



Committed to Safer Patient Care

CAHO NEWSLETTER

January 2019

2019
FREE
NEWSLETTER

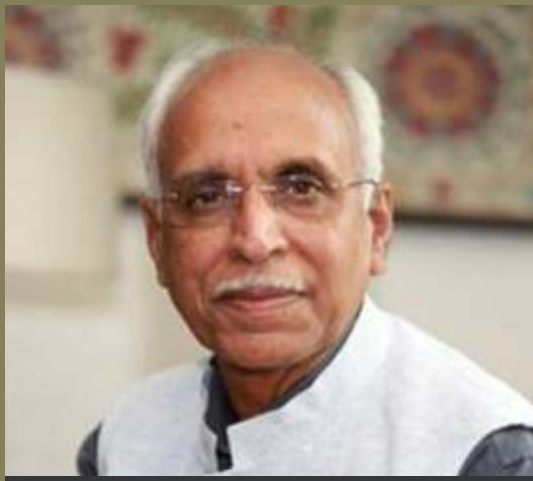


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FROM THE PRESIDENT'S DESK



Dr Vijay Agarwal
President, CAHO

CAHO'S YEAR IN REVIEW: THE BEST OF 2018

We are coming to the end of 2018. What a year it has been for CAHO! We can surely look back with satisfaction the successful completion of our annual events - CAHOCON and CAHOTECH 2018. It has been possible because of the contribution and enthusiasm of a lot of you under the leadership of Dr.Lallu Joseph, Dr. Nalla Palaniswami (CAHOCON), Dr. Narendranath and Dr. Nagendra Swamy (CAHOTECH). The level of pre-conference activities were taken to a different height by vision and dynamism of Mr. Sameer Mehta. We are sure that CAHOCON 2019@ Mumbai with Dr. RajendraPatankar (Org. Secretary) and Dr. Alexander Thomas (Org. Chairman) will be no exception.

Additionally, we have conducted more than 90 training programmes all over the country. We now can probably be called the training Institute of healthcare quality in India.

We have certified more than 650 professionals for basic quality implementation and 158 professionals for advanced quality implementation. These CPQIH have become our ambassadors in true sense!

One of our most successful program has been to train professionals for basic hospital infection control practices. This program led by Dr. Jayalakshmi has been conducted more than 30 times and trained more than 1200 professionals!

120+ lab professionals (CPQIL) were trained towards implementation of ISO: 15189 standards under the leadership of Dr. Aparna Jairam.

Basic National Disaster Life Support workshops (4) in association with SEMI and Enhanced Clinical Communication Workshops (10) in association with AHPI were held.

Several new programs were launched –

- Fire Safety & Emergency Preparedness Training program- in association with Cholamandalam MS Risk Services Ltd. 8 programs have been conducted within 3 months of launch.

- Nursing Communication program was developed and launched by the initiative of Dr. Lallu Joseph, Mrs. Gayathri Sandeep & Mrs. Leena Chandrasekaran. 4 training workshops have been conducted after the launch in end October.

- Basic Course on Cyber Security in Hospitals- in association with InnovatioCuris was conducted in Bangalore and was well received.

- A free Basic online program has been launched for CSSD technicians in association with 3M.

Besides this, we organized 15 webinars for both hospitals & laboratories. Six more hospitals in India were declared as CAHO affiliated Centres for Quality Promotion (CQP) this year, taking the total to 20.

All this would not have been possible without the active participation of individuals and support from our member institutions and our Governing Committee.

We need to especially thank our office staff led by Dr. Sakshi Sharma.

Thanks to the efforts of Dr. Anuradha Pichumani, we are actively collaborating with ISQua. CAHO has become the institutional member of ISQua and our efforts have also been appreciated by QCI.

There are many many more heroes and heroines in the success of CAHO about whom I have not been able to mention in this communication.

Our mission for 2019 should be to focus on research, developing programs on leadership and clinical governance, and creating templates for facilitating hospitals.

To remain on the upward journey we must remain consistent in our actions. It is not what we do once in a while that shapes our lives, but what we do consistently!

