

A Review of E- Training and Development Practices Implemented by Government for Healthcare Sector and their Impact during COVID 19 (With Special Reference to Uttrakhand)

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Abstract:

The sudden outbreak of Corona virus disease popularly known as Covid 19 has drastic impact on all over the world. It especially shattered the whole healthcare sector. As on June 2022 the world health organisation reported 6320599 Corona virus deaths since the epidemic began.

The whole world faces the covid crisis as the most dangerous and unfortunate after the World War II.

As the study focuses the Uttrakhand state and we all know the geographical and climatic conditions of this state. More than 70% of the state is hill and the extreme climatic condition even makes the health sector more prone to shattered. The study analysed state Covid 19 data, taken from an authenticated Uttrakhand government sites. Ministry of Skill Development & Entrepreneurship and National Skill Development Corporation(NSDC) ,supported by healthcare sector skill,council,have designed various courses as part of the Covid response program which support the adequate number of healthcare provider in the country.

The Covid 19 not only brought the serious challenge to the government but also opened the eyes of every policy maker and business organisation to rethink about the skills, abilities and knowledge of their workforce to tackle such kind of unforeseen situations.

To cope with manpower shortage in hospitals which is always prevailing in Uttrakhand state but Covid 19 makes it more vulnerable and make the whole Indian government to think on such kinds of training programmes which help the citizens to overcome from this situations.

Keywords: Healthcare sector, e-training programmes, National Identification number, Hospital information system

Introduction

When we talk about training it's simply a systematic approach of increasing skills,knowledge,abilities of individual person for particular jobs. but as technology is increasing day by day not only business organisation but the organisation which totally run on human skills likes healthcare sectors are also moving towards the internet based technology. Earlier the training programmes is designed on traditional basis but now the ICT is the major mode of developing training modules and provider are using them widely. Indian government is stressing lots on automation or digital system of running

organisation which is earlier from covid. The approach of government towards the digitalization of Indian economy in every sector is playing a vital role to overcome from the covid 19 viruses.

It is the first time during covid outbreak when human is isolated from other human being .At that time only internet and mobile technology helps every Indian to get the basic services .

This paper solely review the E-training programmes run by the government and their impact on defeating the Covid 19 situations.

In response to COVID-19, constant employees training are critical to make certain that evidence-based treatments are available on the frontier to meet communities' ongoing and promising psychological health needs. However, training during a epidemic imposes a lot of new challenges. This paper describes a multisite training and carrying out navigator program, facet of which allowed for sustained training regardless of the beginning of the COVID-19 pandemic and following social distancing guiding principle. This virtual facilitated learning combined in Written Exposure Therapy, an evidence-based management for posttraumatic stress disorder, included virtual workshop training, phone-based clinical consultation, implementation-focused video calls for program leadership, and program evaluation. Data are presented about program enrollees and patient impact following the onset of COVID-19-related social distancing restrictions. Challenges, successes, and sensible regulation are discussed to enlighten the field concerning training strategies possible to be long-lasting in an vague, dynamic healthcare setting.

The health department of Utrakhand had started a three month training programme for its frontline workers involved in epidemiology-related works. This training helped the workers to gain the most critical skills required to conduct Covid -19 surveillance successfully at the local level.

About the training program

In view of the spread of Covid's second wave and rise in cases, it has led to urgent requirement of skilled employees in the healthcare sector to prolong providing important care and services to patients .Ministry of skill development and entrepreneurship (MSDE),under skill India mission is undertaking a unique training program, with the following objectives:

- 1) To meet the increase in the demand of skilled healthcare professionals.
- 2) To decrease the load of existing healthcare professionals
- 3) To offer appropriate healthcare services in every corner of the country.

The special training program comprises of the following three tailored crash course:

Component1: Fresh skilling of candidates in six healthcare sector jobs roles.

Component 2: Upskilling(RPL) for candidates with prior experience /prior learning.

Component 3: Training of drivers in handling and transportation of liquid medical oxygen.

