

# Landscaping Teaching and Training of Urban Health as a Part of Health Professional Education in India

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Sanjay Zodpey<sup>1</sup>  
Ritika Tiwari<sup>2</sup>

## Abstract

### Introduction

India's urban population will be doubled from 377 million in 2011 to 915 million in 2050. Such rapid urban growth may lead to several problems by affecting the economy, environment and the society at large. These problems further affect the health vulnerability in urban areas. Thus, there exists a need for health workforce equipped with the knowledge and skills to meet the urban health challenges.

### Objectives

To undertake the landscaping of teaching and training of urban health as a part of health professional courses and to undertake mapping of specific training programmes related to urban health in India.

### Methodology

A curriculum scan of various health professional courses in India ranging from medicine, dentistry, allied health, Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH), nursing to public health was undertaken related to teaching and training of urban health. An exclusive search was also carried out for identifying urban health-specific training programmes being offered in India.

### Results

As per the curriculum scan, current health professional courses being offered in India have a very little focus on urban health. It was observed that various cross-cutting issues related to urban health are not adequately addressed in the current curricula. Also the curricula of these health professional courses have not clearly spelt out the desired urban health competencies. Few institutions in India offer short-term training programmes specific to urban health issues.

<sup>1</sup> Director, Public Health Education, Public Health Foundation of India, Gurgaon, Haryana, India.

<sup>2</sup> PhD Scholar, Faculty of Health and Biomedical Sciences, Symbiosis International University, Pune, Maharashtra, India.

### Corresponding author:

Sanjay Zodpey (MD, PhD), Director, Public Health Education, Public Health Foundation of India, Plot 47, Sector 44 (opposite PF Office), Institutional Area, Gurgaon 122 002, Haryana, India.  
E-mail: [sanjay.zodpey@phfi.org](mailto:sanjay.zodpey@phfi.org)

## **Conclusion**

Considering the growing urban health population, it is critical that the curricula of health professional courses comprehensively incorporate adequate content regarding urban health and related issues. Curricula should be designed on the basis of clearly spelt out urban health competencies. There is a need to design specific short-term training programmes covering various aspects of urban health. Some of the institutions offering public health programmes, especially Masters in Public Health (MPH) programme, should dwell on developing urban health track as a specialization of MPH programmes.

## **Keywords**

Urban health, health professional education/courses, teaching and training, curriculum

## **Introduction**

As per Census 2011, India's total population has crossed 1.21 billion, with its 31.16 per cent of total population (377 million) residing in the urban areas. This fast urbanization has led to rapid increase in the number of urban poor population, many of whom live in slums and other squatter settlements (Ministry of Health & Family Welfare [MoHFW], 2013a). This rapid growth has put greater strain on the urban infrastructure, which is already overstretched. As per the United Nations projections, if urbanization continues at the present rate, then 46 per cent of the total population will be in urban regions of India by 2030 (MoHFW, 2013a).

Urbanization is a double-edged sword, as on the one hand it provides people with varied opportunities and scope for economic development but on the other, it exposes the community to new threats. An unplanned urban growth may lead to several economic, social and environmental problems. The common challenges which are being faced by urban populations in India include poverty, overcrowding, illiteracy, inadequate food supplies, prostitution, slums, air pollution, child labour, child abuse, crime, road traffic injuries, inadequate infrastructure, transport facilities, etc. (Kantharia, 2010). These economic, social and environmental problems affect the health vulnerability in urban areas. Poor economic conditions may lead to irregular employment and poor access to fair credit. Similarly, poor social conditions may lead to diseases and delinquency, substance abuse, alcoholism, unhealthy diet, physical inactivity, gender inequity, etc. Poor environmental conditions may lead to poor access to safe water supply and sanitation facilities and poor solid waste management systems (Kantharia, 2010; Urban Health Division and Urban Health Resource Centre [UHD and UHRC], 2007).

