# URBAN PLANNING AS PREVENTIVE MEDICINE: DESIGNING CITIES TO REDUCE DENGUE TRANSMISSION

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As cities expand and temperatures rise, incorporating green spaces has never been more urgent, that can mitigate urban heat, improve air quality, and enhance mental health. However, this ecological approach introduces a paradox i.e., green spaces, if improperly designed, can become breeding grounds for disease vectors, particularly *Aedes* mosquitoes that transmit dengue fever, chikungunya etc[1].

World Health Organization reports a ten-fold increase in global dengue cases over the past five decades[2]. This trend correlates with rapid urbanization and climate change, creating more hospitable environments for mosquito proliferation[3]. Urban planners and public health authorities must collaborate to build cities that are both environmentally sustainable and protective against vector-borne diseases.

Firstly, water management should be prioritized: rain gardens, bioswales, and retention ponds should incorporate circulation systems that prevent water stagnation beyond 72 hours[4]. Proper drainage slopes and regular maintenance prevent the accumulation of standing water where mosquitoes breed. Plant selection also plays a crucial role, as native species are more adapted to local rainfall patterns that reduces artificial irrigation needs, minimizing standing water. Additionally, certain plant species naturally repel mosquitoes or attract their predators creating balanced ecosystems that self-regulate vector populations.

Community education remains essential. Residents must understand how everyday actions from emptying flowerpots and saucers to clearing roof gutters contribute to mosquito control. Technology offers additional solutions, smart irrigation systems can prevent overwatering, while sensors can alert maintenance staff to standing water issues before they become problematic. Most importantly, interdisciplinary collaboration between urban planners, landscape architects, entomologists, and

public health officials must become standard practice. Singapore exemplifies this approach, incorporating vector control considerations into all urban development plans.

As we design cities for coming generations, we must recognize that urban planning is preventive medicine. Green cities and vector control are not competing interests, but complementary goals requiring integrated strategies. By embedding vector management into urban design principles, making create cities that are not only green and beautiful, but also protect public health. This holistic approach to urban planning represents our best strategy against emerging infectious disease threats in an increasingly urbanized world.

**References:**


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