Smart Mobility with a Health Perspective

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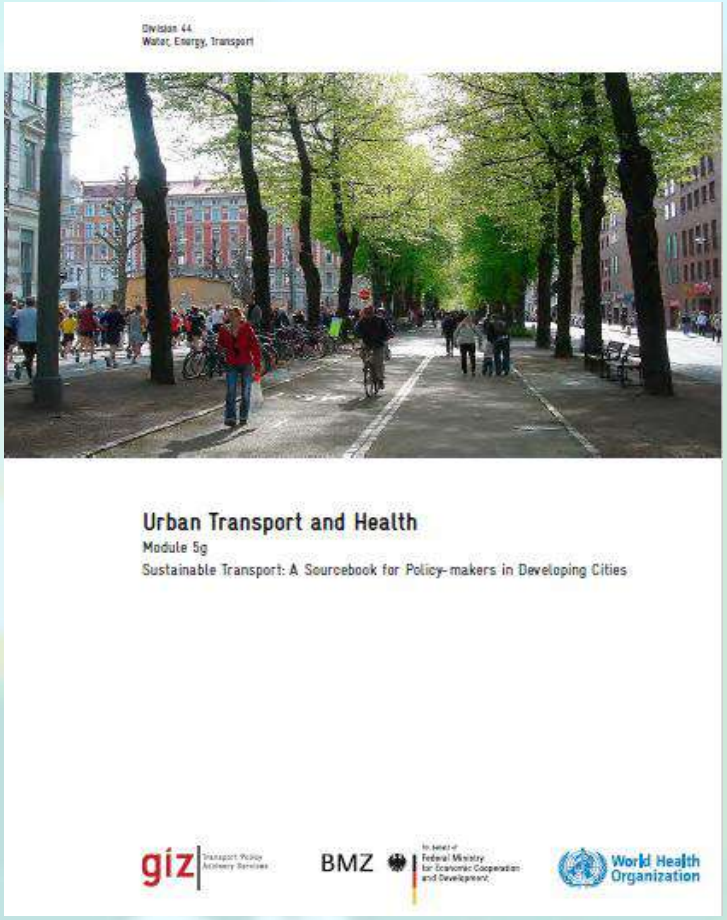
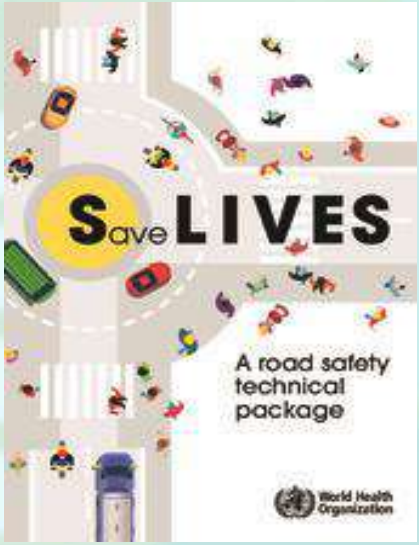
WHO's longstanding work in the field





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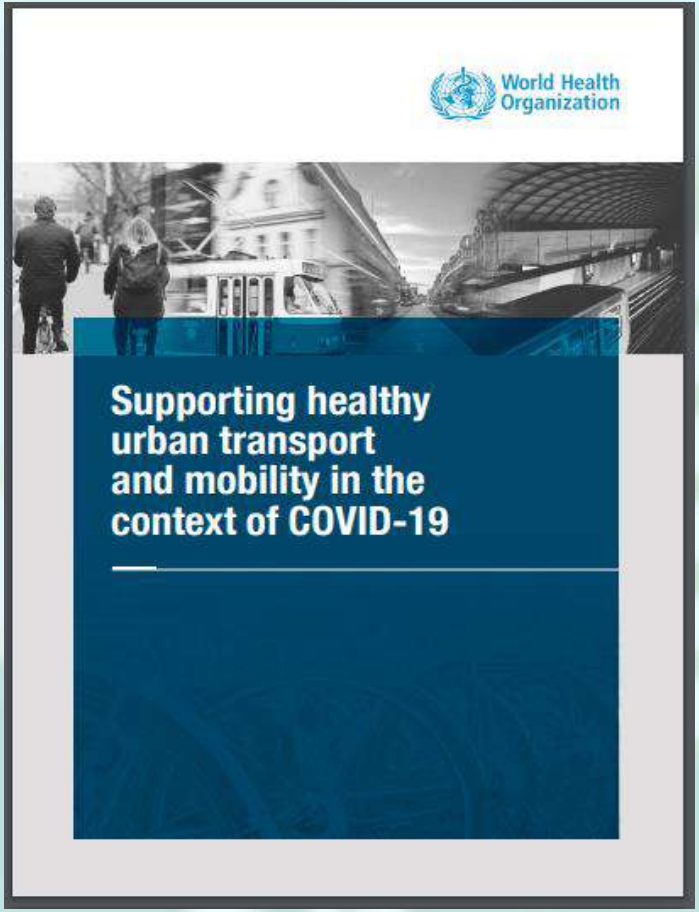
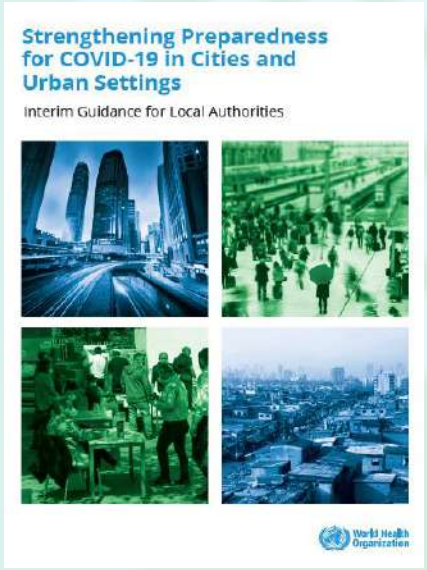
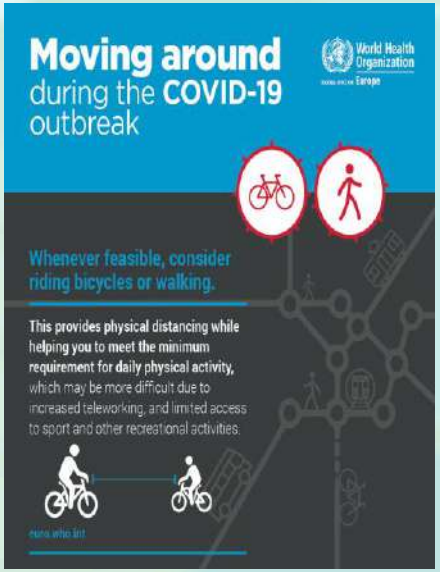
COVID-19 and mobility







