BHOPAL HEALTHY CITY PROGRAM

FINAL REPORT OF TECHNICAL EXPERT CONSULTATIONS ACROSS FIVE PILLARS

HSTP
Health Systems Transformation Platform

Swasti
THE HEALTH CATALYST

WHAT MAKES A HEALTHY CITY?

FINAL REPORT OF TECHNICAL EXPERT CONSULTATIONS ACROSS FIVE PILLARS

Contents

List of Abbreviations

AMRUT	Atal Mission for Rejuvenation and Urban Transformation
ANC	Antenatal Care
ASHA	Accredited Social Health Activist
BHCP	Bhopal Healthy City Programme
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
FGDs	Focussed Group Discussions
FSSAI	Food Safety and Standards Authority of India
HFA	Health For All
HSTP	Health Systems Transformation Platform
NHM	National Health Mission
IEC	Information Education Communication
IIFM	Indian Institute of Forest Management
IMR	Infant Mortality Rate
MMR	Maternal Mortality Rate
M&E	Monitoring and Evaluation
NCD	Non-Communicable Diseases
NFHS	National Family Health Survey
NHM	National Health Mission
PDS	Public Distribution System
PHCs	Primary Health Centers
RWA	Residents Welfare Association
SBM	Swachh Bharat Mission
SDGs	Sustainable Development Goals
SSP	Sanitation Safety Plan
STP	Sewage Treatment Plant
WSP	Water Safety Plan
ULBs	Urban Local Bodies

Executive Summary

The Bhopal Healthy City Program team conducted two rounds of technical expert consultations with 22 technical experts across the five focus pillars of the program viz individual and family health, food/ nutrition, water, sanitation and environment. The technical experts consulted were predominantly practitioners and a few academicians with more than ten years of experience in their respective practice and research areas. Their expertise in specific subject domains provided valuable insights into the current scenarios and for future planning.

Across the five pillars, the topics that were covered in these consultation meetings included reproductive and child health, communicable and non-communicable diseases, substance abuse, nutrition security and safety, food habits, water security, conservation and quality, solid and liquid waste management, sanitation facilities, pollution, waste disposal, urban spaces and safe environments.

The major gaps identified in current government programs and current situations highlighted by the experts included poor accessibility, coverage, and quality of services. They reiterated that lack of integrated multi-sectoral approach in delivery of services and proper monitoring and evaluation framework across various sectors is resulting in a lack of accountability and ownership.

Community engagement along with appropriate legal enforcements has been one of the key recommendations by experts. It has been suggested that delivery of information, education and communication material should be complemented with an assessment of behavioral change at both community and individual level.

Experts insist that resources and utility infrastructure be mapped, adaptation of the healthy cities norms and define what constitutes a healthy city, existing frameworks, models and case studies should be leveraged in developing strategies to cope with context specific problems facing cities in IndiaTechnological advancement is happening at a rapid pace, and needs to be appropriately incorporated into current systems especially for continuous monitoring and real time data. Lastly, the most significant of all recommendations was to contextualize national level programs to state and city level as per specific requirements.

Introduction

The healthy city concept is firmly rooted in an understanding of the historical importance of local governments in establishing the conditions of health and a firm belief that they can play a leading role in health promotion.

The Healthy Cities initiative was conceived with the goal of placing health high on the social and political agenda of cities by promoting health, equity, and sustainable development through innovation and multisectoral change. Its creation was based on recognition of the importance of action at the local, urban level and of the key role of local governments. It thrives at the cutting edge of public health, and this is one of the factors that contributed to its success. Healthy Cities is a strategic vehicle for health development and well-being in urban settings, and actions taken at the city level have a crosscutting relevance to the majority of technical areas of WHO's work.

The Healthy Cities concept emerged in the 1980s on the basis of a new public health movement, the Ottawa Charter, 1986 and the WHO's "Health for All" (HFA) strategy launched in 1978 at Alma Ata. The principles of HFA and the strategic guidance of the Ottawa Charter provide the framework for the WHO Healthy Cities initiatives. The Canadian Healthy Cities project (now called the Healthy Communities) and the WHO European Healthy Cities Project initiated in 1986 were the forerunners of this concept. These pioneering projects were built on the pillars of primary health care and health promotion, which included challenging communities to develop projects that reduce inequalities in health status and access to services, and to develop healthy public policies at the local level through a multisectoral approach and increased community participation in health decision making.

The concept involves focusing on the entire community, with its strengths and problems, rather than being established under the rubric of categorical issues such as tobacco, hypertension, cancer, or child abuse. It is not confined to one or more health problems, but "is intended to build health into the decision-making processes of local governments, community organizations and businesses, to develop a broad range of strategies to address the broad social, environmental and economic determinants of health" and to change the "community culture by incorporating health". Since then, Healthy Cities have spread rapidly across Europe and other parts of the world. The programme is a long-term international development initiative that aims to place health high on the agendas of decision-makers and to promote comprehensive local strategies for health protection and sustainable development.

Rationale

The technical expert consultations were conducted across the five pillars. Deliberations were held with the domain-specific experts, predominantly practitioners and academicians to gain insights in specific subject matters relevant to the current scenario. This helped in distilling indicators that will be used in establishing the baseline and will be subsequently presented to the Task Force. The gaps identified and the recommendations suggested will enable us to feed into the roadmap to make Bhopal into a model of a "Healthy City".

The following were the objectives of the consultation -

- To understand the ongoing government programs under each pillar in terms of design, implementation status and monitoring gaps
- To highlight factors that need to be addressed to improve health outcomes across all population in the city (like income levels, gender, caste, other marginalized group) starting with the most vulnerable
- To identify indicators (programmatic and outcome based) with values and sources of data for pillars
- To suggest recommendations according to experts perspectives

Scope and Limitations of the Consultation

The consultation consisted of experts from diverse backgrounds across the five pillars namely,

- Individual and Family Health
- Food/ Nutrition
- Water
- Sanitation
- Environment

The experts were identified by the BHCP team through the Principal Scientific Advisor's office, government officials/task force members and within the network of HSTP and Swasti.

The aim was to gather subject specific expert advice across thematic areas. The discussion was limited to the key questions (Annexure 2) prepared by the BHCP and HSTP Team. The questions were broad in nature to review gaps in the current government programs and identify challenges in its design, implementation and monitoring. To identify indicators, highlight neglected areas and suggest recommendations as per need of the hour.

Methodology

The preparation of consultation started with development of key questions, both broad and specific in nature. Scheduling of consultations was based on the availability of experts and logical flow of the themes and sub-themes. The following modes were used for consultation as per responses of the technical experts:

- Virtual group discussion
- Virtual one-to-one interaction

There were two rounds of virtual group consultations planned pillar-wise. And several blocks were planned for one-to-one discussions as per responses. A multi-fold approach was used in the consultations; it consisted of engagement of experts on a pro-bono basis and recommendations from various sources as mentioned below -

- The Principal Scientific Advisor's Office
- Health Systems Transformation Platform (HSTP)
- National Health Mission (NHM), Govt. of MP
- BHCP Taskforce Members
- Swasti
- Local experts from Bhopal

Framework of Healthy Cities

Governance for health implies that "health" is featured in all governance activities, going beyond the health sector and creating better conditions for health.

Figure 1: Framework for Governance of Healthy City

The review of global experiences clearly indicates that political commitment, intersectoral collaboration and community involvement are among the key success factors in strengthening systems and improving the health status of the population. Review of the Indian context reveals common challenges across Indian cities that include, limited coverage of quality health services; inadequate health financing; shortage and inequitable distribution of health workforce; weak health management, particularly at the city level. The need of the hour is to strengthen comprehensive preventive promotive packages, essential curative packages based on epidemiology and community requirements, seamless referral to higher facilities and financial protection for health emergencies.

The Department of Health and Family Welfare in Madhya Pradesh is committed to demonstrating that it is possible for cities to deliver "Health for All" by coordinating inputs from the sectors that impact health. Following a concurrence among the departments to work together to make Bhopal a 'Healthy City', a series of city level consultations will be held in Bhopal.

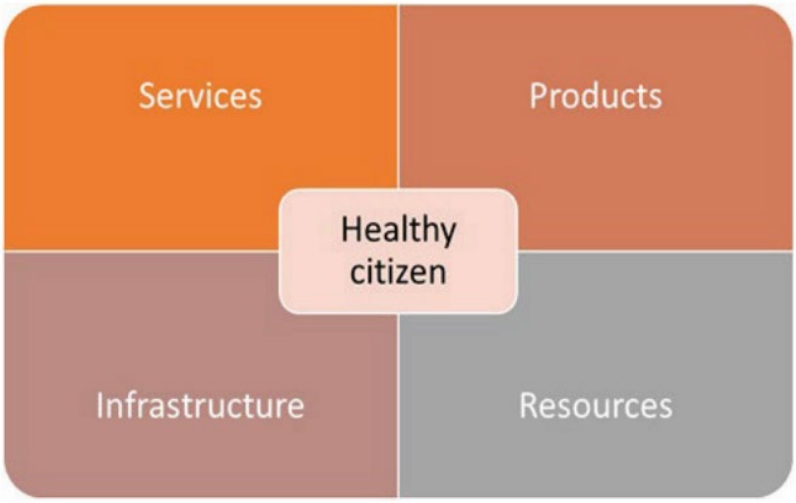


Figure 2: Strategic Framework for Cities to Approach Health

These meetings will be attended by representatives from the Department of Health, not-for-profit sector, and the private sector. Clarity on what services, products, infrastructure, and resources will be needed at the city, community, and individual/ family level and what will be feasible to provide; emerged from these consultations. It was evident that for this vision to succeed, multiple departments and government entities as well as several private and not-for-profit entities would need to play different roles. Sector strategies to achieve 'Healthy City' status would need to be integrated into one shared plan, implemented by different sectors but unified by a city-wide integration unit for project management at Bhopal. Based on the proceedings, the Bhopal Healthy City vision was categorized into five themes -

a. Healthy water (quantity, quality)
b. Healthy food (source, processing/cooking, storage, nutrition)
c. Healthy sanitation (toilets, sewage treatment, recycle, reuse, safe disposal)
d. Healthy environment (air, soil, public spaces, law environment)
e. Healthy individual & family (health services, safety)

The themes traverse the determinants of health across sectors and earmark the key considerations required for modeling Bhopal as a healthy city. Within each of these aspects, an understanding of what services, products, infrastructure and resources will be needed at the city, community and individual/family level needs to be developed. Operationalizing the Healthy City Vision will require articulation of an implementation strategy to develop a healthy city.

