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Sustainable cities promoting urban health "Challenges for better health in an urban environment"

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Abstract

This Review article is focused on the relationship between urbanization and human health and on the policy aimed at promoting a better heath in the urban environment of industrialized countries.

Key Words: urban environment, health, diabetes, health city manager

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Why urbanization and health?

More than 3 billion people live in metropolitan cities In 2007 more than 50% of the world's population were living in metropolitan cities, which was the first time in history that the urban population level had risen above 50%.

The urban population have grown ever since and will continue to do so according WHO estimates. By 2030it has been estimated that 6 people out of 10 will live in urban agglomerates and an estimate of 70% of the inhabitants will be living in urban environments by 2050. During the last 50 years there has been a change in the population with people are moving from rural to urban areas (Fig. 1).

According to the WHO there will be a steady increase in the numbers of people concentrated in the big cities, attracted by the mirage of welfare, employment and a different quality of life. The small and medium sized income countries will experience a population growth of 1.84% per year between 2015 and2020 (Fig. 2).

This is an unstoppable social phenomenon and an irreversible tendency to be administered by many different stakeholders. The phenomenon is studied from different points of views; such as urban planning, transport, the industrial context, employment, and health.

Fig.1 Source WHO - World Urbanization Prospects 2014

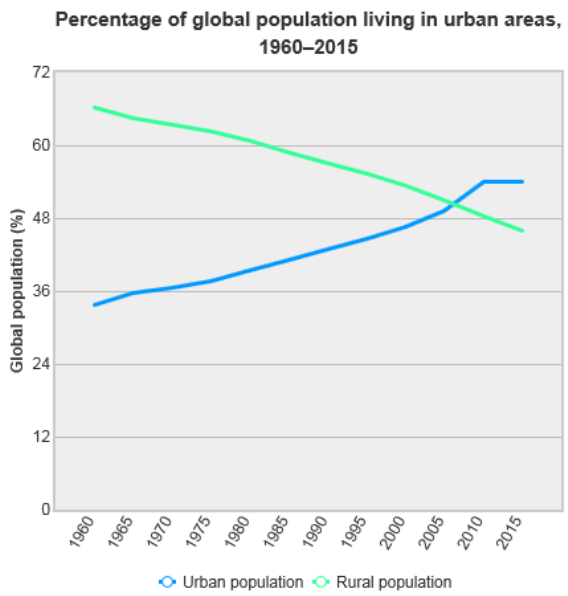
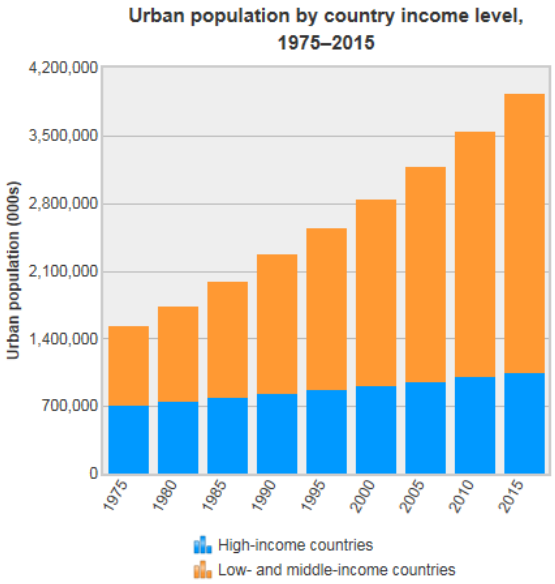


Fig.2 Source: WHO - World Urbanization Prospects 2014.



Cities and their development models are today in the forefront of the fight against the potential problems caused by an increasing. Public health is one of the core issues.

In September 2015, 193 members of the United Nations met in New York with the aim of adopting a series of 17 targets in the Sustainable Development Goals (SDGs). The new SDGs cover a wide range of critical global issues, such as an end to poverty, the achievement of universal education and the fight against climate change. It is, however, important that a specific goal (SDG 11) has been added in order to make cities inclusive, sustainable and able to deal with changes.

The key instruments in achieving goals, such as: housing development, air quality, good nutrition and transport, and the importance of the determinants of health in the cities.

The SDG 3 is part of the more general context of better health, as a global priority in the 2016-2030 planning. This goal is to focus on the improvement of mental and physical wellbeing for everyone at all age. The prevalence of health within in metropolitan cities with a high density of population consists of several risk factors affecting health, health inequalities, social and economic impact, are to be dealt with and discussed. Short-term interventions will not solve the basic problems and to understand the challenge ahead

Today Cities are not only economic engines but also innovation centers which have to manage and face dramatic demographic and epidemiological transitions.

In 2014, a group of mayors and leaders of the world´s largest cities met and committed to tackle global climate change, thus reducing greenhouse gas emissions. This initiative has been launched and promoted by United Nations (UN) through a network made up by *Cities Climate Leadership Group* (*C40*), *United Cities and Local Governments Network* (*UCLG*) and *International Council for Local Environmental Initiatives* (*ICLEI*).