https://www.who.int/emergencies/diseases/novel-coronavirus-2019

Smart mobility - several potential pathways to improved health and liveability

- Air pollution
- Physical Activity
- Noise
- Interpersonal violence
- Social Interaction & exchange
- Food environment

A global framework on transport, health and health equity

DETERMINANTS OF TRAVEL

PHYSICAL ENVIRONMENT
Weather and climate
Topography
Green space, greenery and public space

SOCIAL ENVIRONMENT
People travelling together
Social norms
Police and enforcement practices
Information about and marketing of travel modes

LAND USE
Density, diversity and design
Location choices for residences, employers/businesses, educational institutions, other services, other amenities

INDIVIDUAL AND FAMILY CHARACTERISTICS
Attitudes, perceptions, preferences, habits
Information, knowledge, awareness
Time constraints
Financial constraints
Fitness
Health status

CONTEXT OF TRAVEL

TRAVEL NEEDS
Trip purposes
Trip distance
Trip chaining

VEHICLE FACTORS
Vehicle design/characteristics
Vehicle ownership
Driver licensing

FEATURES OF EACH TRAVEL MODE
Cost
Fear of harassment, interpersonal violence and traffic injury
Travel time and predictability
Hours of availability
Aesthetics, comfort, amenities en route
Stress during travel
Condition of infrastructure
Communicable disease risk
Accessibility for people with diverse needs

TRAFFIC FACTORS
Congestion
Volume
Speed
Mist of vehicles

AMOUNT OF TRAVEL BY EACH MODE
Walking
Cycling
Public transport
Car
Water transport
Freight
Informal transport
Other modes

OUTCOMES OF TRAVEL

ACCESS
Access to water, food, household fuel
Access to health services
Access to social services
Social severance barriers to access
Participation in society
Other access

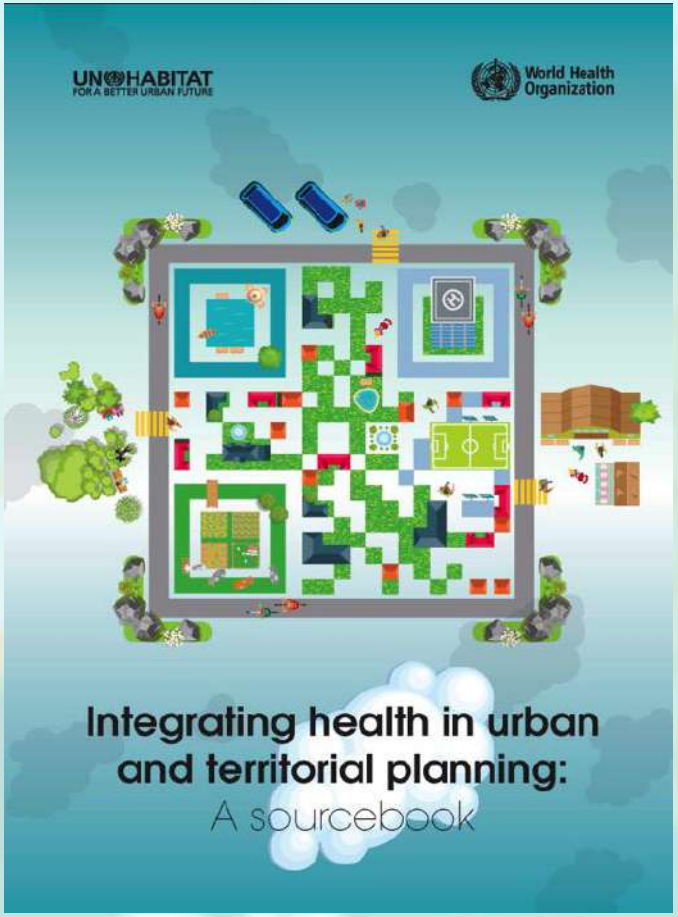
INTERMEDIATE AND PROXIMAL RISK FACTORS
Physical activity
Air pollution
Noise
Diet/nutrition
Social interactions, networks, isolation, severance
Independent mobility for children
Body mass index/obesity