Today, most cities are facing various health challenges related to communicable diseases, non-communicable diseases, maternal and child health problems and threat of emerging and re-emerging diseases (Kantharia, 2010). As per Urban Health Resource Centre (UHRC)—India statistics, the health of the urban poor is considerably worse off than the urban middle- and high-income groups and is as worse as the rural population. Over half (56 per cent) of the child births take place at home in slums putting the life of both the mother and the newborn at serious risk. One in every ten children in slums does not live to see his/her fifth birthday. Malnutrition among urban poor children is worse off than in rural areas. Around 54 per cent of the children under 5 years were stunted, and 47 per cent were underweight (Agarwal, 2009). Only 42 per cent of slum children receive all the recommended vaccinations. Two-thirds of urban poor households do not have access to toilets and nearly 40 per cent do not have piped water supply at home (UHRC, 2010).

There is restricted access of health facilities to the urban poor in India. Ineffective outreach and weak referral system also restrict the access of urban poor to health care services. Lack of standards and unclear norms for urban health delivery system make the urban poor more vulnerable and worse off than their rural counterparts. The Jawahar Lal Nehru Urban Renewal Mission (JnNURM) was launched on 3 December 2005 to tackle the urban infrastructure issues and urban health issues that need immediate attention, especially in the context of the urban poor (Wikipedia, 2015). One of the primary objectives of JnNURM is to provide basic services to the urban poor including improved housing, water supply and sanitation, and ensuring delivery of other existing universal services of the government for education, health and social security (Ministry of Urban Employment and Poverty Alleviation [MoUEPA], 2011). Similarly, the National Urban Health Mission (NUHM), as a sub-mission of National Health Mission (NHM), was approved by the Cabinet on 1 May 2013 (MoHFW, 2013b). The NUHM envisages to meet health care needs of the urban population with the focus on urban poor by making available to them essential primary health care services and reducing their out-of-pocket expenses for treatment.

Thus, there are efforts towards improving urban health infrastructure. However, these efforts will not yield positive results if we do not have in place a competent and motivated health workforce to serve the urban population. Health professionals ranging from doctors, nurses, Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (AYUSH) professionals, public health professionals, allied health professionals to front-line workers would require to address several challenges related to urban health. These health professionals are expected to play a critical role in achieving the goals of NUHM under NHM. Public health professionals with a formal training in urban health are also needed for designing, implementing, monitoring and evaluating various national health programmes in urban areas across the country.

Limited information is available regarding the scope and content of urban health teaching as a part of health professional education in India. Also little information has been provided about urban health-focused training programmes in India. Against this background, the present study was carried out to landscape teaching and training of urban health as a part of health professional courses and to map specific training programmes related to urban health in India.

## Methodology

A curriculum review was undertaken for the present study which included the following health professional courses: Doctor of Medicine (MD) in Community Medicine, Diploma in Public Health (DPH), Bachelor of Medicine and Surgery (MBBS), Bachelor of Dental Surgery (BDS), Bachelor of Physiotherapy (BPT), Bachelor of Homoeopathic Medicine and Surgery (BHMS), Bachelor of Ayurvedic Medicine and Surgery (BAMS), Master of Science (MSc) Nursing, Bachelor of Science (BSc) Nursing, General Nursing and Midwifery (GNM), Auxiliary Nurse Midwife (ANM), Post Graduate Diploma in Public Health Management (PGDPHM), Masters in Public Health (MPH), Master of Business Administration in Health and Hospital Management (MBA-HHM), Master of Health Administration (MHA), PhD in Community Medicine and other PhD programmes. The latest curricula of these courses were obtained from their respective councils, universities and institutions. Wherever curriculum of a course was found to be variable in different institutions, curricula of only a few select institutions were reviewed. The curricula of these courses were comprehensively reviewed and the content and scope of urban health was studied in detail. Similarly, a review was undertaken for identifying the urban health core competencies

being taught in these courses. The scope and content of various other cross-cutting issues in urban health were also studied in the above-mentioned curricula.