2. Material and Methods

This paper is the narrative reviews of e-training programmes developed and implemented by the Indian government .The main focus is led on the state of Uttrakhand .This study is based on secondary data which is taken from the authenticated and government sites .Data used for review is freely available in internet. The main purpose of this study is to present the importance of modern technological based training and services delivering programmes by the healthcare sectors.

Different e-training and health services provided by the government and their reviews:

The Covid 19 has changed the whole system of health services, nobody ever thought of getting medical services with the help of internet and mobiles phone.

Following are the health services provided by government with the help of ICT.

1) E-Health and Telemedicine

Ministry of health and family welfare has undertaken a range of initiatives by means of information and communication technologies (ICT) for getting improved proficient and success of the public healthcare system. Ministry is regularly functioning on setting up and introducing more of ICT initiatives.

This approach of providing medical consultation through mobile phone is really a fast and safe remedy during the covid 19.Mobile phone medical consultation is much easy and convenient way of curing the patient during the phase of complete lockdown.Infact its is the first time when the government of different states generating the toll free mobile numbers for providing the immediate medical help to the needy people.

National health portal

With an overall objective to create awareness amongst the citizens about health, Government programmes & services in Health Sector, National Health Portal (NHP) provides information to citizens and stakeholders in different languages (currently six languages Hindi, English, Tamil, Gujarati, Bengali, and Punjabi).A voice portal, providing information through a toll-free number 1800-180-1104 and Mobile App are also available

Source://www.nhp.gov.in

This initiative of government is very informative and easy to access. As it provides the flexibility of languages to the Indian citizens. This online portal provides the sufficient knowledge about the different schemes and programmes run by the government regarding healthcare sector. Presently it is available only in six language which must include more regional languages so that the more people can take its advantage.

e-Hospital

e-Hospital@NIC a Hospital Management System is a workflow based ICT solution for Hospitals specifically meant for the hospitals in Government Sector. This is generic software which covers major functional areas like patient care, laboratory services,

work flow based document information exchange, human resource and medical records management of a Hospital.

Source :: <http://dashboard.ehospital.gov.in/dashboard-testing2/>

During the pandemic of covid 19 when there is highly need of ventilators and oxygen cylinders .Even there was the situation when we feel that the whole Indian health sectors is on ventilator. But at the critical time the government decision of providing the information through online portal about the availability of hospitals and ventilators might support the government and health sector to overcome from such unforeseen situations.

Now, government should focus more on the ICT based technology and brings more hospitals under the technology so that if this kind of situation arises in future the healthcare provider and industries must be prepared in advance to tackle the problem efficiently.

Online registration system

In order to improve ease of services for citizens, **Online Registration System (ORS)** launched in July 2015 provides services to citizens for taking online registration & appointment, payment of fees, online viewing diagnostic reports, enquiring availability of blood online etc. in various public hospitals.

Source: <http://www.ors.gov.in/>

This online registration system had developed in 2015 which provides easy and frequent access to the hospital services. The ORS system is fast and convenient way of getting registration for particular services .Now, we can say that the government initiatives of moving towards digitalization of service sector is beneficial for the general public. But it needs more efficiency and network support system .At the same time government should focus on more technological advancement in rural areas, providing internet facility and basic internet and technological based education in rural and terrain hilly areas like Utrakhand is still a major challenge for the government.

Central drugs standards control organisation, "SUGAM".

To provide a "single window" for multiple stakeholders (Pharma Industry, Regulators, Citizens) involved in the processes of **Central Drugs Standards Control Organisation, "SUGAM"** enables online submission of applications, their tracking, processing & grant of approvals online mainly for drugs, clinical trials, ethics committee, medical devices, vaccines and cosmetics.

source: <http://www.cdsc.nic.in/>

SUGAM has played a vital role in timely availability of medicines, medical equipments and vaccines during covid 19.

The timely flow of drugs and proper tracking of their supply helps the government in proper management and prevents the black marketing during covid 19 pandemic.

Food safety and standards authority of India.

For ease of services to food sector stakeholders, **Food Safety and Standards Authority of India** is offering services for Online License, Clearance, Product approval to the Food Business Operators.

source: <http://www.fssai.gov.in/>

This initiative of government acts as a milestone by providing online services to the food business industries. It reduces the waiting time for getting the certificate and the online clearance system helps in simplification of the whole process.