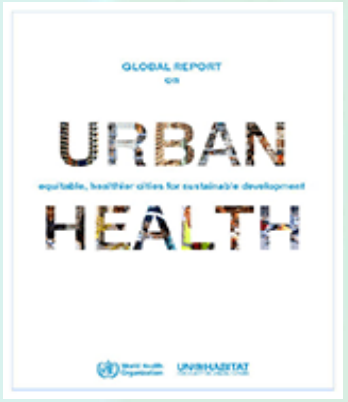
HEALTH AND WELLBEING OUTCOMES
Road traffic injuries
Non-communicable diseases
Mental health
Mortality
Other health and wellbeing outcomes
Health costs

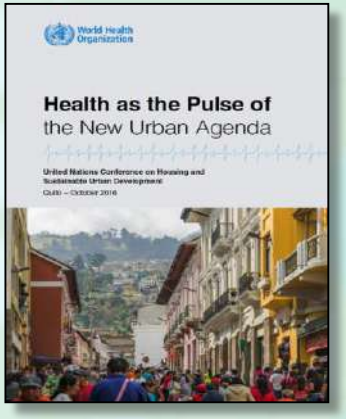
NON-HEALTH OUTCOMES
Climate change
Availability of urban space for non-transport purposes: social, ecological
Experience of travel
Employment in transport services and construction
Other outcomes

What is the role of the health sector to promote healthy and liveable cities through sector policy change?

Integrating health in urban and territorial planning







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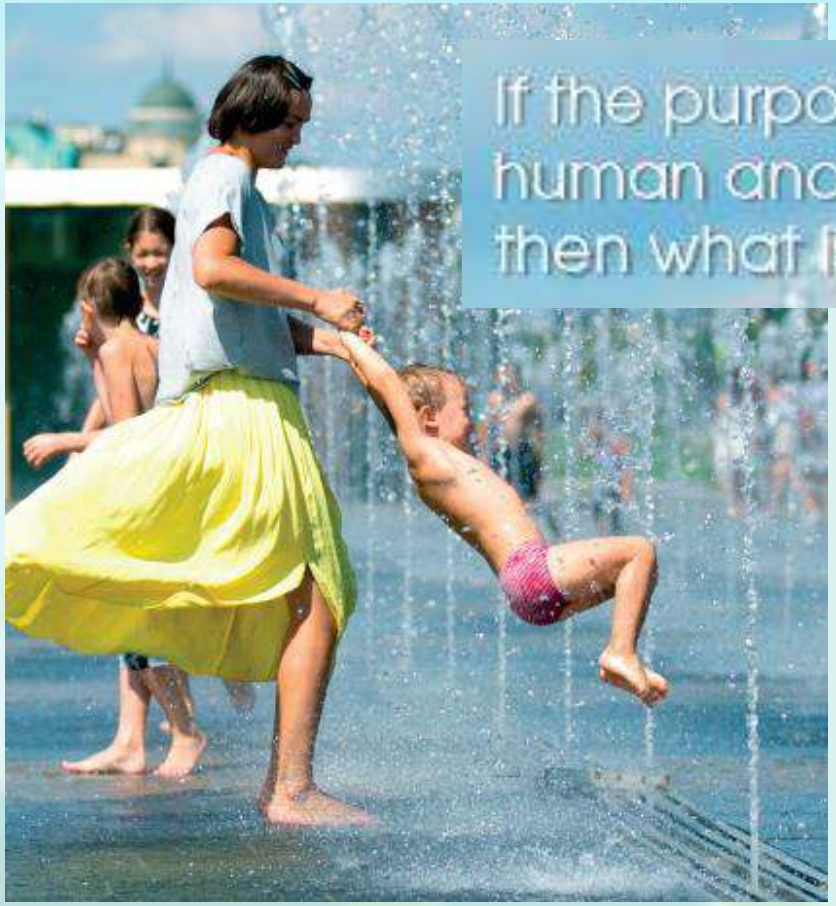


If the purpose of planning is not for human and planetary health, then what is it for?

SMART-MR
Interreg Europe

European Union
European Regional Development Fund

TRANSFORMING EUROPEAN METROPOLITAN REGIONS

Smart mobility for better liveability

SMART-MR: Sustainable Measures for Achieving Resilient Transportation in Metropolitan Regions

Table 2: Set of activities that could lead to greater liveability in metropolitan regions.

Field of intervention	Activity	Short-term effects/wins	Long-term effects/wins	Indicators for measuring progress on the activity
Participatory transport planning	Public consultation			- Number of consultation rounds - People attending the consultations - General acceptance of the plan
Creating a mobility plan	Promotion and implementation of interventions to orga and manage the dem for mobility of people goods			- Number of travellers on public transport - Number of private goods transport operators involved
	Regulation of access in some zones (and/ parking)			- Number of travellers on public transport - Shortening the time of trips - Measurable lower levels of pollutants in the air
	Support for intermod nodes and infrastruc planning for both passengers and freig			- Number of travellers on public transport - Number of private goods transport operators' trips, last mile - Time of trips - Levels of pollutants in the air
		transport) - Less traffic - Less pollution	- Lower environmental impact from mobility - Better traffic flows	