A comprehensive search was undertaken to identify the institutions offering short-term training and academic programmes specifically related to urban health in India. This exercise included an Internet search using the Google search engine with relevant keywords, such as 'Urban Health', 'Urban Healthcare' and 'Urbanization'. Based on this information, a provisional list of such institutions was prepared. Furthermore, institutions were identified and a detailed information about the programmes was collected from the respective institutions, designated websites of these institutions and their respective councils. The search was limited to programmes offered in India and to collaborations between Indian and foreign institutes, if any.

## **Results**

There were two main findings of this study, that is, curriculum scan of the existing health professional courses in India and urban health-specific independent training programmes being offered in India. A detailed analysis of scope and content of urban health teaching and training in health professional courses in India has been presented in Table 1.

### *Urban Health-specific Training Programmes/Agencies in India*

In India, some agencies are working since the past few decades on initiatives focused on improving the country's urban health. One such organization is the Indian Institute for Human Settlements (IIHS), Bangalore. The IIHS offers an 'Urban Practitioners' Programme' (UPP), which is a continuing education and capacity-building programme for urban practitioners. Urban Practitioner' Programme is a capacity-building programme spanning across disciplines, such as climate change, urbanism, corporate environmental sustainability, urban taskforces, systems thinking and urban public health management (Indian Institute for Human Settlements [IIHS], 2015). The duration of these programmes is 1–3 days. Varied audiences attend these workshops—graduates/postgraduates with social science/humanities background, practitioners in the (urban) development sector, planners, researchers, etc. Given the diversity of their course audience and the breadth of their capacities, these courses are delivered through interactive formats that focus on peer learning and experience sharing (IIHS, 2015).

Apart from IIHS, several other institutions are providing short-term training courses in urban health and in related areas. Several conferences and seminars as well provide an opportunity to health professionals, researchers, academicians, etc. for generating ideas and help in developing partnerships with multi-sector players working in urban health. Such conferences and seminars aim to promote equity, development and resilience in the health systems to meet the urban health challenges. Similar conferences are organized by the Urban Health Society of India (UHSI) to deliberate over the topic of urban health in India. The UHSI is an association of researchers, scholars, professionals and community members, workers and activists from various disciplines, roles and areas whose work is directly related to the health and health determinants effects of urban environments and urbanization. It was founded in 2010 and it has since then grown to include a large and widespread network of individuals and the institutes dedicated to urban health. It now includes over 200 annual individual members across the countries (IIHMR University, 2015).