National organ and tissues transplant organisation(NOTTO).

In order to promote organ donation amongst citizens at large, **National Organ & Tissue Transplant Organisation** through its web-portal offers services for Online Registration for Organ/Tissue Transplantation or Retrieval and Online pledge registry by citizen for organ donation.

source: <http://www.notto.nic.in/>

NOTTO is the organisation which promotes the online application for organ and tissues donation system. We all come across the words plasma donation during the covid time. We can now analyse the importance of online system of donating the important human organs. Its main aim is to timely availability of organs and tissues to the needed patients without any black-marketing of human organs. This online registration system has put a check on the human organs trafficking.

Hospital Information System (HIS):

HIS is being implemented in hospitals for automation of hospital processes to achieve better efficiency and service delivery in Public Health facilities upto CHC level. Targeted impact includes facilitation in hospital workflow management leading to better delivery of services to patients and improvement in efficiency of processes at hospitals. Key implementation milestones include:

- a) **e-Hospital developed by NIC** has been implemented on cloud platform in over 100 hospitals as on date and more than 50 hospitals are on standalone platform
- b) **e-Sushrut application of C-DAC Noida** has been Functional in Rajasthan (State-wide: 80 facilities) & 15 hospitals in other states

The HIS is a database for the management of patient's details and improved service quality of government hospitals of India. Initially government is implemented this ICT based information system at community health centre level.

ANM online "ANMOL"

A tablet based application for Integrated RCH Register which allows ANMs to enter and update data for beneficiaries of their jurisdiction has been piloted in the State of Andhra

Pradesh and currently around 15,000 ANMs are working on ANMOL in Andhra Pradesh and pilot districts of MP & Telangana

The “ANMOL” application is specially designed for ANM to unite the regional healthcare sector. Initially it is started in the state of Andrapradesh .This application helps the ANMs to maintain the records of patients specially pregnant women and easily provides the details of services of benefits provided by the government.

In fact during covid time the ANMs plays a vital role in providing vaccination and other medical services to the people.

Drugs and vaccine distribution management system(DVDMS) “e-Aushidhi”

It items to various District Drug Warehouses of State / UT, District Hospitals (DH), their sub stores at CHC, PHC etc by automating the workflow of procurement, supply chain, quality control and finance department in State / UT level.

DVDMS has been implemented so far in 9 States/UTs – Andhra Pradesh, Gujarat, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan &Telangana and is in process in 8 States/UTs- UP, UK, Bihar, HP, Manipur, Jharkhand, Meghalaya & Chhattisgarh. DVDMS has also been implemented in Central Medical Services Society (CMSS) - a Central Procurement Agency under Department of Health & Family Welfare and is under implementation TB Division & Family Planning Division of MoHFW. States like Tamil Nadu, Tripura, Haryana deals with purchase, inventory management and distribution of various drugs, sutures and surgical , Karnataka, Kerala, Delhi and West Bengal have implemented IT based supply chain management systems other than DVDMS, but which have similar features.

“e Aushidhi” is the It based supply chain management system for procurement,distribution and quality control of drugs .This initiatives must be implemented whole of India with more efficient IT based technologies. As this kind of application is the need of hour to tackle the future unwanted medical situations or pandemics like covid.so,the state government and central government must emphasises on this to make it more advanced and applicable within every states.

e-Rakt kosh

eRakt Kosh has been launched which is a comprehensive, efficient and total quality management approach with the help of online systems and is being rolled out for all the licensed blood banks in public and private health facilities in States / UTs. eRakt Kosh is online in 7 Blood Bank in States/UTs of Delhi, Madhya Pradesh, Uttarakhand and Uttar Pradesh. Around 124 Blood Banks are registered on e-RaktKosh Portal for Blood Stock Updation. 2 blood banks in Uttrakhand, 1 in UP and 1 in West Bengal are in process of using the application.

source: <http://www.eraktkosh.in/>

The online details of availability of blood through the application e-Raktkosh portal is milestone to cure the critical patients. We used to come across the various situations where someone really need bloods donors for their critical patients .The online portal helps the people to donate and receive the blood as frequent as possible. This is really a

appreciating step of Indian government but this should be implemented on more frequent basis in every districts and city of our country.