Core Chapter 1:
Individual and Family Health

Introduction

The nature of a family continues to play a crucial role in nurturing and socializing children, influencing adolescent development, nutrition of women and children, and health impacting behaviors. These, in turn, affect individual and family health in both positive and negative ways. Health challenges particularly manifest in cities relate to water, environment, violence and injury, noncommunicable diseases (cardiovascular diseases, cancers, diabetes, and chronic respiratory diseases), unhealthy diets and physical inactivity, harmful use of alcohol as well as the risks associated with disease outbreaks.

In this context, the WHO outlined 100 Core Health Indicators in the Global Reference List, 2018, some of which are focused on mortality rates by age, gender and causes, fertility, and morbidity. Specific targets under these are being pursued through SDGs I, 3, 11, and 16. The impact of individual and family health on building healthy cities was studied in the context of sub pillars:

- Reproductive and Child Health
- Communicable and Infectious Diseases
- Non-communicable Diseases
- Geriatric Disorders
- Substance Abuse

Consultation Proceedings

Key sub-themes of discussion

- Reproductive and child health
- Primary health care
- Communicable and non-communicable diseases
- Disability Services
- Integrated healthcare delivery
- Preventive and promotive health
- Mental health

Gaps in Existing Government Programs

The major gaps in the current government programs are with regards to access, utilization and coverage of health services for the most vulnerable population. For instance, complete Antenatal Checkup (4 checkups), one of the standard maternal indicators, still needs to improve in urban areas especially the vulnerable pockets; the urban slums. One primary problem is the lack of awareness about the health services provided by the government and thus, its usage. The quality of services, lack of access, and delays in availing services due to over-burdened health facilities are also some key factors that play a role in determining utilization of existing benefits of health and social welfare schemes.

Accessibility could be viewed from a three-frame dimension: access to buildings, transport facilities, and information communication. When a healthy city is being developed, access to health care, preventive, promotive, and treatment should be available, accessible, and affordable. Due to regulatory and governance issues, existing

government schemes are unable to reach the public. Despite the vast number of disabled persons, people are not taking advantage of the schemes available for disability rehabilitation, mainly because they are unaware of the services.

An integrated healthcare service delivery program is a major gap in the healthcare sector. For instance, reproductive health and family planning services can be merged with maternal and child health; in this way, the duplication of applications can be reduced, and resources can be used effectively if they are channeled together. Public-private partnerships can be an effective healthcare model, as private organizations can run a healthcare setting with their resources and expertise. Digital technologies are not being used extensively, but there is room for the introduction of digital technologies in the healthcare sector. Telemedicine is one of the rising areas where remote consultation can be used for the health and wellness of the population.

Neglected Areas

Behavioral change assessment through the Information, Education & Communication (IEC) material used in health drives and campaigns is often neglected. IEC material is not being used as it should have been when compared with marketing of other non-health commodities. Community engagement; involvement and accountability of local people in support of health practices is often side-lined.

Stigma around prominent issues in health is often neglected when designing and implementing policies for the same. For instance, stigma around mental health and disabilities needs to be addressed when implementing the Mental Health and Disabilities Act in society. Lastly, the method of collection of data, still remains an area of concern. The monitoring and evaluation mechanism of policies is failed to care for after its design and implementation is completed.. The validity, reliability and reporting of data needs to be closely monitored and kept in check.

Suggested Indicators

- Utilization of health services and immunization coverage
- Primary health care delivery and utilization
- Cases of mortality and disease incidence rates
- Capacity building indicators - No. of training programs, No. of people trained
- No. of people approaching health facilities to avail health services
- Healthy equity indicator and Out of pocket expenditure
- Referral indicators - ease, quality, time taken, availability

Expert Recommendations

Integration of multiple programs at the local level could be a good start to developing an integrative approach in the health sector. For instance, Karnataka has a 3% reservation for people with disabilities. This not only helps them with employment, but also with resources; funds and resources are often used in developing disabled friendly infrastructure. Secondly, in Kerala, the Kudumbashree, a network of women at the community level supports procurement and supply of medicines when there is a disruption in the supply of medicines at the district hospital. These are examples of great convergence at the local level and the learnings from the development sector can be applied to different contexts in the health sector.

In order to facilitate implementation of programs and de-stigmatizing issues around mental health and disabilities, building of pressure groups within the community can impact significantly. Preventive and promotive health programs in mental health need to be initiated at a rapid pace. The incidence of suicides has tremendously increased over the years. Availability and accessibility of councelling centers along with installation of gate keepers at various community and health delivery levels can prevent suicides. For example, AIIMS is running a Mental Health Center at 10 No. Market, Bhopal, a recommended place for field visit. Similarly, gender based violence can be reduced with the introduction of gender based lens in a life cycle approach. In Individual and Family Health, process and output indicators assessed over a span of 1-2 years are more useful than outcome indicators for instance, the ACT framework. The framework of AAAQ (Availability, Acceptability, Accessibility, and Quality) Act framework can also be useful during indicator selection signifying the right to health.

Core Chapter 2:
Food/ Nutrition

Introduction

The role of food, a vital and basic need for human life, in sustaining an individual's health and livelihood can hardly be undermined. The quality and quantity of foods, combined with the systems that produce them, have a profound influence on the nutrition status and thus the mental, physical and social health of populations. In urban areas, especially in developing countries and in countries in transition, people experience a shift in dietary patterns such as diets rich in saturated fat, refined foods, and sugar and low in fiber which create increasing health problems. Food, thus has the ability to form the foundations of a healthy city and catalyze the achievement of key global goals and targets outlined under the Sustainable Development Goals. These include ending hunger and ensuring access to safe, nutritious and sufficient food all year round (SDG 2.1) and ending all forms of malnutrition (SDG2.2). The impact of food on building healthy cities was studied in the context of three sub pillars:

- Food nutrition security: storage and access
- Food safety and adulteration
- Nutrition and food habits

Consultation Proceedings

Key sub-themes of discussion_

- Nutrition education and awareness
- Food and nutrition security
- Food safety
- Nutrition habits and behaviors

Gaps in existing government programs

There are numerous gaps and challenges in the existing programs in the Food/ Nutrition sector. The key challenge being the monitoring of budget allocation; appropriate checks and monitoring is required for the utilization of funds and resources in this area. Quality of services and an efficient monitoring framework for NHM programs still remain a challenge. Data collection under government programs came out as a significant topic of deliberation. The data available is not sufficient, reliable and trustworthy. Moreover, there is often under-reporting that needs to be addressed. This happens due to lack of convergence and coordination between the various departments of government, which is a major gap.

Numerous examples came into light, the most prominent ones included budget and resource allocation to ASHA and field workers and the lack of on-ground staff. For instance, guidelines mention the presence of a mental health counselor at the PHCs, but in reality there is no such personnel present due to financial and technical constraints. Many times there are challenges at the administrative level in terms of Adhaar Card and PDS card due to migration and other technical reasons. Other times there is lack of accessibility or knowledge about the utilization of services. Fair price shops that offer ration at the minimum price though ensure food security, it fails to ensure nutrition security. Firstly, availability of cheap wheat and rice does not ensure overall nutrition of the community. Secondly, the quality of such ration needs

to be monitored. Other items available at such shops need to have proper labeling and FSSAI logos to ensure food safety. Thirdly, the food diversity and consumption pattern also needs to be looked at from a geography, demographic and social determinants perspective. Monitoring and evaluation of existing programs remain a vital gap in this sector. A robust M&E framework needs to be established in order to fill these gaps.

Neglected areas

The Food/ Nutrition sector heavily relies on behaviors and practices that people either follow or adopt as a learning. Thus, IEC plays a vital role in nutrition education and awareness. However, it is observed that just IEC material is not enough to improve nutritional status, there is a need to measure the behavioral change associated with it; an area that remains neglected. Behavioral change communication needs to be emphasized in order to improve nutritional status at an individual level. The position of Asha workers in the formal system remains uncared for. They play a key role in delivering IEC and enabling behavioral change. Food and Nutrition security although sounds convergent, often in order to ensure food security, nutrition security takes a back seat. The objective to feed the people obviously takes priority, but what is being feeded is frequently neglected. This could also be because of the size of population in India that needs to be feeded. Quality checks on the type of ration being supplied and services provided needs to be considered. Also, there is a lack of awareness on the beneficiaries side to avail benefits. It is often observed that the beneficiaries either have no or partial knowledge about the government benefits that they are eligible for, it remains a major area of concern.

Suggested indicators

- Minimum dietary diversity score by WHO
- IMR and MMR
- NFHS indicators
  - Stunting, wasting, underweight in children under 5
  - Anemia
  - Tobacco and alcohol consumption
  - Screening of cancers
  - Breastfeeding practices
  - Obesity
  - Diabetes and Hypertension
  - ANC check ups
- Availability of food and Food consumption patterns
- Consumption of packaged vs. unpackaged foods, labeled vs. non-labelled food and certified vs. non-certified foods.
- Quality control indicators for shops
- Food stability - during times of food and economic crisis

Expert recommendations

Integration of departments is a key step to tackle issues in this sector. A Block Health Convergence Plan can be used as a framework where a block is taken as the unit of planning, which is further integrated and converged. Learnings can be taken from Save the Children, Healthy Cities Program. About 3 years ago, 11 cities including Bhopal were a part of this initiative. Learnings from maternal and child health, key challenges and findings can be helpful in development of BHCP. City

based programs around urban agriculture can be rolled out as a part of national programs that include initiatives like kitchen and community gardens, Focus Group Discussions (FGDs), Nutri and vertical gardens. Community based events like 21 Days Nutrition challenge, Local Recipes challenge, Master chef competitions etc. should be encouraged. Similar to the Village Nutrition Days, Urban Nutrition Days should be launched. At the household level, income support programs for empowering women should be enhanced since women predominantly look after the nutritional needs of the family. To ensure food security, locally available products and recipes should be promoted. The PDS system should ensure nutrition security along with food security; should re-evaluate the nutrition component.

