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EXTENDING THE CAPACITY OF GOVERNMENTS AND COMMUNITIES TO SAVE LIVES:

HOW EDUCATION SYSTEMS CAN MOBILISE IN RESPONSE TO COVID-19 AND LIKELY SIMILAR EVENTS IN THE FUTURE

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The role of education systems in responding to COVID-19 and other threats

Introduction: considering non-pharmacological interventions

The aim of this briefing document is to foreground how education systems may be mobilised to respond to COVID-19 and to stimulate discussion around how this can be achieved in South Africa. In our view, preparations for an impending viral outbreak include non-pharmacological interventions that entail actions intended to prevent, limit or slow the spread of the virus and thereby curtail its impact. Education systems, in particular, should mobilise to respond in the context of the growing threat of COVID-19, but also more widely.

The COVID-19 virus of 2019–2020 is a member of the Coronavirus (CoV) family of viruses that include the common cold as well as MERS-CoV (Middle East Respiratory Syndrome) and SARS-CoV (Severe Acute Respiratory Syndrome) that emerged in 2002–2003 and 2012–2013 respectively. COVID-19 is dispersing ever more widely across the globe in many developed and developing countries that differ widely in their readiness to deal with its impact.

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JET **Bulletin**—The purpose of the *JET BULLETIN* is to share some of the knowledge and insights that are gained through various multifaceted projects in which JET is involved. JET is very active in education development and evaluation, and we see a wide range of new learnings emerging which we believe would be of interest and value to other stakeholders in the sector and to education and training more broadly. This is a special edition of the bulletin which we are publishing in response to a global crisis. We trust you will find the content of this edition of value.

Vulnerability of health systems and preparedness for COVID-19

Over the past three months, experience has plainly revealed that all nation states are at risk of an outbreak of COVID-19. Recent late calls made worldwide to heed the importance of preparation for the epidemic remain largely unanswered, but preparation is viewed as the cornerstone to protect people's health. Simply put by Dr Mike Ryan of the Health Emergencies Programme of the World Health Organisation (WHO): 'The effectiveness of outbreak response depends on the preparedness measures put in place before outbreaks strike' (WHO, 2020). Note that the WHO is referring primarily to preparation of systems, processes, capacity, technology and knowledge explicitly related to the medical and epidemiological manifestation of the crisis.

One of the pressing features of international inequality between countries is the differences between the levels of development and quality of their health systems. Sadly, these differences critically impact on the extent to which country health systems can be 'prepared' for attack from infectious diseases. The WHO rightly points out that gaps in health security render health systems vulnerable to occurrences like COVID-19: 'Ultimately, it's the absence of universal health coverage that is the greatest threat to health security. Universal health coverage and health security are two sides of the same coin' (WHO, 2018: 10). Furthermore, it is not just about coverage but also about the quality of that coverage. General living conditions also contribute to people's vulnerability to infectious diseases. Rossa et al. (2015) argue: 'Weak, malnourished, immunosuppressed populations living in poverty with little or no hygiene, sanitation or running water will always be highly susceptible to new emerging or re-emerging infectious diseases' (Rossa et al. 2015: 89).

Providing adequate access to quality medical treatment for infected and sick people is naturally the primary goal of a national medical system. The problem is that highly communicable virus attacks on human societies happen suddenly, with limited time for medical systems to respond. At the beginning of an epidemic/pandemic, vaccines that respond to the new virus are not available and take time to develop. The WHO argues that in these cases 'non-pharmaceutical interventions may be the only effective initial measures in most countries' (2018: 146).

People infected with COVID-19 will present with either mild symptoms that are treatable at home or serious medical problems requiring high care and hospitalisation. When numbers of people requiring treatment exceed the threshold beyond which the national health system can cope, then infected and sick people may be left without medical attention and receive only palliative assistance. Mortality rates calculated for countries or regions with greater medical capacity will be lower than those in systems that are overrun by demand for treatment. Actions that reduce the load of critically ill people on the medical system thus play an important role and would again be non-pharmacological (non-medical). They would instead focus on improving people's ability and confidence to protect themselves or on actions that retard the rate of infection over time and limit peak infection numbers.

