Review Article

Can proactive roles played by Community Medicine professionals in times of COVID-19 Pandemic bring the leadership of public health in India in the right hands?

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Abstract

Since the onset of the COVID-19 Pandemic, various public health measures have been in focus, viz. social distancing, hand hygiene, use of masks, screening of patients for COVID-19 symptoms, development of quarantine and isolation facilities, and public health surveillance. Most of these relate to the principles of prevention, early case detection, and primary care. In the ongoing fight against COVID-19, community medicine (CM) professionals are involved at various positions and have been leading from the front in a variety of activities, be it screening, patient care, surveillance, orientation and training of front line workers, community engagement, evidence generation through research, and development of guidelines. However, their engagement in policymaking has still been limited. The government should work more closely with CM professionals in order to stem the tide of COVID-19 or any such public health emergencies in the future by shifting the focus to preventive and promotive interventions. CM professionals should take a more proactive approach in getting involved in policymaking and demonstrate leadership through their actions to lead the national, state, and district-level public health teams through collaboration across disciplines and sectors. This will help bring the leadership of public health in India in the right hands for optimum population health and appropriate and timely health emergency response.

Keywords: Community medicine, corona virus, COVID-19, India, pandemic

Introduction

The COVID-19 Pandemic which has claimed more than five lakh lives globally is the deadliest health emergency mankind has witnessed in over 100 years of the Spanish flu.[1,2] COVID-19 was first identified in Wuhan, China in December 2019.[3] India reported its first COVID-19 case on 30th January 2020 from Kerala.[4] Since then, the government of India has come up with various measures such as enforcing strict nation-wide lock-down, creating awareness about social distancing measures and enforcing its implementation, strengthening of community surveillance, upgrading of quarantine facilities and isolation wards, upscaling of laboratory testing services, and provision of personal protective equipment (PPE) for the management

of COVID-19.[5-14] Capacity for laboratory surveillance was expanded with timely revision in testing guidelines.[6-8]

In the ongoing COVID-19 Pandemic, it has been observed that policies and programs at various levels have a huge influence on the health of the communities. To tackle the newer challenges, the policymakers need ongoing support from experts who have a thorough knowledge of epidemiological and bio-statistical methods, and who also possess good administrative and managerial skills. Use of this knowledge for the development of evidence-based policies and programs and to take rapid and appropriate decisions for implementation of these for containment and mitigation of COVID-19 requires a variety of skills.

The COVID-19 pandemic has quite rightly highlighted the importance of "epidemiology" which along with biostatistics, immunization, screening of diseases, disaster management, health planning, communication for health education, primary care, and many such subdisciplines combine to form an altogether unique medical discipline known as "community medicine (CM)."

CM, preventive and social medicine (PSM), and social and preventive medicine (SPM) are often used interchangeably. The roots of this discipline in India can be traced back to 1955 when government of India organized its first medical education conference, which recommended every medical college to have a preventive and social medicine department.[15] Recently, the Medical Council of India (MCI) has given a nod to the name "CM."[16]

Various nonpharmaceutical interventions suggested for COVID-19 such as hand hygiene, cough etiquettes, and social distancing measures are part of the most basic concept of CM viz., "prevention is better than cure."[17] While the work of specialist doctors from all the medical disciplines has been appreciated amidst this COVID-19 pandemic, the work done by CM professionals has still been somewhat under-recognized, at least in some areas. This seems to be largely because of the unawareness of the public, media, and government, who many a times have resorted to hard-core clinicians and administrators (from nonmedical backgrounds) for expertise in controlling the pandemic. While it is equally important to involve experts from multiple disciplines/backgrounds, the core expertise of CM professions can be tapped in a much better manner. Considering the above-mentioned facts, we have tried to answer various questions with respect to COVID-19 and future public health threats of this scale [Table 1].

We explored PubMed, Google Scholar, the website of World Health Organization (www.who.int), websites of various government agencies and functionaries at the Union/federal level such as Ministry of Health and Family Welfare (www.mohfw.gov.in), Indian Council of Medical Research (www.icmr.gov.in), National Health Portal (www.nhp.gov.in), www.mygov.