**Table 1.** Scope and Content of Urban Health Teaching and Training in Health Professional Courses in India

Programme	Scope and Content and of Urban Health in Curriculum Content
<p>Doctor of Medicine (MD) Community Medicine</p> <p>~ Offered by 229 institutions (Medical Council of India [MCI], 2015)</p>	<p>Urban health is a cross-cutting domain and is taught as a part of various sections of MD Community Medicine curriculum. 'Urban Health' is taught by covering common health problems (medical, social, environmental, economic and psychological) of urban slum dwellers. Organization of health services for slum dwellers in urban areas is also a main constituent of urban health. Additionally, policy on urban health and health issues of migrant populations are also covered.</p> <p>'Environment and Health' and 'Skills related to Health Care Delivery to Community' also cover different components of urban health. 'Environment and Health' covers sanitation in the context of both urban and rural conditions within the community, whereas 'Skills related to Health Care Delivery to Community' familiarizes students with Urban Health Care delivery system models. It also includes impact of urbanization on health and disease. Also, it provides an opportunity to students to organize and conduct surveys in urban and industrial communities, migratory populations and in specified groups of population. Practical training during MD Community Medicine programme includes posting at outreach clinics in urban areas/urban health centres. This posting includes work in general outpatient department (OPD), antenatal clinics, special clinics, family planning clinic, etc and also provides an opportunity to students to engage with urban communities. Few students undertake their thesis work in urban areas and enhance their knowledge and skills in the context of urban health.</p> <p>'Health Administration' deals with community development component in both urban and rural areas. Details of implementation and evaluation of national health programmes are also covered in DPH programme. The training methodology for DPH includes 'Community Health Survey' which gives hands-on working experience to the students in rural as well as urban communities. Some aspects of urban health are covered as a part of environmental health, sociology, health care delivery system, etc.</p> <p>In MBBS curriculum, 'Community Medicine' teaches about community organization in rural and urban areas along with community participation. Component regarding health problems associated with urbanization and industrialization is also covered in community medicine. In MBBS, urban health posting for a duration of 8 weeks is mandatory during the fourth and fifth semesters. This posting enables students in managing common ailments at primary level in the urban community. Students are required to study a health-related problem in the community and describe the existing health care services available to the urban community. The students attend mobile clinics in slum areas to learn about the patterns of morbidity, care of patients and referrals at primary level. Students participate in the immunization, health education activities and special exercises, and contribute in the delivery of health care to the urban community.</p>
<p>Diploma in Public Health (DPH)</p> <p>~ Offered by 39 institutions (MCI, 2015)</p> <p>Bachelor of Medicine, Bachelor of Surgery (MBBS)</p> <p>~ Offered by 400 institutions (MCI, 2015)</p>	<p>Some aspects of urban health are covered as a part of environmental health, sociology, epidemiology, health care delivery system, etc.</p> <p>As per the curriculum for BDS programme, practical/clinics/field programmes in community dentistry cover various aspects of urban health-related issues. Preparation of project report on exploring, planning and setting private dental clinics in various locations including urban, semi-urban and rural locations imparts the much-needed practical exposure.</p>
<p>Bachelor of Dental Surgery (BDS)</p> <p>~ Offered by 287 institutions (Dental Council of India [DCI], 2015)</p>	<p>Some aspects of urban health are covered as a part of environmental health, sociology, epidemiology, health care delivery system, etc.</p> <p>As per the curriculum for BDS programme, practical/clinics/field programmes in community dentistry cover various aspects of urban health-related issues. Preparation of project report on exploring, planning and setting private dental clinics in various locations including urban, semi-urban and rural locations imparts the much-needed practical exposure.</p>

(Table 1 Continued)

(Table 1 Continued)

*Bachelor of Physiotherapy (BPT)*

– Offered by 190 institutions (Indian Association of Physiotherapists [IAP], 2015)

*Bachelor of Homeopathic Medicine and Surgery (BHMS)*

– Offered by 185 institutions (Indian Medicine, 2008)

*Bachelor of Ayurvedic Medicine and Surgery (BAMS)*

– Offered by 243 institutions (Indian Medicine, 2008)

*Master of Science (MSc) Nursing*

– Offered by 411 institutions (Indian Nursing Council [INC], 2015a)

*Bachelor of Science (BSc) Nursing*

– Offered by 1312 institutions (INC, 2015b)

As per the BPT programme's curriculum, urban health is touched upon in the third and fourth year only. 'Sociology' teaches about the role of urban and rural communities in public health. However, during the fourth year 'Community Health Sciences' covers community-based rehabilitation (CBR) in both urban and rural set-up. Community-based rehabilitation strategies in an urban set-up are practiced in urban health centres, community centres, clubs, mahila mandals, social centres, schools, industries, sports centres, etc.

In BHMS programme, 'Community Medicine' provides exposure on urban health. It focuses on making BHMS graduates well conversant with the national health problems at both rural and urban areas such that they can play an effective role in the field of not only curative but also preventive and social medicine including family medicine.

In BAMS curriculum, under 'Public Health' (*Sarvajanika-Sarmajika Swasthavrittam*) urban health is being taught vaguely especially in areas dealing with sanitation and disposal of solid waste (*Apadravya nimulana*, i.e., methods of disposal of solid waste).

