

## It's an uphill task in fighting the coronavirus pandemic in Nairobi's tenements

Public health authorities have given guidelines for the control of the spread of the coronavirus, which include regular washing of hands with soap and running water and wearing facemasks to cover the nose and mouth as well as avoiding touching the eyes, nose and mouth. In addition, they have recommended social distancing, staying at home and regular disinfection of areas that are prone to contamination.

**Dr Edwin Oyaro Ondieki** discusses the observance of these guidelines in respect to tenement settlements through a review of its morphology and residents' lifestyle. It draws upon the experience of the author from studies on tenement settlements and specifically the case of Pipeline and Mathare North.

Nairobi is loosely described as a tenement city. And this definition is not far-fetched when it comes to the many low and middle-income settlements dotted with tenements that fall below acceptable standards for human occupation. The highest concentration of tenement is in Mathare North and Huruma, Kayole, Dandora, Kahawa, Mwiki, Pipeline, Tassia and sections of Kawangware and Kangemi, among others.



*(A section of Pipeline estate)*

These are the most populous places in Nairobi. The public health status of these settlements have been put to question but the interventions have been lukewarm and at best, feeble. The outbreak of the novel coronavirus has brought to fore the folly of mismanaging urban settlements over time.

And the country would pay dearly for this mismanagement. It will be a taunting task to control and manage the virus in these settlements because the morphology of the tenements and lifestyle of resident is highly receptive to the spread of infectious vectors.

### **Morphology of tenements**

Tenements are multi-storey residential blocks, some as high as nine floors. The dwelling rooms are arranged in two rows along the length of the plot and face inwards to a corridor and sometimes light-wells, depending on the width of the plot. Room windows face inwards too because the tenements' outer wall abuts the plot boundary. Room sizes average about 10 square metres. The floor layout does not allow natural light and cross ventilation except for the rooms on the top floor and those fronting the road, which is along the narrow side of the plot. Vertical movement is via staircases with a metal balustrade or stone wall barrier. Toilet facilities are located at different places and occupy space equivalent to one room. The provision is usually one or two water closets and one shower on each floor, which are shared among the households on that floor.

Tenements bear certain common characteristics. The tenements have an overall built plinth area that far exceed provisions of planning law and are therefore overdeveloped; they maximized on room provisions per floor thus, accommodating many households that create high levels of crowding. From the estimates of the national census 2019, average household size for these single rooms is three persons. This puts the tenements at high risk of contamination. In Pipeline estate for example, each floor in a typical tenement has 14 rooms accommodating 14 households. Taking an average of three persons per household, each floor could accommodate about 42 persons. The entire tenement with nine floors would accommodate 126 households with 378 persons occupying a plot that measures 247 square metres on the ground. It is no wonder that Pipeline is the most densely populated area in Kenya according to the 2019 census. The movement of such a big number of people within the tenement and settlement will defeat the social distancing requirement.

The overcrowding that finds expression in the tenements extends to the streets of the settlements. These settlements are more than residential areas; they are also major commercial centres with many economic activities, which are a means of livelihood to many families in and outside the settlement. Some of these businesses are carried out in the evening until late at night. This explain the enhanced business activity and congestion in the evenings when most residents are returning home from work. Formal businesses are mostly carried out in premises located on the ground floor of tenements while informal ones are carried out on the sides of the street in makeshift structures and from the ground where merchandise is spread out on pedestrian walkways. These force pedestrians to jostle for space not only among themselves but also with cars, handcarts and motorcyclists on the street. Thus, along these streets, the idea of social distance is unworkable. The streets therefore present the greatest challenge in the control of the spread of the coronavirus in the settlements.

Infrastructure and social amenities are poor; there are no formal markets and open spaces are non-existent, garbage collection is irregular, the drainage systems clogged by dumping, roads are in a poor state of maintenance and water supply is unreliable. The standards of hygiene in tenement settlements is very poor and it is even worse during the rainy season. These conditions highlight the characteristics that an infectious disease such as the coronavirus would readily proliferate. Washing hands under running water therefore is a mirage for these tenants.

