Public Health Education in India

A Study of Master of Public Health Programmes in the Country, March 2022

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10 March 2022
Bengaluru, India

Abbreviations

ANM	Auxiliary Nurse and Midwife
ASHA	Accredited Social Health Activist
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy
BDS	Bachelor of Dental Surgery
CASH	Committee Against Sexual Harassment
CEPH	Council on Education for Public Health
ECCMPHE	European Core Competences for MPH Education
ICC	Internal Complaints Committee
MBBS	Bachelor of Medicine, Bachelor of Surgery
MD	Doctor of Medicine
MOHFW	Ministry of Health and Family Welfare
MPH	Master of Public Health
MSc	Master of Science
NAAC	National Assessment and Accreditation Council
NGOs	Non-Governmental Organisations
NHM	National Health Mission
OBC	Other Backward Caste
PH	Public Health
PHE	Public Health Education
PHFI	Public Health Foundation of India
PPP	Public-Private Partnership
RMNCH+A	Reproductive, Maternal, Newborn, Child and Adolescent Health
SC	Scheduled Caste
ST	Scheduled Tribe
TDPS	Transdisciplinary Problem-Solving
UGC	University Grants Commission
UNICEF	United Nations Children's Emergency Fund

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Executive Summary

The field of Public Health Education (PHE) in India is mired with many unanswered questions, foremost of which is whether the current curricular framework, either prescribed by the government or as being currently practiced by the institutions, is satisfactory and works towards people-centred health care. While vetting the proposed curricular framework is important, it is of equal importance to see how PHE is delivered across institutions in India and whether students graduating from these institutions can pursue the public health careers they had envisioned. The COVID-19 pandemic has further established the need for a responsive Master of Public Health (MPH) curriculum and its delivery leading to a well-trained work force in this area.

The study sought to map the entire spectrum of the MPH programmes in India. It also includes a critical appraisal of the current MPH model curriculum proposed by the Ministry of Health and Family Welfare (MOHFW), of the adequacy of teaching resources as well as of academic research opportunities, and of the existing job opportunities for MPH graduates. The Transdisciplinary Problem-Solving (TDPS) approach was used as the broad conceptual frame for the above review.

Data on institutions offering MPH was collected online from the university websites, prospectuses, and brochures. The easiest accessible information was related with eligibility, admission, and fee, while information on curriculum, faculty, evaluation, and facilities were difficult to obtain. The paucity of information, especially of faculty and facilities on institution websites, indicate a lack of transparency and full disclosure. In addition, we undertook online surveys of faculty, alumni, and potential employers. To understand the job scenario for MPH graduates, job listings on 12 job websites were also evaluated.

Our study found a total of 105 institutions were providing 117 master's programmes in Public Health (PH) in India in 2021. Of the 105 institutions, 83 were providing a two-year MPH programme while three institutions were providing MSc (Master of Science) in PH. More than half of these institutions (57%) were private, while about 37% were fully public institutions. A majority of the newer institutions imparting MPH degree were private institutions. The mean total fees in private institutions was INR 2,93,000, while it was only INR 87,189 in public institutions. A majority of the institutions only accepted candidates from medical, paramedical, or allied medical disciplines. Less than two-thirds of the institutions mentioned a reservation policy on their website, and a majority of these were public and Public-Private Partnership (PPP) institutions.

Looking at the MPH curriculum through the TDPS lens gave mixed results. The presence of the model curriculum has indeed been helpful; despite some limitations and scope for improvement, its presence has helped the institutions in developing their course structures. The lack of information on the websites on other aspects of the programme made it difficult to fully analyse the course structure and its delivery. Overall, the courses appeared comprehensive and transdisciplinary in nature in terms of the subject choices offered in the core and the elective modules. However, perspectives related to structural barriers, intersectionality, and social norms that play a key role in determining health status and access to health care seem to have been only partially covered. The execution and delivery of the curriculum is also solely dependent on how the institutions and faculties interpret and implement it as there are no guidelines on capacity building initiatives that need to be undertaken for the teachers or requirement for engagement in research for the MPH faculty. Poor information on internships and field work requirements on websites as well as a lack of focus on community/field immersions apart from internship in the MOHFW curriculum are also areas that need to be worked on.

Within the job sector, the analysis of 12 employment websites for public health jobs revealed that although the job prospects are not very high, it is not disappointing. Out of 200 jobs, 36.5% listings were for programme/project co-ordination and management positions. While an MPH degree alone is yet to emerge as a very sought-after degree, it seems to be accepted as a desirable qualification for certain roles. Our analysis also showed that the avenues for fresh MPH graduates without any experience are limited, as only 22 (11%) listed jobs did not mention preference for previous work experience. Very few job listings gave clear indications regarding tenure of the job as well as salary to be expected. This could be interpreted to say that there is potential for greater professionalisation of the MPH degree.

The online alumni responses (108) showed that irrespective of one's employment status, an overwhelming 87% of the alumni agreed that their MPH degree (67% substantially and 20% partially) added value to their future prospects. Sixty-two per cent of MPH alumni belonging to public institutions chose affordability and low out-of-pocket expenditure as one of the main reasons to like the course, whereas the same was cited by only 22% of alumni from private institutions. The MPH degree was chosen most for improving job opportunities; therefore, the most common suggestions from alumni included proving better job placement support and more field experience.

The paucity of data and challenges due to COVID-19 did not allow us to apply the transdisciplinary framework to all aspects of the MPH programme. Complete information was seldom available on the same part of the site and the team had to navigate to different webpages or use various other sources to ascertain or clarify the information. The lack of information on the websites made it difficult to fully

analyse the course structure and its delivery. In addition, responses to online survey forms, especially for alumni and faculty, were concentrated amongst institutions in southern India. Despite these limitations, we believe that the study has a wealth of information about the current status of PHE in the country.

In conclusion, it is important for the government to (i) promote policies and practices that promote greater accessibility by making provisions for or incentivising reservation or/and fee concessions/ scholarships or/and flexible courses for women learners and learners from rural areas, socioeconomically disadvantaged backgrounds, and current community level PH workers; (ii) revise the model curriculum and other guidelines to ensure greater transparency of information; and (iii) widen the curricular frame to include detailed pedagogical guidance in a manner that it becomes both transdisciplinary and field-oriented. For other stakeholders, it is important that they support more in-depth field-based research to gain a deeper understanding of the delivery of these courses and faculty and student experiences.

1. Introduction

1.1. Background

'Public Health is the science and the art of preventing disease, prolonging life, and promoting physical health and efficiency through organized community' (Winslow, 1920). Public Health (PH) professionals or 'social physicians' were first introduced in India with the Bhore Committee recommendations in 1946, wherein the committee suggested an inclusion of a three-month training on social and preventive medicine to make social physicians. Medical students receive this training during their second year of medical school as 'Preventive and Social medicine', and they also have the option of choosing to pursue the Doctor of Medicine (MD) in Community Medicine degree.

The All-India Institute of Hygiene and Public Health (AIIH&PH) in Kolkata, started in 1932, is the oldest PH school in the South-east Asia. However, Public Health Education (PHE) in the form of a master's degree has grown in India only during the last two decades, and there were no regulations on the course offerings. The Indian government's first concrete step towards development of PHE came much later in the form of setting up the Public Health Foundation of India (PHFI) in 2006 through a Public-Private Partnership (PPP). As a profession, PH gained greater credibility when the task force on universal health coverage in 2011 recommended the formation of two new cadres, namely the health systems management and public health cadre (Planning Commission of India, 2011). This was further reiterated by the National Health Policy in 2017 (Ministry of Health and Family Welfare, 2017).

The Ministry of Health and Family Welfare (MOHFW) released its first model curriculum for the Master's in Public Health (MPH) in 2018. This was developed by a task force created for the purpose of PHE, and it included PH experts from India and the United Kingdom (Public Health Taskforce, 2018). In a letter dated, 19 September 2018, all universities under University Grants Commission (UGC) were requested to adopt this curriculum.

The model curriculum provides a basic standardised framework for an MPH degree. However, its current acceptability and feasibility by universities is unknown, especially because of the absence of a central accrediting agency in this domain. The available literature shows that MPH courses suffer from low intake of student enrolment as well as limitations in offerings specialised courses in core competencies (Tiwari et al., 2018). The latter is especially important as PH is a multi-disciplinary subject that requires coordination between various health and non-health streams to successfully put forth a largescale community measure. Many MPH course offerings are likely to be deterred by the absence of faculty, student interest, and job opportunities. Although job opportunities do exist for graduates of MPH, entry into private and public health organisations poses many challenges including absence of knowledge of opportunities, lack of competitive salaries, and unclear work expectations (Sharma et al., 2013).

Therefore, the field of PH education is mired with many unanswered questions, foremost of which is whether the current curricular framework, either prescribed by the government or as being currently practiced by the institutions, is satisfactory and works towards people-centred health care. While vetting the proposed curricular framework is important, it is of equal importance to see how PHE is delivered across institutions in India and whether students graduating from these institutions can pursue public health careers they had envisioned. The COVID-19 pandemic has further established the need for a responsive MPH curriculum and its delivery leading to a well-trained work force in this area.

The study seeks to map the entire spectrum of the MPH programme in India, including a critical appraisal of the current MPH model curriculum proposed by the MOHFW as well as those being practiced by the institutions, of the adequacy of teaching resources as well as of academic research opportunities, and of the existing job opportunities for MPH graduates.

1.2. Objectives and Scope

The study objectives are

i. to map the current landscape of MPH programme in India,
ii. to understand how the current MPH degree offerings in universities fare when compared to the well-rounded MPH degree curricular framework,
iii. to study whether institutions offering MPH degrees provide adequate teaching resources and academic research opportunities to students, and
iv. to understand what the nature and size of the job market is for graduates in both private and public sectors, and what is the absorption pattern for MPH graduates in the Indian labour market.

The scope of the study was limited by the fact that it was conducted through desk research supported by telephonic and internet-based interviews and consultations. The fact that the period was marred by COVID-19-led pressures on universities to deliver the course through alternative means also severely affected our study as a majority of our prospective respondents were battling their own challenges during this time. This also made it difficult to fully apply our conceptual framework, the Transdisciplinary Problem Solving (TDPS) approach outlined below for our analysis and inferences. Nevertheless, we have used the following framework as a larger guiding principle for the analysis and discussions.

1.3. Conceptual Framework: Transdisciplinary Problem Solving (TDPS) approach to PH education

As mentioned earlier, our conceptual framework borrows from the TDPS approach, which has already been applied to PH education in some contexts. According to Stokols, transdisciplinarity is defined as below:

> *"An integrative process whereby scholars and practitioners from both academic disciplines and non-academic field, work jointly to develop novel conceptual and methodological approaches that synthesise and extend discipline specific perspectives, theories, methods and translation strategies to yield innovative solutions to particular scientific and societal problems."* (Stokols et al., 2013, pp 3-30)

This approach to sciences is the recognition of social, behavioural, economic, and population/health sciences as a shared value addition to solve problems emerging out of health disparities (Abrams, 2006). It is a departure from inter-disciplinary and multi-disciplinary approaches, where academic silos often create hurdles in realising the full potential of a shared and co-operative way of teaching-learning as well as knowledge creation.

This is different from a multi-disciplinary approach where knowledge creation is guided in an additive and sequential way and an inter-disciplinary approach that involves sharing and coordination among actors. In both approaches, practitioners are still anchored in their own discipline of study and extending and integrating concepts is not emphasised upon. In contrast, the TDPS approach, as adopted by the Brown school to design their MPH course entails developing novel frameworks that could integrate and extend concepts and methods of teaching-learning and knowledge creation, which in-turn allows the students to think and reflect, conceptualise, design, and then implement solutions to real world public health problems (Lawlor et al., 2015).

The relationship of PHE and transdisciplinarity has its roots in the broader institutional philosophy of PH that emphasises on the holistic rather than the reductionist biomedical model of health. The TDPS approach is a break-away from looking at curative, promotive, and preventive health care as binary opposites; it instead strives to strike a fine balance between the three. For example, poor resettlement and rehabilitation of people residing in slums in urban areas can lead to emergence of communicable diseases like tuberculosis, and the areas risk becoming a hot spot for pandemics (Shelar, 2020). As we can imagine, in this case, the solution lies in re-imagining and restructuring the process of re-settlement, rehabilitation, and co-habitation rather than designing a disease-based response. The restructuring is independent of providing cure to the population by designated medical professionals and is largely dependent upon public health engineering education[1] trying to locate the epidemiological basis of the prevalence of tuberculosis as an environmental health issue in addition to understanding the cultural and structural norms of co-habitation (Hussain et al., 2011).

The TDPS approach is also inclusive of the concept of transformative learning. This learning is primarily about transforming the perspective of the students so that they are able to critically examine their prior interpretations and form new meanings of

[1] Public health engineering education focusses on solving environmental problems.

their lives and experiences (Mezirow, 2003) in addition to instructional learning, which enables the students to acquire skills and knowledge to answer the 'what' and 'how' of any phenomenon (Habermas, 1981).

The role of TDPS approach is also important in health communication. In devising campaigns for health promotion on issues such as, obesity, unprotected sex, excessive drinking and tobacco use, it becomes very pertinent to see the cultural bases of both social norms and individual behaviour. For example, in the early days of the COVID-19 pandemic, frontline workers were stigmatised and discriminated against. The fear of infection had its roots not just in the extraordinary situation due to the pandemic but it had direct linkages with the non-realisation of the economic and health challenges of 80% of the population (Perappadan, 2020), which are also linked to the larger socio-economic contexts.

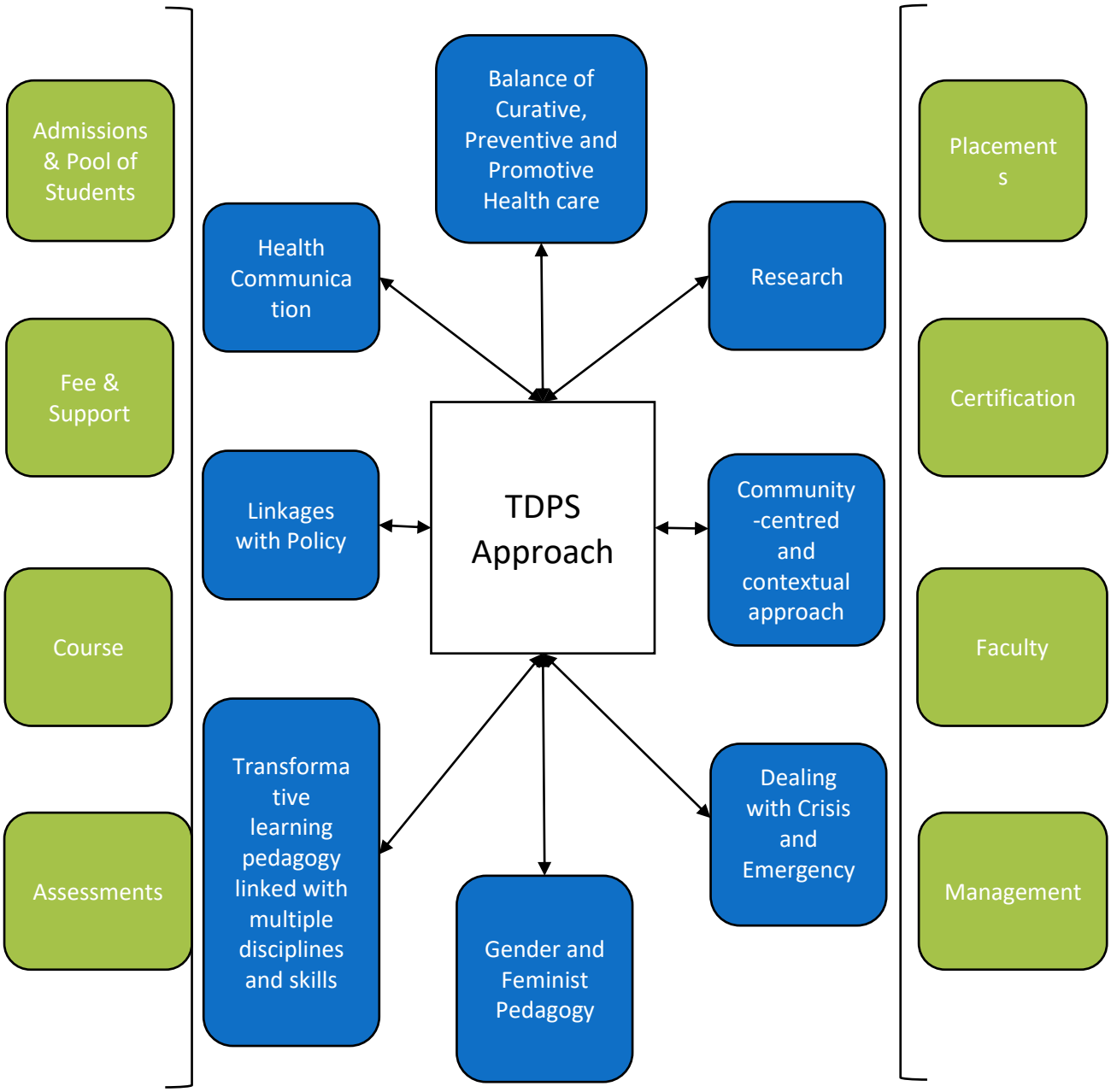
Box 1: Application of the Transdisciplinary Problem Solving (TDPS) Approach

A contextual example that uses the TDPS framework is the Healthy Family Initiative Implementation Student Team Project in rural India, followed by Brown School at Washington University. The project was a part of an eight-week course embedded in TDPS framework, where students were given exposure to work collaboratively with scientists, practitioners, non-governmental organisations , and community residents. The idea was to challenge critical public health issues by designing and implementing novel public health interventions. For example, by looking at diseases such as anaemia among women, cardiovascular health, and dental diseases from a TDPS perspective, the emergence of maternal anaemia in healthy families was not seen as something that can be solved by providing them with appropriate micro-nutrients. The epidemiological basis of the disease was primarily grounded on cultural (patriarchy) and social determinants (position of women) of health.

Source:
http://ictph.org.in/trans-disciplinary-problem-solving-implementing-public-health-interventions-in-developing-countries/

In practical terms, the application of TDPS to MPH may mean the presence of elements in the curriculum and pedagogy that enable transformative learning and sustained solutions. The way this approach has been used for our study is summarised in Figure 1.1.