Table 1: Key questions regarding CM professionals role during public health threats
1. What are the knowledge and skills possessed by CM professionals, and how can these be utilized, and the readiness of CM departments for handling future public health threats?
2. What are the added advantages of involvement of CM professionals that can help lead and coordinate teams comprising other public health graduates?
3. What activities are the CM professionals currently engaged in, in terms of controlling the ongoing pandemic, and what are their contributions?
4. How can CM professionals take this opportunity to serve as role models to inspire undergraduate medical students, take proactive roles, and demonstrate leadership?
5. What are the potential roles and opportunities that CM professionals could play to upgrade the current governance/policy infrastructure and make it more resilient for infectious disease and health management at the community level?

in, and various print and electronic media for relevant literature pertaining to the present study.

Skills Possessed by CM Professionals to Combat Public Health Threats/Emergencies

There are about 295 medical colleges offering post-graduate seats in CM, and almost 1294 CM professionals pass out every year from these institutions.[18] CM professionals are trained in a variety of fields such as epidemiology, biostatistics, research methodology, primary care, and most aspects of public health including information technology, environmental sciences, social sciences, health management, public health programs, and policies, etc.[19] They are also trained in disaster management.

Their skill in biostatistics can be utilized in predicting the future trend of diseases by developing disease models (forecasting).[20-23] Similarly, their field-level experience and in-depth understanding of the health programs and health systems can be utilized in epidemic surveillance at national, state, district, and sub-district levels, contact tracing, finding epidemiological linkages, and outbreak investigation.[24-27]

Continued Medical Education (CME) forums are regularly held by associations of CM professionals which help upgrade their skills in newer topics such as public health informatics, digital health interventions, digital epidemiology, mass media/social media campaigns, etc., Two such large official associations mainly comprising CM professions are the Indian Public Health Association (IPHA) and the Indian Association of Preventive and Social Medicine (IAPSM).

All CM professionals are medical professionals (doctors trained in allopathic medicine at undergraduate level in a registered medical school) and thus, are well equipped in providing primary care. Whereas, other courses in public health, including Master in Public Health (MPH), give entry to medical graduates as well as students from other disciplines as well such as sociology, health

economics, and political science, etc.[28] MPH can be considered as one of the nonclinical subspecialties of CM.[29] Because of their background training, CM professionals also have much deeper insights into disease epidemiology (including the natural history of a disease) and are better equipped to take vital decisions at crucial times like the COVID-19 Pandemic, which justifies their leadership roles in a public health team.

Role Played by CM Professionals in the Current COVID-19 Pandemic

During the COVID-19 Pandemic, the roles and responsibilities of CM departments and CM professionals increased manifold. Entrusted with the responsibility of tackling the COVID-19 Pandemic in their institutions, districts, and states, CM professionals from many of the medical colleges from all over the country took proactive actions.

National level policymaking

The IPHA and IAPSM have so far issued two joint statements on the COVID-19 Pandemic in India and have discussed the epidemiology, strategies for control of COVID-19, and the action plan for the road ahead[30] IPHA has also issued a public advisory for the control of COVID-19.[31] The ICMR also set up a national task force to combat COVID-19 comprising CM professionals along with experts from other specialties. The responsibilities assigned to this task force involved "*initiating research studies, reviewing the existing evidence, aligning research with the level of outbreak and response, identification of priorities for clinical research, diagnostics and biomarkers, epidemiology and surveillance, and vaccines and drug development to combat the coronavirus.*"[32]

Development of tools for actionable components of controlling the pandemic

CM professionals have been at the forefront in developing various tools, guidelines, and modules related to COVID-19. For instance, an operational module for COVID-19 facility in Maharashtra was released by the Medical Education and Drugs Department, Government of Maharashtra. This module has been drawn up by a state-level team that predominantly involves CM professional.[33]

Similarly, the department of CM of Mahatma Gandhi Institute of Medical Sciences (MGIMS), Wardha has come up with a user-friendly self-assessment tool to help combat the pandemic at the grass-root level viz. the villages of India. Recognizing its significance, the chief secretaries of all the states have been instructed by the Union Ministry of Panchayati Raj to utilize the tool for assessing community response to coronavirus outbreaks at the gram panchayat level. The tool identifies eight areas for action —"*creating awareness regarding preventive measures, solidarity (to address associated stigma), support for home/institutional quarantine, surveillance activities (identification), support (to needy families), ensuring availability of routine health services, prompt response in case of positive cases, and maintaining hygiene and sanitation at village-level.*"[34]

