacts, quarantining of asymptomatic suspected cases/contacts and isolation of symptomatic or asymptomatic laboratory confirmed cases, are crucial for reducing widespread transmission, and containing the outbreak.

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Table 3. The Rage Festival confirmed COVID-19 cases by province of residence, 17 November to 27 December 2020

| Province of residence | Total reported cases | Percentage (%) |
|-----------------------|----------------------|----------------|
| Eastern Cape | 4 | 0.47 |
| Free State | 2 | 0.24 |
| Gauteng | 561 | 66.16 |
| KwaZulu-Natal | 254 | 29.95 |
| Limpopo | 1 | 0.12 |
| Mpumalanga | 11 | 1.30 |
| North West | 0 | 0.00 |
| Northern Cape | 0 | 0.00 |
| Western Cape | 15 | 1.77 |
| Unknown | 0 | |
| Total | 848 | 100.00 |

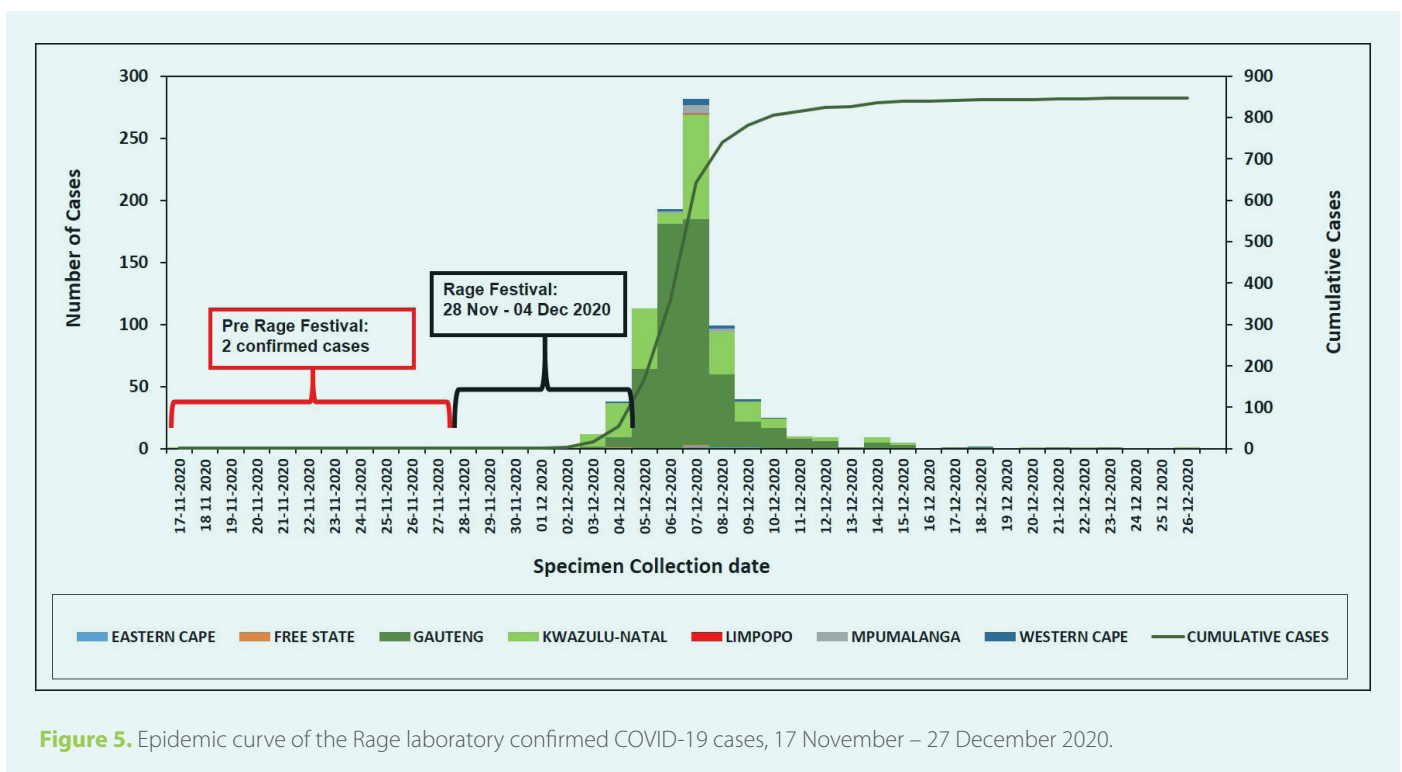


Figure 5. Epidemic curve of the Rage laboratory confirmed COVID-19 cases, 17 November – 27 December 2020.