As per MSc Nursing curriculum, in the first year 'Community Health Nursing' covers nursing care for special groups, that is, urban and rural population at large. These special groups include children, adolescents, adults, women, elderly and physically and mentally challenged populations in urban and rural areas. Practical training includes posting at urban centres for 6 weeks. During the second year, 'Community Health Nursing' covers advanced skills for nursing intervention in various aspects of community health care settings (i.e., both urban and rural). Practical training during second year includes posting in urban and rural community for 17 weeks.

The BSc Nursing programme trains its students to function effectively as part of the team in the delivery of comprehensive health care (curative, preventive and promotive) in a community/hospital in urban as well as rural locations. Several topics during the first and second year of this programme cover various aspects of urban health.

As per BSc Nursing programme's curriculum, in the first year 'Community Health Nursing' focuses on principles of health care for communities and the services available for them in urban and rural communities. 'Public Health Nursing and Health Administration' covers organization and administration of urban health services in India. 'Maternal and Child Health' covers needs and methods of meeting nutritional needs among women and children in urban and rural areas, immunization schedules, etc. 'Sociology and Social Medicine' covers the sociological contrast, social and economic life, etc. in urban areas.

During the second year, 'Sociology' focuses on social problems of urbanization, such as prostitution, minority groups, rights of women and children, child labour, delinquency and crime and substance abuse. 'Community Health Nursing' covers the organization and administration of urban health services in India and the role of health personnel in the community.

<p><i>General Nursing and Midwifery (GNM)</i></p> <p>– Offered by 2119 institutions (INC, 2015c)</p>	<p>Practical experience in community health nursing field area is compulsory in GNM programme. The students are sent for community health nursing experience in urban as well as in rural field areas. ‘Sociology’ deals with urban society and its social problems in detail. ‘Community Health Nursing’ focuses on urban health care services in India.</p> <p>Internal assessment of students involves community health talk to one family and health assessment of an individual in urban area.</p>
<p><i>Auxiliary Nurse Midwife (ANM)</i></p> <p>– Offered by 1289 institutions (INC, 2015d)</p>	<p>In ANM programme, students need to complete 110 hours of experience of ‘Community Health Nursing’. This posting is in both rural and urban communities. Similarly, 160 hours of ‘Community Health and Health Centre Management’ experience is needed in rural and urban communities.</p>
<p><i>Post Graduate Diploma in Public Health Management (PGDPHM)</i></p> <p>– Offered by 11 institutions (Tiwari et al., 2014)</p>	<p>The PGDPHM programme teaches ‘Urban Health’ in its curriculum. It deals with urban health as a cross-cutting domain and covers issues related to urban health in various modules.</p>
<p><i>Masters in Public Health (MPH)</i></p> <p>– Offered by 38 institutes</p>	<p>Urban health is taught either as a module or as a part of a related paper in MPH programmes. Additionally, topics such as environmental and occupational health, industrial health, urban health and urbanization cover urban health areas. The MPH programmes also offer field visits to urban and rural areas. Hands-on working experience is also provided to the students working in rural as well as urban communities (Public Health Foundation of India [PHFI], 2011). However, the content of MPH programmes is quite variable from one institution to another institution in India and so the emphasis on urban health-related issues.</p>
<p><i>Master in Business Administration in Health &amp; Hospital Management (MBA-HHM)</i></p> <p>– Offered by 52 institutes</p>	<p>The MBA-HHM programme covers urban health as a part of ‘Health Care Delivery System and Policy in India’.</p>
<p><i>Master of Health Administration (MHA)</i></p> <p>– Offered by 51 institutes</p>	<p>The MHA programme covers urban health as a module of two credits. However, credits and contents are variable from one programme to another one.</p>
<p><i>PhD in Community Medicine and other PhD programmes</i></p>	<p>Doctoral-level programmes being offered in Community Medicine and other public health-related disciplines offer ‘Urban Health’ as the area of research. Doctoral programmes in the health sector have a multidisciplinary focus and are open to postgraduates from medicine, dentistry, nursing, AYUSH, public health, health economics and allied sciences.</p>