Allocation of budget and resources should be closely monitored in terms of timely dispersion, utilization, and understanding nutrition budgeting. Capacity building of field workers to take place through routine training, assessment and evaluation sessions. Grievance redressal system should be prompt, transparent, and accountable. Learnings to be taken from the food industry in marketing and advertising healthy commodities; transition to healthy food marketing. Child nutrition should be focussed with child friendly marketing for instance, attractive packets of healthy bites. The objective is to encourage healthy food habits. As a policy recommendation, higher taxes can be levied on high sugar, fat and salt products. Lastly, a robust monitoring and evaluation framework needs to be in place to ensure availability, accessibility, quality and safety of food products and perhaps assessment of nutritional status.

Core Chapter 3:
Water

Introduction

Safe and accessible water is important for public health, whether for drinking, domestic use, food production or recreational purposes. Improved water supply and sanitation, and better management of water resources, can boost the countries' economic growth and can contribute greatly to poverty reduction. Water resources (both surface and groundwater resources) are adversely affected by an increasing population as well as by man-made activities, including poorly treated drainage, construction, and industrial runoff, resulting in water quality degradation and limiting safe water supply.

Water management is thus a key focus area of the Sustainable Development Goals (SDGs) with goals to achieve universal and equitable access to safe and affordable drinking water for all (SDG 6.1) and improving water quality by reducing water pollution, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally (SDG 6.3). The impact of water on building healthy cities was studied in the context of four sub pillars:

- Water Security
- Water Conservation
- Water Quality
- Wastewater Management

Consultation Proceedings

Key sub-themes of discussion_

- Water management and conservation
- Water quality
- Water security

Gaps in existing government programs

Current programs like AMRUT, Jal Jeevan Mission etc. are sufficient to deal with the challenges in the water sector. There is no need to scale up, discontinue or start new programs in this pillar. The gap lies in expansion of these programs, since the peripheries of cities are continuously expanding and usually, the peripheries are the ones that face most issues with water. Water is a sensitive issue that comes with major financial and political constraints. No political party has an appetite to charge for water as it is a human right and a basic necessity due to which institutions supplying water financially struggle. This not just leads to poor delivery of services but also makes the public rely heavily on private sources.

The role of social/community specialists also becomes important as the water domain is heavily dominated by engineering and technical specialists in the government programs. There is a need to look at the existing challenges from the lens of a social objective; a major gap that needs attention. Community engagement and accountability of institutions is required at all levels. Traditionally in Bhopal city, the agenda of the Development and Tourism department has been of beautification of water bodies and not necessarily of its protection. Protection and routine monitoring

is needed to ensure maintenance of such water bodies. Utility of water as a part of strong regulation needs to be enforced starting from the most basic unit of a district; the ward level.

Neglected areas

Water as a resource is not a challenge, it is the distribution of the resource, perhaps the financing part along with the lack of HR that is often neglected. The current system is overwhelmed, understaffed and under-resourced, it is not held accountable for unsustainable delivery of services especially among the vulnerable and marginalized. The solution lies in involving the community, having a city level utility plan, using the guidelines from the Water and Sanitation Safety Plan laid out by WHO. A robust monitoring and evaluation system needs to be in place to constantly monitor the water supply and quality.

Technological innovation in this sector is highly neglected. For example, all the reforms that happened in the last two decades in India have been heavily backed by IT like the electoral reforms, banking sector, reforms with Aadhaar card, taxation etc. An IoT platform that gives real time data and provides continuous monitoring can keep the water quality in check and also ensure appropriate management and development of conservation strategies.

Suggested indicators

- Baseline indicators like availability of 135 liter per capita per day, universal connection and 24x7 supply coverage
- Democratization and decentralization should be measured as outcome indicators.
- Water quality indicators like presence of contaminants (eg: heavy metals, bacteria etc.) with context to Bhopal
- Water monitoring indicator

Expert recommendations

City level water program should be rolled out that integrates all central and state level provisions. Generally, the guidelines established at the national level are not applicable at the local level, thus a flexibility in terms of contextualizing programs around city requirements can tremendously help in establishing robust systems. Appropriate enforcements should enforce protection and maintenance of water bodies in Bhopal; both surface and groundwater. Parallel to the MP Water Supply Board, a City level water utility board should be introduced that takes into consideration utility issues; infrastructure, institutional, services and community participation. Community involvement and ward level discussions on matters like intermittent supply, water pressure, scarcity of water during summers and service delivery with institutions being held accountable should be promoted. Encourage household level water prevention and conservation techniques through activities like rain water harvesting, usage of sprinklers, modern techniques of water management, water recycle and reuse. Rewards and incentives should be launched for adopting water conservation techniques.

Learnings should be taken from -

Drink From Tap Mission of Orissa

Right to water and sanitation for the urban poor. 24x7 water supply through household tap connections based on land rights of the population under the Slum Level Development Committee. In the Bhopal context, it is important to understand the demography, the geography, the informal settlements, disaster exposed areas, perhaps the overall landscape.

Water Safety Plan (WSP) and Sanitation Safety Plan (SSP) by WHO are great resources for cities like Bhopal as they take into account the flexibility to be local. Cross -disciplinary teams work together in a specified time frame and re-gather to review. It has two scales that are institutionally embedded and range from local community scale to city wide scale. A participatory utility approach should be encouraged where social technical experts form a significant part of the framework. Implementation and monitoring mechanism should consider SDG based monitoring framework; a bottom up monitoring at a city level from the Mohalla level to ward, cluster and finally city level. Water treatment at tertiary level is important if water is to be recycled; STPs needs to be checked. Recycled water can be used for non-potable uses at the city level.

Core Chapter 4: Sanitation

Introduction

Access to clean water and sanitation facilities are major factors impacting the health of urban populations. Poor sanitation not only contributes to spread of disease but also undernutrition is caused by lack of access to safe drinking water, sanitation and hygiene. The lack of access to clean sanitation facilities also impacts women's education and health.

Safe sanitation is extremely essential to maintaining a healthy lifestyle, as well as in improving mental and social well-being of people. In India, the Swachh Bharat Mission has helped reduce the spread of communicable diseases by focusing on sanitation and hygiene. Sustainable Development Goal 6.2 has set the target of achieving access to adequate and equitable sanitation and hygiene for all and ending open defecation, paying special attention to the needs of women and girls and those in vulnerable situations. The impact of sanitation on building healthy cities was studied in the context of:

- Solid and Liquid Waste Management
- Sanitation Facilities
- Hygiene

Consultation Proceedings

Key sub-themes of discussion

- Gray water and fecal sludge management
- WASH practices and awareness
- Hygiene
- Waste disposal

Gaps in existing government programs

Swachh Bharat Mission (SBM) and AMRUT are two most important programs in sanitation, running quite well and nothing needs to be radically changed. However, there are certain gaps in these programs that exist. One of the drawbacks about any sanitation program is time. The time required for bringing a tangible change in this sector is huge. Both implementation and evaluation are very time consuming. Gray water management is a key area that needs to be addressed. Fecal sludge management is often side-lined; it is important to understand that one approach does not fit all. Open drains, contamination by leakages need different approaches to water management.

Under SBM, there are already existing infrastructures - but are they functional? Micro level indicators at both planning and implementation levels are missing. Learning from SBM is a huge gap that needs to be filled. AMRUT on the other hand has guidelines according to big cities, which are not applicable for smaller cities and towns. Moreover, funding is limited and a multi-sectoral approach needs to be re-evaluated. There are numerous gaps existing in the operational maintenance of sanitation facilities that need attention in order to fill the operational and functional gaps.

Neglected areas

Capacity building of ULBs is a historical weakness. ULBs are not actively involved and the roles of the District Collector and Mayor are not defined. Ultimately, local solutions should be encouraged that creates a demand at the public end and forces the ULBs to flexibly use the funds and resources for the welfare of the public. Funding from central to state government follows the guidelines laid down by the national program. The contextualisation with respect to the state is completely neglected due to which funds and resources are not effectively utilized.

The involvement of the community through RWAs and neighborhood clubs plays a key role in sanitation practices. However, currently there is a deficiency in the social capital and neighborhood cohesiveness. Social equity needs to be addressed and the focus should shift from just IEC delivery to measuring behavioral change in the population. Strong neighborhood groups; networks and linkages need to be strengthened. Lastly, everything boils down to governance. Governance mechanisms should be multi-sectoral in order to be effective. Capacity building and transparency should be encouraged in all urban local bodies. The approach should move from output to outcome based with a robust M&E framework in place. Public private partnerships should be explored in this area with a focus on community behavioral level.

Suggested indicators

- Disposal of biomedical waste generated by healthcare facilities
- Effectiveness of awareness campaigns on sanitation; menstrual hygiene
- Percentage of hypertensive - NCD in the family
- Percentage of awareness regarding screening programs
- Output/ performance based indicators
- Eg: how ULBs are progressing in mission time, no. of units constructed
- Behavioral change in the population
- Climate resilience
- M&E indicators
- Indicators that indicate reuse and recycle of water
- Specific area wise pollution indicators not city wise
- Child friendly cities - concept by WHO and UNICEF; indicators available

Expert recommendations

The most important step in improving sanitation is the involvement of the community. This can be achieved through Resident Welfare Associations (RWAs), neighborhood group strengthening, community building and social mobilization. An assessment of behavioral change through IEC needs to be promoted in order to understand sanitation awareness and practices at the community level. Bottom to top level approach should be followed, where grass root level problems are identified first and local solutions are encouraged. Involving the community creates public demand, which ensures project sustainability and longevity. Learnings can be taken from the **Child Friendly Cities Initiative by UNICEF** and Vulnerability Assessment of Bhopal conducted under NUHM (SHRC). The Vulnerability study can provide insights into the existing resources and services available for the vulnerable, if they are operational and maintained, WASH facilities available, water supply, delivery and quality. In the current scenario, technological advancements are playing a key role in monitoring and evaluation. Technical innovations should be promoted in order to continuously monitor sanitation and hygiene, for instance, strengthening the already existing SBM dashboard.