The schooling system, through its institutions embedded in the community, can play a significant role, as we discuss below.

Ways in which schools may contribute to effectiveness of an outbreak response

There are nearly 25 000 schools in the country attended by just over 13 million learners (Department of Basic Education, 2020). This represents a substantial institutional footprint.

In comparison, the total number of hospitals (including private hospitals) in March 2018 was 4184, and the number of local public clinics was 3187 (Health Systems Trust, 2018: 216). Relative to the education system, the public health system has a much smaller presence.

That the education system has such a large institutional base makes it an important conduit into the community, especially through the parent body. The community of parents of learners at a school is not necessarily restricted to the social class or demographic makeup of the community where the school property is physically located. More broadly than this, schools are the primary institutional form of government with a physical presence and relationship through parenthood with a significant proportion of adults in the population.

Schools thus present a substantial institutional base from which information and knowledge can be communicated with learners and their parents about potential health threats to individuals and the community at large. The range of ways in which schools might support a campaign to limit the impact of a virus-like COVID-19 requires investigation into processes that might be undertaken and the materials and instruments these would require. For this reason, closer collaboration between education and health sectors should prove fruitful and joint interaction between Education, Health and other relevant government departments would be needed to explore the potential for collaboration.

In its *Managing Epidemics* handbook of 2018, the WHO sets out a basic framework or model for a comprehensive outbreak response at an individual country level. This model is proposed as a standardised basis for managing an epidemic in every country and is necessary for international cooperation. The framework provides a starting point for identifying areas of outbreak response in which educational institutions can play a role. Four key response elements are identified in Table 1 (WHO, 2018: 31). In the right-hand column, 'Role for education institutions' has been inserted to map potential roles for education departments, and specifically schools, in relation to the WHO outbreak responses.

It is suggested that education institutions would play a limited role in outbreak response (A) 'Coordinating Responders', (B) 'Health Information' or (C) 'Health Interventions' but could play a substantial role in (D) 'Communicating Risk'.

According to the WHO, community engagement needs to be achieved through dialogue. The following three elements are important to ensure effective community engagement (WHO, 2018: 39, 40–41):

> *Knowledge: communities must know what the disease is, how it is transmitted, and how to protect against it.*
> *Self-efficacy: communities must be able to implement control measures (e.g. access to soap and water, to gloves, to waste management).*
> *Trust: this is an important influence to ensure that communities heed public health advice.*

Lack of information and advice from government can expose communities to panic (Prothero, 2020). The space opens up for 'infodemics' – 'the rapid spread of information of all kinds, including rumours, gossip and unreliable information' (WHO, 2018: 26). Clear and helpful communication reduces the unknowns. Available communication channels and media need to be used to advise people how to respond, protect themselves and reduce the spread of the disease. This 'communication is critical to minimise the social, political and subsequently economic impact of an epidemic' (WHO, 2018: 18).

Table 1: Key outbreak response framework elements including a role for schools

Outbreak response in WHO handbook for country level	Definitions	Role for education institutions
(A) Coordinating Responders	The team of national and international partners who plan and coordinate the response	May include Education Ministry as a partner
(B) Health Information	Information from surveillance of the outbreak, and about interventions undertaken	No
(C) Health Interventions	Reducing transmission, morbidity, mortality and impact on health systems	No Core health competence
(D) Communicating Risk	**Relaying information, listening to and engaging communities, and managing rumours and misinformation**	**Yes** **Education can play a crucial role**

Source: WHO, 2018: 31–34, 36, 38–39, adapted by author

Communication of this nature would benefit from a positive relationship between public hospitals, local clinics and the communities. An established record of the health system's consistent communication with communities about health issues would contribute to levels of trust from which the COVID-19 campaign might benefit. The framework, which, to reiterate, deals primarily with ***response*** to an outbreak, illustrates how schools and the education sector more broadly could begin to explore collaboration with the health sector and gives a sense of the kinds of interventions required.