The main provider of water in Nairobi is the Nairobi Water and Sewerage Company (NWSC). It supplies water through a rationing schedule because it does not have sufficient water for continuous supply across the city. Water supply in the settlements is insufficient and its

rationing schedule unreliable. According to some landlords, the scheduling of supply has been politicized and favours certain areas perceived as more important, to the disadvantage of low-income settlements. There is also interference of water supply by the water vendor cartels that profit from water sales compounding the water supply challenge. As a result, residents regularly purchase water from vendors whose water quality cannot be guaranteed.

### **Resident's lifestyle**

Rental income for single room in a tenement in Nairobi averages sh. 3500. In Pipeline for example, the median wage was sh. 10,000-15,000. Thus, the rent paid by households is less than 30% of their gross income, which falls within acceptable limits for sustainable living. However, when incomes are low, like in Kenya, this guideline loses meaning because 30% of household income is too little to afford housing with adequate space and amenities. Accordingly, living in a tenement entails acceptance of communal for which sharing of limited space and amenities is a prerequisite. A number of domestic activities are carried out in the corridor and balconies and sometimes on the roof terrace. These activities include; airing of clothes, some cooking-especially with a 'jiko', laundry washing, informal meetings and a play area for children. Accordingly, the use of common spaces in the tenement is intense and cross contact cannot be avoided.

The demographics of tenement settlement indicate that household are of young people mostly engaged in gainful employment and small business. Tenements, unlike the low-rise slums, have more adult than children in the ration of about 70:30. Most children are toddlers and school going. Very few households have teenage children. The care of toddlers is a weighty issue. Medical research has shown that young children are most susceptible to diseases when living in poor quality built environments. Mothers of toddlers spend a lot of time indoors and their young ones rarely sunbathe. The options that they have is the common frontage verandas that face the street or on upper floors, when the sun direction is right. A few leave the tenement to search for spaces where they sit and sunbath. In all these places, the mothers congregate closely because space is limited thus exposing themselves and their toddlers to contamination and in the case of Covid-19, infection.

Further, children play alone along the corridors, balcony and stairs. The balustrading is made of metal and plain concrete surfaces, which can keep the coronavirus for days. Parents hardly watch over them, rather the older children play with and guided the younger ones, but they occasionally abandon them for more intense activities. There is no way any household would keep children indoors. Children will always be in contact and if one contracts a virus, all the others in the tenement block will be infected.

Preparation, cooking and selling food is a common phenomenon along the main roads of settlements. Most food vendors use charcoal braziers (*jiko*) and firewood stoves in makeshift kitchens either covered with umbrellas or just open. Much of food sold as take-away service because there is limited sitting space. Many households rely on this food, which they say is much cheaper than when they prepare their own.

The risk of contamination of food sold by vendors is very high. They operate on the roadside under unhygienic conditions. Dust generated from vehicles and pedestrian movement is sometimes overwhelming. The food gets contaminates and reports of frequency of related medical conditions like amoeba, supports this observation. Water used for preparation and cooking is purchased from water vendors whose sources and handling is doubtful. The manner the food is handled will escalate the spread of an epidemic. To control such spread,

households must be encouraged to prepare their own food and closing down these makeshift kitchens irrespective of its socioeconomic impact.

As noted earlier, a household occupies a room that is averagely 10 square meters. From a physiological position, occupancy of such a room by more than one person, especially when all other household activities are carried out in it, is considered unhealthy. However, the conditions of domestic life in the tenements is different and such a room can be occupied by a household of seven as observed in one of the dwellings. Such a room could be very hot and suffocating at night mainly because the openings are closed. It is a common practice to close the windows in the tenements to prevent opportunistic thefts and neighbours and passers-by from listening in on private conversations and activities. Privacy and security takes precedence over comfort. This kind of living increases incidences of respiratory diseases and the coronavirus will propagate under such conditions. The remedy would be to reduce household size and increase ventilation but this can only be a mid-term measure. In the short term, households that have alternative accommodation, mainly in the rural areas can be encouraged to move some of the members out and only those in gainful employment to stay behind.