**Source:** Indian Nursing Council (2015).

## Discussion

The world is urbanizing rapidly with substantial changes in living standards, lifestyles, environment, social behaviour and health. While urban living continues to offer many opportunities, including potential access to better health care, today's urban settings concentrate health risks and introduce new hazards for the communities (Population Foundation of India and USAID, 2015). On the eve of World Health Day in 2010, the Director General of World Health Organization (WHO) laid emphasis on improving the urban health (World Health Organization [WHO], 2010).

It is critical and important that the health professionals have clear understanding of the issues related to urban health and possess competencies to deal with these issues so that they contribute towards creating a healthy urban society. However, unfortunately as per the curriculum scan, current health professional courses being offered in India have a very little focus on urban health. It was observed that various cross-cutting issues related to urban health are not adequately addressed in the current curricula. Also the curricula of these health professional programmes have not clearly spelt out the desired urban health competencies. Few institutions in India offer short-term training programmes specific to urban health issues.

Traditionally, health professionals have a patient-centric approach on providing health care to individuals suffering with various illnesses. However, health professionals in urban areas have a crucial role in both through individual patient care and by engaging with urban health issues at community level. Adopting a population perspective to health care is an important part of modern general practice. There has always been a need for health professionals to have holistic understanding of urban health as several factors interplay to shape the health and well-being of urban populations (Glasgow Centre for Population Health, 2013). Health professionals need to promote healthy communities by focusing on the health of the population rather than individuals. This may include urban health issues from sanitation to infection control and immunization programmes to air pollution. Thus, to meet the current urban health challenges, there exists a demand for adequately imparting urban health competencies to the health professionals in India. Today, health professionals need to become champions in empowering communities to take an active control over their health and other factors (environmental, social, economic, etc.) that influence their health. Health professionals need to challenge and support their communities in finding new ways to meet urban health challenges. The underlying social conditions, which include a combination of economic stability, education, social and community context, accessibility of health care services and environmental factors, need to be worked out (Porter, Blashki & Grills, 2013).

The government agencies need these professionals to provide services to their citizens, to meet health care needs of the urban population with the focus on urban poor and to make available to them essential primary health care services and to reduce their out-of-pocket expenses for treatment (MoHFW, 2013c). Under the NUHM programme, the Government of India (GoI) offers various positions at central, state and district level. The NHM has been launched by GoI to carry out the necessary changes in the basic health care delivery system. The mission adopts a synergistic approach by relating health to determinants of good health, namely, segments of nutrition, sanitation, hygiene and safe drinking water in both rural and urban areas (MoHFW, 2013). Furthermore, GoI has announced Smart Cities Mission in June 2015 to meet the existing challenges and to prepare for the upcoming challenges of urbanization. The mission has been launched with an initial funding of ₹980 billion for the development of 100 smart cities (Exhibitors India Group, 2015). Additionally, a sum of ₹500 billion has been approved for funding Atal Mission for Rejuvenation and Urban Transformation (AMRUT) for 500 towns and cities in the next 5 years (Exhibitors India Group, 2015). The Smart City Mission intends to promote adoption of smart solutions for efficient use of available assets, resources and infrastructure. Furthermore, the mission aims



to provide assured water and electricity supply, sanitation and solid waste management, efficient urban mobility and public transport, robust IT connectivity, e-governance and citizen participation, safety and security of citizens (*The Times of India*, 2015). Thus, this mission was launched, recognizing urbanization as an opportunity for the nation's growth and aiming to provide better quality of life to populations residing in urban areas.