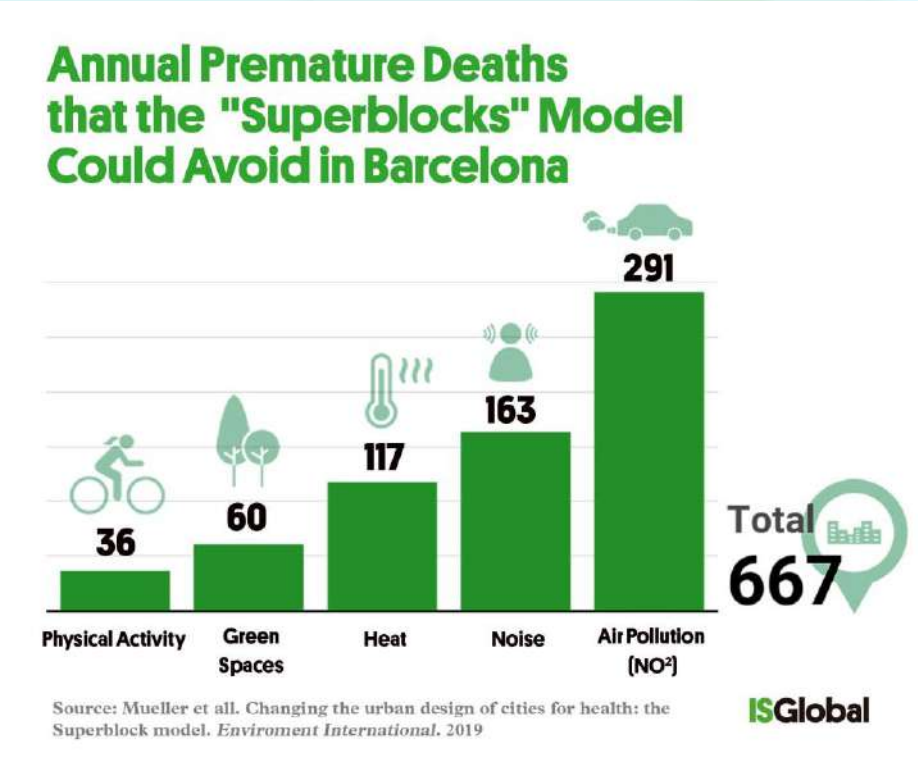
- Less physical inactivity
- Less harassment and violence
- Less traffic injuries
- Less community severance / more social interaction and exchange
- Better access to (health) services, jobs, education and leisure opportunities
- Optimization of land use dedicated to transport infrastructure

- Higher health and wellbeing net benefits from mobility
- Higher NCD prevention through mobility
- Mobility systems better prepared to respond and recover from stresses and shocks (e.g. infectious diseases outbreaks)

Indicators for measuring liveability, health and wellbeing

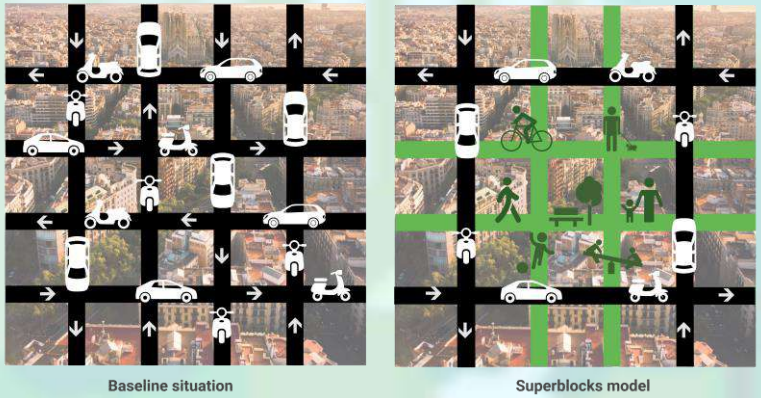
- Perceived levels of quality of life
- Populations levels of happiness
- Number of deaths or DALYs averted
- Number of mobility-related hospitalizations
- Cost of mobility-related diseases and conditions
- Equitability on the distribution of health and wellbeing impacts across the population and the metropolitan area (measured e.g. through Gini or concentration index)

Case: Health and economic impacts of the Superblock project (Barcelona, Spain)



"The findings indicate that the original Superblocks project (over 500 superblocks) could prevent 667 premature deaths every year, ***increase life expectancy by almost 200 days on average per inhabitant****, and generate an annual economic saving of 1.7 billion euros."*