Through this agreement 206 cities with a total population of 270 million people, were able to commit to a specific programme in order to reduce the level of fine dust emissions in urban areas, thereby reducing the vulnerability of their territories.

On 15 October 2015 at EXPO, mayors from 115 metropolitan cities with a total of 400 million inhabitants, signed the *Milan Urban Food Policy Pact.* This commitment involves a series of local actions in order to face global emergencies as hunger, malnutrition and food waste. The cities signed the agreement and committed to develop sustainable food systems and healthy food at affordable prices, in order to reduce food waste.

These two examples highlight the role that mayors and cities play in order to face the development of the planet and its people through a proactive approach.

In the *Sustainable Development Goals, the* health goals relating to the achievement of urban development, such as SDG 3.3 and 3.4 are set. These are goals with a specific focus on the HIV epidemic and mortality reduction of **non-communicable diseases (NCDs).** It is known that HIV is mainly concentrated in cities, whereas urban lifestyle is a determining factor for the growth of NCDs. NCD's have only recently had a specific focus on city environment. The increasing of urbanization and non-communicable chronic diseases are two closely interconnected factors.

Policymakers and administrators, and mainly mayors, must deal with the increasing urbanization through a new approach. The new approach is to understand the burden of the disabilities related to chronic diseases, will affect the development and sustainability of their cities.

An entire new urban welfare model is to be understood, analyzed and studied under different aspects. It is a welfare that, also referring to a national framework, must be assessed also locally through new questions and scenarios. It is necessary to ask whether the welfare systems in big cities and small cities differ, whether we are moving from a state of welfare to a local welfare and whether cities will be available to implement strategies enabling changes and innovations in planning and affecting socio-economic issues. Only the administrators and citizens will be more inclined to support the improvement of life quality and health through a gradual improvement of lifestyle.

An integrated approach to the SDGs will be useful in achieving health targets in cities, which are facing many challenges and will require multi-sectorial cooperation.

Clearly the increase in life expectancy and good life quality is related to the reduction of preventable deaths due to non-communicable diseases, will lead to the establishment of coordination structures between different sectors of urban governance interacting with health. A coordination through the involvement of government- local, regional and national levels and they must be supported by global actions and as a primary factor from a dynamic view of the determinants of health in cities..

Another big challenge for the world´s health authorities is to fight the NCDs' evolution and among these diabetes has an important role.

Diabetes can be considered the biggest epidemic in human history.

According to the International Diabetes Federation (IDF), in 2013 more than 82 million people suffered from diabetes. By 2035 this number will rise to 595 million.

It is in the big cities that the majority of with type 2 diabetes lives in. The current estimates indicate that the disease will affect two people out of three. In fact, according to data provided by the international Diabetes Federation (IDF), 246 million urban people (65%) in the world are diagnosed with type 2 diabetes compared to 136 million living in rural areas. This number is expected to grow**. It has been estimated that in 2035, 70% of people in the world will have, diabetes: 347 million urban compared to 147 million in rural areas.** It seems that cities are the "catalyst" for diabetes: those who move to the city does have higher chances of getting diabetes than people living outside big cities. This is of great concern, especially considering that for the first time in human history, the majority of the population live in urban areas. **From these propositions the Cities Changing Diabetes came about, an ambitious programme aiming to challenge the diabetes epidemic in big cities.** It started in Mexico City followed by Copenhagen, Tianjin, Vancouver and Houston. In 2017 it will involve the city of Rome and Milan. The project is intended to actively involve municipality authorities of the world´s largest metropolitan cities, including Italy, in analyzing the underlying reasons for the increase of the disease and in identifying specific interventions in order to stop it.

Urban diabetes in the metropolitan area of Rome: development of the action plan

The world is rapidly urbanizing, causing alarming health problems to their citizens. The Cities Changing Diabetes program aims to address the social factors and cultural determinants that can increase type 2 diabetes (T2D) vulnerability among people living in cities.

Rome joined the program in 2017, and a series of initiatives was launched with the aim of mapping the problem, sharing the learnings, and designing interventions. The experience of Rome can inspire other metropolitan areas in implementing effective strategies to reduce the burden of diabetes.

The first phase of the project documented that a wide variation exists in the prevalence of T2D among the districts of Rome, associated with social and cultural determinants. A linear correlation exists between the prevalence of diabetes in the districts, unemployment rate and use of private transportation rate (Pearson R 0.52 and 0.60, respectively), while an inverse correlation is present with aging index, school education level, and slow mobility rate (Person R -0.57, -0.52, and -0.52, respectively).These findings were the base for the development of an action plan to be implemented in the next three years.

A structured, multi-stakeholder approach was adopted to prioritize the areas of intervention. Politicians, healthcare policy makers, healthcare providers, patient and citizens association representatives were involved.