Figure 1. 1 Conceptual Framework for using TDPS approach



However, it is important to mention here that we have been able to use this approach in our analysis only as a broad guiding framework because of the paucity of information. We have attempted to examine aspects of admissions processes and actual admission, fee and support, course structures and practices linked with

assessment and certification. In addition, we also examine the presence and background of faculties as well as management practices (outlined in green in Figure 1.1) using the features and characteristics of the TDPS approach as outlined by the presence of elements and features shown in blue in Figure 1.1. In this effort, as the report would make it clear, we have been successful in some respects but were challenged in some others due to limitations on available information and the restricted nature of the work itself.

Next, we outline the methodology in brief and provide an outline of the report.

1.4. Methodology

We started with literature review of PHE in India and followed it up with desk review of original policies and curricular documents related to post-graduate studies in PH in India. In order to contextualise it, we also reviewed curricular frameworks from North America and Europe as they have had a longer history of providing PH education at postgraduate level.

We followed it with preparation of two matrices: (i) a university matrix, and (ii) a job matrix. The respective processes of searches, inclusion and exclusion criteria, and development of these matrices have been discussed in relevant chapters. We also conducted online surveys of selected faculty, alumni, employers, and institutions, and we interviewed certain identified key individuals. The details of these interview processes are also discussed in respective chapters where we use the information.

In order to ensure quality control, we constituted an advisory committee comprising of five members drawn from academia and who had a long history of being a part of the senior policy planning in the area of health. Their engagement helped in finalising the research approach and also in the analysis and report.

1.5 The Report

The present report has six chapters, including this introduction. The second chapter provides a simple landscape of universities and institutions providing MPH education from the perspective of their location, kinds of courses, affiliations, and certifications. The next chapter analyses accessibility and reach of the MPH programmes, followed by the chapter that discusses the MPH curricular focus with their strengths and limitations. The fifth chapter analyses the employment status and prospects of the MPH graduates, and the sixth chapter provides conclusions and recommendations.

2. Public Health Education in India: A Bird's Eye View

Public Health Education (PHE) here refers to institutions providing the post-graduate degree, Master of Public Health (MPH). At least a total of 105 institutions are providing 117 master's programmes in PH in India (Annex Table A1.1). Of the 105 institutions, 83 provide a two-year MPH programme while three institutions provide a MSc in PH[2]. Seventeen out of these 105 institutions provide specific specialisations, honours and executive MPH Programmes, while two institutions offer the MPH programme through distance means (Annexure Table A1.2).

While a majority of these programmes have commenced in the more recent period, the information remains sketchy and hence difficult to analyse[3]. Only 36 out of 105 institutions mentioned the year of commencement of the MPH programme in their websites or brochures. Of these, 16 programmes started before 2017 and 20 started after 2017, the year in which model curriculum was published by MOHFW (Annexure Table A1.3). This means that the publication of the model MPH curriculum has played a role in bringing greater clarity and has enabled institutions to start the MPH course. This becomes important in view of the fact that the availability of MPH graduates is also linked with the larger issue of having a separate PH cadre, which is currently present only in a handful of Indian states.

2.1. Accreditation, Recognition, and Affiliation

The starting and flourishing of such courses are linked with the ease and clarity of affiliation, accreditation and recognition processes. Unlike the Council on Education for Public Health (CEPH) in North America or the Agency for Public health Education Accreditation (APHEA) in Europe, there is no central accrediting body for providing accreditation to PHE in India. It was only in 2017-18, that the task force set up by the MOHFW, came out with the "Model Curriculum handbook"(Public Health Taskforce, 2018) to establish minimum standards for the MPH programmes in India followed by a request from the UGC to all universities and their affiliated institutions to adopt this model curriculum (*DO letter from UGC*, 2018). The UGC had already made the National Assessment and Accreditation Council (NAAC) accreditation compulsory for the institutions offering MPH since 2013.[4] The NAAC accreditation ranks institutions on quality of education and facilities.

Eighty-eight out of 105 institutions mentioned UGC affiliation on their websites while only six institutions indicated the presence of NAAC accreditation on their website. The UGC affiliation comes to both fully recognised and deemed

[2] These are (1) Central University of Tamil Nadu, Tamil Nadu; (2) Dr. M.G.R. Medical University, Tamil Nadu, and (3) Gurugram University, Haryana.

[3] Please see Box 3.1 for the method and preparation of the landscaping matrix, and the associated challenges.

[4] For more information refer to Frequently Asked questions about NAAC: http://www.naac.gov.in/images/docs/FAQS/1_General-6-6-2021.pdf

universities[5]. A small number of the institutions are centrally affiliated, i.e., central universities or affiliated to the MOHFW. Seven out of 105 are also affiliated to autonomous institutions, which have the mandate and legal power to give degrees. The Directorate of Medical Education and Research accredits nine MPH with specialisation in Nutrition courses offered in Maharashtra. Of the105 institutions, one is affiliated to the Johns Hopkins Bloomberg School of Public Health (JHSPH)[6]. The National Medical Commission (NMC), constituted in 2019[7], is supposed to maintain a high quality and high standards in medical education, and it lists MPH as one of the degrees that it can recognise. But only three institutions offering MPH programme mention this recognition and all three are also medical colleges.

It is also important to note that other than the model curriculum handbook, there are no regulations or stipulations for institutions offering MPH. The model curriculum handbook only gives specifications about the curriculum and does not establish minimum standards for an institution offering MPH in terms of facilities, faculty, or even the necessity or length of the field work. Hence, the process and mechanism for accreditation and recognition for MPH programmes remain weak in India.

2.2. Specialisations in MPH programmes

Only 15 of the 105 institutions offer specialisations within the MPH programme. The most common specialisation offered is on nutrition and all nine institutions offering these are government colleges based in Maharashtra; they are affiliated to the Maharashtra University of Health Sciences (MUHS) and supported by the United Nations Children's Emergency Fund (UNICEF). This implies that the presence of specialisation is linked with the origin, and also to the fact that it is possible to build specific programmes to suit and respond to specific health challenges that a state or region faces.

The other specialisations offered include Health Care Quality and Safety, Health Economics and Outcomes Research, Community Medicine, Digital Health, Epidemiology (in MSc Public Health), Global Health, Health Administration, Health Policy, Economics and Finance, Occupational and Environmental Health, and Social Epidemiology. It is mainly the public institutions (12 out of 15) that are providing specialisations. It is important to mention here that the MOHFW curriculum recommends a specialisation in Epidemiology, Health Programme, Policy and Planning, Health System Management, or Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A). However, it appears that the majority of the

[5] An institution deemed to be a university, commonly known as 'Deemed University', refers to a high-performing institute, which has been so declared by Central Government under Section 3 of the University Grants Commission (UGC) Act, 1956.

[6] This is the MPH course offered by the Indian Institute of Health Management and Research, Jaipur.

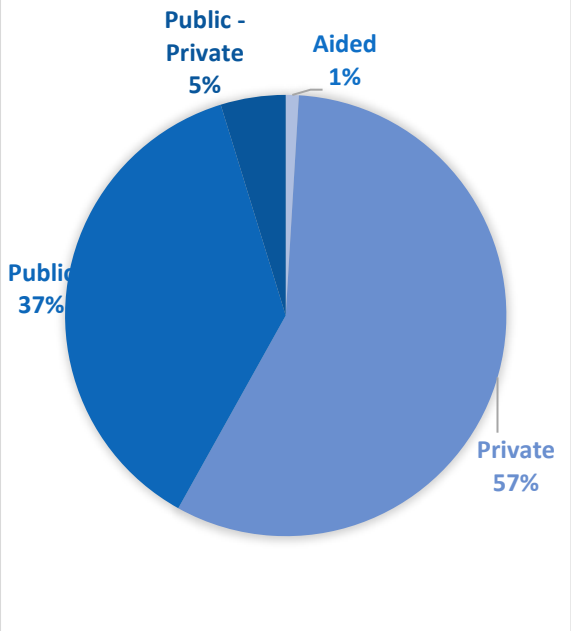
[7] For more information, refer to https://www.nmc.org.in/about-nmc/functions-of-nmc/.

health institutions do not have the capacity to offer any specialised elective streams; we discuss this issue at a later stage of the report.

2.3. Distribution of Institutions by Sectors in terms of Ownership and Control

As is common for educational institutions in general in India, these can be divided in four groups based on the ownership and financial support received: public, government-aided, PPP and private. Public institutions are exclusively set up, owned, and run by central or state government, whereas private ones are exclusively owned by private entities. The government-aided institutions are privately managed but receive aid from the government, while PPPs are set up in collaboration with a private entity. More than half of these institutions (57%) are privates ones, while about 37% are fully public institutions. Only 1% are aided and about 5% are PPP institutions (Figure 2.1).

Figure 2. 1.Distribution of Institutions by various sectors, 2021



In addition, there are courses that are self-financed in nature though located in a public institution. Even though the students can enjoy public funded facilities and infrastructure in such institutions, they pay fees that are higher compared to the other public courses in the same organisation. Four public institutions mention that their MPH programmes are self-financed in contrast to the other programmes provided in the institute. This includes a central university located in Hyderabad, Telangana and three state universities in Uttar Pradesh.

Box 2.1: Process and Methodology of Developing Institutional Matrix

What is included here

We have defined MPH as a two-year Master of Public Health (MPH) programme. Three institutions offering Master of Science (MSc) in Public Health were also included as these had a curriculum similar to an MPH programme. The institutions providing no information about the programme on their websites were initially included in the matrix but were later excluded because it was not possible to collect any data. Institutions providing public health courses as part of some other programme and not leading to an MPH degree were excluded. We also excluded institutions that are yet to start their programme. The data collection was done online for 105 institutions between March 2021 to May 2021.

The Search Process

To start with, an initial list of 44 institutions available from an earlier study (Tiwari et al., 2018) was used. The rest of the institutions were added using relevant keywords such as 'Master of Public health', 'Public health', 'MPH', 'MSc Public health' and School of Public health'. We also searched university and academic websites to find MPH programmes provided in India. Academic/career websites such as shiksha.com, targetstudy.com, getmyuni.com, successcds.net and College dunia were also used. The list was further cross verified for each state.

Collection and Compilation of Data

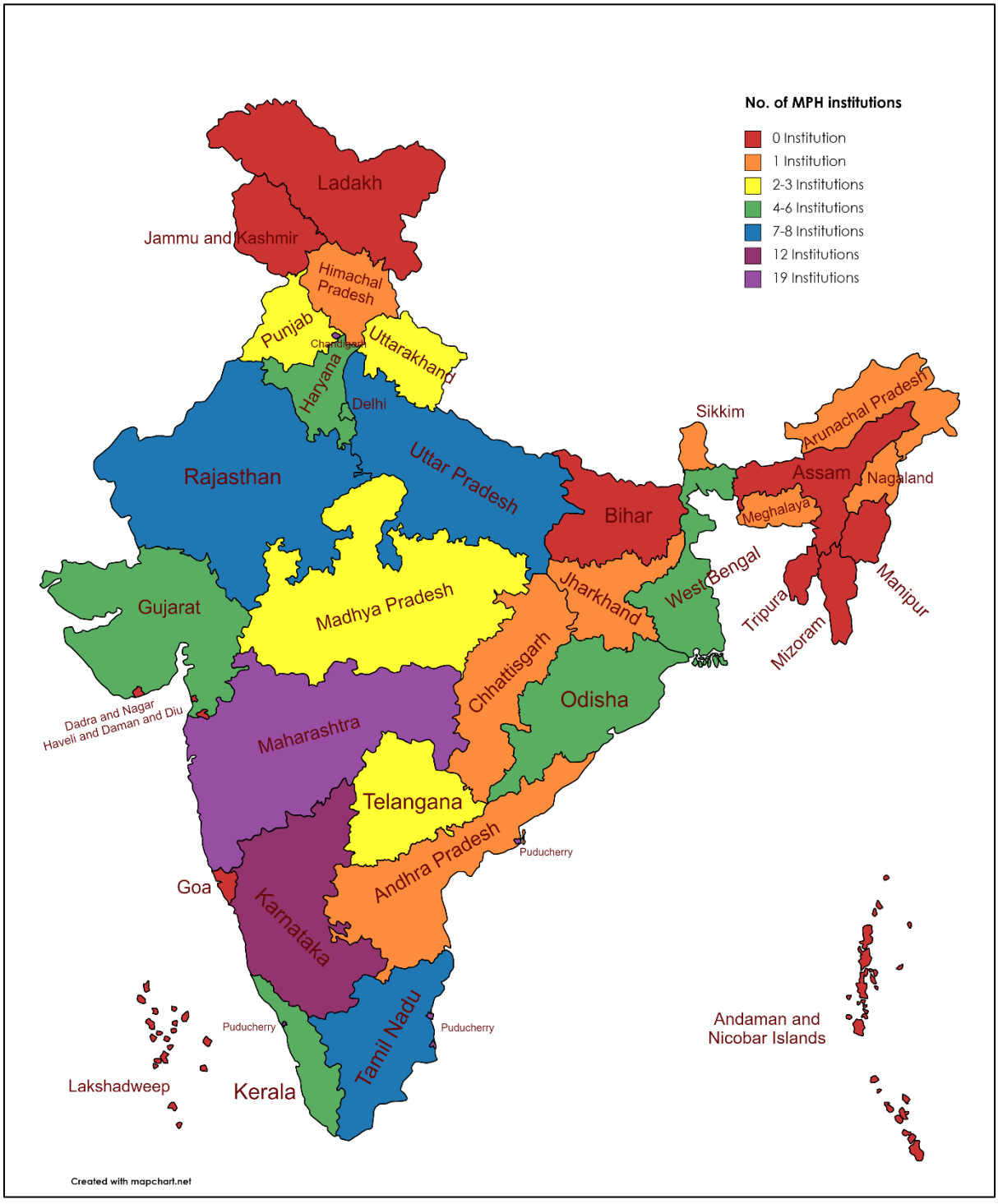
Data was collected from the university websites, prospectuses, and brochures. Phone calls were made if any clarification of information was required. The easiest accessible information was related with eligibility, admission, and fee. Information on faculty, curriculum, evaluation, scholarships, internships, etc. was difficult to obtain. Poor information availability was noticed in private and autonomous institutions. The NAAC accredited universities had better information available on their websites.

Challenges

Populating the university matrix was a tedious task, especially because of the ten different fields that the team had to input. All information was seldom available on the same part of the site, and the team had to navigate to different webpages or use various other sources to ascertain or clarify the information. There were websites with broken and inactive links for MPH-related information. Technological challenges also existed in some cases. Unavailability of prospectuses, brochures, or retraction of documents from college websites were also common, especially in private universities. Sometimes the same programme was listed on the university website as well the college website, which also led to duplication of data. We cleaned these errors before undertaking the analyses.

2.4 Regional and state distribution of Institutions and Seats

Figure 2. 2.Distribution of Master of Public Health Institutions by State, 2021



Out of 105 Institutes, almost one third are located in the two states of Maharashtra (18%) and Karnataka (11%). Rajasthan and Uttar Pradesh have eight institutions

each and there are seven colleges in Tamil Nadu. Among the union territories, Delhi has six institutions, while Chandigarh and Puducherry have one each. A few states do not have any institution offering MPH, and this includes Assam, Bihar, Goa, Jammu and Kashmir, Manipur, Mizoram, Tripura, and Ladakh (Annexure Table A1.3).

Table 2.1 Regional and Sectoral Distribution of Master of Public Health Institutions

Region	Number of institutes	Percentage				
		Total	Aided	Private	Public	Public - Private
North	35	33.3%	2.86%	65.71%	28.57%	2.86%
South	29	26.67%	0.00%	64.29%	28.57%	7.14%
West	23	21.90%	0.00%	39.13%	56.52%	4.35%
East	10	9.52%	0.00%	40.00%	60.00%	0.00%
Central	4	3.81%	0.00%	50.00%	25.00%	25.00%
North-East	4	3.81%	0.00%	50.00%	25.00%	25.00%

Note: There are two distance learning programmes, one based in Karnataka and one in Nagaland

The distribution of MPH institutes across regions (Table 2.1) show that the northern region has the highest number of institutions. A perusal of regional and sectoral distribution together reveals that private investment in MPH education has been higher in the northern and southern regions as compared to the eastern and central regions. The number of institutions is low in the central and north-eastern region. The western region has a high number of institutions because of a higher public investment by Maharashtra with UNICEF's support, as discussed earlier.

It is also interesting to note that the states which have an existing PH cadre in some form (Odisha, Tamil Nadu, Maharashtra and Kerala) had a larger number of institutions offering MPH (Table 2.2). It is also important to add here that the number of private institutions offering MPH was at par if not slightly higher with government institutions offering MPH in these states. This could be indicative of one of the two: (i) the creation of a PH cadre leads to demand for a higher number of MPH graduates making it more viable for both public and private institutions (e.g., Tamil Nadu), and (ii) the availability of MPH graduates makes it easier to create a PH cadre in the state (e.g., Odisha and Kerala). However, there are exceptions such as Karnataka, where the number of institutions and seats are high, but the state still has no PH cadre.

Table 2.2. Sectoral distribution of MPH Institutions by presence of public health cadre in the state, 2021

State	Total No. of MPH institutions	No. of Private Institutions	No. of Public Institutions
Odisha	6	3	3
Tamil Nadu	7	4	3
Maharashtra	19	6	13
Kerala*	5	3	2
States without a public health cadre	68	44	18
Grand Total	**105**	**60**	**39**

Note: Public health cadre are trained professionals responsible for population-wide preventive services to reduce exposure to disease through sanitary and health regulations, monitoring and averting health threats. *It is in the process of creating a public health administration cadre.

The information on the number of seats at each institution was available only in 64 (61%) institutional websites, and therefore is incomplete. However, it still provides certain pointers. The number of seats for MPH predictably follows the number of institutions per state (Annex Table A1.4). States with highest number of seats are Maharashtra (22%), Karnataka, (12%) Uttar Pradesh (11%), Kerala (10%), Gujarat (8%) and Tamil Nādu (8%). The average number of seats per institution was 26 though the number of seats ranged from 6 to 90. The number of seats is high in institutions that offer more than one MPH programme (e.g., Jawaharlal Medical college in Belagavi has 90 seats as it offers 3 specialised MPH programmes). The total number of seats in 64 institutions was 1,722, which is higher than the last reported count of 1,190 in 44 institutions in 2016-17 (Tiwari et al., 2018). This means that the total number of MPH seats in 105 institutions is likely to have more than doubled in four years, by 2020-21.