Once COVID-19 is under control, through vaccine for example, the South African partners would need to develop a strategy that prepares the country better to counteract future virus outbreaks. National investment in defence against epidemic/pandemic outbreaks is now a requirement, as confirmed by this WHO assertion: 'A new HIV, a new Ebola, a new plague, a new influenza pandemic are not mere probabilities. … the only major uncertainty is when they, or something equally lethal, will arrive' (WHO, 2018: 14).

Developing a programme in the education system intended to address occurrence of an epidemic/pandemic

So what can schools do? To begin with, schools can contribute to providing improved access to reliable information resources, strengthening household and community capability and retaining trust in government during the crisis.

We also need to consider ways in which the school system can change its operations to slow the rate of new infections.

Campaign to build capacity in schools to respond to COVID-19

At this stage of the current outbreak, the medium to long term impacts that COVID-19 might have on the fabric of South African society, on institutions like schools and on government are unknown. If schools are to adopt a role in supporting communities in counteracting the virus outbreak, emerging questions are: what can be done to mobilise schools or particular role players in schools to support learners and their families and communities who may be affected? And how can schools be managed to ensure that more people are better informed and better able to adopt behaviours that enhance the health prospects of all household members?

A national public COVID-19 education awareness campaign at schools and circuit/district offices could involve the following elements. Some of these activities may be taken forward during the current COVID-19 outbreak, whereas others would require more preparation and consultation and may take time to develop.

- Create capacity at District and Circuit Offices (communication with schools, school management and closure, teacher infections and learner infections, testing protocols).
- Create capacity for School Management Teams (how to take care of/manage and isolate students with fever and respiratory symptoms until collected from school).
- Create capacity including a curriculum component for teachers to take into classrooms (background and support to facilitate a lesson on the COVID-19).

- Awareness of self and family care and protection information for learners (campaign materials and activities aimed at providing information about COVID-19 that are related to relevant subject areas in the curriculum).
- Capacity and awareness campaign for parents on how the schools will be responding to COVID-19 (clear information about protection of themselves and family members and how schools can respond).
- Education awareness campaign for custodial staff (self-care and role in sanitising the school environment).

These programmes would need to be formulated for cultural fitness in communities and created to build public trust in the information. The materials should be produced in the official languages, and the media used could be: infographics, comics, social media content, printed media (reading clubs, newspapers) or other, as appropriate.

Non-medical/Non-pharmacological interventions

The impact of an epidemic or pandemic can also be mitigated through tactical management of the *operation* of schools, groups of schools or systems of schools. Thus we also need to consider ways in which the school system could change its operations to slow the rate of new infections. Ordinary school activities that bring numbers of teachers and learners together into daily interaction for the purpose of teaching and learning have the unintended consequence of generating multiple interactions that propagate infection. One approach taken during the Spanish Flu pandemic of 1918 was to close schools to prevent spread of infections among assembled learners. Another approach could be to organise schools differently to limit interaction between learners, for instance, changing the practice of having learners move from classroom to classroom for different lessons.