The contextualisation of implementation of national programs in state by understanding needs of the state and developing a state perhaps a city level plan. City should have an appropriate catalog of options designed for implementation according to city specific needs. Funding should not be limited to one program - ULBs should have freedom to use funds as per requirement. Ensure capacity building and skill training of personnel. Promote routine assessment through a proper M&E framework to review the city sanitation plan, sanitation facilities, shit flow diagram, current STPs and fecal sludge treatment, and centralized and decentralized modes of intervention. With increasing changes in climatic conditions, it is significant to ensure sanitation interventions are climate resilient. Recommendations offered by **WASH-Climate Resilient development by UNICEF** can be utilized in order to make interventions adapt to changing climatic patterns. Adoption of the Waste to Wealth model should be encouraged in the industrial sector by designing and implementing waste to wealth model through incentives and rewards.

Core Chapter 5:
Environment

Introduction

The ecological environment combined with the living spaces and the safety together makes an immense and direct impact on people's health. Environmental diseases impact the marginalized population, in particular, women, children, and senior citizens, much more than the rest of the population. For example, continued exposure of pregnant women to ambient air pollution often leads to adverse health outcomes such as preterm delivery or underweight children. It has been observed that stress of urban sprawling on civic amenities adversely impacts the ecology, which is a multiplied manifold with inadequate waste management, traffic congestion, and poor living conditions. The high prevalence of communicable diseases, such as tuberculosis in urban areas has been found to be a result of overcrowding and poor living conditions.

An enabling environment that supports healthy life thus needs to focus on improving air, water, noise pollution, creating better urban spaces, and enhancing at the least the physical safety of citizens. SDG 3.9 seeks to "substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination and SDG 11 focuses on making cities and human settlements safe, inclusive and resilient, by 2030." The impact of the environment on building healthy cities was studied in the context of four sub pillars:

- Pollution
- Waste Generation
- Urban Spaces
- Safe Environments

Consultation Proceedings

Key sub-themes of discussion

- Outdoor and indoor pollution
- Green spaces
- Green energy
- Safe housing and transportation

Gaps in existing government programs

Environment is a broad topic encompassing numerous sectors. In healthy cities' context, to evaluate gaps in programs, it would be necessary to see which already established Healthy Cities' norms are we going to follow in an Indian context as the environmental conditions of India are very different. Understanding the environment by sub-classifying themes and indicators under heads would be a useful exercise. Municipal boundaries of cities are constantly expanding, this indicates that the relation between expanding boundaries (geography) and changing environmental conditions will play a key role in determining the health of the overall environment of the city. One of the major gaps lies in the Blue Green Masterplan of the city. In theory it exists, but on the ground, it has not been implemented yet. There is a lack of monitoring and maintenance system for afforestation schemes. Forests have a compensatory afforestation plan, however, in urban areas there is no such scheme. This is a major gap in the urban afforestation domain; no compensation policy for urban afforestation.

Under pollution controlling and regulatory programs, pollution control boards monitor the levels of pollution not necessarily to reduce or regulate pollution as they don't have a carbon tax system applicable at a local level penalizing the community. However, there are current schemes that provide incentives for mitigating pollution at the household level. Accessibility and affordability of clean energy is another significant issue. In the current scenario, accessibility has increased; however, affordability remains a challenge. Alternative and substitute options that help in transitions to clean energy need to be enforced through public friendly policies in technology. Indoor air pollution greatly depends on easy availability of fuel and cooking patterns. A shift from traditional fuel system to the modern fuel system that is from non-LPG to LPG has been seen in order to reduce indoor air pollution, yet many studies have confirmed that the continuity cost of LPG is higher. Thus, unless you give the public the continuity, in terms of subsidies, people are not going to use it.

Neglected areas

Accessibility still remains a key neglected area. Access to green spaces is not uniform. There are restrictions such as timing of parks, religious differences, social differentiation and taboos. For example, in Old Bhopal Muslim females are not allowed to use the public parks. Public parks close at 6:30pm restricting access to the general public. As observed, smart cities have a dense plantation of palm trees that offer no benefit to either the environment or ecology. A gap in understanding of the local ecology and agriculture still remains unfilled. Similarly, Bhopal city has a widespread network of the type of trees that are proven allergens. Especially during the months of November to February, people are prone to pollen allergies. A thorough study of the type of flora in Bhopal still remains unexplored. Research and appropriate interventions can help mitigate such problems. The concept of vertical gardens is gaining more popularity as there is a lack of space. For a city like Bhopal, which is seeing a rapid pace of urbanization, this form of ecosystem can function well. The utilization of open spaces requires an assessment of the number of people as the requirement of space changes with an increase in people; an area to explore.

Suggested indicators

- Ecology and environment (eg: proportion of native trees in green space)
- Biodiversity - no. biodiversity spots in the city, city biodiversity index (IIFM), green space diversity
- Percentage of population using neighborhood parks/ green spaces
- 3*30*300 rule (per capita green space)
- Industrial presence
- Air, water, land pollution
- Air quality - presence of PM 2.5, PM10
- Effectiveness of air quality improvement policies at the household level
- Major dominant fuel use - for indoor air quality
- Transport indicators - EV usage and perception levels
- Existence of environment friendly infrastructure

Expert recommendations

It is significant to estimate the sequestration capacity through resource mapping of Bhopal for residents - how much environmental services are required for a healthy life. For instance, how much space is needed per individual, how much water and oxygen is required, if the city grows how much would be the potential carrying capacity? Encouraging energy audit/ accounting at household, community and industrial

levels and designing affordability models for transition into green and clean energy and finding substitutes and alternatives with regards to environment conditions, services and benefits is a beneficial step. Exploring technological advancements in mitigating different types of pollution and educating the society regarding the same is needed. Most of the policies are qualitative in nature, quantification of policies should be adopted. Often numbers represented as benefit or hazard work better in enforcing behaviors.

Take learnings from the center's initiative in stubble burning, where farmers sell their stubble to the government that will be used for power generation and help in reduction of stubble burning. Adding a commercial aspect to this has increased the willingness of farmers to sell the stubble and control burning. Miyawaki forests are gaining importance, where forests are grown in small patches in urban areas and typically make use of native or local seeds and saplings. These forests grow quickly in small areas and consist of densely packed trees and shrubs, ideal for cluttered urban landscapes. The plants and trees grow upwards towards the sunlight and the biodiverse forest also attracts fauna like butterflies and bees that are beneficial for the ecosystem.

In Boston, USA commercial farming spaces are coming up with a similar concept of Food Forests by growing local crops. In India, the Nagar Van scheme under CAMPA can encourage the food forest concept with community participation. A knowledge of local and traditional ecology with technology can be useful in planning green spaces in urban landscapes. For example, neem and peepal along with flowering trees can be planted. In North America, the 3*30*300 rule is being used for urban forestry and urban greening. The rule provides clear criteria for the minimum provision of urban trees in urban communities -

- **3 trees from every home**
- **30% tree canopy cover in every neighborhood**
- **300 meters from the nearest public park or green space**

Utilization of land for housing and open spaces can take lessons from the Second Tamil Nadu Housing Sector Strengthening Program with the World Bank that supports affordable housing for the poor and vulnerable. Policy interventions in this program can provide useful learnings for Bhopal facing similar challenges in the affordable housing sector with the increasing urbanization. In Karnataka, northern Bangalore has the concept of Ward Sabhas that involves community engagement. A similar concept can be launched in Bhopal, where discussions can take place at the community level and solutions can emerge. Bringing social lens in terms of celebrating festivals around lakes and biodiversity spots can encourage the locals to be a part of conservation efforts. In Bangalore, municipalities and private partnership have delivered promising engagement of the community. The Whitefield Rising is a great example of this. Environmental health can be assessed through the Soil Health card in peri-urban areas. PM Krishi Sinchai Yojana is a note-worthy scheme to enhance irrigation in peri-urban areas.

Way Forward

The technical expert consultations helped in identifying gaps in existing government programs, highlighting neglected areas, suggesting indicators and proposing recommendations.

The comprehensive list of the indicators across the five pillars will be taken for establishing and measuring the baseline. Overlaps will be identified from the indicators shortlisted from secondary research and expert consultation. The compiled list of relevant indicators will be presented to the Task Force for discussion and deliberation. The Task Force will indicate the availability of data for the selected indicators and suggest other indicators. A final list of indicators will be prepared upon the completion of careful review of indicators with the Task Force members, post which a baseline will be prepared for Bhopal city. The gaps and neglected areas identified along with the recommendations will become a basis of discussion at the city level consultation and feed into the roadmap. Eventually, a final Roadmap for Bhopal Healthy City will be developed and finalized.

Annexure 1

List of Technical Experts

Dr. Nutan Prabha Jain

Dr. Nutan has overall 35 years of working experience in the health sector conducting more than 50 research projects, training, and teaching for the health sector at national and international levels. She works as a Professor at S D Gupta School of Public Health at IIHMR University. She has a background in Behavioural Science and Public Health. She has contributed research articles on gender, reproductive and sexual health, adolescent health, mental health, etc.

Dr. Ganesh Arun Joshi

Dr. Ganesh is an Assistant Public Information Officer at the Composite Regional Centre for Skill Development Rehabilitation & Empowerment of Persons with Disabilities.

Dr. Pankaj Shah

Actively involved for the past 35 years with SEWA Rural - a voluntary service organization providing health, medical, and educational-related services to the rural, poor, and tribal communities of Bharuch and Narmada districts. Currently managing the hospital as Superintendent, managing Community Health Project as Director, and governing the organization as Managing Trustee.