ISGlobal - Barcelona Institute for Global Health



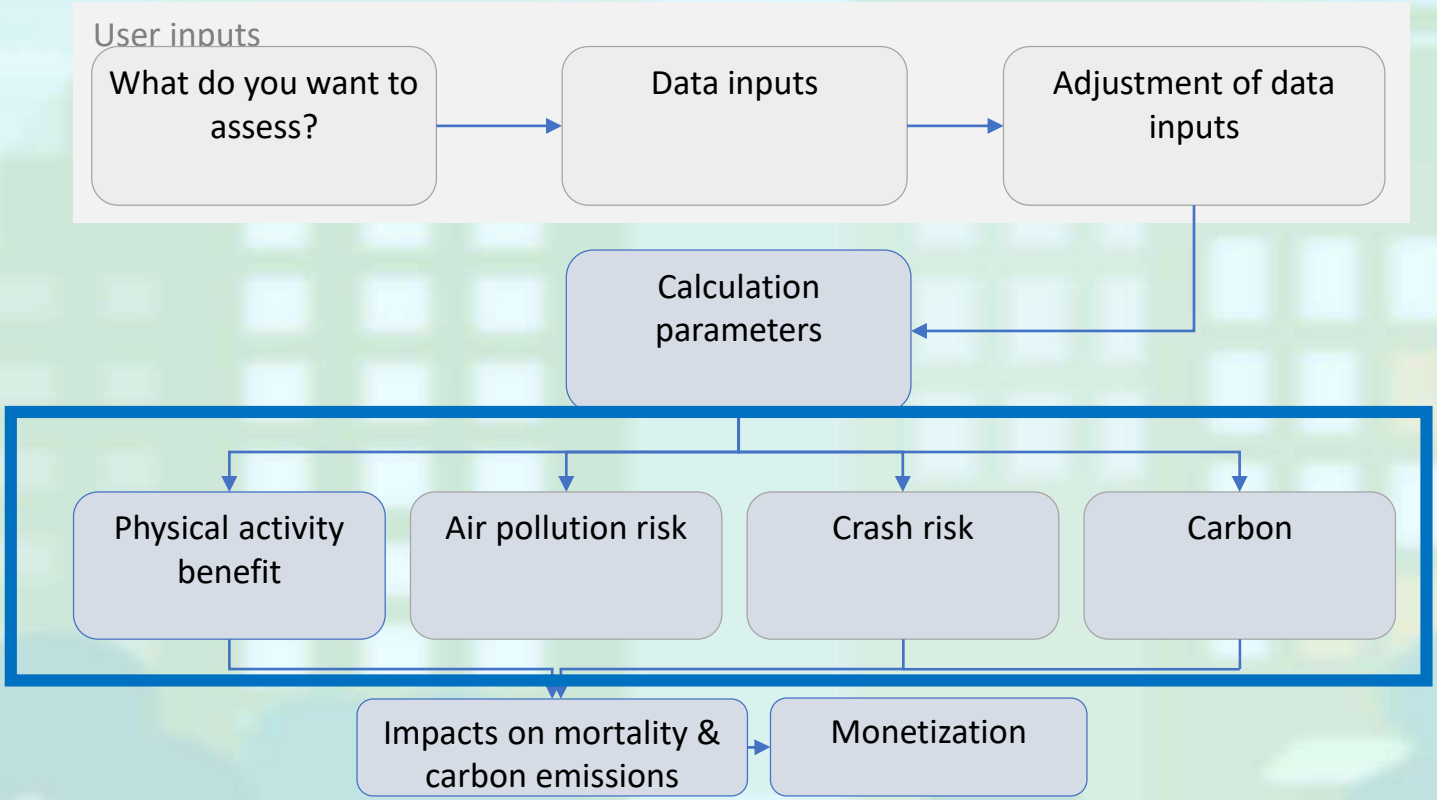
Analytical applications to enable health calculations

WHO Health and Economic Assessment tool for walking and cycling

- Health and economic assessment of health impacts of walking or cycling
- Online application www.heatwalkingcycling.org
- Originally designed for transport planners, but suitable for a broad audience of non-health experts
- Originally designed for the European context, global adaptation currently ongoing

A simple tool to allow consideration of health in planning decisions that affect walking or cycling