To meet the growing urban health challenges and demand of health professionals trained in urban health, it becomes critical that the curriculum of health professional courses must comprehensively incorporate adequate content regarding urban health and its related areas. The curricula of these health professional courses should be designed on the basis of clearly spelt out urban health competencies. These health professionals trained with optimum urban health competencies shall have better understanding of urban health and will be better equipped to deal with urban health challenges. Also these health professionals would be able to provide health care and serve populations in a better way.

There is also a need to have more short-term training programmes focused on urban health in order to hone the skills and competencies of already working health professionals in this area. Urban health-centric short-term training programmes can be offered on topics focusing on various urban health challenges/problems, sustainable changes needed to meet the urban health challenges and best practices in urban health adopted by other countries. These short-term training programmes can contribute substantially in developing competencies needed for dealing with the urban health.

There is also a need to design long-term independent training programmes covering various aspects of urban health. Some of the institutions offering public health programmes, especially MPH programme, should develop and offer urban health track as a specialization in the MPH programme. Public health programmes have a substantial scope of generating urban health specialists, who are much needed for work in the health systems. Such MPH tracks will contribute significantly in developing urban health specialists.

In conclusion, it is important to strengthen the curriculum of health professionals courses in India with respect to scope, content and competencies related to urban health, so that the graduates of these courses are better equipped and competent to deal with the urban health challenges. Moreover, it is also important to design and offer short-term training programmes focusing on various issues related to urban health to enhance skills of existing health professionals. Development of specialized long-term academic programmes in urban health would help the country to produce much-needed urban health specialists. These efforts would help us to create competent health workforce to respond to the existing and emerging health needs of urban Indian population more efficiently and effectively.

## References

- Agarwal, S. (2009, June 9). Forgetting something? Parties are silent about India's fastest-growing group's needs. *Indian Express*. Retrieved from [http://uhrc.in/modules/ContentExpress/img\\_repository/ie09-06.png](http://uhrc.in/modules/ContentExpress/img_repository/ie09-06.png)
- Dental Council of India (DCI). (2015). *College list*. New Delhi. Retrieved 3 July 2015, from <http://www.dciindia.org.in/CollegeSearch.aspx?ColName=&CourseId=1&SplId=0&StateId=&Hospital=&Type=0&Status=—Select—>
- Exhibitors India Group. (2015). *India to have 100 smart cities across 21 states in next 5 years*. New Delhi. Retrieved 26 June 2015, from <http://www.smartcitiesindia.com/>
- Glasgow Centre for Population Health. (2013). *Urban health: Past learning and future direction*. Glasgow: Glasgow Centre for Population Health.
- IHMR University. (2015). *2nd National Conference of Urban Health Society of India*. Retrieved 3 July 2015, from <https://www.iihmr.org/uploads/documents/UHNC-1st-Announcement.pdf>
- Indian Association of Physiotherapists (IAP). (2015). *List of under graduate colleges*. Retrieved 3 July 2015, from <http://www.physiotherapyindia.org.in/approved-colleges-ug.html>