I would like to wish a very Happy New Year to all the members of CAHO family and look forward to meet you at CAHOCON 2019 @ Mumbai!!

EDITORIAL TEAM



Dr. J Jayalakshmi



Dr. Anna George



Mr. J Adel



Dr. Sakshi Sharma

FROM THE DESK OF SECRETARY GENERAL



Dr. CM Bhagat
Secretary General - CAHO

FROM THE
DESK OF
SECRETARY
GENERAL

CAHOTECH 2018 – A REPORT



Dr. Narendranath.V
Joint-Secretary

CAHOTECH 2018
– A REPORT

Year 2018 has been a wonderful & eventful year for CAHO where we have been able to start many new programmes and reach out to more new people. Our achievements have been, introducing infection control programmes, communication programmes, fire safety and acceptance of our advance workshop trained personnel as assessor for entry level waste bench mark. Academic activity has reached new horizons from where there will be no looking back. Success of CAHOCON 2018 and CAHOTECH 2018 was noticed by the industry.

While we have been enrolling new members as individuals, our success in retaining on to Institutional members has been slow. Our group activities on various messaging platforms has been superb. Many of our members have been honoured at various platforms, and quality movements have been on the go. Congratulations to all.

We had an article in a small newspaper in Jabalpur about NABH. We forgot about it but I would like to remind all of you – don't forget the message - NABH and its implementation has become a major industry, drawing its fund from health care industry, thereby depleting the resources for patient care. At the same time there has been significant resentment in - I would say - majority of medical practitioners, though things have been constantly changing. I would like to emphasize that any such quality initiative when changed from voluntary to mandatory (for insurance work by IRDA) pushes it to commercial platform and has the potential to be

misused. Mushrooming of consultants has been unregulated. We definitely need a course correction and these corrections need to be accepted and not resisted out of selfish interest. Health care industry has yet to learn and develop a mechanism to shield itself from vested business interest.

Attitude of quality manager has to be understood from a psychologist view point. Giving instruction and orders is easy when you don't have to do it yourself (in my opinion). In WhatsApp, many of the instructions are spontaneous and without taking into consideration the addressee, and situational aspects. Decisions are to be based on multiple criteria and situations – patient care is priority. And once given, it leads to various types of bias which the person who initiated it finds difficult to overcome. Quality managers cannot become command centres – they are facilitators of the system. Therefore before creating guidelines, interacting and taking feedback of actual user is a must and you need to be wise enough to understand the feedback.

See how many of us reacted to that news article instead of reading and analyzing it as feedback – though we have been talking of patient feedback all the time.

I hope this quality movement under the CAHO banner grows further in 2019 and beyond.

Wishing you a very happy New Year. Enjoy life and spread happiness. You should be remembered for your good deeds.

CAHOTECH - 3rd International Conference on healthcare technology was organised on September 29 at Royal Orchid Resort and Convention Centre, Bangalore. The event was organised with the theme - "Adoptable Future Technologies for Indian Hospitals".

CAHOTECH 2018 was attended by around 300+ delegates and had speakers from industries, hospitals and startup companies. Dr Nagendra Swamy S C, Advisor, Manipal Health Enterprise and Dr Narendranath V, Chief Administrator, Ramaiah Medical College Hospital were the Organizing Chairman and Secretary respectively.

The event was inaugurated by Dr. Devi Shetty, Chief guest, Dr. Dhashayani, Guest of honour, Dr Vijay Agarwal, President CAHO, Dr CM Bhagat, Secretary General, CAHO, Dr Girdhar Gyani, Director General, AHPI, Dr Nagendra Swamy S C and Dr. Narendranath V.

"Adaptable future technology for Indian Hospitals" was the theme of CAHOTECH 2018. In line with the theme, the event saw an enviable line-up of highly renowned speakers who shared their thoughts and ideas on the future of healthcare industry.



