Sustainable Urban Planning to Counter Pandemics

Center for Study of Science, Technology and Policy
Sep 16 · 4 min read

By Trupti Deshpande & Anantha Lakshmi P.

Every epidemic leaves a distinct mark on our cities. Compact cities — with high-rise, high-density settlements — have been urban planners' solution of choice to accommodate the constant influx of population. The current *contact-spread* pandemic, however, has challenged the status quo. Our cities are at a great risk, despite their proclaimed resilience. India's densely populated cities do not allow proper physical distancing.

The questions we need to ask are: Can the constraint of physical distancing provide an opportunity to redesign our city structures? Can cities afford these changes — economically and spatially? How can we manage urban density to reduce the spread of COVID-19 and similar lurking outbreaks? Moreover, we must consider the plight of the urban poor (often living in high-density settlements) when attempting to make our cities resilient to infectious pandemics.

Immediate strategies: adapting and managing

When we talk about a city's population density, we usually mean the overall city (gross) density. This density is not uniform within a city. For instance, slums are high-

density areas, whereas independent housing societies are low-density areas. While it's relatively straightforward to plan infection containment in low-density areas, high-density areas need more complex strategies.

Slums lack basic services and share common amenities like tap water, toilets, and other public spaces. This makes physical distancing almost impossible. Unhygienic conditions and lack of awareness accelerate the spread of epidemics in such areas. To begin with, setting up temporary toilets can reduce crowding at existing common toilets. The common areas, where people tend to gather, can be used as springboards to launch safety regulations. Entry to slums/common taps should have sanitising facility. Open spaces (within or adjoining the slum) such as play grounds, industrial sheds, and bus depots could be used to provide essential services to restrict people from moving out of their area and reduce crowding at the existing facilities. One can also use these areas to build quarantine wards (temporary structure).

Apart from slums, areas like work places, parks, market places, and public transport also pose a severe threat. These areas see rise in density during specific times of the day. Aside from common practices like temperature screening and sanitisation / hand wash facility at the entrance/reception, specific precautions are required. Most of our work places cannot accommodate 100% staff strength with physical distancing (2 metres). Here, individual cubicles (enclosed on three sides) for a physical barrier, work from home, staggered timings, limiting staff to 50%-70% (number present at one time/day) could be some options. Sanitisation and hand wash stations in common areas (cafeteria, conference rooms, long passages, etc.) have to be embedded in the office design. Posting specific direction signs and floor markings in common areas can help avoid unnecessary contact with visitors.

Automation in buildings to minimise common touch points such as doors, power switches, cistern flushes, and elevator buttons (lift companies such as ThyssenKrupp are developing apps that can be used for zero-contact operations), could help in containing the spread of viruses and germs. At schools, staggering student attendance (morning/afternoon), avoiding assembly sessions, staggering seating arrangement/single chair units to reduce contact, as well as online classes (which has already picked up) and home study are a few possible measures to ensure physical distancing.

The National Association of Street Vendors of India (NASVI) has prepared guidelines for the safe restart of street vendors' business; they have even started training street vendors on operating in the 'new normal'. Organising street vendors, limiting customer entry, sanitisation, and socially-distanced queues are essential at market places. In the long term though, local markets should plan home-delivery services. Tying up with an existing online store may be a good start.

Meanwhile, in parks and gardens, hedges and artificial separations could be used to promote distancing while retaining the aesthetics and greenness of the areas. Restricting the number of visitors, separate entry/exit, organising street vendors and food stalls by providing temporary shops could also ensure physical distancing.

For public transport, ticketing and cash transactions, and close-knit seating are the major hurdles. While e-ticketing provides for contactless transaction, running public transport at lower occupancy will not be financially viable. However, the regular use of masks and sanitisers by commuters, and physical partitions between seats will help. Behavioural changes are the key to staying safe during pandemics such as the present one.

Long-term planning: decentralised development

The current pandemic has made the necessity of planning for physical distancing in our societies inevitable. Therefore, reducing urban density and mixed-use (residential-plus- commercial) development can be a viable long-term solution. In India, the ongoing practice of population projection and proposed land use has led to saturation and unmanageable urban density — with growing pressure on the social infrastructure. It's time our urban-planning strategies undergo a sustainable makeover as mentioned below.

We need to assess the carrying capacity of our cities and calculate their sustainable population densities. Reducing the disparity between the urban and rural settlements can reduce migration to cities. We need to plan economic epicentres with satellite towns and expand this model to make sure people get employment, civic amenities, and facilities no matter where they live.

Building self-sufficient neighbourhoods within cities can reduce people's necessity to move to other places for education, healthcare, and employment. Meanwhile, setting up essential facilities will generate employment, reducing the need for travel and unnecessary human interactions. These measures may not be viable in the current economic and spatial scenario, yet can contribute to an improved quality of life in the long term.

Thus, building self-sufficient communities and managing urban density can make cities more resilient to future pandemics. A combination of long- and short-term solutions with a focus on manageable urban density is essential for sustainable urbanism.

The authors work in the area of Environment and the Ecosystem at CSTEP, a research-based think tank.

Vertical Housing Slums Urban Planning Physical Distancing Cstep