2.5. Attachment to medical college

The MPH programme is being delivered by a mix of institutions, where 46 out of 105 institutions (44%) have close proximity with a medical college (Table 2.3). In such cases, the MPH programme is undertaken either by the departments of community medicine at a medical college or the medical college is part of the same university/institutional campus. The remining 59 (56%) institutions do not have any association with a medical college. A larger proportion of MPH programmes with no association with medical education are located in the private sector though such programmes also exist in a good number in the public sector.

Table 2.3 Number of Institutions by Location and Type

Proximity to a medical college	**Private**	**Public**	**Public-Private**	**Aided**	**Total**
Yes	25 (42%)	20 (51%)	1 (2%)	0	46 (44%)
No	35 (58%)	19 (49%)	4 (6.8%)	1 (1.7%)	59 (56%)
Total	60 (100%)	39(100%)	5(100%)	1(100%)	105(100%)

The institutions attached to medical colleges tend to take only medical graduates as students for the MPH programme. These MPH courses may need a review and strengthening of social and other dimensions of the course to make it more rounded. On the other hand, the MPH courses in non-medical colleges have a better mix of these dimensions in their curriculum, as later analyses reveal; however, they are not affordable by many because of largely being located in high-fee charging private sector.

2.6. Faculty related Information

The number, qualifications, and experience of faculties are directly linked with the quality of any higher education programme. However, the information available for faculties delivering the MPH programme in their respective institutions was incomplete and poor on the institutional websites. Only 60 of the 105 (54%) institutions provided some information on their faculties and this number totalled 492[8].

The analysis of the available information (of 476 faculties) suggested that men (60%) outnumber women. Women for about one third of the total faculties in public institutions and about 44% of the total faculties in private institutions (Table 2.4). Although difficult to ascertain fully, a higher proportion for women in private institutions may be due to lower remuneration than due to a better gender balance as is clear from the general trend in private sector education in India (Calka, 2020; International Labour Office, 2013)

[8] Of the 105 institutions offering MPH, 60 institutions had some information on faculty. Although we got 492 distinct faculty numbers, not all faculty details were necessarily listed on the websites. Some institutes only listed details of just one faculty member, while another listed 27 in detail. Yet others just listed the number of faculty members in the department. Hence, we were able to get the gender of only 476 faculty members and qualifications of only 266. This number came down to 216 for the number of faculty members with a listed email address on the website.

Table 2.4 Faculty information by gender and type of institution (for 57 institutions), 2021

Type of Institute	Men (No.)	Women (No.)	Total Teachers	Percent of Men	Percent of women
Aided	1	3	4	25	75
Private	127	99	226	56.2	43.8
Public	134	67	201	66.7	33.3
Public - Private	24	21	45	53.3	46.7
Grand Total	**286**	**190**	476	60.1	39.9

Information pertaining to qualifications of faculty members was available only for 40 institutions on their websites and this number totalled 266. Among these, half of them possessed a doctoral degree, while 20% held an MD degree. About 45% of these faculties reported holding a PH degree/diploma though only 10% had an MPH degree. Other highest degrees ranged from Master of Business Administration (MBA), post-doctorates, and post-graduate medical diplomas. A number of them had a Master of Philosophy, MSc, MSc in Engineering (mainly for MPH environmental engineering), Master of Social Work, and Master of Arts as their highest degree. Public institutions had a greater representation of faculties with medical degrees, and private institutions had a greater mix of disciplinary backgrounds in their faculties. Considering that this information is for a limited number of institutions, we need to be a little cautious in interpreting this analysis.

The information on the courses taught by the faculty was even poorer on the websites. However, the most common area of expertise mentioned on the websites was communicable diseases, non-communicable diseases and nutrition, followed by epidemiology and disease surveillance.

Table 2.5 Number of faculty by number of publications by type of institution, 2021

Type of Institute	1 to 10	11 to 20	21 to 30	31 to 50	51 to 80	81 and above	Not Mentioned	Total
Private	23	6	7	4	3	3	91	137
Public	11	13	3	9	6	4	39	88
Public - Private	4	3	3	1	2	2	26	41
Grand Total	**38**	**22**	**13**	**14**	**11**	**9**	**159**	**266**

The number of publications is considered an important indicator of the quality of faculties. Of the 266 faculty data available, no data on publications was available for 159 of them (60%). Of the remaining faculty members, a majority had only between 1

to 10 publications (Table 2.5). Although the UGC has made NAAC accreditation compulsory for all higher education institutions, which would also imply adherence to standards for faculties and infrastructural facilities, only six institutions had specifically reported having NAAC accreditation on their website.

2.7. Facilities available in the institutions

The availability of and accessibility to facilities also impact the quality of courses and programmes. We assessed this aspect through a perusal of facility-related information mentioned on the website. Overall, 85% of the institutions mentioned the presence of the library facility on their website. Libraries remained open for 12 hours or more in about 36% of the institutions, while it remained open 24 hours in case of about 10% of the institutions. While only about 66% mentioned the presence of internet facilities on campus, more than 72% reported the presence of an online journal published by the institution, and 83% reported that they do organise seminars and conferences. Only 63% mentioned the presence of computer labs on their websites, while about 70% had hostel facilities available.

Table 2.6 Number of institutions by facilities mentioned online, 2021

Facility if mentioned on website	Aided N=1	Percent	Private N=60	Percent	Public Na=39	Percent	Public Private N=5	Percent	Grand Total	Percent
Library	1	100	50	83.3	37	94.9	2	40	90	**85.7**
Library opening hours										
12 hours or more	1	100	16	26.7	10	25.6		0	27	**25.7**
24 hours		0	4	6.7	6	15.4		0	10	**9.5**
Less than 12 hours		0	5	8.3	5	12.8	1	20	11	**10.5**
Online journal - Yes/No	1	100	38	63.3	34	87.2	3	60	76	**72.4**
University organises conference/seminar/posters	1	100	50	83.3	32	82.1	4	80	87	**82.9**
Hostels (yes/no)	1	100	46	76.7	23	59.0	3	60	73	**69.5**
Internet/wi-fi facility present	1	100	39	65.0	26	66.7	3	60	69	**65.7**
Computer lab present on campus	1	100	37	61.7	27	69.2	2	40	67	**63.8**

What emerges from the above landscaping exercise is that the MPH education though present in some institutions for long, has expanded to a larger number of institutions only recently, and that it is still an emerging area. The recent growth in the number of institutions is largely due to the entry of a higher number of private institutions imparting MPH degrees. Its spread is still very limited in the eastern and north-eastern regions of the country; these regions have one of the worst health indicators. The MPH education seems to have become more diverse as a higher

number of newer institutions imparting MPH education are not necessarily attached to a medical college. Most PH positions in the country are taken over by clinical specialists, with little or no training in PH. There is a need to differentiate clinicians from PH professionals (PHPs) while being two sides of the same coin. This starts with cleaving out a separate identity of PHPs by promoting MPH in institutions unattached to medical colleges allowing for higher chances of transdisciplinarity.

Given that this profile is based on a web-based mapping of institutions and that many do not provide complete information, the data about faculties and facilities need to be interpreted with caution. It is difficult to comment on the quality of these programmes merely by looking at this information, but the lack of full information on their websites is itself an indicator of the lack of transparency and full disclosure. Although UGC mandates compete information to be posted on the website, most do not adhere to this mandate.

We next move to examine the three aspects of (i) access to MPH education, (ii) curriculum of the MPH education and (iii) employment trends and potential for MPH graduates while using the TDPS approach as a broad frame. The next three chapters are based on this examination.

3. Access to MPH Education

We have tried to understand the aspect of accessibility by analysing the location, ease of the admission process, fee structures and the presence of certain inclusive mechanisms.

3.1 Location

The location of an institution has significance for accessibility because of two reasons: (i) the first is affordability as living costs are likely to be higher in urban areas, and (ii) the second is that the presence of a local institution is likely to trigger some interest in respective education streams. The proportion of institutions located in urban areas is expectedly higher at about 68% (Table 3.1).

Table 3. 1.Number of Institutions by Location and Type, 2021

	Type of Institution				
Location of Institute	Private	Public	PPP	Aided	Total
Urban	39 (54.9%)	27 (38%)	4(5.6%)	1(1.4%)	71 (67.6%)
Rural	13 (52%)	11(44%)	1(4%)	0	25 (23.8%)
Semi-urban	7 (87.5%)	1 (12.5%)	0	0	8(7.6%)
Total	60 (100%)	39 (100%)	5 (100%)	1 (100%)	105 (100%)

Note: Figures in parenthesis represent percentages. PPP stands for Public-Private Partnership.

3.2 Availability of prospectus and course related information on the websites

In 2013, the UGC issued a set of guidelines for students' entitlement relating to a number of processes, including admissions in institutions for higher education. The guidelines emphasised the importance of establishing a transparent system on admission procedures. According to the guidelines, prospective students are entitled to have the information (i) regarding the degree and a prospectus for the programme offered, (ii) on whether the university awarding the degree is in the list of universities maintained by UGC or not, and (iii) on the admission process and criteria, reservation criteria if any, syllabi, academic profile of faculty, duration, evaluation process, fee, and rules on the refund of fee. According to these guidelines, if the information is not available the students can approach the Grievance Redressal Committee where the grievance should be addressed in ten days, or the students can approach the ombudsman of the university.

We tried to assess whether these are being followed or not by scanning the information given on respective websites and also by looking at the prospectuses where we could access those. Of the 105 institutions, only 62 (59%) provided a prospectus/brochure on their websites. Of the remaining 43, only 26 institutions provided this information on their websites though they did not have a prospectus. The remaining 17 did not have any of these details on their websites. Availability of information through brochures or website was higher in private colleges than in public colleges (Table 3.2).

Table 3. 2. Number and Type of Institutions by availability of information, 2021

Availability of programme information	Brochures available on the website	Information on the website	Limited information on the website	No Information on the website	Total
Public	22 (21%)	8 (7.6%)	1(0.95%)	8 (7.6%)	39
Private	34 (32.4%)	18 (17%)	3(2.9%)	5 (4.8%)	60
Public-Private	5 (4.8%)	-	-	-	5
Aided	1 (0.95%)	-	-	-	1
Total	62 (59%)	26 (24.8%)	4(3.8%)	13 (12.4%)	105

Note: Figures in parenthesis represent percentages of the total number of institutes

However, we found that accessing application form is easy in most cases. All (100) except five institutions having MPH programmes prescribed filling and submission of the application for the programme through electronic mode and all but three provided an application form online in their website.

3.3 Eligibility and screening process for admissions

The model curriculum acknowledges the role of learners from multi-disciplinary backgrounds as 'important' for the MPH programme in India, and therefore does not restrict the eligibility to only medical or science graduates. This means that graduates from any non-science disciplines like economics, sociology, statistics, social work, anthropology and others are also eligible for MPH programmes offered in Indian universities. While allowing for this flexibility, the model curriculum mentions that it is up to the university to decide the eligibility and screen for the aptitude of the candidate as they deem fit for the course on MPH offered by them. In addition to those who have studied clinical/western medicine, sciences and allied areas, this flexibility is also extended to individuals who have studied dentistry, veterinary sciences, allied and health sciences, life sciences, and Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy (AYUSH). However, even though the model curriculum does not overtly make the TDPS approach an essential

element of the MPH programme, as we would discuss in later chapters, it recommends that students from diverse backgrounds should be considered for admission. However, few institutions encourage students from diverse backgrounds to apply. Only 24 of the 105 institutes accepted any graduate or person with a bachelor's degree for admission and did not specify medical graduation. Only one of these institutions was attached to a medical college and 17 of them were either private or public-private institutes.

A majority of the institutions (69, i.e., 65.7%) accepted students only if they had a Bachelor of Medicine, Bachelor of Surgery [MBBS], Bachelor of Dental Surgery (BDS), AYUSH, paramedical, or allied medical disciplines, including in Bachelor of Veterinary Science (BVSc), Bachelor of Science (BSc) Nursing, Bachelor of Physiotherapy (BPT), Bachelor of Occupational Therapy (BOT), Bachelor of Pharmacy (BPharm), BSc Microbiology, BSc Laboratory Technology (BLT), BSc Radiography, etc. Of these, 41 (59.4%) institutions were attached to a medical college.

Three (2.9%) institutions specified that only candidates with an MBBS degree could apply. These were all government-run public institutes of high reputation (such as Indian Institute of Hygiene and Public Health, West Bengal; National Centre for Disease Control, New Delhi; and National Institute of Epidemiology, Chennai, Tamil Nadu). Only one private institution mentioned that any medical graduate could apply. Two institutions listed that only those with a Bachelor of Public Health could apply. Six institutions did not provide any information on eligibility.

The information about eligibility criteria is largely restricted to the degree required in most cases; however, age and work experience also figure in a small number of institutions. Only 8t out of 105 institutions have mentioned age restrictions for admission to the MPH programme, and it is mostly in the form of a maximum age limit, ranging from 35 years to 47 years; one of these eight also mentions a minimum age-limit of 21 years for the MPH admission. Of the 18 institutions that mentioned work experience as a preferred criterion, 9 mandated some work experience as one of the eligibility requirements for the MPH admission.

Although, age or experience does not factor as a criterion for admission, it may merit further investigation. As one MPH programme co-ordinator remarked, 'There will be a student who is 32 or 35 years old with an MBBS, and a person who is 22- or 23 year old with a BSc, creating a huge variation in the classroom, and the kind of maturity these students have will also vary. So, if applicants have a BSc, I prefer them to at least have one-year work experience'.

Fifty institutions (48%) conduct their own entrance test, while 29 (28%) institutions explicitly mention that they do not have an admission test. The remaining 26 (24.7%) institutions do not mention either; hence, it is not clear if an admission test is conducted or not. Nearly half of those conducting tests for entrance belong to public

sector. Only 32 out of 50 institutions conducting entrance tests provide information regarding the type of admission test conducted. A majority (26 out of 32) of them conduct tests using a multiple choice questions methodology, while the remaining six mention diverse methods such as interaction method, essays, and focus group discussion, essays or picture-based questions, video response to the questions, short descriptive type question, or a mixed method as their preference. The lack of access to complete and transparent information about eligibility as well as the entrance tests indeed limits accessibility to MPH programmes.

Another issue calls for attention in this context. This is related to the tension between need for flexibility on one side and standardisation on the other. The model curriculum does not mention any specific parameters such as minimum marks secured in previous public examinations or about the screening processes for admissions. While this allows freedom to the institutions to develop their own criteria and processes and is a desirable feature at higher education level, in practice, it also allows for a very heterogenous set of parameters and processes for entrance to MPH programmes. This may also be leading to certain kinds of biases in some cases. For instance, if the idea is to promote transdisciplinarity, then it is important to have an entrance process including tests and evaluation criteria that normalise both the advantages and biases that prospective learners from particular disciplines may or may not have. The mandatory presence of a desired set of parameters that enable a minimum threshold of uniformity on accepted principles within a framework, which allows institutions to detail out their own processes and assessment criteria for admissions, may be helpful in ensuring greater fairness and promote core values of inclusiveness and transdisciplinarity in greater depth.

Given that India follows a policy of affirmative action leading to a reservation of seats for the educationally deprived social groups both in higher education institutions and public sector jobs, it is important to examine the presence of such provisions for this programme as well. Of the 105 institutions, 45 do not mention a reservation policy on their websites, and 96% (43) of those were private institutes. Only 60 (57%) of the institutions have some information on their websites on the reservation policy that they follow; of these, a majority came from public sector (37), a good number came from the private sector (17), five were PPP institutions, and one was an aided-institution. The majority of the institutions (56%) having reservation policy had reserved seats for Scheduled Caste (SC), Scheduled Tribe (ST), and Other Backward Classes (OBC) groups. Twenty-one of the 60 (35%) institutions also provided reservations for persons with disability. The other major categories considered for reservation were for economically weaker sections, nomadic tribes, and religious minorities. In our online survey of alumni, 30% (33 of 108) belonged to the OBC category, while 8.3% (9 of 108) belonged to the SC group. The

representation of SCs and STs are much lower than their population share among the alumni respondents.[9]

3.4 Fees

It is mandated by the UGC that information on fees and fee concession be available online. However, only 85 (81%) of the institutions give information about the fee structure in their websites. The information is more commonly provided by public, PPP or aided institutions (90%) as compared to private institutions (75%). Major categories in fee structure found on the institutional website and brochures include tuition fee/course fee (both years), admission fee, deposit/caution money, registration fee, exam fee, hostel and mess fee, and other fee.

The application fee, meaning the amount of fee paid at the time of applying for admission[10] is highly variable. Seventy (67%) of the MPH programmes mention an application fee for the process of application; of these,34 (49%) were private, 32 (46%) public, 1 (1.4%) aided, and 3 (4.3%) public private. Public institutions showed higher admission fees than private institutions though this situation changes entirely when we discuss the programme fee that a student pays after admission during the entire course of the programme. The application fee in public institutions ranged from INR 200–5,015 with a mean of INR 1,231 rupees, whereas in private institutions, the application fee ranged between INR 350–4,000 with a mean of INR 1,182 rupees (Table 3.3).

Table 3. 3.Distribution of application fee (in INR), 2021

Type of Institute	Average	Std. Deviation	Min	Max
Aided	1500	0	1500	1500
Private	1182.06	770.16	350	4000
Public	1231.88	887.35	200	5015
Public-Private	2500	2483.28	500	6000

We next move to discussing the fees paid by students after getting admission and during the entire duration of the programme. This information is given by 85 (81%) institutions in their brochures or website. This amount ranges between INR 1,366–18,03,614 and has a median of INR 16,600. However, all 85 institutions do not provide the entire breakup of this fee. Table 3.4 provides the details of these fee including the number of institutions that provide the information and the mean and the range for various fee components.

[9] This needs to be interpreted carefully as the number of respondents is small and there is a bias towards southern India, as elaborated in later chapters.

[10] This includes any amount paid during application process or for the process of application or for the admission tests if any.

Table 3. 4.Mean and range of fee components in each type of institution (in INR)

Type of fee (in INR)		Aided (in INR)	Private (in INR)	Public (in INR)	Public – Private (in INR)	Total (in INR
	N	Mean	Mean	Mean	Mean	Range
Total fee	85	2,35,000	2.93,995	87,189	3,21,800	1,366-18,03,614
Tuition/ Course Fee	82	1,56,000	2.14,775	66,786	206,000	216-16,59,614
Admission fee	25	400	5,758	1,457	5,150	5-15,000
Deposit / Caution	27	10,000	10,133	4,975	5,000	40-25,000
Registration Fee	22	4,000	2,483	2,686	5,500	5-12,300
Examination Fee	17	14,000	7,694	5,769	.	1,000-18,000
Hostel and Mess	37	80,000	1,34,341	25,878	1,10,400	15-2,25,000
Other Fee	38	2,970	43,905	8,035	31,650	750-2,40,000

Except for the registration and examination fee, all other fees including tuition, admission, deposit, hostel and other fees[11] are, on an average, significantly lower for public institutions as compared to private. The average tuition fee in private institutions, which is the biggest component of all charges in all kinds of institutions, is more than three times higher than that in public institutions. The difference is even higher for the hostel and mess charges, which largely refers to the living cost; this average in private institutes is more than five times higher than in public institutions. The paucity of information about various fee components itself is also alarming as is obvious from the low number of institutions mentioning the relevant details (Column N in Table 3.4) on their websites. This also limits the accessibility as prospective students need to make decisions without full information available to them.