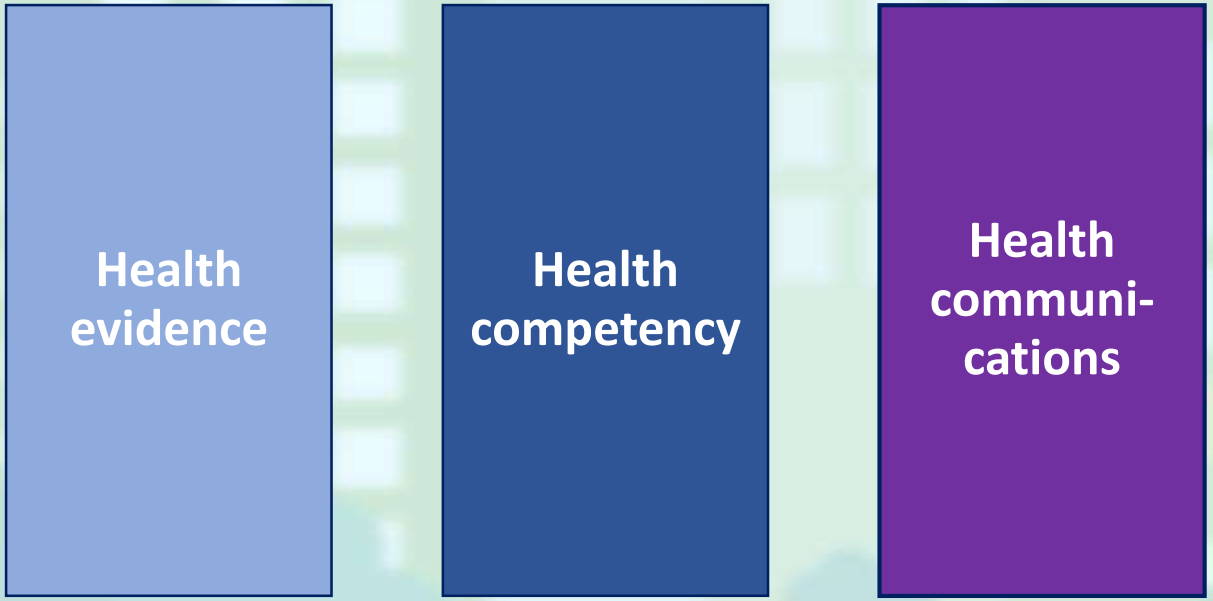
HEAT workflow – integrated assessment



Urban Health Initiative

A model process for catalyzing change

The role of the health sector: 3 pillars to catalyse policy change



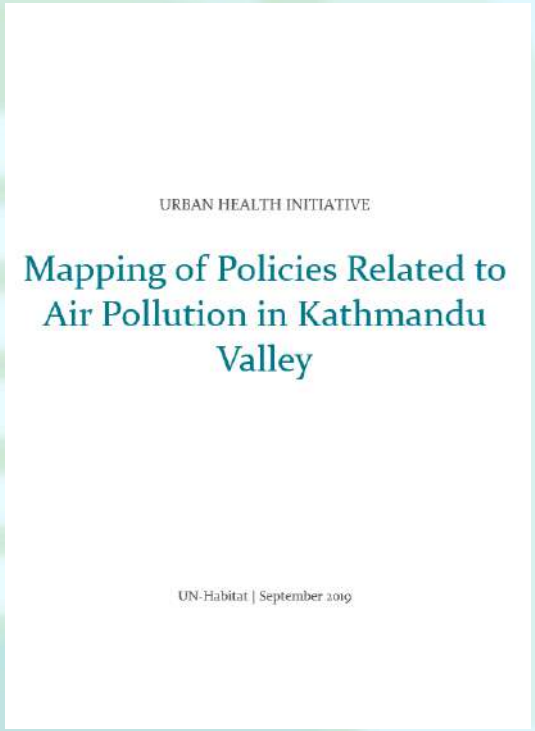
Levels of urban transformation

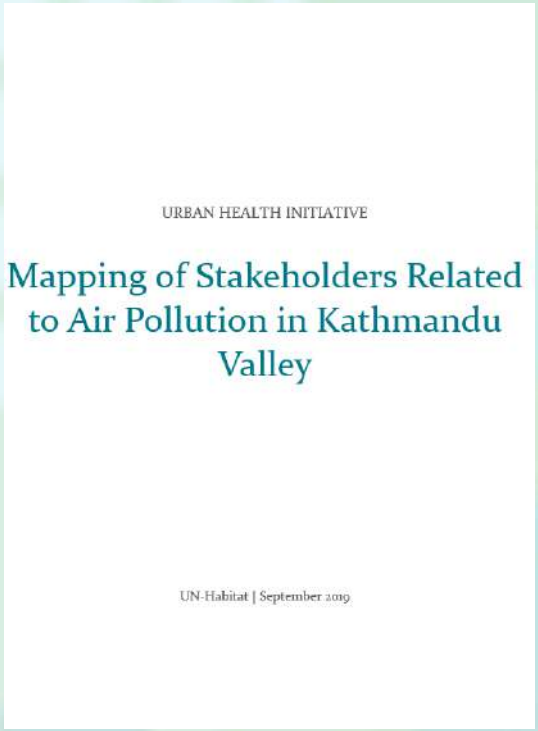
6	Urban leaders act - changes in policies, air quality, climate & health indicators are tracked
5	Communications intensify demands for change
4	Alternative scenarios tested – vision for healthy urban future articulated
3	Tools for assessing health and economic benefits
2	Health policymakers build competencies
1	Current policies assessed and mapped

Pilot projects in Accra and Kathmandu, with air pollution as the entry point

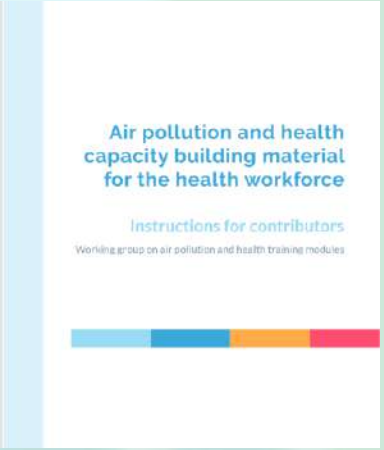
Main partners include WHO, MoHP Nepal, Ghana Health Service, Kathmandu Valley municipalities, Accra Metropolitan Assembly, CCAC, Government of Norway, ICIMOD, UN-Habitat, Kathmandu University, University of Ghana Legon, ICLEI, SEI, Ghana EPA, among others.

1 Current policies assessed and mapped





2 Health professionals build competencies



Development of capacity building material for health practitioners, ongoing

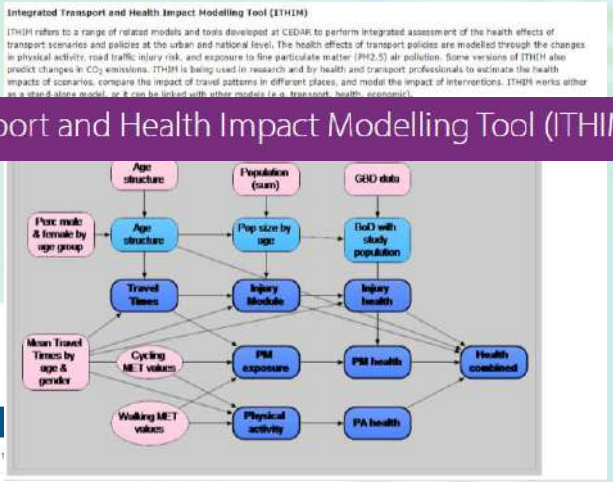
Capacity building activities as part of Urban Health Initiative pilot project in Kathmandu, 2018

Regional training workshop on Environmental Health Impact Assessment, CEHA, Amman, Jordan, 2017