The following actions have been identified:

1. To potentiate healthcare resources to meet the increasing needs associated with urban development and improve accessibility;
2. To create and strengthen support networks in the territory, to meet the needs of elderly, fragile people, often living alone;
3. To support sustainable mobility and improve the usability of shared and public transport networks;
4. To increase information available to the most vulnerable subjects;
5. To create a uniform network of specialist care through innovative solutions and increase the access to specialist care in suburban, underserved areas;
6. To support the development of information and telemedicine systems, to promote integrated care.

The overall aim of the initiative is triggering a virtuous circle in which prevention, access to care and innovation, and sustainability of healthy lifestyles are the result of integrated actions in the territory, for the territory and with the citizens.

Knowledge of social and cultural determinants represents a lever on which to insist to obtain a change that can have significant effects in reducing the risk of diabetes. The initiative will be replicated in other metropolitan areas in Italy.

There is an obvious need for a Health Observatory in cities which can identify the critical matters and facilitate the best practices to harmonize the benefits in order to avoid further discrimination.

In fact, health benefits in cities can be significantly different between people. It is known that in the same urban contexts there are different life expectations. In London, for example, people live longer if they are residents in Westminster, which is few metro stops from the *City*, whereas inhabitants of a decentralized suburb of Baltimore live shorter than people resident in other areas of the city.

The epigenetics have been studied for a long time and the correlation between circadian rhythm, environment and outbreak of certain diseases. Recent studies indicate that there is a strong correlation between genetic factors, individual lifestyle and the environment where we live. These are factors to be studied through a methodical approach and are relevant to identify in order to get the underlying reasons for the different situations between cities and its regions.

A roadmap on urbanization and health should be created.

In order to raise awareness of health challenges related to urbanization and in order to increase the need to face these challenges through urban planning and inter-sector actions is it recommended that a *roadmap* I made to promote concrete actions and government strategies on health risks. The *roadmap* should take into account how urbanization increasingly exposes citizens to environmental factors (as air, water and noise pollution, problems related to public hygiene, sewage and waste disposal, etc.) and, therefore, to different health risk factors. The *roadmap* should indicate actions to be promoted in the different cities, in order to avoid inequalities and to enable citizens to live a healthy life, as a common good and as an engine for everyone´s development and wealth.

Italy could be at the forefront of the study on health issues related to urbanization if government, mayors, universities, health authorities and experts interact through a virtuous and multidisciplinary approach and not through a virtual, sectoral and individualistic one thus avoiding the logic of silos, which means the lack of cooperation between the different institutions involved.

New competences to manage urban health: Health City Manager core curriculum

In December 2017, Italian Minister of Health and President of Italian Municipalities Association (ANCI) during the G7 side event signed the Urban Health Roma Declaration. The declaration has underlined the necessity of a strong alliance between Municipalities, Universities, Health Centres, Research Centres, Industry and Professionals to study and monitor the determinants of citizens' health at an urban level and it suggested in the same time the creation of a HEALTH CITY MANAGER figure, able to guide the process of health improvement in urban areas in synergy with local and sanitary administrations. Health City Institute, in partnership with EUPHA- Urban Health and WFPHA, has developed a core curriculum to define the HEALTH CITY MANAGER knowledge, competences and ability.

Learning degree and professional profile

- The HEALTH CITY MANAGER must have acquired transversal and interdisciplinary knowledge in:
- promotion of health and well-being, prevention through the adoption of correct lifestyles of communicable and non-communicable diseases typical of urban areas, in synergy and collaboration with the Authorities responsible for Public Health and Prevention, as well as the Health Professions of the territory;
- assessment of the social and psychological impact of urban life on the quality of life of the citizen with specific attention to situations of greater fragility and to the weak categories of the population in order to achieve improvement;
- city architecture, urban planning and territorial planning, both in terms of the functionality of the city areas and the activation and coordination of participation processes, together with the ability

to read, integrate and coordinate the plans aimed at governing the territory and transforming urban contexts;

- capacity for political-administrative dialogue at the various institutional levels, in respect of mutual prerogatives and interaction with the informal / horizontal levels for the management of the city;
- management of relations for the finalization and measurement of public policies implemented according to adequate timelines and criteria for the replicability and scalability of the project.

The Health City Manager gains professional skills in public health management, sociology and psycho-sociology of communities, urban architecture and control in reducing social and health inequalities.

Duration of the course is determined in University Educational Credits (CFU): each CFU corresponds to 25 hours of student learning. Being a highly theoretical learning, each CFU corresponds to 8 hours of lectures and 17 hours of individual study. The duration of the course will be 80 hours of frontal teaching for a total of 250 hours of student learning and 10 CFU.

Degrees valid for access to the course are Master's Degree (MD) achieved in the fields pursuant to Ministerial Decree 22 October 2004, No. 270; Master's Degree (LS) obtained pursuant to Ministerial Decree of November 3rd 1999, n.109, to the previous equivalent; Diploma (DL) referred to the previous equivalent regulations; foreign equivalent qualifications equivalent.

Conflicts of interest: The authors declare no conflict of interest.

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