MIS and Surveillances

Health management information system

HMIS is a web based portal for monitoring the programmes under National Health Mission (NHM). For monthly service delivery data reporting from public health facilities to improve program monitoring and management. Approximately 2 lakhs Health facilities are regularly reporting on HMIS Portal. It is integrated with GIS and available in public domain.

Source: <https://nrhm-mis.nic.in/>

Only implementation of any polices or application without proper checking and controlling cannot became fruitful. For this purpose the health management information system an ICT based software application is developed to monitor the various programmes run under national health mission. More than 2 lakhs health facilities are regularly updating and monitored on HMIS web portals. This kind of application system helps in providing fair and regular information for general public.

Integrated disease surveillance programme(IDSP)

Online portal for data entry, reports, data analysis, training modules, on which ~90% districts report weekly surveillance data through portal. There is also a 24x7 call centre for disease alerts on a toll free number; for verification and initiating appropriate action

source: <http://idsp.nic.in/>

This portal is designed to provides various online assistance regarding data analysis, reports and training modules. This portal is widely used during covid 19 spread .

Standards and regulations

NDHA(**national digital health authority**) is being set up by MoHFW as nodal agency for formulation, adoption & regulation of eHealth Standards in India as well as work as nodal agency for all strategic eHealth initiatives in India. The Act for setting up of NDHA has been drafted and is under approval process to be placed in public domain for suggestions and comments.

EHR(Electronics health records) Standards

(Revised version of 2013 Standards) has been notified in December 2016. The EHR Standards include standards for Disease Classification, Medicine and Clinical terminology, Laboratory Data exchange, Digital Imaging and Communication etc. for semantic interoperability.

source: http://mohfw.nic.in/sites/default/files/17739294021483341357_1.pdf

Meta data and data standards

Committee on Health Domain Metadata and Data Standards has approved the Health Domain MDDS standards. The MDDS is intended to bring semantic interoperability among all health IT system. This is a prerequisite for establishing interoperability

among disparate health information systems. Health Domain MDDS has created more than 1000 data elements and 142 code directories. Most of these standards are drawn from global standards however these are developed keeping in view local health information systems requirements. The standards were developed following a rigorous consultation and review process and public opinion was also sought and incorporated on these standards

National identification number

A unique identification number, which a key requirement for achieving inter-operability and creation of EHRs, is being assigned to all health facilities (both public & private) to facilitate inter-operability among health IT systems deployed. So far more than 2 lakh Public Health Facilities have been allocated NIN. The process for setting up mechanism for allocating NIN to private facilities is underway.

source: <http://nin.nhp.gov.in>

Capacity building programmes

Mobile academy

It is a free audio training course designed to expand and refresh the knowledge base of ASHAs and improve their communication skills Launched in 2016. A total of over 70000 ASHAs have completed the Mobile Academy course since inception in Bihar, Chattisgarh, Himachal Pradesh, Jharkhand, Madhya Pradesh, Rajasthan and Uttarakhand.

Toll free number: 1800-3010-1704

Training Management Information System (TMIS):

TMIS implemented by a number of States Haryana, Karnataka, Odisha, Telangana, Himachal Pradesh etc. for management of skill development/upgradation of health professionals/workers Digital health has huge potential of improving the healthcare delivery system and capable of changing the landscape of healthcare industry across the globe. Government of India has been increasingly focusing on Digital Health to bring about improvements in Indian public healthcare delivery by progressively using Information & Communication Technology under the overall objective of Digital India.

