

Recommendations on Prevention Priorities

Problem Statement

As we enter week 15 of the lockdown, with the easing of restrictions at present coupled with the natural evolution of the outbreak, the number of cases of SARS CoV 2 infection are rising rapidly. Are there any specific approaches or activities that could have a disproportionate impact? What Covid-19 prevention activities should be prioritized to make an impact on the increasing cases, especially in Gauteng?

Task to Committee

Based on the available evidence, physical distancing, hand hygiene and masks when in public are meant to be prioritized for prevention. Is this appropriate at this stage of the epidemic? Should any new approaches to promoting these be considered? Should any other activities be considered, especially from emerging evidence from new studies on the enhancing the effectiveness of prevention strategies. What should be prioritized?

Evidence review

1. As of the 6 July, there were 196 750 confirmed cases 3199 deaths attributed to the infection. Gauteng and the Western Cape are disproportionately affected with about 65% of the confirmed cases. (Notably, even in the USA where testing rates (88 per 1,000) population compared to SA (25 per 1,000); it is estimated that the number of Covid-19 infections is likely at least 7-fold higher. Hence, the current numbers of Covid-19 reported from South Africa are likely an under-estimated of the order of 5-10 fold.)
2. South Arica entered a level 5 lockdown on the 27th March 2020 to slow down the spread of the novel SARS CoV2. The slowing of rate of infection was intended to give the health care system time to prepare for an eventual and evitable surge of infections. Whereas the Level-5 lockdown expectantly slowed the rate of transmission of the virus, the effective reproductive rate during the Level-5 lockdown was 1.5 (compared to 2.5 prior to the lockdown); indicating ongoing community-transmission even during the lockdown, when community transmission was still at an early stage. There is currently substantial community spread with few if any imported cases
3. There have been four non-pharmaceutical intervention proposed to slow down transmission in the community on a personal level:
 - a. Wearing of non-medical masks when in public spaces
 - b. Physical distancing
 - c. Hand washing or sanitizing
 - d. Cough etiquette.
4. New evidence while it is still evolving, suggest that airborne spread of the virus, include either direct inoculation between people in closed proximity, or airborne transmission with inhalation of contaminated microdroplets (<5 um) is probably the major modality of infection. Furthermore, evidence suggest that contaminated micro-droplets may remain airborne for 5-12 minutes, longer in poorly ventilated areas and confined spaces (e.g. taxi). This would add a further possible intervention to slow down the spread: adequate ventilation.
5. Infection through fomite spread, although also likely to play a role, is possibly less common than previously suggested
6. With the lifting of the levels of restrictions on personal movement, return to employment and education, unsurprisingly the number of cases has increased.
7. Evolving evidence from investigation of outbreaks and transmission studies, further support that approximately 80% of infections results from 20% of infectors (transmitters); i.e. likely that super-spreaders account for the majority of infections occurring and at least 70% of

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infected people may not be infecting anyone. Whilst it's not possible to up-front identify who these super-spreaders are, avoiding scenarios in which such super-spreading events may occur, could militate against such rapid transmission. This may include religious gathering, cinemas and casinos.

8. A meta-analyses support that children (<21 years) are 50% less likely than adults to be infected with the virus when exposed, and are more likely to be asymptomatic if infected (80%) compared to adults (50%). Also, developing severe Covid-19 illness is rare in otherwise healthy children. While attention needs to be paid to protecting teachers and other support staff at educational facilities, re-opening of the education system is advised. Current estimates have 9 million children from poor households received nutritional support at school. Further closure of schools will increase child hunger.
9. That there may be an inadvertent increase in non-COVID deaths, is supported by a 25% reduction in immunization of children; 50% reduction in testing for tuberculosis, 30% reduction in diagnosis of new TB cases and possibly 15-20% decline in new diagnosis of HIV and decline in management of HIV. The inadvertent deleterious effects of the Level 5 and Level 4 lockdown are likely to continue, and is expected to take time to recover from. Any further highly restrictive lockdowns would exacerbate an already compromised health care system.
10. Such as a strategy of increasing the level of lockdown, is likely to lead to major ongoing damage to health due to non-Covid-19 disease; including an excess in non-Covid-19 deaths. Notably, by mid-June 2020, when there were 2000 reported deaths from Covid-19, the MRC reported that there had already been an excess of 4300 non-accidental deaths in South Africa than would otherwise have been anticipated. Low detection rates leads to undiagnosed cases and therefore unrecorded COVID-19 deaths. Analysis of Gauteng death list (n=166) and DATCOV (n=141) at the end of June demonstrated that GDoH had not reported 69 of the deaths in DATCOV.
11. Nevertheless, considering the rapid rate of spread of the virus, and reports of shortage of hospital beds and stock outages of supplemental oxygen, strengthening of available interventions, without compromising on other essential health services that need to be safeguarded is warranted.
12. A Level-5 lockdown on its own cannot eliminate circulation of the virus, and modeling data indicates that any further level-5 lockdown, without subsequent additional interventions, would have limited impact on the number of Covid-19 cases anticipated in South Africa, but would only push the peak of the outbreak out into the future. Also, the notion of intermittent lockdowns is unlikely to have any material effect on the number of Covid-19 cases, and will likely need to be pursued for months on end

Recommendations

The following recommendations are proposed to slow the rate of transmission of the virus, **without defaulting to a level-4 or Level-5 lockdown**, which would not result in the elimination of the virus, but at best buy a few additional weeks at a huge health and economic cost.

A level 4 or Level 5 lockdown, including intermittent lockdowns, is not a sustainable option to address the current surge of Covid-19 cases in Gauteng (or elsewhere), and at best would only delay the surge of cases. This is all the more pertinent in the context of not being adequately resourced to embark on a testing strategy to identify the majority of symptomatic cases in the community, ensure effective close contact tracing (at least 70% of contacts from three-day period prior to symptom onset up until the cases is isolated), and ensuring quarantine of the close contacts.

Nevertheless, considering the rapid rate of spread of the virus, and reports of shortage of hospital beds and stock outages of supplemental oxygen, strengthening of available interventions, without compromising on other essential health services that need to be safeguarded is warranted.

1. Active education around the modality of transmission, with focus on importance of physical distancing, **adequate ventilation** and wearing of face masks in public spaces.
2. Promote physical distancing in all public spaces. In closed areas such as public transport or an office where physical distancing is not feasible, ensure adequate ventilation (including leaving windows open and not using recirculation ventilators. The role of air conditioners is under investigation but limiting their use seems prudent at this stage.
3. Regulate the compulsory wearing of masks in public spaces, especially where physical distancing is difficult to maintain (e.g. Shopping centers)
4. Prohibiting conditions lending itself to heightened rate and risk of transmission; including rolling back:
 - a. The lifting of restrictions on places of worship
 - b. Opening of cinemas and casinos,
 - c. Reducing occupancy allowed in taxis (change back to 50% occupancy) and other public transport;
 - d. Opening of restaurant dining in closed spaces, until the wave of the outbreak has subsided.
5. Re-instatement of banning of liquor sales, both because drinking in groups can lend itself to increase rates of transmission; as well as the impact that alcohol abuse is having on demands on health care facilities.
6. Re-instatement of a curfew to reduce road accidents and after hour's trauma to reduce demands on emergency rooms and trauma-related bed.
7. Enhance effective policing of settings that lend itself to heightened rates of transmission, including in shopping places, taxi ranks and religious gatherings.

Rationale for recommendations

At the present time the current approach to the slowing down of the spread of SARS CoV 2 is utilizing all the available methods with the addition on the emphasis of good ventilation. Increasing the level of lockdown is not recommend.