A high fee obviously signifies lower affordability, and therefore lower accessibility for those coming from economically poorer families. However, to an extent, this can be offset by the presence of bursaries and provision for fee-waivers or scholarships. But this information, like most others, is also incomplete on the websites; only 67 (63%) institutions mentioned concessions or scholarships for their students on their websites. A majority of these were linked with caste/community or gender backgrounds or the economic status of the student with a little less than half of these

[11] Other fees include all miscellaneous charges levied on students for the library identification card, certificate issuing, convocation, etc. It is important to note that three institutions charge a comparatively higher amount of other fee as it includes field visits and internships.

also having provision of scholarships linked with merit (Table 3.5). However, only nine institutions specified scholarships, stipends or grants, especially for MPH students. Of these, three public-private institutions provided full tuition waivers for candidates of economically weaker sections and required the students to mandatorily serve at a non-governmental organisation (NGO) for two years and provided a stipend for the same. There were also one to two more scholarships available specifically for students from SC, ST, and OBC groups at these institutions. One public institution offered a cash award and a travel fellowship for the "Best" MPH student and MPH student with the "best abstract presentation at a national or international conference", respectively. One private institution offered up to INR 25,000 towards investigational/project expenditures for MPH research. Provision of stipend is mentioned in four institutions,[12] of which only one institute specifically takes only MBBS students. Most institutions only cover partial tuition fees, and no institution extends scholarships to cover other living expenses.

Table 3. 5.Number and type of scholarships available by sector of institutions, 2021

Type of Institution						
Type of Scholarship	**Aided**	**Private**	**Public**	**Public - Private**	**Total (N = 67)**	**Per cent of 67 (%)**
SC/ST/OBC students	1	11	10	3	25	37.3
Minority students		6			6	9.0
Economically weaker		14	8	3	25	37.3
Girl child		10	6		17	25.4
Merit scholarships		25	4		29	43.3

Note: SC stands for Scheduled Caste, SC stands for Scheduled Tribe, and OBC stands for Other Backward Classes.

Only 21 institutions mention concession in entrance fees and 11 institutions mention lower marks for entrance exam for reserved category of students. Of these 21 institutions, only two were private and one was a public -private institution. The concession in entrance exam fees ranged from INR 200–3,000. It should be noted that some institutions that provide concession for entrance exam fees or separate eligibility criteria in entrance exams for reserved categories do not mention the presence of a reservation policy on their website for these categories. For instance, a

[12] Three of these institutes are public institutions, and the remaining is a public-private institution.

total of 25 institutions mentions separate eligibility criteria for reserved categories, but only 11 of these have a reservation policy mentioned on their websites.

We also analysed the regional nature of the fee in order to see if there is any variation in the average fee charged among regions (Table 3.6). We found that the northern region has the highest average tuition, total fee, and also the highest variability. The southern and western regions follow, with the highest average total fees. However, if you consider tuition fees alone, it is the north-eastern region that has the second highest average tuition fees.

Table 3. 6. Mean and range of total fee and tuition fee (in INR) in each region in India

	Total Fee N = 85 (in INR)		Tuition Fee/Course Fee N= 82 (in INR)	
	Range	Mean	Range	Mean
Distance Learning	55,900	55,900	55,900	55,900
Central	7,356-1,20,000	63,678	5,856-1,20,000	62,928
East	43,390-1,80,000	1,00,522	16,000	67,000
West	56,000-6,98,403	1,93,085	40,000-5,00,000	1,37,263
South	26,120-5,29,000	2,05,046	2,400-3,08,000	1,41,331
North - East	12,000-3,55,500	1,82,569	26,125-3,00,000	1,75,375
North	1,366-18,03,614	2,84,943	216-16,59,614	2,09,662

The average fee (and the median) is higher for institutions not attached to a medical college (Table 3.7). When viewed in conjunction with the eligibility criteria for admission, this implies that the programme is more expensive for those who have no medical background. In such cases, these programmes would be attractive to prospective students only if high-paying job opportunities exist so that they are able to justify the high investment for the programme. We examine this issue in our chapter on employment status and prospects.

Table 3. 7. Average fee structure (in INR) for institutions attached and not attached to a medical college, 2021

	Type of Fees	Mean	Standard Deviation	Median	Minimum	Maximum
Institutions attached to medical college	Total fee	1,77,469	1,26,524	141,000	7,356	5,29,000
	Tuition fee	1,27,564	3,05,600	120,000	76,950	3,08,000
	Admission fee	2,160	4,700	1,750	300	1,796
	Caution deposit	9,458	24,880	10,000	120	25,000
	Registration fee	2,700	9,700	2,000	300	10,000
	Hostel & mess fee	93,715	2,10,660	112,750	340	2,11,000
	Other fee	17,380	2,39,250	2,110	750	2,40,000
Institutions not attached to medical college	Total fee	2,44,589	2.89,479	1,93,500	1,366	18,03,614
	Tuition fee	1,79,321	16,59,398	1,12,410	2,62,051	16,59,614
	Admission fee	4,851	14,995	2,262	5	5,265
	Caution deposit	7,313	19,960	5,000	40	20,000
	Registration fee	3,050	12,295	1,150	5	12,300
	Hostel and mess fee	94,423	224,985	1,06,000	15	2,25,000
	Other fee	24,723	88,915	17,435	1,085	90,000

In order to deepen the understanding about accessibility, we also included information on the presence of redressal mechanisms for students. It is mandated by UGC regulation that an Internal Complaints Committee (ICC) be present as a redressal mechanism against sexual harassment in higher education institutions. The same also requires the reconstitution of already existing Committee against Sexual Harassment (CASH) as ICC (University Grants Commission Regulations, 2016).

Table 3. 8.Presence of redressal mechanisms for students

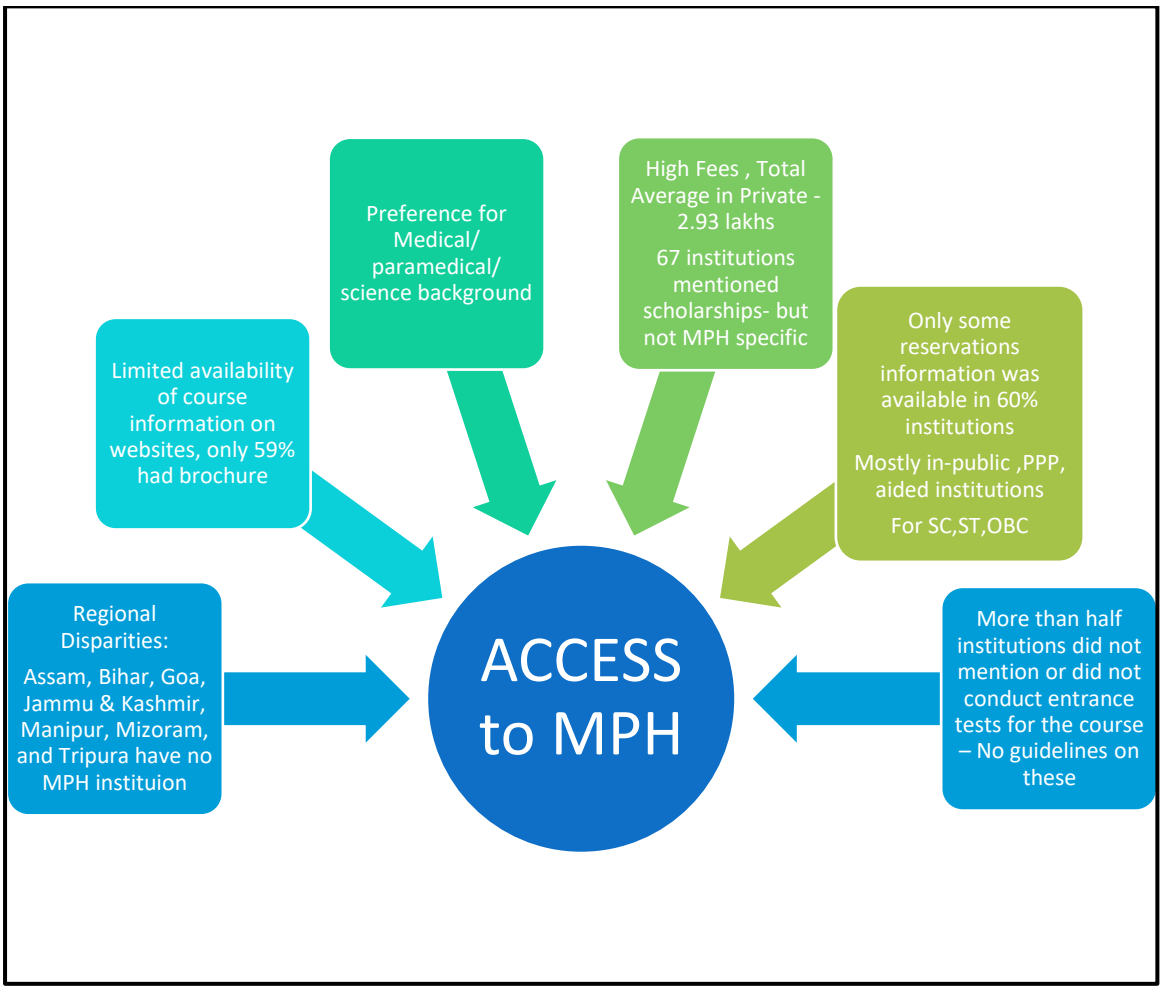
Facility if mentioned on website	Aided N=1	Private N=60	Public N=39	Public Private N=5	Total
CASH committee mentioned on the website (% of total)	1 (100%)	29 (48.3%)	22 (56.4%)	0	52 (49.5%)
ICC Committee present (% of total)	1 (100%)	20 (33.3%)	18 (46.2%)	0	39 (37.1%)
Women grievance/ welfare/empowerment committee present (% of total)	0	8 (13.3%)	2 (5.1%)	0	10 (9.5%)
Anti-ragging committee present (% of total)	1 (100%)	40 (66.7%)	25 (64.1%)	2 (40%)	68 (64.8%)
Disciplinary and grievance redressal committee present (% of total)	1 (100%)	24 (40%)	10 (25.6%)	2 (40%)	37 (35.2%)

Note: CASH stands for Committee against Sexual Harassment and ICC stands for Internal Complaints Committee.

We found that only about half (around 50%) of the institutions mention the presence of CASH and 37% mention the presence of ICC on their websites. The presence of these two committees is higher in public institutions as compared to private. Since ragging of new students has also been a major issue in many Indian higher education institutions, 65% of these institutions have mentioned the presence of an anti-ragging committee on the website. More than one third of the institutions have also mentioned a grievance redressal committee and about 10% have mentioned the presence of a women's welfare committee.

Figure 3.1 summarises the access issues. What emerges foremost from the discussion on accessibility is that the information provided on the websites is incomplete and going by this, many institutions do not comply with all the processes and mechanisms that are mandated by the UGC and other regulating bodies to make the admission process transparent and the university environment responsive. Majority of the newer institutions imparting MPH degree are in the private sector and the fees charged are high there, making the MPH programmes somewhat a high-cost degree. Before examining how alumni connect to the issue of prohibitive cost and their employment prospects, we discuss the aspect of curriculum and pedagogy of imparting the MPH education in the next chapter.

Figure 3. 1.Factors involved in Access to MPH education



4. Master of Public Health (MPH) Curriculum in India

This chapter delves into the issue of curriculum and to some extent also its delivery or pedagogy using the information available through websites or other channels such as faculty surveys. We first discuss the MoHFW model curriculum as that is expected to serve as model for others, using the TDPS lens, and then move on to examine the curriculum as being practiced in different institutions. Finally, we present an analysis of the results of a small online survey of the MPH faculties.

4.1 The Ministry of Health and Family Welfare (MoHFW) Model Curriculum

As mentioned earlier, the MoHFW has developed the model curriculum for MPH education in India in 2017-18.[13] This curriculum provides the course structure, including the subjects that need to be taught under all MPH courses currently operative in the country. The aim of the curriculum is to create a cadre of PH professionals who cater to the niche demand of the health sector in India by having an in-depth understanding of diseases epidemiology, and various determinants of health and related challenges, intersected with an understanding of policy and management. As mentioned in the introduction, this curriculum was made mandatory for all universities and associated colleges and institutes offering MPH programmes by an order passed by the UGC in September 2018.

A perusal of the curriculum shows that by giving precedence to competencies related to PH management and research, core values such as scientific temperament and scholarship as well as ethics and accountability that the curriculum targets to inculcate are in tandem with the TDPS framework. The curriculum mentions not just leadership skills but also the aptitude and ability to work with a socially, culturally, and economically diverse group of stakeholders, especially those belonging to the most marginalised sections of society as part of its value framework. This is particularly critical in the Indian context where the socially and economically marginalised sections are most vulnerable to poor health conditions due to the limited choices available to them and have often been outside the periphery of the policy purview (Barik and Thorat, 2015; The Wire, 2021; Oxfam India, 2021). Apart from this, the other competencies enlisted in the curriculum framework deal mainly with health policy and management issues such as understanding of budgets and resources, quality assurance and improvement, and management of information

[13] This curriculum was developed by a core committee of taskforce members comprising of bureaucrats and policy makers working in the MoHFW ministry, public health professionals, experts and educators from prominent public health institutes in India and the United Kingdom. While the task force comprised of 14 members, technical support was provided for content development and organisation by public health professionals and practitioners from National Institute of Health and Family Welfare (NIHFW), National Centre for Disease Control (NCDC), Johns Hopkins Program for International Education in Gynaecology and Obstetrics (JHPIEGO), and the Human Resource for Health (HRH) cell located in the MoHFW.

systems. Research skills that lead to evidence-based policy making and development of robust health systems reflecting an understanding of the issues at the ground level are also mentioned as core competencies that the curriculum wishes to inculcate.

The prescribed course duration is of two years, divided into four semesters, inclusive of internships and dissertations, which are compulsory components of the course work. The course is designed to be a full-time course and no flexibility in terms of extension of course work or migration of exam credits is mentioned in the curriculum model. By making the programme full-time and not offering flexibility options, the model has made it inaccessible for many who could be desiring to take up the MPH courses. For example, frontline public health professionals like (i.e., Accredited Social Health Activist [ASHA] and Anganwadi Workers[14]) are women with limited resources (Ambast, 2021; Tripathi & Thaker, 2021), and they would find it extremely difficult to give up their current employment to pursue a full time MPH course. Therefore, flexibility in course duration would allow for greater inclusion of diverse set of learners, which the current model curriculum does not offer.

Box 4.1: Core Modules Prescribed by the MoHFW Curriculum for MPH

a. Principles and practice of Public Health
b. Introduction to health system and policy in Developing countries
c. Health Management: Management Principles and practices
d. Basic Epidemiology
e. Basic Biostatistics
f. Demography and population sciences
g. Introduction to health economics
h. Health promotions approaches and methods and evaluation
i. Introduction to financial management and budgeting
j. Social and behaviour change, effective communication in health care
k. Reproductive, Maternal, Neonatal, Child Health and Adolescent Health (RMNCH+A), also to include Family Planning
l. Introduction to health programme evaluation
m. Principles of social research methods
n. Environment and occupational health
o. Law and ethics in public health

Source: MoHFW Model MPH Curriculum

The model curriculum prescribes 15 compulsory core modules (Box 4.1) and four elective streams: Epidemiology; Health System Management; Health Programme, Policy and Planning; and lastly, RMNCH+A. Under each of these four steams, five

[14] Accredited Social Health Activist, ASHA, is a health activist in the community who creates awareness on health and its social determinants and mobilises the community towards local health planning and increased utilization and accountability of the existing health services, under the National Health Mission. The Anganwadi Worker (AWW) under the Integrated Child Development Scheme, provides nutrition, health and preschool services to children under 6 years of age.

modules have been listed as compulsory subjects. In addition to these elective modules, the institutions have the flexibility to offer other electives like Advanced Health Economics and Financing, Advance Health Informatics, Demographic and Population Sciences, Advanced Environmental and Occupational Health to name a few.

A student needs to pass or complete all 15 core modules along with the five elective modules depending on their stream. The model curriculum, however, does not mention the criterion for deciding that the student has successfully completed the module/course. This leaves room for the institutions to have their own system of grading and scores that qualify as minimum requirement for completing a particular module. The model curriculum also does not outline any flexibility criteria or even the need to have one in its prescription related to passing of the core modules and stream-related modules. For example, it is not clear if a student who has not been able to secure the minimum marks or has not been able to pass a particular core module in a semester has the flexibility to opt for re-attempting to pass the module in the next semester or not. The institutional websites are also silent about these; hence, a prospective learner is deprived of this information even if such practices could possibly have been in place.

The first semester has suggested teaching hours of approximately 450 hours. The courses suggested for this semester are introductory in nature where Principles of Public Health, Health systems and Policy in Developing Countries, Basics of Health Management, Epidemiology, Biostatistics and Population sciences, including Demography are suggested as core modules. Semester two, with suggested teaching hours of 300 hours, is more inclined towards Economics and Policy, where modules on Health Economics, Health Promotion Approaches, Financial Management and Budgeting, Social Behavioural Change, and Health Communication are recommended. The third semester is an integrated semester with modules comprising of diverse topic areas, like RMNCH+A, Health Programs and Evaluation, Social Research Methods, Environmental and Occupational Health, and Laws and Ethics in Public Health. The last semester is reserved for elective modules.

After the successful completion of these two semesters, learners have to undergo a two-month internship programme. The internship can be undertaken in both government and non-governmental PH institutions. The idea is for the leaners to gain hands-on experience in the practice of PH through involvement in research, implementation-based activities, or programme management. The nature of the internship should be symbiotic so that organisations and interns mutually benefit from this engagement. Upon successful completion of the internship, the learners are supposed to submit an assignment documenting their work during the internship, challenges faced, solutions implemented, etc. Two credit scores have been assigned to the internship. But it is not mentioned as to how these scores will be allocated. For example, it is not clear if the internship organisation has a say in the scores for the

learner, or if it is based on the report submitted by the learner at the end of the internship. Even though field work is a compulsory component of the programme, immersion in rural areas or urban slums has not been prescribed in the model curriculum. This could lead to better understanding of health and health-care issues in these population groups, which is one of the curricular values.