Online consultation-Tele medicine

For universal outreach of healthcare services in an affordable manner, MoHFW has aligned its initiatives along with the Sustainable Development Goals (SDGs) to ensure healthy life and well-being of the citizens. MoHFW has proactively taken a leap to utilize the effective fusion of Information and Communication Technologies (ICT) with existing health infrastructure in meeting the challenges of healthcare delivery to rural and remote areas to ensure continuum of care. Keeping in view the benefit which can be reaped from the ICT innovations in Healthcare service delivery, MoHFW has espoused citizen centric approach in transforming the way the healthcare is being functional presently. By encompassing ICT innovations, Tele-health solutions are being promoted to deliver basic and specialized health care services nearest to the end user in

inaccessible and rural areas. The key initiatives of the Department in this direction include National Medical College Network, National Telemedicine Network, Use of Space Technology for Telemedicine etc. The key officials and their contact details in Telemedicine Division are:

National tele medicine networks

National Telemedicine Network (NTN) has been envisaged to provide Telemedicine Services to the remote areas by upgrading existing Government Healthcare Facilities (MC, DH, SDH, PHC, and CHC) in States. Telemedicine nodes across India are being created inter connecting SDH/PHC/CHC, District Hospital and Medical College in every State for providing Citizen-centric services. This NTM Network will start in Synchronous with the roll out of NOFN across country. In the first phase of National Telemedicine Network project, it is proposed to connect 500 PHC/CHC/SDH at remote/rural locations with 100 District Hospitals and 50 Medical Colleges..

Mission Directors of NHM of all the States/UTs have been advised to seek financial assistance under their respective State/UTs Programme Implementation Plan (PIP) of National Health Mission (NHM) scheme for strengthening and promoting Telemedicine network. So far financial aid has been provided 7 States.

Review of Training programmes in Uttrakhand .

Strengthening primary care during this unprecedented pandemic of COVID-19 is an urgent demand for public health. It needs to relook into the healthcare machinery and reenergize the much overlooked primary and secondary tier in healthcare delivery to effectively combat COVID-19 and other similar epidemics. Objectives: Strengthening of primary care and enhance the skills and knowledge of primary care physician working at Community Health Center/Primary Health Center (CHC/PHC) in context of Family medicine and updating them in recent advancements in primary care management and COVID 19 guidelines for efficient delivery of primary care services.

Director general health services of Uttarakhand was intimated with the aim and objectives of this one-day hands-on workshop going to be conducted at All India institute of medical sciences. All Chief Medical Officers of the various districts had been communicated and sensitized for this noble cause. Total 30 primary care physicians attended the certificate program. This session commenced with a pre-test followed by the lectures, discussions and hands-on skills and ended with a post-test. Results: Majority (60%) of the participants were male and 40% were female. A total of 30% had never attended any similar workshop in the past. 45% of them were never exposed to any hands-on training before. Only 10% of them were Postgraduates and the rest were only MBBS (undergraduate). As the scores were not normally distributed, Wilcoxon Signed-Ranks Test was applied for the dependent variable. There was a significant difference ($p < 0.05$) found between pre and post-test results.

According to Sustainable Development Goal (SDG), the promotion of well-being and ensuring healthy lives with a target to address Non-communicable disease, mental health, injuries, and environmental issues is one of the goals.[5] Without addressing primary care and strengthening primary physicians who are working at the periphery

and community, achieving this target of SDG seems to be difficult. The first level of contact that individuals and communities have with the health system is the primary and community health centers. In 21st century, India is facing a triple burden of disease, primarily, the backlog of common infections, under nutrition, the rise of non-communicable diseases and emergence of novel pathogens causing epidemics and pandemics.[6] There is increasing evidence that India needs to shape a robust comprehensive primary care system to achieve advancement in the wellbeing status of the people. This on-going pandemic has further emphasized the necessity for strengthening the primary health care at the earliest.[4] Of the numerous challenges that India faces in the reinforcement of existing primary health care services, the absence of a specialized cadre of health professionals, trained to tackle the wide breadth of common acute and chronic conditions in the community is of the main priority. India is finally taking up the call for the need of this specialized cadre of generalists/family doctors/family physicians/family medicine specialists. The concept of Family medicine is finally setting its foot in India and the medicine community is visualizing the family doctors as gate-keepers or health advocates for patients.[7] Keeping in view the role of primary and community health centers at these times, AIIMS, Rishikesh organized a COVID 19 preparedness and capacity building workshop for the Medical Officers and primary care physicians of Uttarakhand, to strengthen and also enhance them with the knowledge of recent technologies, which would also help in rejuvenating and creating resilient health system in the long run. This program aimed to strengthen the Medical officers of Uttarakhand with the knowledge of primary care and introduce them to the concept of Family Medicine as well as preparing them to tackle the situation in COVID-19 pandemic. Aim: Capacity building of medical officers and strengthening their primary care skills in view of COVID-19 pandemic.