Dr. Manda Venkata Sasidhar

Dr. Manda Venkata Sasidhar is the Chief Scientific Officer at Apollo Hospital Educational and Research Foundation (AHERF). He was instrumental in establishing the exosome biology program at AHERF. He is also the founder of Urvogelbio, a biotech start-up engaged in developing exosome diagnostics for oncology and neurodegenerative diseases. He has pioneered the exosome biology program at AHERF and expanded the project portfolio into various applications (diagnostics, drug delivery, exosome engineering, and therapeutics) using the exosome platform.

Dr. Sarman Singh

Dr. Sarman is currently working as Mentor, MEDSER Centre at IISER, Bhopal. He worked as faculty at All India Institute of Medical Sciences New Delhi and as a Director & CEO of AIIMS Bhopal. He has 8 patents, and 350 peer-reviewed publications. He is a medical doctor and holds a background in Biomedical Sciences. He has a PG degree in epidemiology from the University of Michigan, Ann Arbor and a fellowship from Chicago.

Dr. Geetha Desai

Dr. Desai is Professor of Psychiatry and has been associated with perinatal psychiatric services at NIMHANS since 2007. Her special interests include medication use during lactation, mother infant bonding disorders, mental health problems during pregnancy. She has over 150 publications and an extensive experience in suicidal prevention.

Dr. Janardhan N

Dr. Janardhan is an Assistant Professor at DST-Innovation in Science Pursuit for Inspired Research (INSPIRE) faculty, Department of Psychiatry, National Institute of Mental Health and Neurosciences (NIMHANS). Dr. Janardhan's research areas include OCD and Schizophrenia.

Prof. Amit Arora

Amit Arora is a Professor at CTARA, IIT Mumbai. He holds a Ph.D. in Food and Bioprocess Engineering from University of Illinois, USA. He has vast experience of over a decade in bioenergy, bioprocessing, downstream processing, food processing, membrane separations, process design and development, microwave technology, paper and pulp engineering.

Dr. Preeti Khanna

Dr. Preeti is currently working as a Social Protection Nutrition Consultant at UNICEF, Delhi. She holds a Ph.D. in Public Health Nutrition from Delhi University. She specializes in Pediatrics, Adolescent Nutrition, Maternal and Child Nutrition and Nutrition for mental well-being. She has past experience of working as a Consultant with NITI Aayog.

Dr. Ravinder Kaur

Dr. Ravinder is a Nutrition Consultant at the Nutrition Opportunities Worldwide, Canada. She is a global health professional with more than 12 years of experience. She holds a MPH degree from PGIMER, Chandigarh. She has worked with Centre for Social Innovation, WHO, Child Health Foundation and various other organizations in the past for providing health care solutions using the continuum of care and health system strengthening approaches.

Dr. Zuha Khan

Dr. Khan is a women centric and an accomplished Public health professional with nearly 10 years of experience in Nutrition and Maternal and Child Health issues and health programs. She is currently working as a Consultant Maternal and NewBorn Care - Birth Package Program at Nutrition International. She has previously worked with UNICEF and World Vision India.

Mr. Vishwanath S

Vishwanath S is the founder of Rainwater Club, Director of Biome Environmental Solutions, and Trustee of Biome Environmental Trust. He is a Civil Engineer from Mysore University and a Masters in Urban and Regional Planning from CEPT, Ahmedabad. He holds a Post-Graduate Diploma in Urban Environmental Management from Rotterdam in the Netherlands. A member of the Sustainable Sanitation Alliance, he is also an Ex-Secretary General of the International Rainwater Catchment Systems Association. He serves as an Adjunct Professor at Azim Premji University, and has been a columnist at the Hindu since May 2007 ('Waterwise' in Property Plus on Saturdays).

Mr. Raman VR

VR Raman is the SLH In-country Focal Person for India and a Consultant Senior Research and Policy Mentor at the Centre For Social & Environmental Innovation. He has over three decades of work on equity, inclusion and human rights. He has unique associations with various missions of Government of India including the Swachh Bharat Mission on universal sanitation. He has rich research experience and works with several WASH, health and environmental organizations.

Dr. Bhaskar Jyoti Deka

Dr. Deka holds a Ph.D. in Environmental Engineering with a specialization in Desalination and Membrane Distillation, and a Masters in Water Resources, Utilization & Environmental Management from Indian Institute of Technology, Guwahati. Dr. Deka's research interests include forward osmosis, nanoengineered surface design, polymeric/nanocomposite membrane fabrication, membrane biofouling and scaling, water/wastewater treatment, and solid waste management.

Mr. Amit Mishra

Amit Mishra presently serves as the Vice President, Marketing at Vassar Labs. With his 14+ years of technology experience, He believes in working for a sustainable future wherein he has done a PG Course from University of Florida on sustainable Agriculture and Land Management. Apart from that he has a graduation in Mathematics from Delhi University and has done his MBA specializing in Data science.

Ms. Susmita Sinha

Ms. Susmita has a background in Environmental Management from Indian Institute of Social Welfare and Business Management, Kolkata. She is currently working as a Project Advisor and Capacity Building Expert at the WASH Institute, New Delhi. She has past experience of working with Indian Institute of Human Settlements, BORDA, GIZ, TIDE and various others.

Ms. Sapna Swamy

Ms. Sapna holds a Masters degree in Engineering from Birla Institute of Technology, Mesra. She is an SWM expert and has worked closely with Bangalore Municipal Corporation in their citywide integrated solid waste management and is a Director at e-Parivartan

Dr. Satish Kumar

Dr. Satish is currently working as an Advisor to Athena Infonomics. He is a former advisor in public health planning to the Ministry of Health and Family Welfare, Government of India. He has undertaken projects in WASH, health and nutrition. He has previously worked with UNICEF East India Office and other regional offices including Rajasthan and Tamil Nadu for over 15 years.

Mr. Santosh Kumar Sahu

Mr. Santosh is an Associate Professor of Economics in the Department of Humanities and Social Sciences at IIT Madras, Chennai. He holds a Ph.D. in Economics from Indian Institute of Technology Mumbai. Mr. Santosh's research interests include energy economics, applied microeconomics, industrial economics and the economics of global climate change. He is an affiliated researcher at the Center for Technology and Policy at IIT Madras.

Mr. Siddhartha Khare

Mr. Siddhartha is currently working as an Associate Professor in the Department of Civil Engineering at the Indian Institute of Technology, Rorkee. He holds a Ph.D. and M. Tech degree in Geomatics Engineering. Mr. Khare's areas of interest include GIS, remote sensing, phenology, biodiversity, crop monitoring and artificial intelligence.

Dr. Dhanya Bhaskar

Dr. Bhaskar is presently Associate Professor of Ecosystem and Environment Management and Chairperson, Centre for Policy Studies at Indian Institute of Forest Management, Bhopal. She holds a Ph.D in Forest Ecology from Forest Research Institute, Dehradun. Her work is located at the interface of ecological and livelihood sustainability in forest, rural and urban landscapes.

Ms. Sandhya Naidu Janardhan

Ms. Janardhan is an architect with 12 years of experience in community-led design and sustainable architecture. Currently, she is the Founder and MD of Community Design Agency. A graduate of Columbia University's GSAPP in New York City, Sandhya's prior experiences span multiple countries including working at an interdisciplinary design firm based in Singapore, and prior to that at the San Francisco based non-profit, Architecture for Humanity.

Annexure 2

General Overarching Questions (common for all pillars)

- Currently, there are several government programs that are being implemented for improving food/water/sanitation/environment/individual health in our cities. What according to you are programs that:
  - Need to be improved and how?
  - Need to be started?
  - Need to be scaled up?
  - Need to be discontinued?
- What are some gaps in these programs? What are the challenges in its design, implementation and monitoring? What can be done to address these?
- With your expertise in the field, what is the need of the hour to improve the food/water/sanitation/environment/individual health conditions in cities or urban areas? What needs to be done in order to improve the overall situation? How do we improve outcomes across all groups of population in the city (like income levels, gender, caste, other marginalized groups) starting with the most vulnerable?
- In the Literature review document, there is a section on recommendations. Are there any changes that you would like to suggest? How do you prioritize the recommendations according to relevance? How should we go about implementing the recommendations?
- At a city level, how would we be able to measure success in food/water/sanitation/environment/individual health? Can you suggest 3-5 key indicators (programmatic and outcome based) with values and sources of data for this pillar?

Specific Questions (pillar wise)

Individual & Family Health

➤ **Reproductive & Child Health**

- Are reproductive and child health services easily accessible to women living in urban areas, particularly those from marginalized communities, or are there barriers to access the services at an Individual level, Facility level and Health System level.? What is your view regarding this approach in terms of availability, affordability, and accessibility?
- What are the challenges associated with maintaining the continuum of RMNCH care and Integrated management of childhood illnesses?
- Currently, RCH evaluation is done based on coverage of services, IMR, MMR, and TFR like indicators. Are there any other indicators that should be included to reflect the reality?
- Flash the current status of maternal mortality rates, infant mortality rates, U5MR. Are there strategies in place to address persistent disparities in health outcomes across different population groups in urban areas?

- ⌘ Are efforts being made to ensure that women have access to a range of contraceptive options, and that they are able to make informed choices about their reproductive health?
- ⌘ What is your opinion regarding the work of ASHA/USHA workers? What are some challenges in this system that works on incentives at the grass root level? What are your recommendations to address the same?

➤ Communicable Diseases (CDs)

- ⌘ There are numerous IEC efforts being made to curb CDs. Provision of prevention kits and health facilities access is ensured during high risk months. However, people tend to not utilize these resources or are careless. Self-awareness still remains a challenge. How can such issues be addressed?
- ⌘ AIDS, TB, Vector Borne Diseases, Leprosy, Hepatitis are just a few names in the list of CDs that already have existing national level programs running. IDSP is a reporting system for CDs used by health facilities. Nonetheless, this mechanism is not routinely used by health personnel. The reporting is often incomplete or goes without reporting. How can this reporting system be strengthened and kept in check?
- ⌘ What are the Top 3 indicators or any other recommendations, with possible sources, to monitor the burden of CDs in the city?