#### *Hygiene and health of households*

Households in tenements are supplied water by the caretaker on a prearranged schedule and on a floor-by-floor basis. After they fetch water, households store it in their dwellings and next to their doors in the corridors. They use all sorts of containers but the most common are the 20 litre plastic jerricans. While the responsibility of cleaning the common areas is the caretaker's, the tenants clean their dwellings and the areas that they use when doing laundry. The procedures of water handling, storage and cleaning do not meet the protocol of hygiene and are susceptible to contamination.

From the reading of tenement layouts in various settlements, those with less than 15 households per floor generally provide one shower cubicle, which is an under provision. It is standard across tenements not to have plumbing fixture in the showers mainly because they are shared and landlords cannot equitably apportion water charges to households, they also have experience that tenants waste water when they do not directly pay for it. Tenants bring in water in basins to take a bath and because they are always conscious about scarcity, they use very little water. This means that once the shower is cleaned by the caretaker, the first few tenants that use it, gradually leave it dirty and all the others use it in that condition until the following day. One is supposed to leave a shower clean and rejuvenated but in the tenements, you might leave the shower contaminated.

There is usually one or two eastern squatting type water closets per floor, all without flushing cisterns. Tenants use a five-litre bucket (modified cooking oil plastic container) to splash the water closet once they have used it. There are 100-litre water drums placed in the toilet lobby for this specific purpose and caretakers refill them. Handling of water during the splashing process can easily lead to contamination of tenants because the water closet is intensely used.

Toilet facilities require running water to maintain high levels of hygiene. Without water, installation of plumbing fixtures such as cisterns, showerheads, sinks and hand washbasins or the use of the splash tops will remain a mirage and continue to expose households in tenements to infectious diseases.

Settlements cannot expect to have sufficient water supply from both the formal and informal systems in the short term. However in the mid to long term, tenement owners need to develop innovative ways, individually and collectively, to provide water sufficient water. Nairobi receives between 850mm and 1,050mm of rainfall per annum. A lot of the water drains away as surface runoff. Tenements have large roof surfaces from which rainwater can be harvested and directed to underground tanks. Such water can be used for cleaning and flushing toilets.

There are very few government health facilities in the tenement settlements and equally NGO's shy away from these settlements too because they do not consider the residents poor enough to require their services. Households rely mainly on private clinics for medical care services. This is flourishing business in the settlements. Inquiries from these establishments in Pipeline, about the common ailments they treat and the frequency, indicate that upper and lower respiratory infections were second to malaria. Tenants affirmed this position and added that coughs, cold and difficulties in breathing were frequent especially among children. This was attributed to poor ventilation in dwelling rooms and a dusty environment. The tenement designs and poor environmental condition are a major influence on the health status of residents. Immediate reduction of air pollution, improved supply of clean water and waste disposal followed by spraying the settlement is the short-term strategy to control the spread of the coronavirus. However in the mid to long-term, a review of house designs and enforcement of planning and building laws should follow. The advent of the coronavirus may just be a precursor to future challenges from infectious diseases. Public health laws were purposely enacted to forestall such epidemics and should be enforced strictly.

The overview of the morphology of tenements and lifestyle of residents in the settlements in relation to the spread of the coronavirus reveals many challenges. Tenement settlements are the densest living spaces in Kenya. The use of common amenities and space is possibly the most intense of any residential place in the country. Unfortunately, tenement settlements are among the least supported in terms of infrastructure and social services such as health care because they are regarded as illegal and there is a wish that they will fade away. The coronavirus is exposing the underbelly of this neglect and the effects of this pandemic would be astounding and a public shame. There is no quick fix to the impending spread of the coronavirus in settlements that is concrete in the short term. However, quick action to ameliorate immediate effects should start with ensuring sufficient water supply and enforcement of a strict cleaning regime for all tenements. This should be followed by enhancing refuse disposal, clearing and opening up of drainage systems and cleaning the streets. Further, regular spraying and disinfecting of streets and tenements should commence. Finally, cooking of food in make-shift kitchens should be stopped so that households can prepare their own food. All these actions can be achieved through administrative action; centrally coordinated collaboration between various state and non-state agencies and community based organizations. The other interventions include enhancing local publicity campaigns that strongly advise residents to follow the Ministry of Health's instructions on hand washing, social distancing, wearing of face masks and keeping good hygiene.