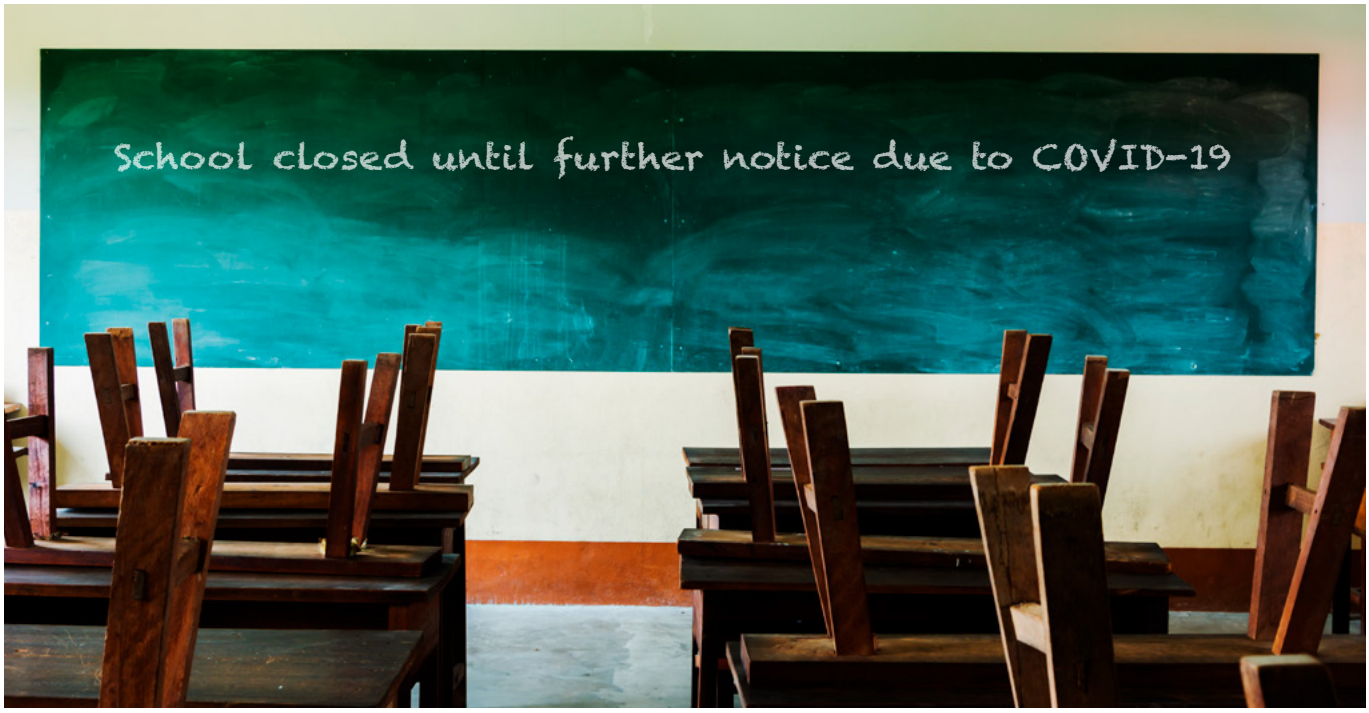
It is important to reiterate the observation made earlier that the supply of drugs and hospital accommodation by the private and/or public sector may be limited and that support efforts to limit infections must increasingly involve non-medical strategies. Lodge, Schatz and Drake (2020: 1) agree: 'During outbreaks of emerging infections, the lack of effective drugs and vaccines increases reliance on non-pharmacologic public health interventions and behaviour change to limit human-to-human transmission.'

Intervention strategies that form a first line of defence include encouraging people to adopt basic protective measures, as recommended by the WHO[1]. Four potentially powerful non-medical/non-pharmacological strategies that a government may elect to implement can include the following:

- Increased quarantine of infected people or case isolation in hospitals or at home, depending on availability of facilities;
- Reduction of community contact, which involves bans placed on public gatherings, meetings, events, etc.;
- Closure of schools for specified periods of time to prevent spreading the virus across the school community;
- Workplace shut down by public and private enterprises.

These strategies are referred to as 'social distancing measures' and are applied on the assumption that they are effective in interrupting transmission of an epidemic/pandemic. Social

1 https://www.who.int/emergencies/diseases/novel-coronavirus-2019/advice-for-public



distancing entails defining a period during which ordinary social contacts are drastically limited. The argument for closing schools is to prevent the virus from being spread more widely by students while at school. With schools closed, the speed of infections is presumed to slow, resulting in a later and lower peak, although a contrary view argues that closing schools simply extends the prevalence of the infection over a longer period.