Community level infection containment activities in co-ordination with the states

As many as twenty central public health teams comprising predominantly eminent CM experts from institutes viz. National Centre for Disease Control (NCDC), National Institute of Health and Family Welfare (NIHFW), All India Institute of Medical Sciences (AIIMS) Delhi, Bhopal, and Jodhpur; Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), National Institute of Epidemiology (NIE), Chennai, Vardhman Mahavir Medical College (VMMC), New Delhi, and All India Institute of Hygiene and Public Health were sent to the twenty districts that reported the maximum number of COVID-19 cases in the country. These teams were assigned the task to support and assist the states in the implementation of containment measures for COVID-19 in the affected areas within these districts/cities.[35,36]

In response to the rise in COVID-19 cases in Madhya Pradesh, the Emergency Medical Relief (EMR) Division of the Ministry of Health and Family Welfare (MoHFW) deputed a Central Rapid Response Team to Madhya Pradesh for technical support in the preparedness of containment plans and their implementation. Two out of the three members in the team comprised experts from the Community and Family Medicine department of AIIMS Bhopal.[37] Later, a state-level Technical Advisory Committee was constituted in Madhya Pradesh for COVID-19 control measures, issue of technical guidelines, and formation of various teams to get the plans executed.[38] This committee also had a fair deal of representation of CM professionals.

Health education and health promotion activities

In an attempt to provide authentic information to the general public regarding various aspects of COVID-19, the Department of CM and School of Public Health, Postgraduate Institute of Medical Education and Research Chandigarh has come up with videos and information booklets pertaining to the transmission of COVID-19, social distancing measures, and hand hygiene measures; and disseminated these videos via their Youtube channel.[39-42]

Eminent CM experts have featured in both print and electronic media during the pandemic and have voiced their opinions about a variety of concepts related to COVID-19 such as dynamics of disease transmission, misinformation, community participation, informed decision making, better dissemination of information, and herd immunity.[43-46] An informative Youtube video which deals with myths pertaining to COVID-19 has also been developed and disseminated by a CM professional.[47]

Generating evidence and publishing research articles on priority in journals

Many CM professionals are involved in generating research evidence.[20-23,48-51] Some journals which are primarily meant for CM professionals/public health and mainly edited and managed by CM professionals/departments/organizations came out with

focused publications on COVID-19 on priority. Indian Journal of Public Health and the Indian Journal of Community Health had come up with special COVID-19 editions.[52,53]

Direct patient care and population health services

Mumbai has recorded the highest number of COVID-19 cases in India till date.[54] In March 2020, a team comprising resident doctors from the CM department from medical colleges of Mumbai and peripheral public health services were deputed for screening passengers at the Mumbai airport.[55] CM postgraduates were also posted round the clock at Brihanmumbai Municipal Corporation (BMC) COVID-19 helpline in the Disaster Management Cell for resolving people's queries.

Many departments of CM in institutes of national importance are involved in routine screening services of acute respiratory infection (ARI) patients such as AIIMS Bhopal, AIIMS Bhubaneswar, AIIMS New Delhi, and AIIMS Patna. Some of them have taken lead to set up screening clinics, flu clinics, etc., In AIIMS Bhopal for instance, the "screening and holding area" is directly under the administrative control of Department of Community and Family Medicine (CFM). Faculty and residents of this department have been contributing to the development of standard operating procedures (SOPs), screening of patients, periodic evaluation, examination and contact tracing of health care workers, data compilation and reporting to hospital authorities, etc.

An Example of Leadership by National Level Institute

The leadership by national-level institutes is important, as this will serve as models for state government and private medical colleges. The contributions by the CM department of AIIMS Patna can be taken as an example as it contributed across most of the domains, which have been discussed. They set up a flu corner for all patients seeking health care from the institute. The department has also developed its own contact tracing algorithm and form, which were also shared with the Government of India. This possibly helped in the development of a contact investigation form for suspected contacts of a confirmed COVID case for health care workers of the country [Figures 1-3]. Also, this department conducted an epidemiological investigation in response to rising COVID cases in Bihar Military Police. Additionally, the department is involved in various multicentric projects related to COVID-19 for e.g. determinants of mortality due to COVID in India (with AIIMS New Delhi) and efficacy of hydroxychloroquine prophylaxis among health care workers (with ICMR) along with other projects such as mental health of community dwellers during COVID-19 pandemic, perception of doctors involved in COVID duty regarding the provided PPEs, etc.