Objectives of the training programmes

1. supporting of primary care and to increase the skills and knowledge of primary care physician working at CHC/PHC in perspective of Family medicine.
2. Updating their existing knowledge in recent development in primary care execution.
3. To update their knowledge regarding COVID 19 guidelines so that they can deliver efficient services .

About the effectiveness of training programmes.

Director General Health services were intimated with the aim and objectives of this one-day hands on workshop, to be conducted at All India Institute of Medical Sciences(Rishikesh). All Chief Medical Officers of different districts were informed and sensitized for this good cause. Most of them welcomed this concept and were happy for conducting workshops/CME for medical officers on regular basis. Out of the 13 districts, 10 had participated in this program. Total 30 Primary care physicians attended the same. At first, everyone was screened for COVID-19 with a checklist prepared by COVID19 task force team and thermal screening. This session commenced with a pre-test followed by lectures and discussions on various aspects of COVID-19 preparedness and hands on skills required to manage primary care in a critical situation and ended

with a post test. All participants were asked to fill the self-administered questionnaire where they had been enquired about their prior exposure of any workshop, their willingness to attend for similar workshops in future and their expectations from this workshop. Moving forward with the program, the participants were oriented about the necessity of primary care and family medicine in the strengthening of the overall well-being of the community. The session was commenced with a pre-test assessing the knowledge of the participants on COVID 19, management of trauma in a primary health care setting and diagnosing X-Rays, followed by lectures, discussions, and hands-on training on basic lifesaving skills. A visit was then organized for the attendees to the super-specialty section of the institute.

Source: Kumar, et al.: Capacity building programme for primary care physician. Journal of Family Medicine and Primary Care 822 Volume 10 : Issue 2 : February 2021

The session was then concluded by a post-test assessment and suggestions were taken from the listeners for future improvements. COVID-19 preparedness at primary care Screening of patients at periphery All participants were demonstrated that how to screen COVID-19 suspects by a checklist exclusively prepared for screening of patients. Role play was conducted among participants for same. Emphasis was given to mild and moderate symptomatic cases and their tentative guidelines for isolation. Uses of masks and precautions to be taken during wearing of face mask were very well demonstrated by microbiologist.

Conclusion:

This paper is theoretical reviews of e-training programmes developed by the government for improving the service delivering quality of healthcare sector. In this study the ICT based initiatives of government and their impact to defeat the covid 19 situation is studied.

As this paper has special reference to Uttarakhand states so the researcher took a help of secondary data and article published about the success of workshop conducted at AIIMS ,Rishikesh. All the participants of this training programmes were happy and feels lots of improvement in their knowledge.

Similar workshop was also conducted by Laiberte et al. (2010) and Romero Rodriguez et al. (2019).[15] According to J I Vidal-Pardo et al., a simple intervention like training workshop for the primary care clinicians can improve the quality of care for diabetic patients. It was a multifactorial intervention and was proved to be more efficient than the intervention targeted against only one component. This finding strongly corresponds with our study as the certificate program conducted here was also a multifactorial intervention where the participants were trained about many different yet interlinked components.[16] Online training workshop for primary health care provider's knowledge in diabetes mellitus management in China by Mu-Hong Wei et al., achieved a significantly increase in their knowledge regarding the subject.[17] These findings will encourage us to conduct similar online webinar for primary care physician to update their existing knowledge.

All these studies stated that timely awareness and strong public health and primary care always control many pandemics.

Frequent skilled based training programmes always helps in improving the knowledge ,skills and capacity of health service providers. Both medical and paramedical staffs are benefitted by this kind of initiatives of government.

Hence, government should implement more policies and provides more emphasis on electronic based training programmes to fully automated the healthcare sector of India. so ,that in coming future the conditions like Covid 19, if emerged must be tackled more effectively and well in time.

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