➤ NCDs

- ⌘ In response to the "WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020", India is the first country to adopt the National Action Plan with specific national targets and indicators aimed at reducing the number of global premature deaths from NCDs by 25% by 2025. Do you think this can be achieved with the initiatives being undertaken by the NPCDCS? What can be improved?
- ⌘ What NCDs (and its proportions) occur due to the Pollution and Built Environment of the cities? What are the emerging trends? How can primary healthcare systems respond to it?
- ⌘ What is the role of lifestyle and consumption patterns on incidence of NCD's in cities?
- ⌘ What are the Top 3 indicators or any other recommendations, with possible sources, to monitor the load of NCDs in the city?

➤ Mental Health

- ⌘ Post COVID, mental health has taken a toll on the population. Depression, anxiety and trauma have become very common. What is your opinion on the recently passed Mental Health Act, 2017? What are your recommendations?
- ⌘ CPHC package includes screening and management of Mental Health Care. What is the progress in that aspect and overall capacity and readiness of the Health system to manage mental health?

➤ Elderly/ Geriatric Care

- ⌘ What are your views regarding facilities (both healthcare and social support) available and accessible to the elderly? Can you highlight some challenges faced by the senior citizens in our cities? And possible solutions to address these.

- ⌘ Are there any specific regulations formulated for elderly care apart from the National Policy for Senior Citizens, 2011? What are your recommendations in framing a policy for senior citizens?
- ⌘ What are some key indicators with sources for assessing the health and overall well being of senior citizens in the city?
- ⌘ What are the ways to make a city Age-friendly, promoting overall health of elderly?

➤ **Substance Abuse**

- ⌘ The easy availability and accessibility of alcohol, tobacco and drugs increases addictive behaviors in the community especially amongst the youth. What are some actions that can be taken to curb and monitor the supply of it? What are some mechanisms that can help to trace the illegit provisions made?
- ⌘ There are several regulations already existing for tobacco and drugs consumption, under age drinking and smoking.
- ⌘ Could you comment on the implementation status of COTPA act Section 4 (prohibition of smoking in public places and educational institutions) Section 6b (prohibition of sale of tobacco products near educational institutions) in the City? Is the COTPA act adequately enforced in our cities? Do you see violations within and premises of schools, colleges & universities?
- ⌘ Often, cancer and mental health problems are outcomes of substance abuse. What are the other indicators that should be included?

➤ **Govt. Initiatives**

- ⌘ Experts say, in the Budget 2023, there is no effective rise for health dept as when adjusted with inflation, in real sense it is a decline of funds to health dept. It is only a 3.82% increase as compared to the previous budget. What is your opinion regarding this allocation? Do you think efficient use of resources is being made? How do you think this allocation can be put to full use?
- ⌘ In your opinion, are public health policies and programs adequately taking into account the needs and experiences of marginalized communities, including migrant populations and those living in slums or informal settlements?
- ⌘ With your experience, where are the major gaps in access, service delivery and finances on individual and family health? What needs to be done? What are your top 3 recommendations?
- ⌘ Ayushman Bharat Yojana promises universal health coverage through establishment of HWCs and PM Jan Aarogya Yojana (PM-JAY). Currently, not all states have implemented it. What are some challenges associated with this scheme? What are your recommendations to fill the gaps and work towards achieving universal health coverage?
- ⌘ Primary healthcare delivery has gained a lot of importance lately. What are some innovative service delivery models in providing primary healthcare in urban settings?
- ⌘ The idea of Sanjeevani clinics in MP (comparable to Mohalla clinics) is coming up. What are some challenges in these models? Do you think these models will be successful in the long run? What are your suggestions?

Food/ Nutrition

- **Food Security**
  - ⌘ Fair price shops are set up in the MP that provide subsidized ration, what are your views regarding such establishments? Its availability and accessibility?
  - ⌘ What is your opinion on the National Food Security Act that entitles the TPDS and AAY from the perspectives of its relevance and impact? What are some of the recommended strategies to build a sustainable nutrition security plan?
  - ⌘ What are the Top 3 indicators (e.g., measurements of suitable nutrition levels) that you suggest, with possible sources, to measure and monitor food security in the city?

- **Food Safety & Adulteration**
  - ⌘ In addition to already existing Food Safety and Standards Authority of India FSSAI regulations, what would you recommend to address the concerns of food quality, safety and adulteration?
  - ⌘ At present India doesn't have a Policy to limit saturated fatty acid intake and eliminate industrially produced trans fatty acids. Could you comment on whether we need such a policy? Highlight what is the internationally acceptable level of fatty acid intake for adults and children? And what is the international safety limit for trans fatty acid in processed/packaged foods?
  - ⌘ Would you like to comment on the quality of food supplied/prepared by street vendors, hotels? What are the challenges in maintaining quality and safety in your experience? What are your recommendations for the same?
  - ⌘ What are the departmental actions about packed processed foods? Whether the State exercises any regulation in its production, marketing and availability?
  - ⌘ Does the state/district implement Repurposing Used Cooking Oil (RUCO) program? What is the level of its implementation? Please comment on its progress, challenges and possible solutions?

- **Nutritional Security**
  - ⌘ Malnutrition & Micronutrient deficiencies: Highlight the NFHS-5 data about Stunting, Wasting and Underweight and few micronutrients deficiency status (Vit A, Iron and Iodine), Low birth weight, anemia status of pregnant & non-pregnant women and elicit what system perceive as challenges to improve the nutritional security of the population.
  - ⌘ Children and all food handlers need to be de-wormed regularly. How can departments work together to make this happen? What mechanisms would be needed?

- **Nutrition & Food habits**
  - ⌘ Provision of nutritious food is ensured through various departments especially WCD. The most common problem is the level of awareness in terms of food habits.. Do you think the intended purpose of IFA tablet distribution has not been achieved? What do you think are the problems and challenges in taking IFA by people? Are there any misconceptions regarding IFA tablets? How can this issue be addressed?

- ⌘ Poshan Abhiyan - ICDS, Mid day meal, Anemia Mukt bharat, these schemes are closely related to education. How can they be used for maximum benefit? What are some strategies to enhance its reach and expand provisions covered under it?
- ⌘ Most recent NFHS has shown an increase of anemia in women and children in Bhopal. What could be the possible reasons for this deterioration? What can be done to address this?

➤ **Govt. Initiatives**

- ⌘ The Indian government undertakes one of the largest food subsidy programmes in the world through the Public Distribution System. Do you think the current allocations (finances and food share) for our cities are adequate esp. For urban poor? Is there an effective way to tackle this?
- ⌘ What are the current initiatives to improve the food security and nutritional security for the population? Any targeted intervention for a specific population being undertaken? What are the non-governmental organization participation?
- ⌘ With your experience, are you satisfied with the resource/ budget allocation in this dept? If funding is inadequate, could you list the departmental activities which need funding support?
- ⌘ What are the major storage and supply chain management issues w.r.t. PDS system currently? How can they be addressed effectively?

Water

➤ **Security**

- ⌘ Should Urban Local Bodies (ULBs) target universal coverage (households, commercial establishments and industries) of piped water supply (portable) in the city? Are they capable? If so, what are your key recommendations for implementation?
- ⌘ What are the key challenges of Urban Local Bodies (ULBs) to achieve universal coverage of piped water supply in the city? What are your recommendations to address these challenges?
- ⌘ How to plan for increasing the needs of water consumption in the city? What are the recommended strategies for source improvement and augmentation of supply infrastructure?
- ⌘ Are there any policies that govern supply of bulk water to commercial and industrial establishments within the city? How can it be equitable? Any guidelines on allocation of water resources for bulk supply?
- ⌘ What is your opinion on establishment of dedicated water boards for improving efficiency in supply and conservation of water in larger cities (E.g. BMWSSB)
- ⌘ Most ULBs do not recover the cost of water supply services, how can it be improved for long term financial sustainability?
- ⌘ With increasing population densities in urban areas and its pressure on land, what are the recommended measures to protect the water based ecosystems in a city?
- ⌘ What are the Top 5 indicators or any other recommendations, with possible sources, to measure and monitor water security in the city.

- **Conservation and harvesting**
  - Leakages in municipal water supply systems contribute to a great portion of non-revenue water in our cities? How can we reduce it? What are the key challenges that ULBs face to address this issue?
  - Any suggestions for initiating zero discharge or net zero approach for bulk water users in the city?
  - How to monitor and regulate the private use of groundwater in a city to avoid depletion/over exploitation? Are there any frameworks for arriving at the optimal use of groundwater, since we can't completely avoid its use?
  - What are some proven strategies for incentivising the use of rainwater harvesting for reuse and recharge to reduce pressure on freshwater sources?
  - What are the Top 3 indicators or any other recommendations, with possible sources, to measure and monitor water conservation in the city.

- **Quality**
  - What are the top 5 reasons for poor quality of municipal piped water supply? How can we address them?
  - In your experience, what
  - Urban surface water bodies are prone to severe pollution predominantly due to wastewater inflows through stormwater drains. In our cities, how can we delink the wastewater drainage and stormwater drains to protect the surface water bodies?
  - What are the Top 3 indicators or any other recommendations, with possible sources, to measure and monitor water quality in the city.

- **Govt. Initiatives**
  - Under the AMRUT program, several new and augmentation projects of water supply were implemented. Any comments on the resource availability at a ULB level for the O&M and their long term sustainability?
  - How can ULBs best leverage the Jal Jeevan Mission (Urban) that has been recently launched by MoHUA? Do you think the resources allocated under this mission are adequate for achieving the mission objectives?
  - Any suggestions on what government initiatives need to be strengthened/ prioritized and the ones that need to be deprioritized or phased out?