CM professionals are thus contributing at various positions; some at the medical college level and district level, some

as part of state health departments and nongovernmental organizations (NGOs), and carrying out a variety of tasks.

Way Forward

Leadership roles in national/state level committees/task forces

There is a huge void in our country as far as leadership amongst medical professionals is considered. Medical professionals must develop leadership qualities in order to make crucial clinical and public health decisions. Investment in leadership skills training is the need of the hour, and young medical professionals must rise to this task and take up the leadership roles.[56-58]

In spite of their skills and expertise, various committees constituted by the central and state governments for combating COVID-19 seem to yet realize that CM professionals form the fulcrum of disaster preparedness and response in India.[59] During future public health emergencies, various task forces should be constituted with CM professionals leading such committees to ensure adequate preparedness and mitigation measures in the larger interest of the nation.[60] Setting up of Indian Medical Services with the creation of a separate public health cadre, with CM professionals as team leaders is the need of the hour, and is one important step that will help CM professionals come to the forefront.

Proactive involvement in helping the state health machinery in capacity building, research, surveillance, monitoring, and supervision

Various faculties from CM departments of state medical colleges in various states should be assigned at least one district for surveillance purposes, so that in times of any emergencies, the disaster response be carried out by the concerned faculty in coordination with the concerned district officials. They should also be involved in training the front line workers at the district as well as state level, building local disaster/epidemic preparedness plans, mapping resources of districts/states through situational analyses, developing guidelines/standard operating procedures (SOPs) for screening, contact tracing, health education, surveillance, monitoring and supervision, preparing disaster/pandemic preparedness plans, analyzing data gathered by district/states to help states prepare and implement public health interventions suited to the local context, and in developing robust quality control mechanisms and feedback systems.

Increased collaboration with various public health institutes and mentoring of public health professionals

CM departments should collaborate with various public health institutes, and experienced CM professionals should act as a mentor for budding public health graduates. They should work in tandem in various research activities as well in times of emergencies such as the COVID-19 Pandemic. CM professionals
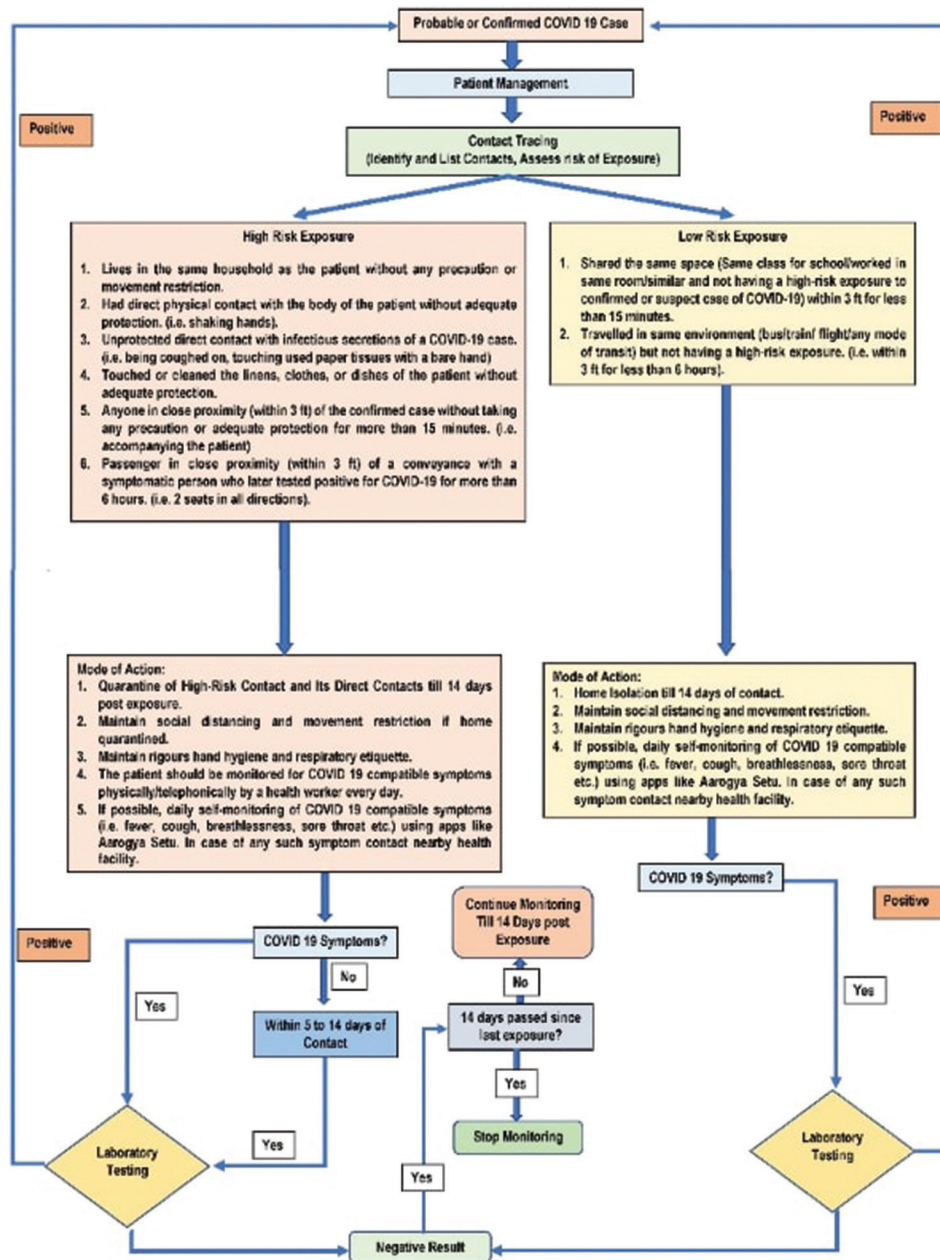
Figure 1: Algorithm of Contact Tracing of Probable or Confirmed COVID-19 case in General Population, AIIMS Patna