In the case of schools, decisions on the duration of closure are affected by numerous considerations including, for instance, ordinary scheduled school holidays and the life cycle of the pathogen in humans. Complicating the school closure strategy are the criteria used for making a closure decision (Ridenhour et al., 2011). For instance, some studies advocate that schools should close pre-emptively at the onset of an epidemic, while others suggest closure should be triggered 'after a certain number of community cases' or 'when a case is detected in a school'. The criteria for closure and for re-opening are debated in the research. Nevertheless, by 9 March 2020, UNESCO reported that as many as 15 countries had closed all schools or permitted area-based closures affecting hundreds of millions of learners[2].

The value of school closures is further contested: 'the efficacy of school closure at preventing disease spread is unknown in general because school closure is often confounded by seasonal holidays .... or increased circulation of children outside of school' (Ridenhour et al., 2011: 1). Debates about the effectiveness of closing schools to reduce disease transmission are difficult to adjudicate because it is so difficult to control for all conditions at play.

2 https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures

School closures would not be without costs: in South Africa one of these is related to the likely disruption of the national school feeding scheme which provides nutritious meals to learners at school.

School closures elicit strong criticism from employers who lose access to their labour force. At the same time, caregivers/parents are obliged to stay at home to care for their children now at home, and consequently forfeit their wages. Economic estimates are that school closures would, at an aggregate level, impact negatively on national production of goods and services and sales (Ridenhour et al., 2011). There is no doubt that the effective management of school closures requires sound protocols, communication and collaboration across the system[3].

In the recent case of China, all four levels of social distancing were imposed, which gives an indication of the concern with which the COVID-19 infections were viewed, and also a sign of the power of the Chinese government to proclaim and enforce such conditions. It is doubtful if the Chinese model of such a total shutdown could be easily replicated in nation states with more checks and balances[4].

Conclusion

The pace of COVID-19 onset in other parts of the world is extremely rapid, so responsiveness, clarity and focus at these early stages will serve South Africa well. The aim of this document is not to go into detail but to provide an overview of the terrain, with an emphasis on making sense of key features at this early stage. Challenges will emerge in the following days and months. The following specific issues are identified as relevant to the schooling sector:

3 The Department of Basic Education has just released guidelines on containing and managing COVID-19 for all childcare facilities and schools. See https://www.scribd.com/document/451387122/Guidelines-for-Childcare-Facilities-and-Schools#from_embed

4 Italy has in the past days introduced a shutdown, though on a smaller scale.

- Washing hands is a basic essential for preventing infection. This requires access to clean water for school children which cannot be guaranteed in all schools. Water and soap/ disinfectant need to be provided.
- Exposure of teachers as a professional group to infection must be kept in mind given their pivotal role in the education system.
- South Africa has a large number of HIV positive people whose suppressed immune systems may render them more vulnerable to infections. This can impact on the sustainability of households.
- Access to social media brings with it exposure to misinformation, rumour, fake news. Children and learners may be impacted by such materials unless counter measures are taken.
- Closure of schools will impact on the national school feeding scheme.
- The problem with school closures is that the needs of learners who form a substantial proportion of the population do not just go away. This becomes a joint responsibility for parents and for government.
- The children of foreign nationals attend South African schools as per their rights. COVID-19-related xenophobic acts have emerged internationally, such as against people perceived to be of Chinese descent. COVID-19 fears may generalise to any group, for example, immigrants and refugees living in South Africa.
- School closures do not remove learners from the risk of infection. Social sources of infection in the neighbourhood are therefore a matter of concern. The activity patterns of children in the community, and who their care giver is, is relevant information.

The emergence and aggression of COVID-19 has demonstrated that health is truly a global public good and that there is common interest in having all nations act accountably.

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