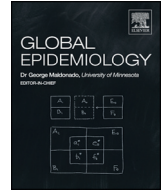




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## International Perspective

## Public health challenges posed by delays in obtaining COVID-19 clearance for long-distance truckers across East Africa



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## Background

On various dates starting March 2020, East African countries (EAC) confirmed their first coronavirus disease 2019 (COVID-19) [1–3]. Among the EAC, Kenya reported the first COVID-19 related death on March 26, 2020 [1], followed by Tanzania on March 31, 2020 [4], and Uganda on July 23, 2020 [5]. In Kenya, the number of reported cases and deaths has increased modestly compared with countries from the West, with 55,877 confirmed cases and 1,013 deaths reported by 1st November 2020 [1]. Following the initial reports of the cases in March 2020, the COVID-19 epidemic curve grew slowly in the lead phase lasting three months between mid-March and mid-June 2020 in response to intensive public health responses mounted to contain the disease spread in Kenya [1]. These responses included ban on mass gatherings, working from home where possible, observing social distancing, handwashing with soap under running water, and wearing face masks [1]. While the country experienced exponential growth of cases in July 2020, the cases peaked in August 2020 [1]. In early September 2020, the incidence curve started to drop, reflecting an inflection (tipping) point though the trajectory has been on upward trend since October 2020 [1].

During the lead phase, the EAC identified long-distance truckers (LDTs) as one of the high-risk groups in the spread of COVID-19 on the premise of their extensive spatial mobility and interactions with diverse populations across the region. In response, the EAC formulated protocols,

mainly focusing on testing and certifying all LDTs for COVID-19 and presenting evidence of negative status at cross-border points. Implementing the COVID-19 certification directive overwhelmed the capacities to detect cases due to slow testing; this led to unprecedented delays at cross-border points. For instance, at any given time, 1500 truck drivers and their assistants (combined referred to as LDTs) waited for their COVID-19 test results for at least ten days at the Kenya-Uganda cross-border at Busia and Malaba points, translating to 30,000 person-days in one location of approximately 4 km squared per the ten days of delay [6]. This paper highlights public health challenges posed by delays in obtaining the COVID-19 clearance for long-distance truckers across EAC borders, focusing on Busia and Malaba ground crossings at the Kenya-Uganda border, both in Kenya's western County of Busia. Evidence of Busia County being key in COVID-19 spread came to the fore during modelling of COVID-19 by the authors [1]. The modelling exercise computed a composite index that informed vulnerability levels in counties using six indicators: population density, road network, transit point locations, demographic structure, household size, and occurrence of co-morbidities. In order of decreased vulnerability, Busia County ranked in the 10th position out of the 47 counties in Kenya. When we included the variable cross-border ground crossing, the vulnerability for Busia County increased dramatically, raising the rank to position four nationally [1].

In containing the pandemic, other systemic challenges emerged and compounded the existing situations, including uncoordinated political decisions requiring multiple testing on both sides of the border. These challenges impeded effective joint cross-border response and timely flow of goods and humans [6]. Furthermore, considerable disparities

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in response to COVID-19 across EAC was evident with Tanzania adopting significantly relaxed public health policies contrasting the WHO-recommended suspension of mass gatherings, testing and isolation of infected individuals, contact-tracing and quarantine measures, and reporting [7].

### Immediate challenges

Persons with severe COVID-19 tend to have a high viral load and a long virus-shedding period, posing a higher risk of transmission to in-contact persons and surfaces [8]. Although the prevalence of risk factors for severe COVID-19 among LDTs could be high based on their lifestyles and the nature of work, majority of them fall in the 30–39 years old category [9]. This age range mainly comprises of COVID-19 asymptomatic spreaders if infected [10]. Among others, these include the disproportionate substance abuse through smoking, precisely compromising their respiratory health and immunity in general [11]. For being away from home for long, they live through suboptimal nutrition that may further affect their immunity [11]. A large number of LDTs drawn together in these cross-border points presented challenges in implementing COVID-19 measures, severely undermining social distancing guidelines required to control the pandemic. A near-similar scenario happened in Japan, where infections occurred among passengers and crew members on board the *Diamond Princess* cruise ship in February 2020 with their large number in the ship creating a unique environment for heightened person-to-person transmission of pathogens as highlighted below [12].