should also lead and engage much more in multidisciplinary research projects.

Advocacy to media and government

Greater advocacy by CM professionals highlighting their skills through the work done should be taken up not only by professional associations of CM professionals, but also individually by each CM professional. Local media engagement is a necessary part of advocacy, as this also serves as the channel for awareness of the general public regarding the contributions of CM professionals. Similarly, advocacy to policymakers is very important which can be done by proactively helping them carry out important decisions. The findings of situational analyses,

data analyses should be shared using policy briefs. Policy dialogues should also be conducted to share the findings, where government officials, policymakers, and media persons should be invited. Each CM department of a medical college should develop a stakeholder engagement plan of their own as per the local scenario.

Inspire undergraduate medical students for pursuing Community Medicine as a career

There is still some amount of hesitancy among the medical graduates while choosing CM as a choice for postgraduation subject of specialization. Many medical students opt for it because they do not get to choose their desired subject of
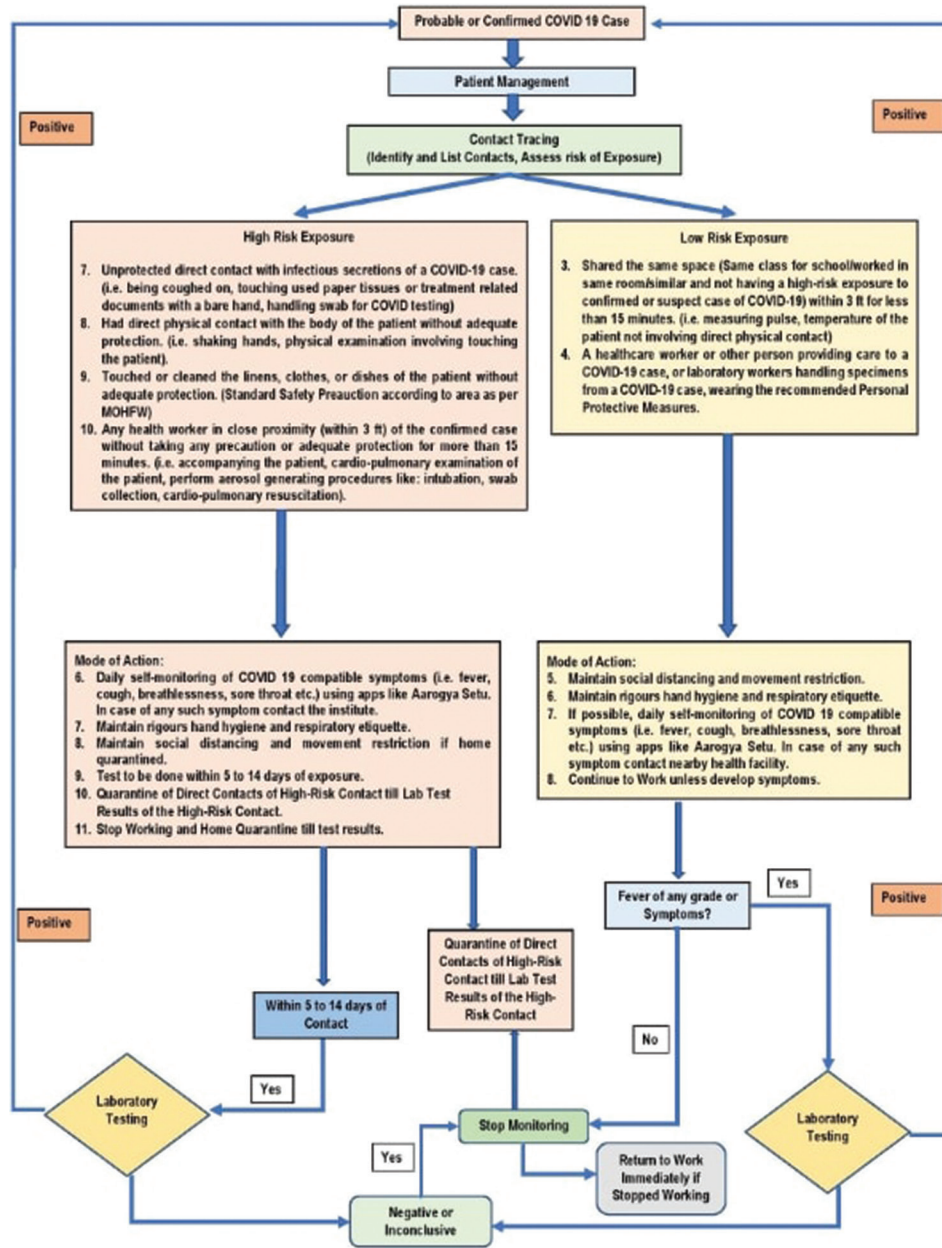
Figure 2: Algorithm of Contact Tracing of Probable or Confirmed COVID-19 case in Health care Workers, AIIMS Patna

specialization due to lower rank in the merit list. A few opt for it due to interest in teaching and academics, whereas very few actually have genuine interest in hardcore public health and primary care.[61-63] While looking for postgraduation subject options, it loses out to the more fancied disciplines such as medicine, surgery, obstetrics and gynecology, etc.[64]