Dr. Devi Shetty gave a realistic look at the adoption of technologies in treating patients by narrating his experience in his practice and encouraged all to switch to technologies for better healthcare outcomes. Mr. Siddharth Shah-Industry Analyst- Frost & Sullivan and Mr. Shashank N D Founder-CEO of Practo Technologies delivered the keynote address. Entire



day programme was packed with various sessions presented as hospital and industry presentations where experts from each domain presented their work and contribution in healthcare technology adoption and invention.



Healthcare startups were given special opportunities in this conference to showcase their products and give a bird's eye view of their innovation and two best healthcare startups were awarded. This was further taken to discussion during a networking session after the conference. Two Best Awarded Innovations from CAHOTECH 2016 were given special opportunities to present their current status and share their journey in healthcare.

CAHOCON 2019 was launched with great pomp and show. Dr. Vijay Agarwal introduced the conference to the audience and detailed the importance of such events in healthcare. On spot registration was opened at discounted rates for all the participants of CAHOTECH 2018.

Though all sessions and speakers were par excellence,

CAHOTECH 2018
— A REPORT

but the Panel discussion on 'Challenges in Adopting New Technologies' was tad more interesting due to presentation style of the speakers.

The highlight of the event was the excellent teamwork, precise coordination and planning that started about a year ago under the leadership of Dr. Vijay Agarwal, Dr. Nagendra Swamy & Dr. Narendranath. The organizing committee and various sub - committees were formed,

to whom various tasks were delegated and all the members did absolute justice.

CAHOTECH 2018 was a great success, and was well attended by representatives of hospitals, start-ups and technology companies alike. Accompanying trade exhibition displayed latest technologies from start-ups and medical technology companies.



PATIENT SAFETY AND QUALITY IN EMERGENCY DEPARTMENT



Dr. S. Saravana Kumar
GM – Unit Head
Dr Mehta's Hospitals, Chetpet, Chennai

PATIENT SAFETY AND QUALITY IN EMERGENCY DEPARTMENTS

Emergency departments in our hospitals are high risk areas of compromise in patient safety, and prone for errors due to their very nature of functioning.

It is important for us all to understand how Emergency Units are different from others, and why it is prone for high risk and errors.

- All Emergency Units are comparatively open access area 24x7 with limited Security control, and it is Impossible to have a controlled access entry like an OT or an ICU.
- It is impossible to provide PPEs to all visitors and relatives to protect from cross infection.
- Clinically not possible to differentiate and isolate communicable diseases from the very start as evaluation and diagnosis is not fully available.
- Over crowding.
- Blood spills from bleeding patients like trauma, Body fluid spills over bed/floor.
- Inadequate manpower. Lack of adequate specialists and skilled doctors, Nurses, Paramedics trained in handling Emergencies.
- Bounded rationality of decision making by Emergency Doctors and Staffs.
- Unrealistic demand and expectations from the attenders.
- Not possible to shut down the unit and follow full disinfection procedures as in ICU or OT.
- No clearly defined Emergency department structure, process, or clinical protocols suitable for our country and disease patterns.
- Multiple transitions (Ambulance personal to staff nurse, Nurse to Nurse, nurse to Doctor, Doctor to nurse, Doctor to doctor) within a very short time.
- Little or no time for case transition (Handover) during shift change.
- Very few units with a flat hierarchy culture.
- Physically, Mentally and emotionally tiring for Healthcare providers in the unit.
- Risk taking behavior of staff.

- Minimal budget allocation as it is considered “Cost” Unit, not revenue unit.
- Additional responsibilities in the unit on handling disaster events, Mass Causality Events, Codes within the institute.

A complete recipe for disaster in patient safety!

Understanding all these major facts, CAHO has collaborated with a Professional Emergency Medicine Society like Society for Emergency Medicine, India to work together in sensitizing the hospitals and hand holding the hospitals in improving quality and patient safety in their Emergency Units.

CAHO and SEMI has developed and launched two training programs tailored to suit Indian Emergency departments

- 1) Program on Quality Implementation and Patient Safety in Emergency Department
- 2) National Disaster Life Support (NDLS) Basic training program for hospitals

CAHO is also working together with SEMI to develop a Clinical Procedural Safety Training program for Nurses.