Capacity building activities as part of Urban Health Initiative pilot project in Accra, 2018

Urban Health Initiative and BreatheLife training event at the World Urban Forum, Kuala Lumpur, Malaysia, 2018

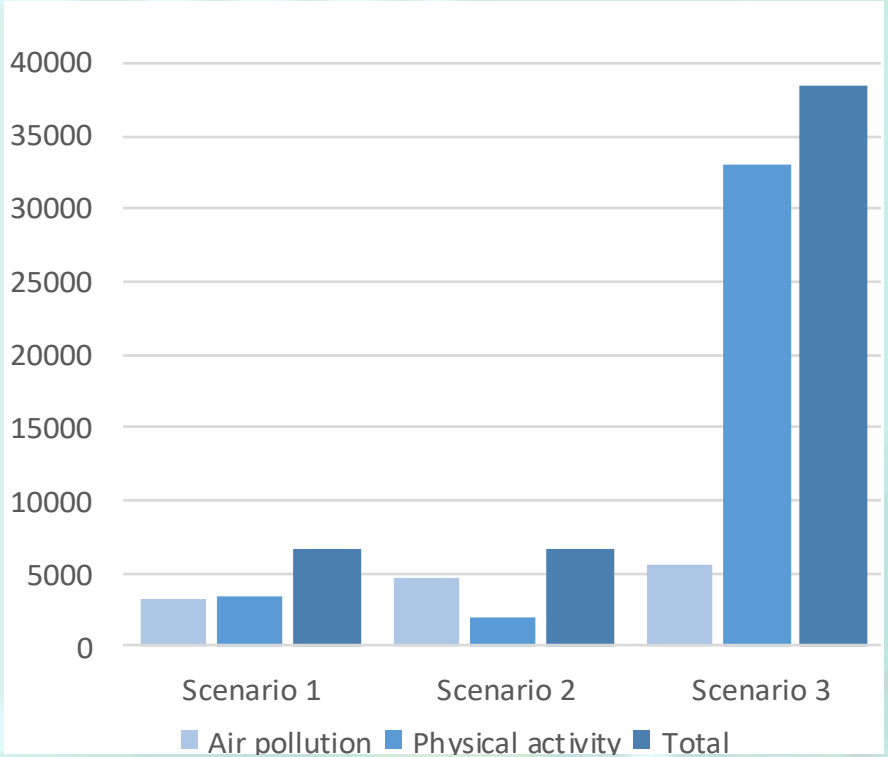
3 Tools for assessing health and economic benefits



4 Alternative scenarios assessed and tested

Deaths averted from changes in transport policies

Preliminary estimates found **5,500** averted deaths from reduced air pollution, and an additional **33,000** averted deaths from increased physical activity in the most aggressive policy scenario projected over the next 35 years — including increasing public transport, fleet fuel economy, and infrastructure for walking and cycling, while reducing reliance on cars — resulting in an economic health benefit of almost **USD 14 million**.



4 Alternative scenarios assessed and tested

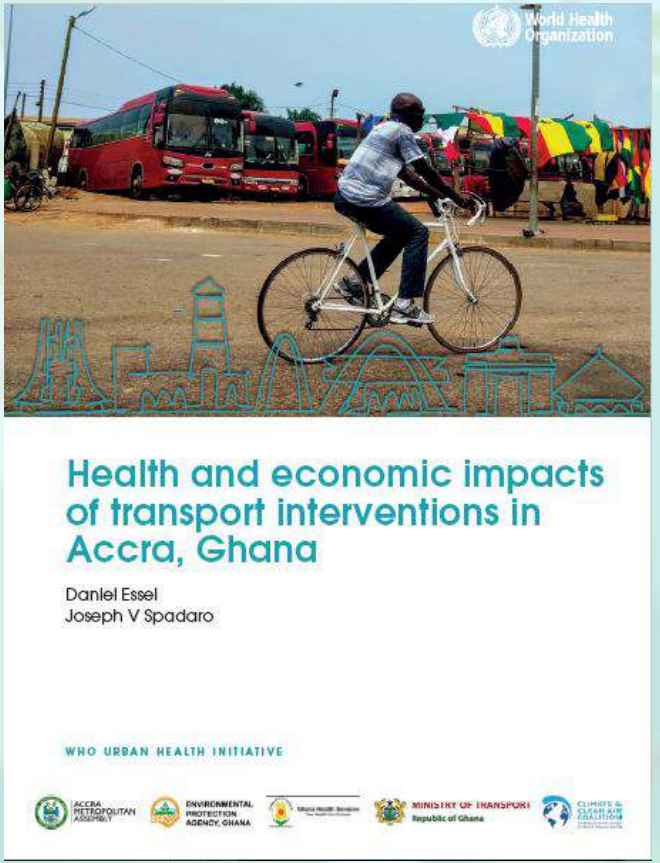
Improving local health and economic evidence to inform policy decisions

Cost of selected diseases in Accra (mean, in US$)