The dissertation that the students are supposed to embark on at the end of the last semester is to be chalked out after the internship experience. The linkage of internship with dissertation is useful as it allows the leaner to reflect, critically think, plan, and take their internship experience further by delving deeper into the perspectives gained during the internship. The score credit for dissertation is higher than the internship, at 10 credits. For evaluation of the dissertation, there is provision for both internal and external evaluation, where 60% of the credits are assigned for internal evaluation and the remaining 40% for the external evaluation. One of the methods suggested for evaluation is viva voce. There is no mention of publication of dissertation or any incentives for learners to publish research articles based on their dissertation.

The contents of the core modules are organised in a way that almost all pertinent topics related to PH and methods used to study PH are covered. The provision for elective modules enables learners to choose a topic they would like to specialise in and study deeper. Therefore, irrespective of the electives chosen, the core modules ensure that learners have a broad perspective in PH and policy. The topics covered in the elective modules are comprehensive and allow the learner to deep dive into the themes. Overall, the courses in terms of the subject choices offered in the core and the elective modules seem to be comprehensive and transdisciplinary in nature. However, perspectives related to structural barriers (like caste, gender, class, language, etc.), intersectionality (how social structures intersect to allow for power dynamics, access, privilege, and deprivation), and social norms that play a key role in determining health status and access to health care seem to have been only partially covered in one of the core modules on social and behavioural change. The elective module on RMNCH+A does cover these topics in depth, but only if learners opt for it as an elective, will they be able to understand more about these structural impediments.

All elective modules have 10 credits, with each broken down into 350 hours of teaching. While the core modules spread across the first three semesters have a total allocation of 980 hours of teaching and practical work, highest credits have been assigned to the modules on Basic Epidemiology, Basic Biostatistics, Public Health Programme and Design, and Principles of Research Methods with 2.5 credits each. For the electives, each module comprises of 2 credits. Therefore, for the total course work on MPH, a total of 50 credits are assigned comprising of 1,750 hours of teaching and practical work. The credits have direct linkages with the number of teaching hours required, i.e., the modules with the highest credits require the highest

number of teaching hours. The model curriculum does not say anything on the pedagogy or how the classroom processes need to be conducted. In that sense, the curriculum becomes more of a syllabus, which is a narrower description of subjects and topics to be taught.

The curriculum is also silent on the kind of capacity building initiatives that need to be undertaken for the teachers or requirement for engagement in research for the MPH faculty. Therefore, even if the modules are comprehensive and linked to the objective of the model curriculum, the execution and delivery of the curriculum is solely dependent on how the institutions and faculties interpret and implement it. This is in contrast with some of the internationally acclaimed curriculum modules like the European Core Competences for MPH Education (ECCMPHE), where the focus is not only on the content but also on how teachers and learners along with other stakeholders like researchers and social workers, and how all of them can engage with the curriculum; ECCMPHE defines the study of MPH from the perspective of problem identification and solving, and therefore stresses a lot more on the way PH needs to be practiced in addition to understanding the theoretical underpinnings of PH. Practice here, as per the ECCMPHE, is not just restricted to health policy making, management and implementation but is also related to teaching of MPH curriculum and creating strong epistemological classroom processes that are transdisciplinary in nature. Similarly, the accreditation criteria for PH schools of PH Programmes developed by CEPH, the United States mentions how MPH faculties need to interact with each other and engage in workshops and school specific curriculum development so as to co-create a transformative curriculum for MPH. Such guidelines are absent in the Indian model curriculum.

4.2. Mapping of MPH Curriculum as Practiced in India

This analysis of MPH curriculum as practiced in the Indian institutions is based on two perspectives: (i) the adherence of colleges and institutions to the MoHFW curriculum prescriptions and suggestions, and (ii) how diverse or uniform are the MPH curriculum as practiced by these 105 institutions.

We found that almost all (102 of 105) offer full-time MPH courses as prescribed by the MoHFW curriculum. Out of these 102 institutions, a majority (57%) were public sector institutions, and about 37% were private sector institutions. Only one institution had explicitly mentioned in their website that they offer a part-time MPH programme. In terms of the organisation of semesters too, we found that about 86% followed the prescribed structure of offering 4 semesters over two years of the MPH, with each semester being 6 months long.

Only a little more than half (59 out of 108) programmes provided semester-wise course information on their websites. A perusal of the course structures indicated that barring one or two exceptions, most institutions did not adhere to the model curriculum's suggestion of having six core modules in the first semester/term, four

core modules in the second, and five core modules in the third. However, in term 4, 45 out of 59 programmes mentioned internship or dissertation (17 internships and 28 dissertation).

Table 4. 1.Core subjects offered by programme by Term, 2021

Number of Programmes	**N= 59**			
Term	Term 1	Term 2	Term 3	Term 4
Core subjects	No. of programmes offering recommended core subjects			
Principles and practice of Public Health	36	5	2	
Introduction to health system and policy in Developing countries	21	15	11	
Health Management: Management Principles and practices	17	22	17	1
Basic Epidemiology	44	37	5	
Basic Biostatistics	36	30	1	
Demography and population sciences	8	7	4	
Introduction to health economics	9	10	11	2
Health promotions approaches and methods and evaluation	1	7	4	1
Introduction to financial management and budgeting	5	7	3	1
Social and behaviour change, effective communication in health care	18	13	4	5
(RMNCH+A) (including Family Planning	7	15	5	3
Introduction to health programme evaluation	0	5	5	
Principles of research methods	23	15	4	1
Environment and occupational health	9	16	22	4
Law and ethics in public health	5	15	7	6

*Note: In this table instead of number of institutions, the number of programmes/courses has been taken as the denominator as some institutions offer more than one MPH programme (e.g., with specialisation). RMNCH+A stands for Reproductive, Maternal, Neonatal, Child Health and Adolescent Health.

The mapping of core modules taught in institutions revealed that majority taught three out of six recommended modules in the first term (Table 4.1). These are: Principles of Public health, Basic epidemiology and Basic biostatistics. Many

institutions tended to include basic sciences courses in the first semester, including Human Biology or human anatomy or physiology. MPH programmes offering specialisation in Nutrition or Management tended to include their specialized courses in the first term itself. Almost all the institutions for whom we have this information introduced the non-core specialisation courses in the second semester. The third terms courses are generally related to the environmental and occupational health, health management, health economics and health policy modules. This term also includes many advanced courses. Many institutions require project and field work in this term. Health programme evaluation and Health promotion approaches & methods seemed to be the least taught modules in any semester. One reason could be that these are at times combined with health policy or health management courses. Very few institutes also focused on research and scientific writing and specific courses on vulnerable populations like tribal, urban poor were also rare.

Our mapping showed that only 40% of institutions (44 of 105) mentioned internship as a compulsory part of their curriculum. As a result, we do not know about the rest. Out of the 40% institutions that mentioned the internship norm, 61% were private, 31.8% were public institutions, and about 7% were aided/PPP-based institutions. It was difficult to find information on the duration of the internship as most institutions did not disclose this information. Only two institutions mentioned that the duration for the mandated internship was two months, which was in line with the norms prescribed by MoHFW model curriculum. Most institutions also did not mention the total number of credits assigned for dissertation or internship. Only two institutions mentioned following the prescription of MoHFW curriculum of assigning 10 credits for dissertation. Most institutions mentioned dissertation only in the final semester. Only one institution began the process of planning for dissertation in the first semester itself, giving students time to understand and develop their dissertation.

It is also important to note that about 53% (of 105) of the institutions had mentioned field work as a necessary component of the MPH coursework although there is no mention of a separate field work in the MoHFW curriculum. When separating institutions by type, 53% of public institutions provided information on fieldwork as opposed to 51% of private ones. Seven institutions explicitly mentioned rural immersion as a necessary component in the field work experience for the MPH learners. About 10 public and 5 private institutions mandated community visits as a part of the MPH coursework. One public institution in fact had 11 months of field work (5 separate experiences including internship), which was interlinked with their course work to provide maximum experience. An MPH co-ordinator from a private institution remarked, 'An internship of two months is not enough. Our curriculum has everyday morning four to five hours for field posting. Morning 9am to 1pm or 10am to 1pm. Postings into primary health care centres, taluk offices, sub-centres (to each) etc.

Given the limited information we have on the nature of the field or community immersions, we are not able to comment on how in-depth and relevant these immersions really are. Interviews with faculties, employers as well as alumni have pointed to a lack of field experience in MPH students/graduates. Poor information on internships and field work requirements on websites as well as a lack of focus on field work apart from internship in the MOHFW curriculum are areas that need to be worked on.

4.3 Faculty profile and experiences

Teacher profile and experiences matter as they deliver the curriculum. We have already discussed that the mapping of faculty information based on the websites and prospectuses of the institutions provided us with limited information as only 54% of 105 institutions provided some information related to the number of dedicated faculty for MPH courses, gender, educational qualification, and publications, which we already analysed and presented in Chapter 2. To add to this information, we attempted an online survey of MPH faculties and managed to get responses from 33 individuals located largely in the southern states of India: Kerala, Tamil Nadu, Puducherry, Karnataka, and Telangana (Box 4.1). About 46% of the respondents taught at private institutions, followed by 27% at public institutions. The analysis presented here needs to be interpreted with these facts into consideration. However, in many respects, their profiles were similar to the profiles we analysed using data from the websites. For instance, 64% of our respondents were men, which was similar to the distribution seen earlier (60% were men faculties). Most of the faculty who responded to the survey were either associate or assistant professors at their respective institutions.[15]

Box 4.2: Faculty Survey and Expert Interview

We collected the list of faculties and their contact details as part of the university matrix, wherever available. This way, we managed to have email and phone details of 206 faculties. We sent emails to these faculty members along with the survey link. Where phone numbers were available, team members followed up with potential respondents and requested them to fill the survey. A total of 33 faculty members took part in the survey.

We also interviewed several experts, including former civil servants associated with the health issues in India, academics, and professionals.

The data on educational qualifications and disciplinary backgrounds collected through survey showed that their degrees often matched with the courses they had

[15] Although we have data on religious and caste backgrounds, the number is too small to have a valid analysis, especially as 21% chose not to respond to the caste question.

been teaching. In general, public institutions had a greater representation of faculties with doctoral (Doctor of Philosophy) degrees, while private colleges had a greater representation of faculties with non-medical degrees. The data on experience levels of faculty members who took our survey showed that about one third of the faculty members had experience between 10 to 20 years, with the average experience of the respondents being 12.25 years. In our sample of respondents, faculty members belonging to public institutions had more years of experience than those in private institutions.

The top two areas of expertise cited by the faculty members (greater than 60%) were Epidemiology/Disease surveillance followed by Research Methods. On the contrary, only 6% of the faculty members mentioned Health Economics, Health Finance and Budget as one of their areas of expertise. Close to 88% of the respondents said that their institution provided them with capacity building opportunities through training and research activities. All our respondents also seemed to be very passionate about developing MPH programmes as they reported this as their main motivation for being part of these institutions.

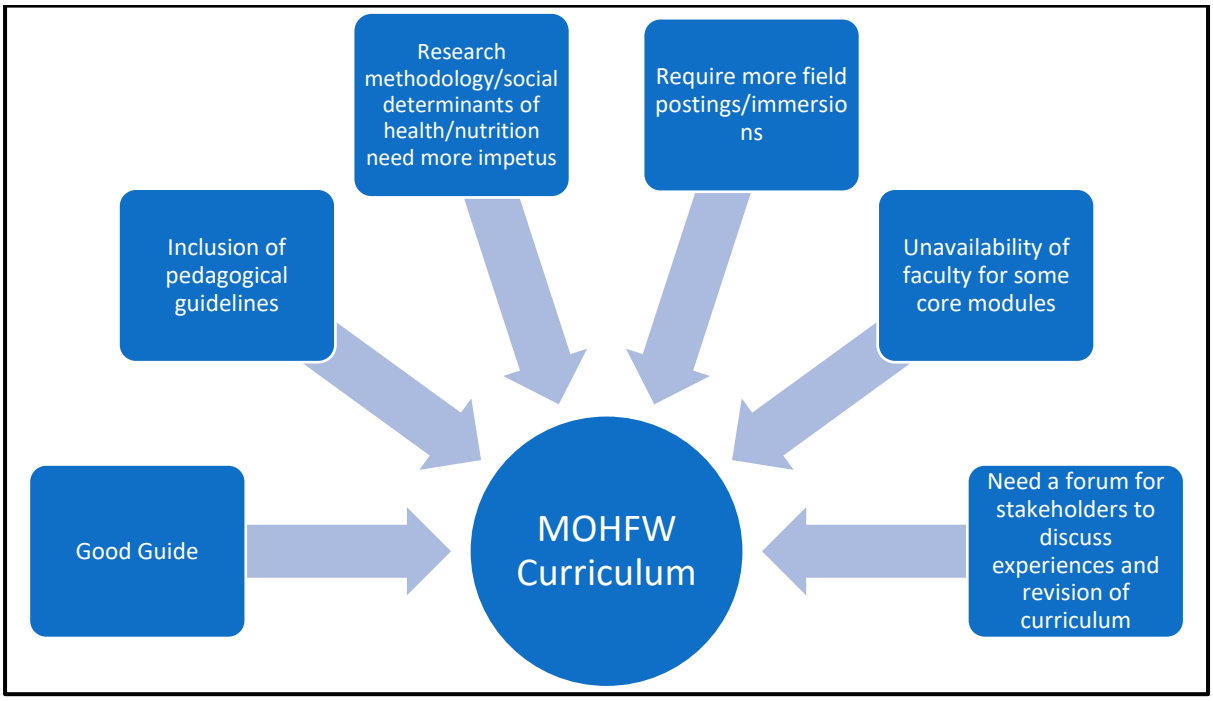
The main teaching-learning methods used by the faculty members who responded to the survey were classroom discussions, presentations, lectures, videos, and visual aids. However, less than half the faculty members (48.5%) we surveyed also employed paper writing and report writing as teaching-learning methods. In addition to this, we also asked them as to how they adapted their teaching processes to suit remote and online classes necessitated by the pandemic. In response to this, almost all the faculty members (94%) said that they used virtual meeting platforms such as Zoom and Google Meet to conduct their regular classes. In general, the usage of videos, visual aids, and other online tools became popular since the onset of the pandemic. Interestingly, one-third of the faculty members also mentioned that there has been an overall reduction in class timings due to the pandemic.

When asked about what else is required at their institution to improve MPH students' learning experiences, three prominent suggestions were made in that order: (i) greater field exposure to students, (ii) more and better multidisciplinary learning opportunities, and (iii) greater involvement of the students with the local communities. These were corroborated by the alumni survey results as well, which we analyse and present in the next chapter. Interestingly, while 'Research Methods' was one of the main areas of expertise among the respondent faculty members, only 21.2%of them felt that providing training on the same would help improve a student's learning experience.

About four in five faculty members, i.e., almost 80%, were aware of the MoHFW's MPH model curriculum. However, this awareness was higher among faculty members affiliated to the public institutions (89%) than to private institutions (67%). Among the faculty members who were aware of the MoHFW curriculum for the MPH degree, many opined that it was fairly good guide, but they also felt that it

needed to be updated and made much more comprehensive by including pedagogical guidelines and by making field attachments longer as well as more inclusive. More than one faculty member felt that it was too 'theoretical than practical'. One faculty member suggested the need for a regular feedback loop to ensure that the curriculum when revised is reflective of the field needs and realities.

Figure 4. 1.Opinion of faculty on the MOHFW Curriculum from faculty survey and expert interviews



A faculty member mentioned some reasons as to why adherence to the model curriculum in terms of teaching term-wise suggested courses was not as high, 'Some modules are given enormous credit and teaching hours and don't do justice to the other more important modules. Research methodology is in third semester, which should be brought to the first or the second semester'. Similarly, another faculty member felt that giving students the choice to choose electives in the first and second semesters was more acceptable to them.

Finally, what emerges is that the presence of the model curriculum has indeed been helpful, and despite some limitations and scope for improvement, its presence has helped the institutions in developing their course structures. Given the lack of information on the websites, it has been difficult to fully analyse the course structure and its delivery. However, it appears that it is an emerging area where the aspects of transdisciplinarity need further strengthening though a beginning has already been made. With growing numbers and a much stronger presence of institutions offering MPH courses, there seems to be a need to move forward by creating a voluntary association of PH institutions, which can collectively revise the model curriculum to

develop a stronger curricular framework that would have guidelines on community immersion, pedagogical choices, faculty capacity building and diverse ways of integrating social determinants of health as a core principle of the course.

5. Alumni Profile, Employment Status, and Job Prospects for MPH graduates

In this chapter, we move to MPH graduates. Here we present our analysis of (i) the results from the online alumni survey to understand their socio-economic profile, programme experience and job status and (ii) the job prospects through an analysis of the job matrix that we created through a targeted search of job websites. The literature suggests that though job opportunities exist for graduates of MPH, entry into private and public health organisations is not easy because of several reasons including an absence of knowledge of opportunities, lack of competitive salaries, and unclear work expectations (Sharma et al., 2013). Our own analysis also corroborates this by showing how job opportunities in the public sector are usually project-based and/or contractual, and very few openings exist with a defined career path.

5.1 Alumni profile

Unlike the faculty profile where we saw a preponderance of men faculties, women (60%) outnumbered men (40%) among our 108 alumni respondents. We had also asked for religion and caste details, and we found that 65% of the respondents were Hindu, while 50%of the total belonged to the General (upper caste) category. This is an indicator of the alumni being from diverse religious and caste backgrounds as nearly half were from the educationally backward groups of SC, ST and OBC communities, with, of course, a high concentration of the dominant upper caste communities. Since we adopted a snowballing approach (Box 5.1) and we are in southern India, a majority of our respondents (72%) also came from southern India.

More than two-third (68%) respondents graduated from public institutions and the rest from private institutions. Half of the sample respondents were recent graduates and had completed their MPH degree in 2020-2021. The next 30% had completed their degrees between 2015-2020, while the remaining had completed their degrees before 2015.

Almost half (49.1%) of the respondents had an MBBS, BDS, or an AYUSH degree. The next 30% had an allied health degree, most commonly a nursing degree but physiotherapy or optometry degrees. While 4% of the respondents denied having any medical or allied degrees before MPH, about 17% did not respond to this question.