COVID-19 might serve as just the right kind of stimulus which may do good for this important discipline and get the things in the right perspective. Whatever may be the outcome of the COVID-19 Pandemic; the variety of roles played by the CM professionals across the country in mitigation and containment of the pandemic should inspire increasingly more medical graduates to opt for CM. But to achieve this,

CM professionals would have to take up increasingly more leadership roles to serve as role models for students. They should also think of innovative ways and platforms to share their work with medical students through appropriate platforms. Social media, for example, can serve as an excellent medium to not only inspire students locally but across India. This way, a continuous built up of a talented pool of trained manpower will be maintained.

Conclusion

In spite of having the appropriate and unique skills, along with the immense potential to lead public health teams, CM professionals have not really been utilized up to their potential. Although,

Department of Community and Family Medicine; AIIMS Patna
COVID 19 Contact Tracing Form for General Population

Contact Details:
Name:
Age:
Sex:
Contact Number:
Full address:

Occupation:

Whether staying in a same household with the patient?
Yes/ No

Relation with the patient if a relative:

Date and Time of Contact:

Place of Contact:

Details of Safety Measures used during the Contact (if any):
Maintained 3ft distance — Yes/ No
Hand Sanitisation post any surface touch — Yes/ No
Used a mask/ Face cover — Yes/ No
Weather participated in any mass gathering post high-risk contact with the patient? — Yes/ No
If Yes,
Whether maintained 3ft distance with others: — Yes/ No
Used a Mask/Face cover — Yes/ No
Hand Sanitisation post any surface touch: — Yes/ No
Followed respiratory etiquette: — Yes/ No
Details of the Event:

Narrative of the Whole Event (During exposure):

Details of direct contacts post high risk contact with the patient (Post Exposure):

Impression: (To be Filled by Officials)
Type of Exposure?
High Risk / Low Risk
Additional Comments: (If Any)

a

Patient Details:
Name:
Age:
Sex:
Contact Number:
Full address:

CR Number:
Date of Admission:

Time of Admission:

Presenting Symptoms:
Time of onset of Symptom:
Criteria under which admitted:
Cat 1: Symptomatic international traveller in last 14 days
Cat 2: Symptomatic contact of lab confirmed case
Cat 3: Symptomatic healthcare worker
Cat 4: SARI (Severe Acute Respiratory Illness) patient
Cat 5a: Asymptomatic direct and high-risk contact of lab confirmed case
Cat 5b: Asymptomatic healthcare worker in contact with confirmed case without adequate protection
Cat 6: Symptomatic Influenza Like Illness (ILI) patient in hospital/ MoHFW identified clusters
Others..
(Please select "others" only if the patient doesn't fall in any other category)

Current Status: Serious / Stable / Died

Date and Time of COVID 19 Positive Report:

Department of Community and Family Medicine; AIIMS Patna
COVID 19 Contact Tracing Form for Healthcare Worker

Contact Details:
Name:
Age:
Sex:
Contact Number:
Address:

Department:

Designation:
Duty Area:
Date and Time of Contact:
Details of Standard Safety Preauction taken during the Contact:
Single Gloves: — Yes/ No
Double Gloves: — Yes/ No
Surgical Mask: — Yes/ No
Cloth Mask: — Yes/ No
N95 Mask: — Yes/ No
Splash proof Apron: — Yes/ No
Hood / Headgear: — Yes/ No
Goggles/ Face shield: — Yes/ No
Foot cover: — Yes/ No
Details of Procedures Performed on the patient:

Narrative of the Whole Event (Exposure):

Impression: (To be Filled by Officials)
Weather taking Standard Safety Preauction according to area of duty during the contact as per MOHFW?
Yes/ No
Quarantine Required?
Yes/ No
Additional Comments: (If Any)

b

Patient Details:
Name:
Age:
Sex:
Contact Number:
Address:

CR Number:
Date of Admission:
Time of Admission:
Presenting Symptoms:
Time of onset of Symptom:
Criteria under which admitted:
Cat 1: Symptomatic international traveller in last 14 days
Cat 2: Symptomatic contact of lab confirmed case
Cat 3: Symptomatic healthcare worker
Cat 4: SARI (Severe Acute Respiratory Illness) patient
Cat 5a: Asymptomatic direct and high-risk contact of lab confirmed case
Cat 5b: Asymptomatic healthcare worker in contact with confirmed case without adequate protection
Cat 6: Symptomatic Influenza Like Illness (ILI) patient in hospital/ MoHFW identified clusters
Others..
(Please select "others" only if the patient doesn't fall in any other category)

Current Status: Serious / Stable / Died
Date and Time of COVID 19 Positive Report:

Figure 3: COVID-19 Contact tracing form AIIMS Patna (a) For General Population (b) Health care Workers

during the COVID-19 pandemic, the proactive roles played by CM professionals in various aspects of the control efforts are evident, still, they are mostly involved in the implementation of guidelines/policies rather than policymaking. The onus is on the government now to shift focus to preventive and promotive interventions and work along with CM professionals to stem the tide of any such public health emergencies in the future. Having said that, CM professionals should also use this opportunity in the COVID-19 times, to advocate media and government, create awareness among the general population, and inspire undergraduate medical students regarding the work done by them. They should take a more proactive approach in getting involved in policymaking at all levels and demonstrate leadership through their actions to lead the national-, state-, and district-level public health teams through collaboration across disciplines and sectors. This will help bring the leadership of public health in India in the right hands for optimum population health and appropriate and timely health emergency response.

Key Messages

- CM professionals have been contributing significantly during the COVID-19 Pandemic.

- Despite having tremendous potential to lead public health teams, CM professionals' true potential still remains untapped.
- Greater involvement of them by the government can be of great benefit to stem the tide of any such public health emergencies in the future.

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Conflicts of interest

There are no conflicts of interest.

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