Cost Category	COPD	IHD	Lung Cancer	Pneumonia	RTI	Stroke
Medical staff	28.4 (10.7%)	25.7 (11.3%)	30.4 (6.3%)	19.2 (18.0%)	15.0 (14.4%)	22.7 (7.3%)
Laboratory tests	140.4 (52.9%)	97.1 (42.9%)	84.0 (17.5%)	50.2 (47.0%)	38.2 (36.6%)	180.8 (58.2%)
Medication	53.10 (20.0%)	62.3 (27.5%)	283.4 (59.1%)	22.1 (20.7%)	28.3 (27.1%)	64.0 (20.6%)
Materials	40.31 (15.2%)	38.1 (16.8%)	78.2 (16.3%)	12.0 (11.2%)	19.6 (18.8%)	39.8 (12.8%)
Overheads	3.20 (1.2%)	3.2 (1.4%)	3.2 (0.7%)	3.20 (3.0%)	3.2 (3.1%)	3.2 (1.0%)
Cost per day	**265.4 (100%)**	**226.5 (100%)**	**479.2 (100%)**	**106.8 (100%)**	**104.3 (100%)**	**310.6 (100%)**
Length of Stay (mean)	*24.7*	*15.1*	*33.3*	*8.5*	*22.6*	*14.0*
TOTAL COST per patient	**6,548.6**	**3,411.4**	**15,973.4**	**907.8**	**2,362.3**	**4,363.8**

4 Alternative scenarios assessed and tested

Local estimates with local data informing local policy-based scenarios, led by local stakeholders

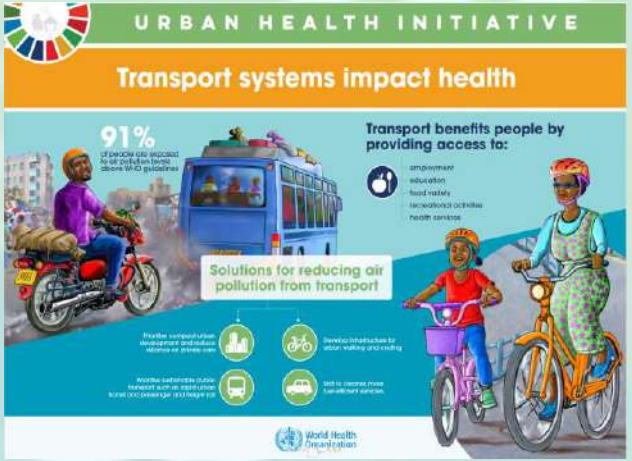


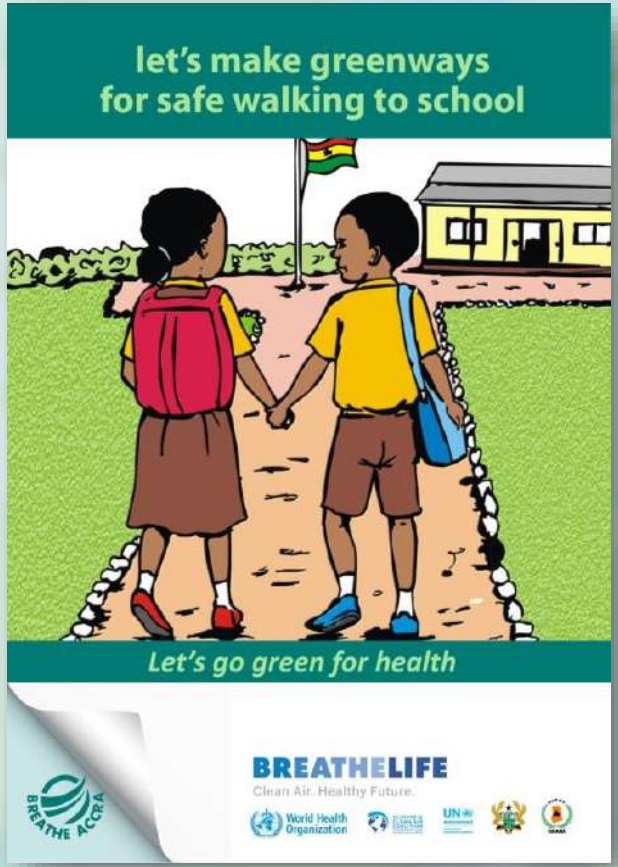
5 Communications intensify demands for change

Multi-sectoral communication materials

5 Communications intensify demands for change

Community Health Workers, School Health Education Coordinators and Environmental Health Workers sensitization materials





5 Communications intensify demands for change

Community & media engagement

Community, religious and traditional Chiefs and Queen Mothers have been engaged in **8 sub-metro areas**

Student engagement at **10 community schools**

Street theater, popular education and **awareness raising**

7 editors and publishers of major media houses have committed to follow the Accra air pollution story. Hundreds of earned media pieces in over 20 TV, radio and newspaper outlets.

6 Urban leaders act

Health and economic arguments provide urban leaders with incentive to act; changes in related policies monitored and tracked

Mayor of Accra, Mohamed Adjei Sowah, launching the BreatheLife Accra in 2018 as part of the UHI pilot project.

Accra presents its work to tackle air pollution and improve urban health at the First WHO Conference on Air Pollution and Health (October, 2018)

Milestones and lessons learned

- Officials more willing to share knowledge, data and resources
- Strong community mobilization
- Interest from sectors (e.g. Ghana Ministry of Transport) to incorporate health assessments into their regulatory framework
- Inclusion of UHI recommendations in Accra's local strategies:
  - Air Quality Management Plan
  - Resilience Strategy
  - 2020 Climate Action Plan
- Interest from other cities in applying the UHI model process in both pilot countries
- Strong interest in UHI model process from cities and regions beyond the pilot context

Articulating a new approach for the links between health and mobility in urban environments

“Health as an outcome + Health as an input”

Thank you