Only 44 graduates (41%) reported that their institution offered them a specialisation within MPH. The most common area of specialisation among the respondents was health system management followed by epidemiology.

Box 5.1: Process of conducting Alumni and Employers Surveys and preparing a Job Matrix

Alumni Survey: Due to the challenges posed by closure of institutions because of COVID-19 coupled with travel restrictions, we decided to conduct an online survey using Google forms. All the surveys were anonymous and conducted in the period 31 August 2021 and 9 September 2021. Unlike faculty, alumni were obtained by snowballing known contacts. Therefore, the survey respondents tended to be mostly from institutions based in southern India.

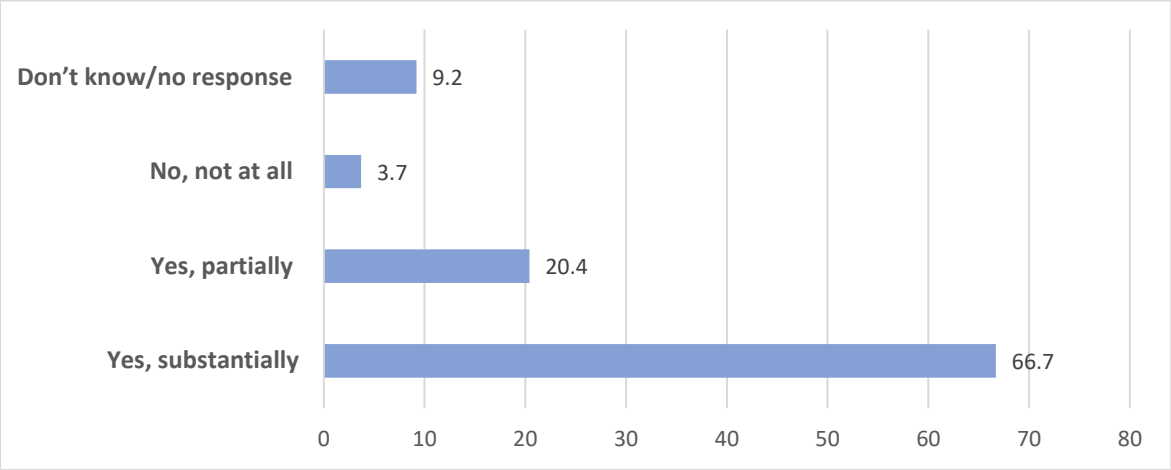
A total of 122 alumni of the MPH course took our survey between 30 August 2021 and 8 Sept 2021. The survey questionnaire consisted of 11 multiple-choice questions and 4 open-ended questions. However, upon further analysing the profile of the respondents we had to remove a total of 14 respondents from this sample set as 12 were enrolled in the MPH course at the time of taking the survey and 2 were alumni from foreign universities, thus moving them outside the scope of our study. Hence, a total of 108 respondents were considered for this study.

Job Matrix: In order to understand the number and types of jobs available for MPH graduates, an online analysis of 12 job portals that are most commonly used to search for employment was undertaken. The analysis of job sites and job listing was undertaken separately. The process of populating job matrix was done during the period between 15 July 2021 and 27 August 2021. The data collection from each job portal was mainly based on 33 variables, which were mentioned in the data sheet; these included category of search, job title, employer, application deadline and number of posts, location of job, mandatory and preferred qualifications, prior experience, domain area and salary, computer skills, and language proficiency. Any listing that was repeated on more than one website was removed. After removing the duplicate jobs, 200 listings that mentioned MPH in their eligibility were analysed.

Employer survey: From the job matrix, email ids of 206 potential employers across 104 organisations were shortlisted. The link for the online survey was sent to these email IDs. As most were human resources representatives, they were unwilling to fill the survey forms. In the end, we received 11 responses from the employers. Two of them responded that they don't recruit MPH graduates even though we collected the employer details based on their job notification for graduates including MPH.

The analysis of the current employment status showed that nearly 64.8% of the respondents indicated that they are working in a health-related area, while 22.2% were still looking for a job. Only three currently employed alumni were looking for better job opportunities, while five were also pursuing their PhD or looking for opportunities to study further. If we analyse the same data based on the year of graduation, we find that a much higher percentage (41%) of students who graduated in the last couple of years (which also coincides with the onset of the pandemic) indicated that they are looking for a job. When this same data is analysed from the lens of the type of institution that the respondent has graduated from, about 19% of the MPH alumni from private institutions indicated that they are looking for jobs, whereas it was a bit higher for alumni of public institutions (at 23.5%).

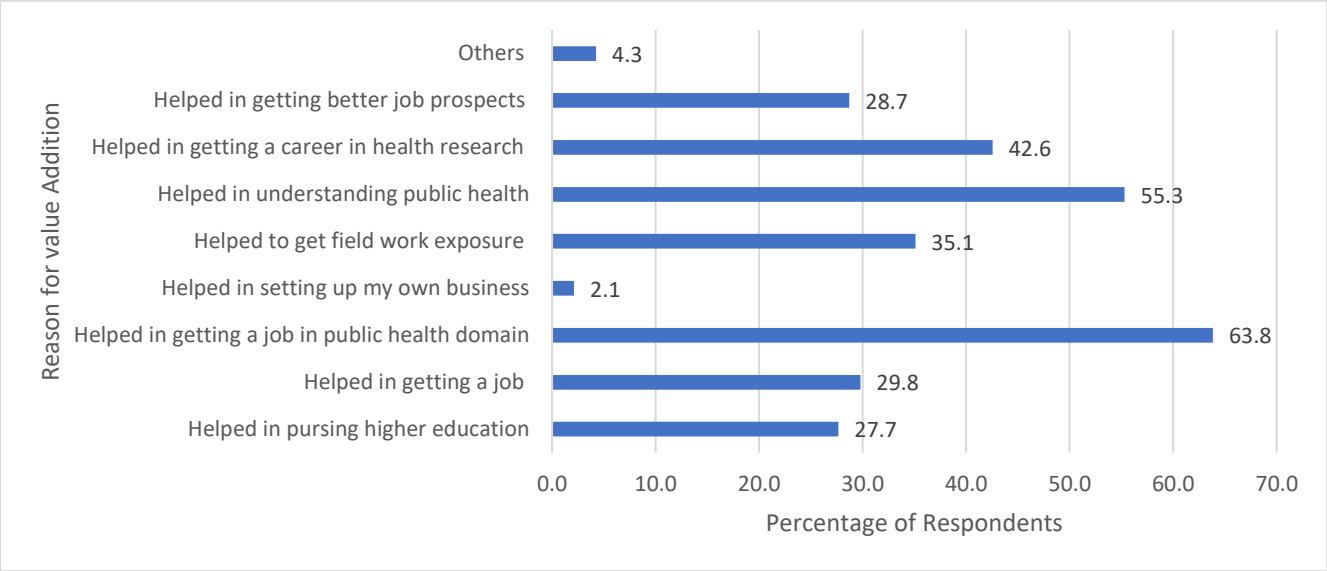
Figure 5. 1.Response to 'Did the MPH degree add value to your professional pursuit?' in percentage



Note: The majority of our respondents (72%) came from southern India.

Irrespective of the employment status, an overwhelming 87% of the alumni agreed that their MPH degree (67% substantially and 20% partially) added value to their future prospects. Only 4 (3.7%) people said that their MPH degree did not help them at all (Figure 5.1). The most important reasons for thinking that the degree added value was linked to the fact that it helped them in getting a job in the PH domain (63%) and in gaining a better understanding of PH (55%). Amongst those who said that the MPH degree did not add any value, the primary reason cited was that the degree did not help in improving their job prospects (Figure 5.2).

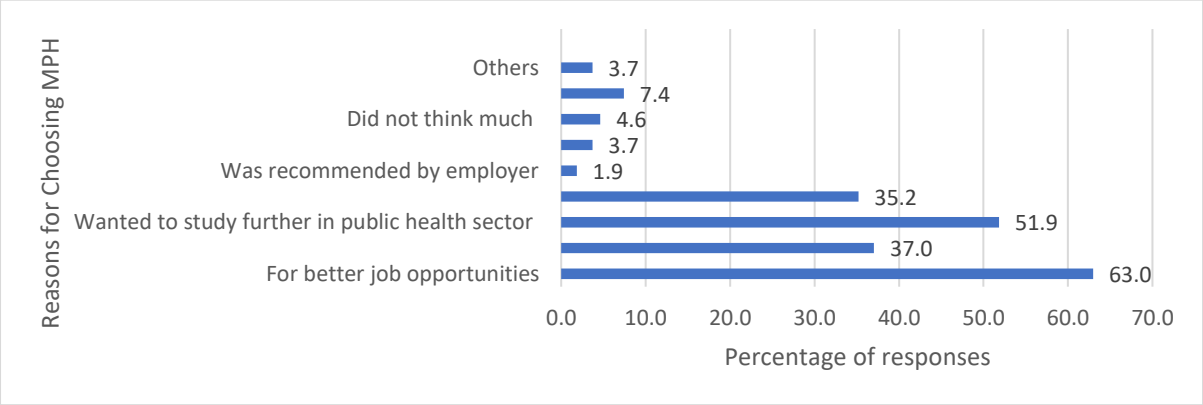
Figure 5. 2.Reasons for value addition with MPH (percentages-multiple responses), 2021



Note: The majority of our respondents (72%) came from southern India.

Better job prospects have been the main motivation for our respondents for choosing the MPH programme (Figure 5.3). The desire to pursue further studies in the PH sector or an interest in PH specialisation were the main reasons stated by the alumni for choosing the MPH course. The top three reasons shared by the MPH alumni for liking the course were their teachers, the curriculum, and the facilities offered by the institution. However, it is also interesting to note that about 29% of the survey respondents also chose the location of the college as one of the reasons to like the MPH course. When the reasons to like the MPH course were segregated based on the type of institution, we found that while 62% of MPH alumni of public institutions chose affordability and low out-of-pocket expenditure as one of the main reasons to like the course, the same was cited by only 22% of alumni from private institutions.

Figure 5. 3.Reasons to choose the MPH Course (percentage), 2021

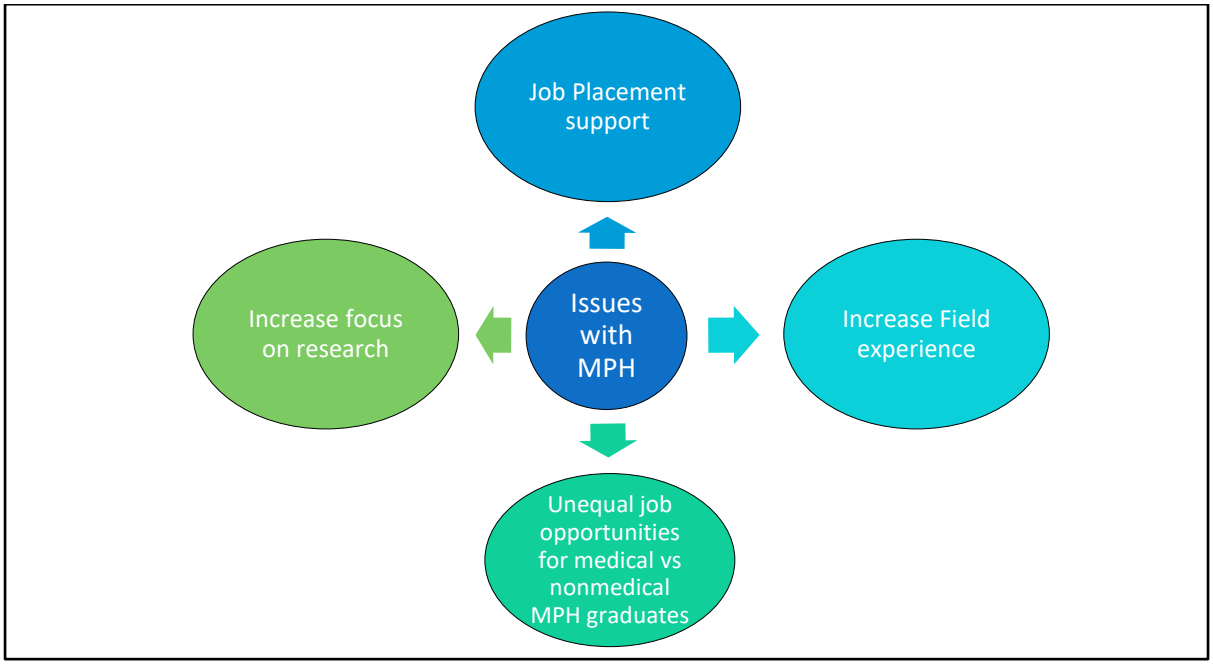


Note: The majority of our respondents (72%) came from southern India.

However, it is interesting to note that while 63% of the alumni chose the MPH course for better job opportunities, only 12% reported their institution's job placement opportunities as one of the reasons for liking the programme. This is also important.

Although, MPH was chosen most for improving job opportunities, the most common suggestions from the alumni included proving better job placement support and more field experience. The lack of focus on research and a definite career path for students, especially for those from a non-MBBS background, also emerged as concern from alumni. Alumni responses to these questions hinted towards the need for a higher impetus for field work experiences in the MoHFW model curriculum other than a mere mention of the two credit internship.

Figure 5. 4.Areas of support sought by MPH graduates from their institutions for employment



5.2 Job prospects and availability

While searching the websites, a total of 50 jobs from each website was targeted; only one among the 12 jobsites, Devnet Jobs, yielded 50 jobs and that comprised 20% of the total number of jobs listings analysed here (Table 5.1). As mentioned earlier, we shortlisted only those jobs that mentioned MPH as one of the qualifications for application. Devnet, Glassdoor and Indeed provided the highest number of such job opportunities based on the keyword 'public health'. In these three websites, the number of keywords required for search was also minimal. The rest of the websites had very few such job openings, and these also required multiple keywords to access job listings. It is important to add that this method may not have completely covered all public sector job opportunities coming from state governments as they tend to advertise in local language newspapers, and it was not possible to scan those given the limited scope of the study.

Table 5. 1.Distribution of Jobs by Job Sites, 2021

Job Sites	Number of Jobs	Percentage
Devnet Jobs India	50	19.76%
Glassdoor	45	17.79%
Government Jobs Work	17	6.72%
Indeed	34	13.44%
Jora	7	2.77%
Monster India	8	3.16%
Naukri	12	4.74%
Ngobox	13	5.14%
Sams	38	15.02%
Talentify	7	2.77%
Times Job	5	1.98%
UN Jobs	17	6.72%
Total	**253 (53 repeats)**	**100.00%**

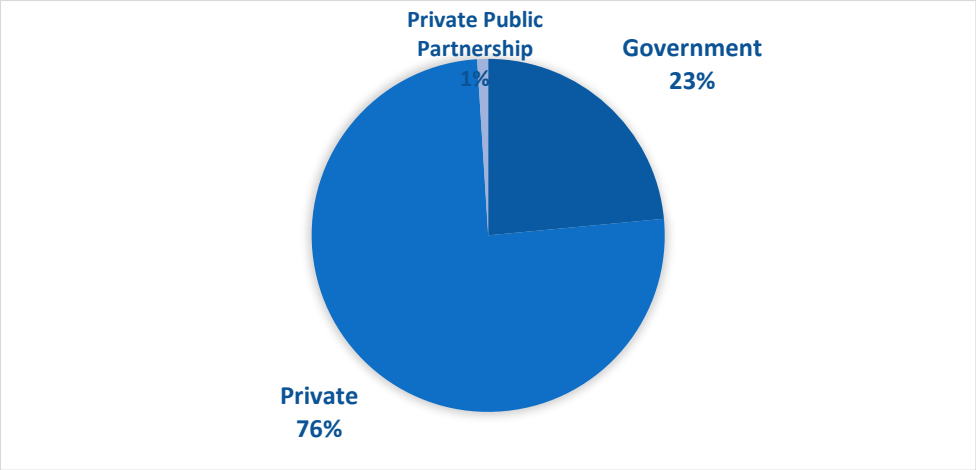
In order to understand the nature of jobs available we classified those into five types (Table 5.2). Out of 200 jobs, 36.5% listings were for programme/project co-ordination and management positions. These positions were usually advertised as 'project co-ordinator' 'programme associate', or 'state or district co-ordinators'. This was followed by 24.5% listings for a technical expert role; these listings were mainly advertised as 'health consultant', 'technical advisor', 'public health consultant', or any other 'expert or specialist'. Seventeen per cent listings were for research and analysis, which included 'epidemiologist', 'research analyst', 'research associate',

and other similar listings. Leadership role listings consisted of 14.5% listings and constituted jobs like 'operation lead', 'program lead', or 'director'. More than 75.5% of the jobs were in the private sector (Figure 5.5).

Table 5.2 Distribution of job openings by expected role, 2021

Job Role	Number	Percentage
Leadership Roles	29	14.50%
Programme/ Project Co-ordination & Management	73	36.50%
Research and Analysis	34	17.00%
Technical Expert Role	49	24.50%
Others	15	7.50%
Grand Total	**200**	**100.00%**

Figure 5. 5. Sectoral distribution of listed jobs



Half of the listed jobs were for the northern region followed by about 30 jobs (15%) meant for southern region, with this number being low for all other regions (Table 5.3). Most postings were based in cities and the top five cities with the highest number of job openings included Delhi with 72 jobs (36%), Mumbai with 14 (7%) jobs, Bengaluru with 11 (6%) jobs, Hyderabad with 7 (4%) jobs, and Lucknow with 6 (3%) jobs. Only 25 jobs out of 200 (13%) mentioned the upper age limit, which ranged from 30 years to 57 years. In these 25 job listings, it was seen that the average age for a leadership role was 50 years. For programme/project coordination/management, it was 39 years,38 years for research and analysis role, and 41 years for technical expert role.

Table 5.3 Job Listings by Region, 2021

Region	Number	Percentage
Anywhere in India*	21	10.50%
Central	10	5.00%
East**	8	4.00%
North	99	49.50%
North-East	6	3.00%
Outside India	8	4.00%
South	30	15.00%
West	18	9.00%
Grand Total	**200**	**100.00%**

* There are jobs in which the employee is responsible to work all over India or multiple locations in the country
** Andaman & Nicobar Island included

Table 5.4 Mandatory qualifications for the listed jobs, 2021

Mandatory qualification	Number	Percentage
Any Bachelor's Degree	4	2.00%
Any Master' Degree	19	9.50%
Bachelor's degree in Public Health or other relevant fields	28	14.00%
Master of Public Health (MPH) as the only criteria	2	1.00%
Medical Degree (MBBS, BDS, Nursing, Ayush, etc.)*	30	15.00%
MPH after a Medical Degree (MBBS, BDS, Ayush, etc.)	8	4.00%
MPH or Other Relevant Master's Degree**	109	54.50%
Grand Total	**200**	**100.00%**

* Bachelor of Medicine, Bachelor of Surgery [MBBS], Bachelor of Dental Surgery (BDS), Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy and (AYUSH)** Other relevant fields include the Sociology, Social Work, Health Management, Epidemiology, Health Economics, etc.