CAHO along with other major stakeholders like AHPI and SEMI, drafted a one of a kind guidelines and checklist for improving safety and Quality in Emergency Departments in the Country by working with Indian Space Research Organization (ISRO), adapting ISRO best practices for safety into Emergency Departments, called Health QUEST guidelines.

The guidelines specifically address some of the issues detailed above and gives simple structure, process and performance measure guidelines that can be readily adapted by hospitals in their Emergency Units.

The guidelines and implementation guide video is available on the CAHO website <https://www.caho.in/health-quest>

A six months study done at Dr Mehta's Hospitals, Chennai on health QUEST showed promising improvements in many key performance indicators for ERs, including a reduction in mortality rate at emergency units, and is currently implemented at many Emergency Units across the country.

INFECTION CONTROL DURING NATURAL CALAMITIES AND EMERGENCIES



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INFECTION CONTROL DURING NATURAL CALAMITIES AND EMERGENCIES

Disaster, by definition is an event disrupting the normal conditions of existence, and causing a level of suffering that exceeds the capacity of adjustment of the affected community.¹ Natural disasters are catastrophic incidents originating from atmospheric, geologic and hydrologic changes. Disasters include earthquakes, volcanic eruptions, landslides, tsunamis, floods and drought². In recent decades, disasters have resulted in substantial economic damages as millions of people have been killed or disabled. These are often associated with sudden or delayed onset of illnesses which have serious implications on health, social and economic status. International Federation of Red Cross and Red Crescent Society in its latest report (1999-2008), stated that over 7100 disasters occurred across the globe causing 1,243,480 deaths and a damage of over one billion dollars. On the contrary, in Asia-Pacific regions in 2005, 46% out of the total severe natural disaster events reported worldwide (246 out of 650) were recorded in Asia killing over 97,000 and adversely affecting > 150 million people. Likewise, in 2006, 28 million people were affected from 174 disasters. In the south pacific region, average annual direct losses from natural disaster events are estimated at \$284 million.³ Developing countries are severely affected by such calamities due to their inadequate infrastructure, lack of awareness and resources and poor disaster-preparedness systems.² Infectious disease outbreaks are not a usual sequel of a disaster episode. These are sometimes being overemphasized by health officials and media after a disaster and results in panic, confusion and unnecessary disturbances to the public.⁴ Natural disasters, particularly rapid-onset disasters, increase the mortality and morbidity due to blunt trauma, crush-related injuries, projectile injuries, burn injuries and drowning. Although reports including deaths due to communicable diseases after a disaster are less common, statistics include them as the top five causes of death. The commonly occurring infections in such emergencies include diarrhea, acute respiratory infections, measles, malnutrition, and in endemic zones, malaria and typhoid⁵. These infections can be prevented by adopting appropriate infection control strategies.

Predisposing Factors for transmission of Communicable diseases

Outbreaks are less often reported after earthquakes, volcanic eruptions and tsunamis, and the risk is relatively high after flooding. The risk for transmission of diseases is commonly associated with the size and characteristic of population displaced. Usually, outbreaks are more common in conflict-affected areas than in disaster affected areas, wherein two thirds of deaths are reported from these⁶. Sometimes population displacement is due to long-term conflict in an area and leads to malnutrition in people affected which also serves as a predisposing factor for communicable diseases and the deaths reported. Other factors responsible are availability of safe potable water, sanitary facilities, nutritional status of the people affected, immunity towards vaccine preventable diseases like measles and access to healthcare services.⁷

Communicable diseases associated with disasters

The communicable diseases (Table 1) associated with natural disasters are divided into following categories

- I. Waterborne diseases
- II. Diseases associated with overcrowding
- III. Vector borne diseases
- IV. Infections in trauma wounds and injuries
- V. Infections transmitted through corpses