Sanitation

- **Sanitation Facilities**
  - Swachh Bharat Mission has ensured almost universal coverage of access to toilets (individual or public toilets) however there are challenges w.r.t usability. What are the key challenges and suggested solutions?
  - Were there any sections of the society that were excluded by SBM? If so, why and how can that be addressed?
  - Is there a decision making framework to choose an operating model (self, outsource, PPP etc.) for Urban Local Bodies (ULBs) for effectively operating and maintaining public toilet infrastructure? Would you recommend an alternate framework, if feasible?

- ⌘ How can water conserving solutions available for sanitation facilities (e.g. water-less urinals) be scaled up across the city? What are the possible challenges and solutions?
- ⌘ What are the Top 3 indicators or any other recommendations, with possible sources, to measure and monitor the coverage of toilets in the city.

➤ Solid Waste Management

- ⌘ Implementation of Solid Waste Management Rules and the Swachh Bharat Mission has brought in remarkable improvements in municipal solid waste management. However, there are a few fundamental challenges persistent e.g. source segregation (which is key to SWM). Any recommendations to address them?
- ⌘ What are some proven methods for reduction of single use plastic?
- ⌘ Bio-medical waste management (from Institutions) has been an established system with active involvement of the private sector. Are there any gaps? What can the municipal solid waste system learn from it?
- ⌘ What are other solid waste streams that we need to prioritize on considering current urbanization trends? E.g. domestic bio-medical waste, hazardous waste, e-waste etc.
- ⌘ How to position/promote waste to wealth as an underlying approach to SWM in cities? Also, Some technologies advancing waste to energy are detrimental to air quality. What are the ways of waste to wealth which are sustainable and also promote individual's health?
- ⌘ What are the Top 5 indicators or any other recommendations, with possible sources, to measure and monitor the efficiency of SWM in the city.

➤ Liquid Waste Management

- ⌘ Domestic wastewater management has been a neglected area of service delivery by ULBs for a long and has picked up momentum with missions like AMRUT and especially SBM-Urban. However, there are several gaps in closing the loops across the sanitation value chain (collection-conveyance-treatment-reuse/safe disposal). What are the key challenges especially in larger cities? Any recommendations?
- ⌘ What is your opinion on centralized vs decentralized systems for wastewater management? What is the right level of decentralization across urban pockets/morphologies for our cities?
- ⌘ Govts. Think city level centralized systems are the most preferred solution for wastewater management. NGT is advocating decentralized options as solutions until the city can afford to build and operate centralized systems? What is your opinion on it?
- ⌘ In addition to domestic wastewater, what are the other sources of liquid waste that the city governments have to prioritize on managing?
- ⌘ Do you think the National Urban Sanitation Policy and the National Policy on Fecal Sludge and Septage Management (FSSM) provide the necessary policy framework for the improvement of wastewater management? Any specific suggestions for states/cities on how to customize them as per local conditions?

- ⌘ What is your opinion on establishment of dedicated wastewater boards for improving efficiency in supply and conservation of water in larger cities (E.g. BMWSSB)
- ⌘ In your experience, do ULBs allocate optimum resources (budget, workforce and infrastructure) for wastewater management? If not, how can we improve it? If so, what are the best practices?
- ⌘ What are the Top 5 indicators or any other recommendations, with possible sources, to measure and monitor the efficiency of LWM in the city.

➤ **Hygiene**

- ⌘ What are the gaps in our cities for maintaining personal hygiene? In your opinion, are the existing amenities and facilities in our cities optimal? Any recommendations for improvement?
- ⌘ In our cities, are schools, public open spaces and buildings and public toilets equipped with menstrual hygiene management systems? How can we improve them?
- ⌘ What is the importance of communications (IEC) in sustaining hygiene practices among people (esp. Vulnerable groups)? How do we integrate communication strategy in ULB/Health Dept. for periodic and sustained activities for IEC?
- ⌘ Are the IEC budgets under national and local programs utilized effectively? How can we ensure maximum returns on investments made on IEC activities?

Environment

➤ **Pollution**

- ⌘ Particulate matter is considered to be the major source of air pollution in urban areas. Is that right as per your experience? Are there other sources that cities have to be continuous off?
- ⌘ Are city corporations well equipped to manage air pollution? If so, what are the best practices that we can look at? If not, how can we strengthen their capacities?
- ⌘ How did the National Clean Air Program (NCAP) helped or help in improving air quality in our cities? If not, how can it be leveraged better?
- ⌘ Do local governments have ample budgets to address air, water and soil pollution? How can ULBs year mark resources for managing pollution?
- ⌘ Major reason for pollution of urban water bodies is considered to be because of wastewater. Do you agree? If so, how to address this effectively. What are the other reasons?
- ⌘ What are the main reasons for contamination of groundwater in cities? How can we address it?
- ⌘ Is topsoil pollution an area of concern in urban areas? What are the main reasons for the same and how can cities avoid it?
- ⌘ How to build convergence between ULB and Parastatal agencies (PCBs, PHED, Water Resources Dept. etc.) for effectively controlling pollution in cities? Are there any best practices?

- ⌘ What are the Top 3 indicators each for air, water, noise and soil that you suggest or any other recommendations, with possible sources, to measure and monitor pollution in the city.

➤ Waste Generation & Management (other than SLWM)

- ⌘ What is the contribution of industrial waste to pollution in cities? What are the ways to effectively manage them?
- ⌘ Post implementation of SBM-U, what are the improvements in managing construction and demolition waste? Are there any recommendations for further improving the system?
- ⌘ Do ULBs manage dead animal waste effectively? What are the recommendations for its effective management?
- ⌘ What are the effective ways for flood management in cities? How can the root causes be identified (changes in watershed, climate change etc.)? Are there any latest and effective responses planned by the cities in India and implemented? Any recommendations?

➤ Urban Spaces

- ⌘ What are the key challenges in protecting the open public spaces in the city? How can they be addressed?
- ⌘ How to increase accessibility to public open spaces in cities?
- ⌘ What was the impact of the AMRUT program on improving urban green spaces? Do cities prioritize their improvement and leverage the resources available under this program?
- What are the effective ways to improve indoor air quality? What role can ULBs play in maintaining/regulating the same in buildings in the city?
- How can local governments play an active role in protecting the urban ecosystems (long water bodies, urban forests etc.)? What are the ways and means?

➤ Safe Environment

- ⌘ Road traffic is increasing everyday. Enforcement can benefit in regulating traffic to some extent, but what significantly plays a role is self-discipline and self-awareness. What are some ways to improve traffic behavior through self-awareness? What are the roadblocks and solutions for the same?
- ⌘ There have been numerous efforts made in improving child and women safety however, the situation still has not significantly changed. Would you like to highlight some challenges in these measures? What can be done to address these?
- ⌘ Studies have shown that housing refurbishment and modifications, provision of adequate heating, improvements to ventilation and water supply are associated with improved respiratory outcomes, quality of life and mental health. What are the strategies and policies for improving the Built environment and Structural Safety of building in the city?
- ⌘ Discuss the strategies and policies regarding the Built environment and Structural Safety

- **Clean Energy**
  - Cities consume most of the energy and contribute to greenhouse gas emissions. Have the Indian cities undertaken a holistic assessment of their current energy use and future energy needs?
  - One of the ways to manage energy demand is implementation of modern district energy systems (DES) in cities. What are the challenges and opportunities in the implementation of DES in India?
  - What are the Smart Energy Management (SEM) Initiatives undertaken in the Indian cities? Could you highlight the best practices?

- **Mobility**
  - Indian cities are consistently ranked high on the list of the most congested and the most polluted cities globally. What are the effective strategies to decongest the Indian cities? How can we improve access to public transportation and energy-efficient and clean transport?
  - What is the status and way forward for India w.r.t. shift in vehicle technology, (EVs & HEVs) EV charging infrastructure & supervision services?
  - How can Intelligent traffic management and parking systems be introduced in our cities to decongest?
  - We moved from a traffic management paradigm to improving mobility. How far did we go in integrating our mobility services in cities?

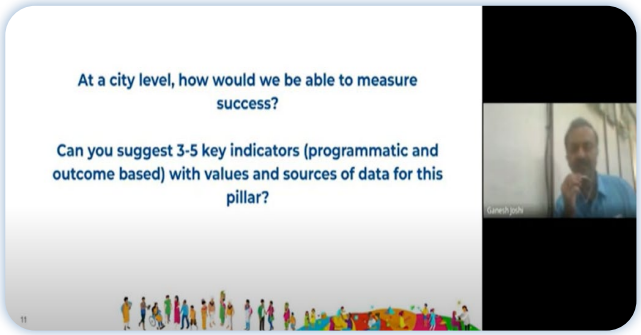
Annexure 3

Date	Consultation (Pillar)	Participants
Round 1		
23rd February, 2023	Individual and Family Health	* Dr. Nutan Prabha Jain * Dr. Ganesh Arun Joshi * Dr. Pankaj Shah * Dr. Manda Venkata Sasidhar
10th March, 2023	Water	* Mr. Vishwanath S * Mr. Raman VR
13th March, 2023	Food/ Nutrition	* Mr. Amit Arora * Dr. Preeti Khanna * Dr. Ravinder Kaur
15th March, 2023	Environment	* Mr. Santosh Kumar Sahu * Mr. Siddharth Khare
17th March, 2023	Sanitation	* Ms. Susmita Sinha * Ms. Sapna Swamy * Dr. Satish Kumar
Round 2		
27th March, 2023	Individual and Family Health	* Dr. Sarman Singh * Dr. Geetha Desai * Dr. Janardhan N.
29th March, 2023	Food/ Nutrition	* Dr. Zuha Khan
31st March, 2023	Water and Sanitation	* Dr. Bhaskar Jyoti Deka * Mr. Amit Mishra
5th April, 2023	Environment	* Dr. Dhanya Bhaskar * Ms. Sandhya Naidu Janardhan