- Indian Institute for Human Settlements (IIHS). (2015). *About IIHS*. Bangalore. Retrieved 3 July 2015, from <http://iihs.co.in/about/>
- Indian Medicine. (2008). *State-wise list of AYUSH colleges*. Retrieved 3 July 2015, from <http://www.indianmedicine.nic.in/writereaddata/mainlinkFile/File157.pdf>
- Indian Nursing Council (INC). (2015a). *List of colleges of nursing for M.Sc (N) course recognised and permitted to admit students for the academic year 2015–2016*. New Delhi. Retrieved 3 July 2015, from [http://www.indiannursingcouncil.org/reg-ins/msc\\_30jun15.pdf](http://www.indiannursingcouncil.org/reg-ins/msc_30jun15.pdf)
- . (2015b). *List of colleges of nursing for B.Sc (N) course recognised and permitted to admit students for the academic year 2015–2016*. New Delhi. Retrieved 3 July 2015, from [http://www.indiannursingcouncil.org/reg-ins/bsc\\_30jun15.pdf](http://www.indiannursingcouncil.org/reg-ins/bsc_30jun15.pdf)
- . (2015c). *List of colleges of nursing for GNM course recognised and permitted to admit students for the academic year 2015–2016*. New Delhi. Retrieved 3 July 2015, from [http://www.indiannursingcouncil.org/reg-ins/gnm\\_30jun15.pdf](http://www.indiannursingcouncil.org/reg-ins/gnm_30jun15.pdf)
- . (2015d). *List of colleges of nursing for ANM course recognised and permitted to admit students for the academic year 2015–2016*. New Delhi. Retrieved 3 July 2015, from [http://www.indiannursingcouncil.org/reg-ins/anm\\_30jun15.pdf](http://www.indiannursingcouncil.org/reg-ins/anm_30jun15.pdf)
- Kantharia, S. (2010). Urban health issues in India-need of the day. *National Journal of Community Medicine*, 1(1), 1.
- Medical Council of India (MCI). (2015). *List of colleges and courses*. New Delhi. Retrieved 3 July 2015, from <http://www.mciindia.org/InformationDesk/CollegesCoursesSearch.aspx>
- Ministry of Health & Family Welfare (MoHFW). (2013a). *National Urban Health Mission: Framework for implementation*. New Delhi: Ministry of Health & Family Welfare, GoI.
- . (2013b). *National Urban Health Mission (NUHM)*. New Delhi: Ministry of Health & Family Welfare.
- . (2013c). *State wise information: National Health Mission*. New Delhi. Retrieved 16 June 2015, from <http://nrhm.gov.in/nrhm-in-state/state-wise-information.html>
- Ministry of Urban Employment and Poverty Alleviation (MoUEPA). (2011). *Jawaharlal Nehru National Urban Renewal Mission*. New Delhi. Retrieved 6 July 2015, from <http://jnnurm.nic.in/wp-content/uploads/2011/01/PMSpeechOverviewE.pdf>
- Population Foundation of India and USAID India. (2015). *Urban health and corporate social responsibility in India—a fact sheet*. New Delhi. Retrieved 3 July 2015, from <http://hupindia.org/resources/Factsheets/CSR%20Factsheets%20on%20Health%20and%20WASH/Urban%20Health%20and%20CSR.pdf>
- Porter, G., Blashki, G., & Grills, N. (2014). General practice and public health: Who is my patient? *Health*, 10(7), 11.
- Public Health Foundation of India (PHFI). (2011). *Masters of public health programs in India*. New Delhi: Public Health Foundation of India.
- The Times of India*. (2015). What is a 'smart city' and how it will work. Retrieved 26 June 2015, from <http://timesofindia.indiatimes.com/What-is-a-smart-city-and-how-it-will-work/listshow/47128930.cms>
- Tiwari, R., Sharma, A., Negandhi, H., Zodpey, S., Vyas, N., & Agnani, M. (2014). Building public health capacity in Madhya Pradesh through academic partnership. *Global Health Action*, 7, 24839. PubMed PMID: 25128807, Pubmed Central PMCID: 4134670.
- Urban Health Division and Urban Health Resource Centre (UHD and UHRC). (2007). *State of urban health in Delhi*, New Delhi, India: MoHFW.
- Urban Health Resource Centre (UHRC), India (2010). *Urban health facts and figures*. New Delhi: Urban Health Resource Centre.
- Wikipedia. (2015). Jawaharlal Nehru National Urban Renewal Mission. Retrieved 3 July 2015, from [https://en.wikipedia.org/wiki/Jawaharlal\\_Nehru\\_National\\_Urban\\_Renewal\\_Mission](https://en.wikipedia.org/wiki/Jawaharlal_Nehru_National_Urban_Renewal_Mission)
- World Health Organization (WHO). (2010). *Measuring health workforce inequalities: Methods and application to China and India*, Geneva: WHO.