One of the least represented jobs in these listings was as faculty in MPH colleges. Only two such listings were seen on the job websites. Interviews with experts pointed out that faculty positions were difficult to fill and prone to vacancies—we therefore expected to see a greater job listing for such positions. One reason for this could be that faculty listings are mainly posted on the individual institutional websites or are filled though ongoing applications. It is also possible that most of the MPH faculties are drawn from other disciplines, and they are teaching the MPH courses on an adjunct basis.

Most job listings mention both mandatory qualifications and preferred qualifications. Since all job listings were shortlisted only if they mentioned MPH, the

question then was how much preference was given to a candidate if they had an MPH versus other similar degrees. Only two out of 200 listings mentioned MPH as a mandatory qualification, and an additional eight jobs asked for MPH as an additional degree after having a medical degree (Table 5.4). However, an additional 109 (55%) jobs asked for an MPH or any other relevant master's degree as a mandatory qualification. Thirty jobs (15%) asked for a mandatory medical degree, while 28 (14%) jobs asked for a bachelor's degree in PH or other relevant fields. Hence, it is clear that having an MPH is not mandatory for most of the PH job listings and anyone with an equivalent master's degree can apply. Furthermore, 15% job listings mandated a medical degree, thus reducing the job pool for non-medical MPH graduates. Out of 200 jobs, 86 (43%) didn't mention any additional preferred qualification. However, MPH or other relevant master's degree after any medical degree was preferred by 34 (17%) jobs. Only three jobs (2%) mentioned MPH as the preferred additional qualification.

The analysis of the experience requirement showed that the avenues for fresh MPH graduates without any experience are limited as only 22 (11%) listed jobs did not mention preference for previous work experience. Nearly half (47.5%) job listings asked for three to five years of work experience; 21.5% jobs asked for six to ten years of experience, while 15% asked for one to two years of experience. However, the good news for MPH graduates was that 9% jobs considered MPH as an offset degree, and it could offset on an average about three years' experience requirement.

The most common domain area for these listed jobs was communicable diseases (mainly Acquired Immunodeficiency Syndrome [AIDS] and tuberculosis) including COVID at 30.5% (Table 5.5). This was followed by the general PH management (26%), which were mainly project coordination roles at various NGOs and government programmes. Ten per cent of jobs came under data analysis and research. These were put in a separate category as no specific area of research was given and were advertised as a research analyst role.

Only 37% listed jobs gave information about the nature of the position in terms of tenure. Of these, 86.6% were contractual in nature as opposed to the remaining that appeared to be permanent. Contractual jobs were associated with all domains of jobs and included the openings for National Health Missions (NHM) jobs in various states. Permanent jobs openings came largely for positions in universities or in government owned health/allied institutions.

Table 5.5 Distribution of listed jobs by main domain areas, 2021

Domain Area of job posting	Number of Jobs	Percentage (%)
Academic co-ordinator/Faculty	4	2.0
Climate Change, environmental health	2	1.0
Clinical Research	4	2.0
Communicable Diseases, COVID, other diseases	61	30.5
Data Analysis and Research, Epidemiology	21	10.5
Digital Health	1	0.5
Drugs/Vaccinations/Immunisations	8	4
Family Planning	4	2.0
Food Safety	1	0.5
Health Economics/Market Research	2	1.0
Maternal and Child Health	17	8.5
Mental health	2	1.0
Monitoring & Evaluation	10	5.0
Nursing	1	0.5
Nutrition	2	1.0
Public health	52	26.0
Quality Improvement	1	0.5
WASH (water, sanitation and hygiene)	1	0.5
Other	6	3.0
Grand Total	**200**	100.0

Table 5.6 Salary details in Job listings by sector (in INR), 2021

Job Sector	Salary Range (monthly)	Average Salary
Government (N=24)	17,000 to 1,00,000	54,625
Private (N=23)	15,000 to 3,02,202	1,00,364
Private Public Partnership	Not Mentioned	Not Available
Total	15,000 to 3,02,202	77,008

The proportion of those mentioning the salary or its range was even lower, as only 24% or 47 listed jobs mentioned this. The monthly salary ranged from 15,000 to

3,02,202 rupees. Salaries for government jobs ranged from 17,000 to 1,00,000 per month while the salaries in private places ranged from 15,000 to 3,02,202 rupees per month (Table 5.6). The research and analysis jobs had lowest salary range, i.e., INR 15,000–60,000 per month (Table 5.7).

Table 5.7 Salary by type of Job (in INR), 2021

Job Title	No. of Listings	Salary Range (monthly)	Average Salary
Leadership Roles	2	1,94,244 to 2,21,565	2,07,904
Programme/Project Co-ordination; Management	19	22,000 to 1,36,415	79,207
Research and Analysis	7	15,000 to 60,000	37,500
Technical Expert Role	16	35,000 to 3,02,202	1,68,601
Others	3	17,000 to 24,425	20,712
Total	47	15,000 to 3,02,202	77,008

5.3 Employers' perspective

Although a very small of employers who employ MPH graduates participated in our survey, we have analysed the data for its criticality for the MPH programme. Nine employers who responded included an international organisation, a PH research institute and a few NGOs. Although we could not decipher a clear preference for MPH amongst the employers in this survey, the employers also did not show a preference for a medical degree among those MPH graduates who they hire. The employers who preferred an MPH graduate did so because of their knowledge of PH domain, research, and data analysis skills, understanding of health policies and programmes, and programme management skills.

When employers were asked to rate current skills of MPH graduates, the only skills that were clearly rated good by them were, 'competency and knowledge of PH domain', and 'writing papers, proposals and reports'. In the other domains like 'understanding policy and advocacy', 'proficiency in project management', and 'understanding the ethical principles in research, evaluation and dissemination', MPH graduates were rated average. Employers, like alumni, also identified greater field exposure and better written and communication skills as suggested areas for improvement in the MPH programme.

Overall, the analysis reveals that though the job prospects are not very high, it is also not disappointing. While MPH alone is yet to emerged as a very sought-after degree,

it seems to be accepted as a desirable qualification for certain specific roles. Current jobs look for work experience of two to three years and most jobs in our analysis were contractual positions. Some of the jobs offered salaries as low as INR 15,000-20,000 per month, which is very low. Our interviews pointed out that these salaries were usually offered to those who did not come with a medical background. This could be interpreted to say that there is potential for greater professionalisation of the MPH degree.

We also need to consider the role that COVID-19 could have played in either expanding or shrinking the opportunities. Being a PH crisis itself, the demand for MPH graduates could have gone up though such signs were not very clear. On the other hand, given that economic activities and expansions have been adversely affected, this may have meant lower job opportunities for MPH graduates also among others.

6. Conclusions and Recommendations

6.1 Conclusions

Several important conclusions emerge from the study that need reiteration and call for attention from key stakeholders such as the government of India, state governments, researchers, and the PH fraternity, which includes medical and non-medical professionals. This is true even though the scope of the study has been limited to the analysis of information available through web search and online surveys/interviews. The presence of COVID-19 and associated restrictions made it difficult to conduct any field visits, and it could have also affected some parameters that we have tried to understand and analyse. For example, the job market may have been distorted due to the impact of the pandemic. Hence, the conclusions of this report need to be interpreted with respect to these caveats.

While using the TDPS approach broadly, these conclusions are organised using the frame of equality in **access to MPH education**, inclusiveness and quality **within MPH education**, and enhancement of opportunities **through MPH education.** These conclusions have been drawn with the assumption that India needs to strengthen its PH capacities alongside an effective PH care system to be able to address both the prevention and curative aspects of health. The availability of a well-educated and well-trained pool of MPH graduates is likely to be one of the first conditions to lead to this process.

6.1.1 Access to MPH education

We list three major barriers to access to MPH education here:

a. Regional imbalance

The number of institutions running a two-year MPH programme has gone up significantly in the last one decade, and therefore an increased availability of seats signifies increased access. However, though all regions have seen an increase, the number of institutions continue to be low in two regions: the east and the north-east. These are also the regions with relatively low health outcomes, and hence see a higher need for strengthening public health systems. This means there is a need to have measures that would encourage the emergence of more institutions offering MPH education in these regions. The northern region has seen a high growth in the number of institutions providing MPH education primarily because of the entry of private sector in a major way. That may not be a ready option for the east and the north-east, given that these regions are also economically and educationally backward, and therefore unable to attract private investment. Although a high number of learners from these regions go and study in other regions paying a high fee, it is difficult to convert this into a local investment in the absence of an enabling

ecosystem that leads higher educational institutions to evolve and succeed. Only a comprehensive policy with elements of support and suitable incentivisation can lead to such shifts. The presence of a local institution generates interest as evidenced by high demand by local students in the Indian Institute of Public Health (IIPH) Shillong in Meghalaya even without a formal policy to give preference to local students and communities for their MPH programme (expert interview, August 2021).

b. Lack of complete information of course details

The number and paucity of seats, however, is not the only barrier. The lack of complete and transparent information about all aspects of programme and its delivery on the website is appalling. We have discussed this issue in all the chapters. This is despite the fact the dependence on websites other forms of technology for all the processes including admission and information-sharing had gone up tremendously during the pandemic. Lack of transparency and absence of complete information curtails accessibility to a great extent as decisions are made on incomplete or no information. The government of India as well as other regulatory bodies such as UGC can bring clearer guidelines and push for stricter adherence in this regard.

c. High costs and limited scholarships

High fee and living costs are other constraints in accessibility to MPH education. This is especially true because the expansion of the MPH education is happening largely through private institutions where the average tuition fee, at INR 2,90,000 is more than three times higher than public colleges whose average fees is INR 87,000. The current landscape does not appear conducive to students from an economically and socially poor background. We have discussed earlier that the availability of concessions and scholarships or bursaries is limited and only about half of the institutions report following a reservation policy. It is important that the government intervenes and makes provisions or facilitates the development of a system where bursaries can be promoted and students from disadvantaged socio-economic backgrounds have a better chance to join and complete the MPH programme.

6.1.2. Inclusiveness and quality in the MPH education

Our understanding of inclusiveness and quality is based on the analysis of the model curriculum, curricular practices in the institutions, faculty profile and some feedback from faculty, alumni, or employers. These are obviously not adequate to make comprehensive and conclusive comments, but they are enough to provide pointers. We have 5 major conclusions in this area.

a. TDPS in MPH Curriculum – a long way to go

We start with the issue of whether MPH has emerged as a transdisciplinary or even a multi-disciplinary programme or not. The answer is 'it is not yet there' although some progress towards that is indeed visible ,and some programmes are much stronger than others in this area. As discussed before, the TDPS approach calls for an integration of lenses coming from multiple disciplinary perspectives to understand a PH issue (see Box 1.1 as an example). In order to promote such an approach and a perspective, it is important to conceptualise the curriculum not only as courses to be taught but also the preferred pedagogical practices for the same. In other words, it is not only the content but a combination of content and its delivery that decides the approach, and it is possible to bring transdisciplinarity either through content or pedagogy or both. Going by the available information, the MPH programme currently rarely practices such an approach although a few community health programmes have some such features from where some lessons can be learnt.[16]

b. Current eligibility criteria for students not inclusive

One way of promoting the approach is by taking students from diverse yet relevant disciplines and design the course and pedagogy in a manner that compulsorily promotes cross learning among learners without advantaging or disadvantaging any discipline. Although several institutions have started taking non-medicine graduates, it is still not the norm. A majority of the institutions continue to prefer students from medical or paramedical background. Students from non-medical fields are often viewed as 'less-eligible' as is obvious from this statement, 'unless you offer a foundation course separately for these students, it will be difficult for them to be on par with those of medical/paramedical background'(expert interview, February 2021). While the need for a foundation course in medicine-related areas may be a necessity for a non-medical student, it is of concern that the need for a foundation course, in social determinants of health for example, for students with a medical background is not viewed as necessary. This not only advantages certain disciplines but also prevents the programme from being truly transdisciplinary.

c. Field/community immersions and internships

Another aspect of the curriculum that has potential for making it transdisciplinary and much more relevant is well-designed field-immersion and internships. Both

[16] One such example is the 'community health learning programme', a one-year course offered by Sochara that can be taken as following the principles of transdisciplinarity by (i) developing the programme through a consultative approach with community practitioners, (ii) hiring faculty with diverse background, and (iii) by opening the programme to anyone who is interested in community health. The programme also has community project as part of course work It also offers a part-time programme open for mid-level professionals. Read more here: https://www.sochara.org/sophea/Community_Health_Learning_Programme_Bengaluru.

alumni and employers mentioned the need for greater fieldwork in the courses, and this perhaps also translates itself into inadequate understanding of the communities and issues that surround the communities, which the PH graduates are likely to serve. The mapping exercises and surveys showed that there is little information on internships and field work on the institutional websites. The MOHFW curriculum itself accords internship only two credits to this although this can get offset partially if the later dissertation with 10 credits is linked to this internship. However, this is not a universal practice. Also, the absence of any focus on pedagogy in the model curriculum means that fieldwork is not mentioned or integrated with any course, and the institutions do not necessarily promote this. Some institutions have introduced fieldwork on their own accord and their experience can guide others.[17]

In addition to assigning greater credit and integration with the course, one way of enhancing the field-immersion aspect in the MPH training could be to link it to longer placements, which could help the students in finding jobs as well.

Alumni have also pointed towards a lack of placement opportunities in many institutions and our analysis of public health jobs also showed a tilt towards those with some field experience. Feedback from alumni suggested that students themselves have to look for internships in most case with no or minimal help from the institution. This needs to change, and any step that strengthens both the field element and improves the chances of placements will strengthen the MPH programme not only in its inclusiveness and quality but also in improving the job prospects.

d. Faculty capacity

Any discussion on the quality here cannot be complete without discussing the faculty. Our interviews have pointed out to the lack of adequate faculty at institutions to meet the broad and diverse thematic areas of the MPH curriculum. We have already discussed the information about faculties not being available on half the websites and this being incomplete on many more. While faculties are coming from diverse backgrounds, especially in private institutions, we need further research to know how far this is translating itself into shaping a transdisciplinary course. Available information showed a very moderate performance when assessed against traditional markers of quality such as paper publications. The number of institutions that offer higher research degrees is also very low, affecting the pool of faculties that can be made available for teaching MPH courses. This shows that PHE needs further impetus to gain popularity as an area of research amongst institutions.

[17] The National institute of Epidemiology, a public institution, has field immersion in the form of 11 months of field work/practical training related to the MPH course work and internship. Still other institutions like the JSS school of Public Health in Mysuru have field postings every morning. Although this was affected during the pandemic, students were encouraged to volunteer their services during the pandemic.

e. Curriculum and language

Another important aspect of the curriculum that emerged from our discussion with experts is the of language of delivery. It becomes important for the MPH programme to be bilingual or multilingual if we want it to include current PH professionals such as ASHA or ANM (Auxiliary Nurse and Midwife) workers in MPH programmes. This is a challenge in terms of developing the course and reading materials in local languages, but it is in line with the new education policy that promotes education of professional courses in Indian languages.

6.1.3. Employment opportunities for MPH graduates

We have two major conclusions in this area.

a. Lack of specialisation hampers job opportunities

One of the main reasons for the popularity of MPH programme comes from the need for the position of health managers/administrators generated by the emergence of programmes such as the NHM on one side and the entry of private health care/private health-related service providers on the other. From our study, we also see that the current job market encourages project managers. This could be one reason the curriculum in many institutions focuses on generating health administrators. While this is justified and welcome, it is also important that the MPH programmes do not limit themselves as this may prove to be a myopic vision in the long run. However, this will change only if the job markets also change, providing opportunities for diverse skillsets and perspectives. More than one interviewee has pointed out the need to cater to 'industry'. Opportunities for graduates exist in PH research, data analysis, and in the pharmaceutical industry. Education institutions should tap into these resources to find internship and placement opportunities for their students. This may encourage new avenues for employment. A desirable step in this direction would be to strengthen the aspect of 'specialisation' within MPH education.

Currently, only 14 institutions offer specialisations within MPH, and only 16 institutions offer doctoral degrees in MPH. An increase in this number and an effort to help different institutions develop the specialisation considering their own vantage points can go a long way in strengthening MPH education and enhancing employment prospects for graduates. This can be done through consultations in a collective mode with space for diverse opinions and voices. Currently, there is hardly any opportunity for stakeholders like faculty, management, and students to engage with curriculum developers or policy makers at this point even to address issues in implementation of current curriculum.

b. Creating space for mid-level employees for upgradation

A perusal of the present government health systems showed that a majority of primary health providers at various levels (medical officers, ANMs, nurses and ASHAs) require a mix of both clinical knowledge as well as PH principles. But currently, only the clinical knowledge is present in most cases and the PH aspect remains neglected. This also means limited success in using community level health staff such as nurses for health promotion and communication. The advent of NHM has brought a lot of focus on health management. Programme nodal officers in the NHM are mostly doctors with limited PH training, who work alongside other staff such as programme managers, data entry officers, and surveillance officers who are often not clinically trained but have varying degree of PH expertise.[18] Hence, the MPH programme has the potential of benefiting a varied section of people engaged in PH duties if the course is flexible enough to adapt to differential needs by provision for specialisations. With the government mandating the formation of a PH management cadre in each state, there is an opportunity for institutions to tweak their programmes as per their state/regional requirements, and it is upon respective state government to use this opportunity to provide enough impetus for the institutions to do so.