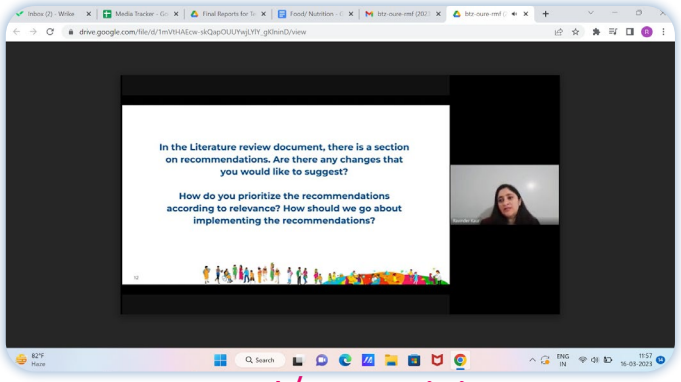
Annexure 4

Pictures of the Consultation

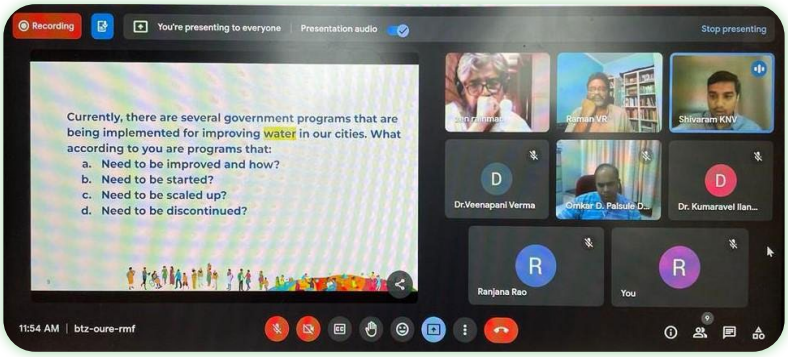
➢ Round 1



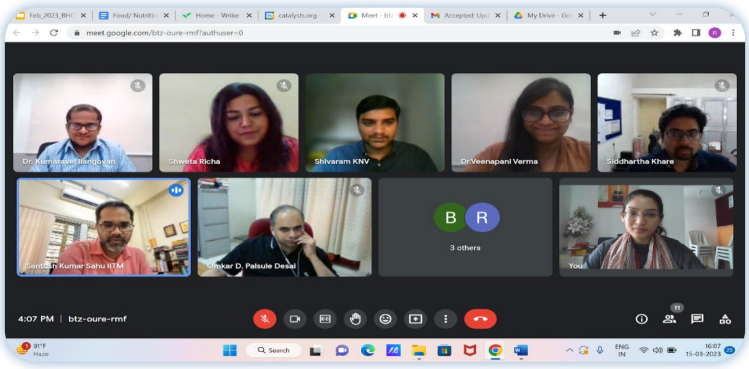
Individual & Family Health



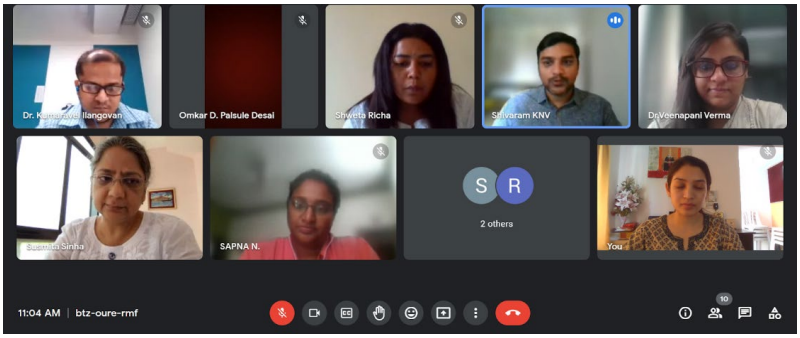
Food/ Nutrition



Water

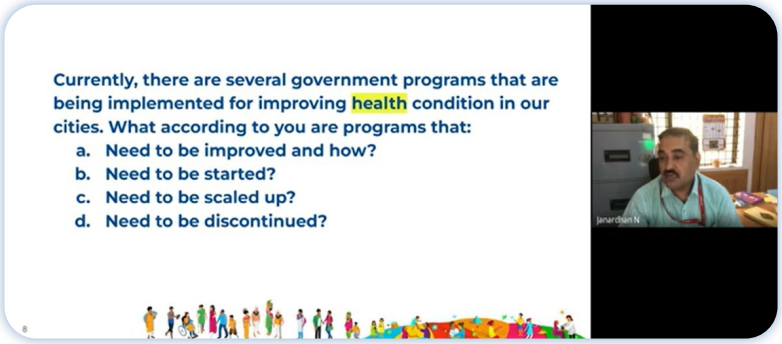


Environment

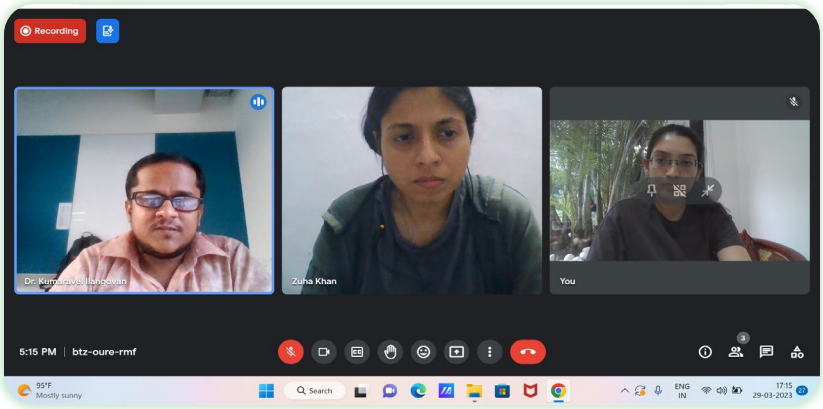


Sanitation

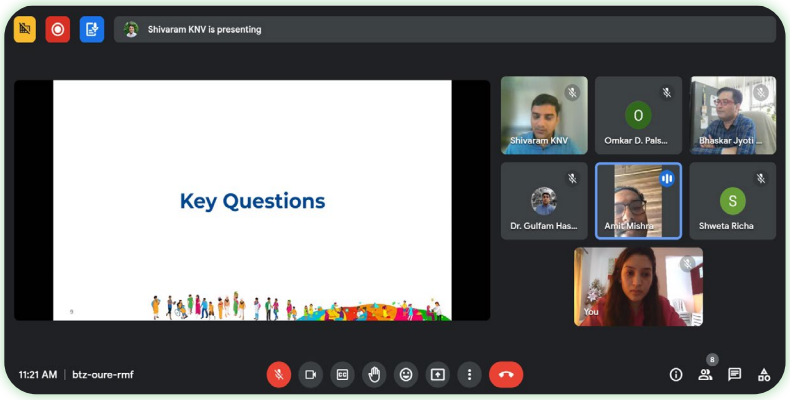
➤ Round 2



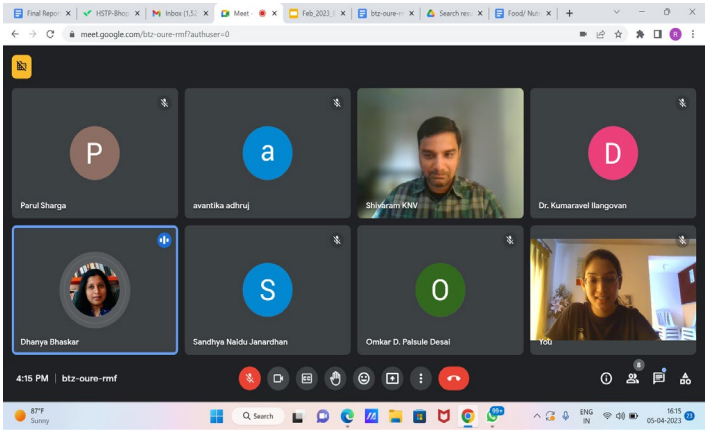
Individual & Family Health



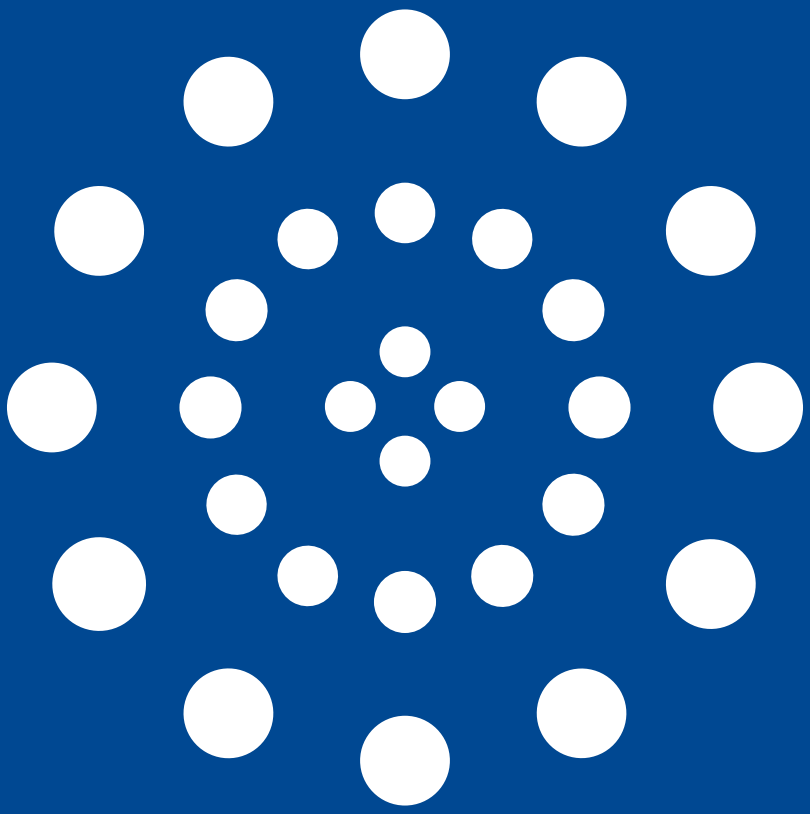
Food/ Nutrition



Water & Sanitation



Environment



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