Demand for daily basic needs by the LDTs created opportunities for small-scale business among the local people, increasing person-to-person contact rates, a risk factor for COVID-19 spread. These needs included food, laundry, makeshift bathrooms, toilets, and sexual services. Existing open-air spaces, for instance, the airstrip close to the Busia ground crossing along the Kenya-Uganda border, served as points of delivery of these supplies since eateries, bars, and lodgings had been closed as part of COVID-19 containment measures. On the flip side, the boosted local economy in the border areas could have mitigated some poverty effects in those regions. Upon returning to their homes, the local people interacted with their families and communities, spreading the disease exponentially. Some LDTs were hosted locally in homes for a fee as the accommodation needs outran the limited illegally operating lodging services. Further, the sudden influx of the LDTs created a supply-demand mismatch of foods and other commodities, generating upward pressure on food-related prices, thereby compromising diet quality through reduced dietary diversity.

With time, the demand for clean water also outstripped the supply. Living conditions became unsanitary, lowering personal hygiene levels, with local governments being unable to adequately supply handwashing facilities, water, or alcohol-based hand sanitizers. Consequently, a unique but notable public health challenge arose. On any given month, for example, the ground crossing area experienced 90,000-person-days. As a result, an excess of 36 t of human waste could accumulate per month without any proper disposal, assuming that an adult passes an average of 400 g of waste per day [13]. Human waste can easily contaminate food, water, eating, and cooking utensils, especially in overcrowded conditions. Such contamination increases the risk of diarrhoeal diseases caused by bacterial, viral, and protozoal organisms spread through the oral-fecal route under low water, sanitation, and hygiene (WASH) levels. These organisms are known to significantly cause sickness and death in emergencies involving unforeseen overcrowding in a small locale. Diarrhoeal disease is among the leading causes of morbidity and mortality among children <5 years of age in Africa [14]. Besides, the other solid waste generated in such environments could attract rats, dogs, cats, and other animals, which serve as mechanical vectors of soil-borne zoonotic pathogens reported in western Kenya, particularly *Leptospira* species [15].

Western Kenya is generally a high malaria zone that benefits from programmatic interventions that were expectedly interrupted by the COVID-19 pandemic. Congregation of LDTs and local people in such a small area as Busia could have fueled malaria spread. Transmission of the malaria-causing agent is a function of human and mosquito population density, number of infected humans and mosquitoes, and human blood-feeding interval of three days [16]. These factors potentially converged in Busia, escalating the risk in cases and deaths from malaria.

The humanitarian settings described in this paper may have significantly compromised the quality of health care, including shortages of medicines. In the waiting period, LDTs living with non-communicable diseases such as diabetes and hypertension may have interrupted their long-term medication due to unforeseen stock out of medicines at individual, local pharmacies, and health facility levels. Interruption of insulin and food supply constitutes an emergency, particularly among people living with type 1 diabetes [17].

There were reports of transactional sex services, some through sexual exploitation and abuse, between LDTs and women and girls while mitigating adverse financial shocks caused by the negative economic effects of COVID-19 in the community [17]. Transactional sex occurs in unequal gendered power relations under limited livelihood opportunities and economic marginalization among women, and limited negotiating power among girls [18]. Consequently, women, especially girls engaging in transactional sex relationships, are often unable to negotiate condom use and thus face severe health risks of sexually transmitted infections, including unintended pregnancies under high HIV prevalence among LDTs. Girls carrying unintended pregnancies are more likely to procure unsafe abortion amidst limited post-abortion care, escalating the already high maternal mortality and morbidity among the approximately 500,000 abortions estimated to occur annually in Kenya [19].

### Long term challenges

In the long term, the disease burden attributable to diarrhoea emanating from low levels of WASH affects child growth and increases the risk of developing irritable bowel syndrome [20,21]. Epidemiological studies have demonstrated that a significant association exists between transactional sex and HIV [22]. Through transactional sex, the above-described delays might sustain current gendered disparity in HIV incidence among young people. Young women aged 15–24 years have >2 fold risk of acquiring HIV relative to their male counterparts in sub-Saharan Africa [23].

### Conclusion

While trying to mitigate global challenges like the COVID-19 pandemic, countries may experience unintended consequences that counter the intended objectives. This paper has highlighted lowered hygiene levels, local economic disruption, accelerated transmission of HIV and other STIs, and the harmful individual and public health consequences from interrupted management of chronic diseases among LDTs occasioned by delays in obtaining COVID-19 clearance. Currently, no information exists on the prevalence of COVID-19 among LDTs or the proportion of COVID-19 cases in the local population attributable to LDTs. Research opportunities exist in reconstructing detailed transmission chains between LDTs and the local community under close surveillance to identify levels of risk for targeting appropriate measures. Broadly, the EAC could jointly evaluate their COVID-19 response regarding their effectiveness and scope to improve public health at cross-border points. Specifically, innovative solutions are needed to hasten cross-border clearance and harmonize transboundary disease control policies to contain the spread of COVID-19 across EAC.

### Declaration of Competing Interest

None.

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