6.2. Recommendations

While we have integrated certain suggestions that the mapping and analysis of MPH education in India demands within the conclusions and the text, we are putting together a few key recommendations here for consideration of the MPH community, which includes all important actors such as the government, academic institutions, alumni, and the wider PH community. While presented as separate recommendations for the sake of ease of detailing out, these are closely interlinked and should be accordingly interpreted.

i. Need for an independent accrediting agency and a professional association

There are currently no regulations governing MPH programmes in the country. Although recognized by the UGC, very few institutions show a NAAC certification. This is because the model curriculum only provides a guideline for minimum requirements for the MPH curriculum, but it does not go into details of eligibility, admission procedures, faculty requirements, or pedagogical practices. Therefore, institutions have adopted practices that best suit their interests, thus leaving students with little information. Very few institutions in our study provided

[18] This is based on our field understanding gained through the process of carrying out another study on the need for public health cadre in India.

complete information of the course on their websites. No minimum standards have been set for faculty capacities, be it number of faculty, faculty disciplines, or capacity training for faculty. There is also no place for institutions to share their experiences and seek support in the current system. All of these point towards the need for (i) an independent agency of PH professionals who can set minimum standards of MPH education in the country, and/or (ii) a professional association of MPH institutions, experts and practitioners to self-regulate, which also acts as a space that enables discussions and discourses around curriculum and pedagogy of the course. Although setting standards is important, it is equally necessary to promote an environment that accepts the transdisciplinary nature of this field. In that aspect, it is imperative that no one discipline claims monopoly, and opportunities to learn are available equally to both medical and non-medical students. A professional association may be best placed to develop such frameworks that allow innovation and creativity while also defining standards that are non-negotiable.

ii. Developing Pedagogical practices uniquely suited for the country

The current MPH curriculum provides no input on pedagogy. In its absence, the current curriculum as practiced by various institutions varies widely. Our study showed the lack of community engagement as well as a lack of importance given to social and behavioural sciences. These are characteristics of medical education, which also gives little importance to social and behavioural sciences. In our interviews and surveys, we found the need to separate clinical medicine from PH although these are closely interlinked. That PH or population health is separate from curative health needs to be established. This has become especially true in the aftermath of COVID-19. This can only be done if teachers, PH professionals, and other stakeholders engage in research on PH pedagogy. To this end, it is important to have a platform for institutions to share their challenges or innovative methodologies in teaching PHE. What PH means in an Indian context needs to be clearly established. Teaching methodologies for MPH also need to keep pace with emerging research in PH and recommended pedagogical choices should also include implications for faculty development. While the current MOHFW curriculum has done its job, it is important to move to the next stage where a self-regulatory body, along with an independent expert agency, if necessary, takes charge and modifies these to suit emerging needs.

iii. Field/Community Immersions an integral part of MPH curriculum

Currently, a two-month internship and dissertation are mandatory parts of the curriculum. However, the curriculum does not issue further guidelines on what

experiences the students should have. As a student of PH, engagement with the community is non-negotiable. Understanding the community's many facets, especially from the point of view of social determinants of health as well as establishing lasting ties with the people PH professionals work with is paramount. A need for more field experiences was stressed by all stakeholders interviewed in the study. An internship does not guarantee exposure to all facets of a PH professional's career; only a few internships allow for this. However, a deeper understanding of the public health system as well as working with vulnerable communities is necessary. In our analysis, most job listings asked for work experience. A good internship or community experience may help a student's job prospects. Some programmes in our study mandated field visits along with regular coursework, which should be encouraged. Community immersions would also help in bringing parity in the classroom where students from various fields can bring together their diverse experiences for a shared learning experience.

iv. Strengthening the Social and Behavioural component within the curriculum

In the last decade, under the NHM, the country has improved its health indicators by leaps and bounds. However, recently, articles have pointed out a stagnancy in the improvement of child health indicators (Nagarajan, 2021; Dreze, 2021). Research also shows that the social determinants of health can be more important than health care or lifestyle choices in influencing health (WHO, n.d.). A large body of literature exists on the importance of social determinants of health indicators; this has not translated into the curriculum. The MPH curriculum has "Social and Behaviour Change (SBC), Effective Communication in Health Care" as a core module, but this was not offered in many of the programmes analysed. Community immersions and SBC go hand in hand. Encouraging students from social sciences to apply to the programme can also go a long way in strengthening SBC learning in the classroom.

v. Parity between students of different disciplines in public health

Public Health (PH) has been largely monopolised by the medical profession since the beginning. It is only natural to assume that a clinical training in health and diseases is enough to practice PH. Most of the PH leadership positions in the health department across all states in the country are occupied by clinicians and only a few of them possess PH training. The result is a health system that emphasises curative care over preventive care.

There is a need for outside-the-box thinking, considering, as previously mentioned, the various determinants of health that are beyond healthcare or lifestyle changes. Opening MPH education to students of non-health disciplines is one such measure.

Currently, there is a preference for students of a medical or science background. Although medical graduates have their place in PH, many opportunities exist in the current PH system that do not require clinical training. In a country where there is a dearth of both clinicians and PH professionals, PH roles need to be clearly defined and well compensated in order to attract the required talent. Promoting skills in research, programme evaluation, data analysis, budgeting as well as non-health subject expertise in nonmedical students is required. Measures should be taken to actively encourage students from other streams to apply. That diverse disciplines help in promoting transformative thought should be imbibed as the central core of PH. Promoting specialisations in MPH programmes will also be useful.

Limited employment opportunities, especially for non-medical PH graduates is also a deterrent. It is important for both the government and the PH community to encourage PH as field distinct from clinical medicine although they are related. Establishment of a separate PH cadre therefore is a step in the right direction.[19] Similarly, it is also important to encourage PH schools that are not attached to medical colleges.

vi. Flexible and multi-layered programmes to expand the reach and access

It is well-known that there is a dearth in PH professionals in the country, and the pandemic has shown us that this issue requires immediate attention. However, a two-year full-time course is a difficult prospect for a working individual who may be able to benefit from the course in their current employment. Hence, the course needs to be more flexible to accommodate the need of mid-level professionals with immediate effect. The pandemic has shown how programmes can adapt to changing needs with a lot of education happening online. Though this maybe limiting for a community/field-based programme like MPH, it can also open opportunities for interaction with experts in other states or countries to improve perspectives.

The choice of offering a part-time MPH degree of a longer duration, i.e., four years, could also be debated for the sake of those who are already employed in PH or other last mile delivery jobs such as ASHA, ANM and Anganwadi workers. Many of these workers may have the required qualifications and may be interested in upgrading their qualification and skills to be able to gain upward mobility. They are more likely to be interested in PH jobs at community levels. Multi-layered courses that are flexible and have exit options with relevant certification and diplomas would make the MPH programme more inclusive, especially in its access.

As the basic premise of a public health professional is to serve the community, it is important that learners from diverse, including rural and socio-economic

[19] The Niti Aayog constituted an expert committee on Public health cadre in 2018. Read more here: https://nhsrcindia.org/pha-phmc.

disadvantaged groups are encouraged to join MPH. In this context, it may also be important for the Government of India to incentivise the promotion of MPH education in the eastern and north-eastern states such as Bihar, Assam, Mizoram, Manipur, and Tripura where there is no institution at present. Provisions for suitable reservation or/and fee concessions/ scholarships would also be helpful for those who otherwise cannot access due to lack of finances or social capital.

vii. A field-based in-depth research study

Finally, we recommend an in-depth field-based study for a better understanding of the practices and deepening of the insights presented through this study. This could help provide more elaborate and nuanced suggestions.

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Annexures

Table A1. 1 List of institutes providing a Master of Public Health degree in India, 2021

Sr No	Name of Institute	Type of Institution
1	Adesh Institute of Medical Sciences & Research, Bathinda, Punjab	Private
2	Adichunchanagiri University, Mandya, Karnataka	Private
3	Akal School of Public Health, Eternal University, Sirmour, Himachal Pradesh	Private
4	All India Institute of Medical Sciences, Jodhpur, Rajasthan	Public
5	All India Institute of Medical Sciences, Raipur, Chhattisgarh	Public
6	Amity University, Uttar Pradesh	Private
7	Amrita Vishwa Vidyapeetham, Kochi, Kerala	Private
8	Apex University, Jaipur, Rajasthan	Private
9	Asian Institute of Public Health, Odisha	Private
10	Athar Institute of Health and Management Studies, Delhi	Private
11	Byramjee Jeejeebhoy Government Medical College and Hospitals, Pune, Maharashtra	Public
12	Career point University, Aalniya, Kota, Rajasthan	Private
13	Central University of Kerala, Kasaragod, Kerala	Public
14	Central University of Tamil Nadu	Public
15	Chitkara University, Chandigarh, Punjab	Private
16	Christian Medical College, Tamil Nadu	Private
17	Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra	Private
18	Delhi Pharmaceutical Sciences and Research University	Public
19	Department of Social Work , University of Lucknow, Lucknow, Uttar Pradesh	Public
20	Dr Shankarrao Chavan Government Medical College, Nanded, Maharashtra	Public
21	Dr Vishwanath Karad MIT World Peace University, Pune, Maharashtra	Private
22	Dr. Giri Lal Gupta Institute of Public Health and Public Affair, University of Lucknow, Lucknow, Uttar Pradesh	Public
23	Dr. Rammanohar Lohia Avadh University, Ayodhya, Uttar Pradesh	Public
24	Galgotias University, Greater Noida, Uttar Pradesh	Private
25	Ganpat University, Mehsana-Gozaria Highway, north- Gujarat	Private
26	GD Goenka Education City, Sohna, Haryana.	Private

27	Global Institute of Public Health (GIPH), Thiruvananthapuram, Kerala	Private
28	Government Medical College, Akola, Maharashtra	Public
29	Government Medical College, Aurangabad, Maharashtra	Public
30	Government Medical College, Chandrapur, Maharashtra	Public
31	Government Medical College, Gondia, Maharashtra	Public
32	Government Medical College, Nagpur, Maharashtra	Public
33	Grant Government Medical College, Mumbai, Maharashtra	Public
34	Gurugram University, Haryana	Public
35	Hamdard Institute of Medical Sciences & Research, Hamdard Naga, New Delhi	Private
36	Himalayan Garhwal University, District Pauri Garhwal, Uttarakhand	Private
37	Indian Council of Medical Research, Regional Medical Research Centre, Bhubaneswar, Odisha	Public
38	Institute of Clinical Research India (ICRI), Srinivas University, Mangalore, Karnataka	Private
39	Institute of Clinical Research India, SAM Global University, Bhopal, Madhya Pradesh	Private
40	Institute of Clinical Research India, Mumbai, Maharashtra	Private
41	Indian Institute of Health Management Research , Jaipur, Rajasthan	Private
42	Impact Paramedical and Health Institute, Paschim Vihar, Delhi	Private
43	Indian Institute of Hygiene and Public Health, West Bengal	Public
44	Indian Institute of Public Health, Shillong, Meghalaya	Public - Private
45	Indian Institute of Public Health, Delhi	Public - Private
46	Indian Institute of Public Health, Gandhinagar, Gujarat	Public - Private
47	Indian Institute of Public Health-Hyderabad	Public - Private
48	Indian School of Technology and Management, Karnataka	Private
49	Institute of Management Study, Kolkata, West Bengal	Private
50	Institute of Public Health, Kalyani, West Bengal	Public
51	Inter disciplinary School of Health Sciences, Pune, Maharashtra	Public
52	JSS School of Public Health, JSS Medical College, JSS Academy of Higher Education and Research, Mysuru	Private
53	Jawaharlal Institute of Postgraduate Medical Education & Research, Puducherry	Public
54	Jawaharlal Nehru Medical College, Belgavi, Karnataka	Private
55	Jawaharlal Nehru University, Delhi	Public

56	Jodhpur School of Public Health, Jodhpur, Rajasthan	Private
57	Kalinga Institute of Industrial technology, Bhubaneswar, Odisha	Private
58	Karnataka State Rural Development and Panchayat Raj University, Gadag, Karnataka	Public
59	M. S. Ramaiah University of Applied Sciences, Bengaluru, Karnataka	Private
60	Maharashtra University of Health Sciences, Nashik, Maharashtra	Public
61	Mahatma Gandhi Mission Institute of Health Sciences, Navi Mumbai, Maharashtra	Private
62	Mahatma Jyoti Rao Phoole University, Rajasthan	Private
63	Manipal University, Manipal, Karnataka	Private
64	National Centre for Disease Control, Sham Nath Marg, New Delhi	Public
65	National Institute of Epidemiology, Chennai, Tamil Nadu	Public
66	National Institute of Mental Health and Neuro Sciences, Bengaluru, Karnataka	Public
67	National Institute of Public Health Training and Research, Maharashtra	Public
68	Nitte University, Mangaluru, Karnataka	Private
69	Noida International University, Gautam Budh Nagar, Uttar Pradesh	Private
70	North East Frontier University	Private
71	NSHM Knowledge Campus, Kolkata, West Bengal	Private
72	Om Sri Gayatryviswakarma University, Andhra Pradesh	Private
73	P P Savani University, Dhamdod, Gujarat	Private
74	Padmashree School of Public Health, Bengaluru, Karnataka	Private
75	Panjab University, Uttar Pradesh	Public
76	Parul University, Ahmedabad, Gujarat	Private
77	Poornima University, Jaipur, Rajasthan	Private
78	Post Graduate Institute of Medical Education and Research, Chandigarh.	Public
79	Pravara Institute of Medical Sciences, Ahmednagar, Maharashtra	Private
80	Rabindranath Tagore University, Bhopal, Madhya Pradesh	Private
81	Rajiv Gandhi Institute of Public Health and Centre for Disease Control, Bengaluru, Karnataka	Public - Private
82	Ravenshaw University, Cuttack, West Bengal	Public
83	Regional Institute of Management and Technology (RIMT) University, Punjab	Private

84	Sai Institute of Para Medical and allied Sciences, Dehradun, Uttarakhand.	Private
85	Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh	Aided
86	School of Medical Education (MG university), Kottayam	Private
87	Shree Guru Gobind Singh Tricentenary University, Gurugram, Haryana	Private
88	Sree Chitra Tirunal Institute for Medical Sciences and Technology, Kerala	Public
89	Sri International, University, Cuttack, Odisha	Private
90	Sri Ramachandra Medical College and Research Institute, Chennai, Tamil Nadu	Private
91	Sri Ramaswamy Memorial Institute of Science and Technology, Chennai, Tamil Nadu	Private
92	Sri Ramaswamy Memorial University, Sikkim	Private
93	Sushant University, Haryana	Private
94	Swami Vivekanand University Sagar Madhya Pradesh	Private
95	Symbiosis Institute of Health Sciences, Maharashtra	Private
96	Tata Institute of Social Sciences, Mumbai, Maharashtra	Public
97	The Global Open University, Dimapur, Nagaland	Public
98	The Tamil Nadu Dr. M.G.R. Medical University	Public
99	University of Hyderabad, Hyderabad, Telangana	Public
100	University of Technology, Jaipur	Private
101	Utkal University Rural Campus, Odisha	Public
102	Vasantrao Naik Government Medical College, Maharashtra	Public
103	Vinayaka Mission's Research Foundation, Salem, Tamil Nadu	Private
104	Y.B.N University, Jharkhand, Ranchi	Private
105	Yenepoya University, Mangaluru, Karnataka	Private

Table A1. 2 A list of institutes providing Master of Public Health (MPH) other than the regular MPH programmes 2021

Courses		Institutes providing more than one type of MPH course
Number of Institutes providing more than one type of MPH course = 19 (18%)	MPH and Executive MPH	1. Amrita Vishwa Vidyapeetham, Kochi, Kerala 2. Asian Institute of Public Health, Odisha 3. Indian Institute of Health Management Research (IIHMR), Jaipur
	MPH specialisation in (1) Hospital Administration, (2) Health Policy, Economics & Finance (3) Social Epidemiology	4. Tata Institute of Social Sciences, Mumbai, Maharashtra
	MPH and MPH with Specialisation in (1) Epidemiology, (2) Health Economics and Outcomes Research (3) Health Care Quality and Safety	5. Jawaharlal Nehru Medical College, Belagavi, Karnataka
	MPH, MPH Honours, and MPH with Specialisations in Digital Health, Global Health and Nutrition	6. Poornima University, Jaipur, Rajasthan
	MPH Community Medicine	7. Department of Social Work, University of Lucknow, Lucknow, Uttar Pradesh
	MSc Epidemiology	8. Central University of Tamil Nadu

	Nutrition	9. Byramjee Jeejeebhoy Government Medical College and Sassoon General Hospitals, Pune, Maharashtra 10. Dr Shankarrao Chavan Government Medical College, Nanded, Maharashtra 11. Government Medical College, Akola, Maharashtra 12. Government Medical College, Aurangabad, Maharashtra 13. Government Medical College, Chandrapur 14. Government Medical College, Gondia, Maharashtra 15. Government Medical College, Nagpur, Maharashtra 16. Grant Government Medical College, Mumbai, Maharashtra, 17. Vasantrao Naik Government Medical College, Yavatmal, Maharashtra
	MPH Occupational and Environmental Health	18. Sri Ramachandra Medical College and Research Institute, Chennai, Tamil Nadu
	Distance Learning MPH programmes	19. Indian School of Technology and Management, Karnataka 20. The Global Open University, Dimapur, Nagaland

Table A1.3 Number of institutions offering Master of Public Health, by state, 2021

Sr No.	State	No of institutes	Percentage	Sr No.	State	No of institutes	Percentage
1.	Maharashtra	19	18.10%	**14.**	Telangana	2	1.90%
2.	Karnataka	12	11.43%	**15.**	Uttarakhand	2	1.90%
3.	Rajasthan	8	7.62%	**16.**	Andhra Pradesh	1	0.95%
4.	Uttar Pradesh	8	7.62%	**17.**	Arunachal Pradesh	1	0.95%
5.	Tamil Nadu	7	6.67%	**18.**	Chandigarh	1	0.95%
6.	Delhi	6	5.71%	**19.**	Chhattisgarh	1	0.95%
7.	Odisha	6	5.71%	**20.**	Himachal Pradesh	1	0.95%
8.	Haryana	5	4.76%	**21.**	Jharkhand	1	0.95%
9.	Kerala	5	4.76%	**22.**	Meghalaya	1	0.95%
10.	Gujarat	4	3.81%	**23.**	Nagaland (DL)	1	0.95%
11.	West Bengal	4	3.81%	**24.**	Puducherry	1	0.95%

12.	Madhya Pradesh	3	2.86%	**25.**	Sikkim	1	0.95%
13.	Punjab	3	2.86%	**26.**	Centres all over India (DL)	1	0.95%

Note: DL stands for Distance Learning.

Table A1. 4 Number of institutions, as of 2021, by year of commencement of Master of Public Health, by Type

	No of Institutions		
Year of Commencement	Public	Private	Public-private
1997	1		
2005	2		
2007	2	1	
2008	1		
2009		2	
2013	2	1	
2014		1	1
2016	2		
2017	2	2	
2018	2		
2019	9	2	1
2020		1	
2021		1	
Not Mentioned	17	46	6
Grand Total	**40**	**57**	**8**

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