VI. Disaster-related disruptions

Table 1. Diseases affecting displaced populations in disasters⁸

Disease	Symptoms	Environmental risk factors	Health hazards
Acute upper respiratory tract infections	All symptoms of the common cold, fever and heavy coughing. Chest pain and pain between shoulder blades in pneumonia	Crowding, poor hygiene	Influenza and pneumonia may cause severe complications, especially in groups at risk
Diarrhoea	Watery stools at least three times a day, with or without blood or slime. May be accompanied by fever, nausea or vomiting	Contaminated drinking-water or food, or poor sanitation	Dehydration, especially in children, shown by dark coloration of urine, dry tongue or leathery skin
Measles	A disease of early childhood, characterized by fever and catarrhal symptoms, followed by maculopapular rash in the mouth	Crowding, or poor hygiene	Several constitutional symptoms, high case fatality rate
Malaria	Painful muscles and joints, high fever with chills, headache, possibly diarrhea and vomiting	Breeding of Anopheles mosquitoes in stagnant water bodies	Disease may rapidly become fatal, unless medical care is provided within the first 48 hours
Meningococcal meningitis	Infected persons may show no symptoms for a considerable time. When an epidemic is in progress, headache, fever and general malaise will suggest the diagnosis, which must be confirmed by lumbar puncture	Crowding	Often fatal if untreated at an early stage; neurological problems in survivors
Shigella Dysentery	Diarrhoea with blood in the stools, fever, vomiting and abdominal cramps	Contaminated drinking-water or food, or poor sanitation, poor hygiene	Case fatality rate may be high
Viral hepatitis A	Nausea, slight fever, Pale colored stools, dark colored urine, jaundiced eye whites and skin after several days	Poor Hygiene	Long-term disabling effects
Louse-borne typhus	Prolonged fever, headache, body pains	Unhygienic conditions leading to lice infestations	May be fatal without treatment
Typhoid Fever	Starts off like malaria, sometimes with diarrhea, prolonged fever, occasionally with delirium	As for diarrhea	As for diarrhea
Cholera	Modest fever, severe, but liquid diarrhea (rice water stools), abdominal spasms, vomiting, rapid weight loss and dehydration	As for diarrhea	As for diarrhea
Dengue and dengue hemorrhagic fever	High fever, headaches, pain in muscles and joints, red spots on skin	Breeding of Aedes mosquitoes in natural or artificial containers, filled with water	Dengue usually runs a mild course. DHF, however, is often accompanied by heavy
Diphtheria	Inflamed and painful throat, coughing	Crowding, poor hygiene	A secretion is deposited in the respiratory tract, which can lead to asphyxiation
Tetanus	Muscles spasms, starting in the jaws and extending to the rest of the body over several days	Poor hygiene, injury	Fatal
Rabies	Fatigue, headache, disorientation, paralysis, hyperactivity	Bites from infected animal host	Fatal if untreated
Relapsing fever (Louse-borne or tick-borne)	Acute high fever at intervals	Unhygienic conditions leading to lice or tick infestations	Often fatal in untreated persons, depending on immunity levels
Heat stress	Elevated body temperatures, nausea, vomiting, headache	Excessive temperatures	Risk of coma

I. Waterborne diseases

Waterborne diseases are one among the common hazards of natural disasters especially after flooding and population displacement. Contamination of drinking water can lead to diarrheal disease outbreaks. An example is the isolation of Vibrio Cholerae (O1 Ogawa and O1 Inaba) and enterotoxigenic Escherichia coli in diarrhea presenting cases after population displacement by flooding in Bangladesh in 2004.⁹ In India, it was reported from West Bengal in 1998 in a large (> 16000 cases) Cholera epidemic (O1 Ogawa) after flooding. Likewise, in Indonesia, a study conducted between 2001 and 2003 showed the isolation of Salmonella enteric serotype paratyphi A from disaster exposed cases.¹⁰

There was an increase in diarrheal cases incidences in Thailand after Indian tsunami in 2004.¹¹ A Cholera epidemic with a high case fatality rate 6.4% (303 out of 4722) was reported 9 months after an earthquake in Haiti.¹² The contributing factors were poor sanitary conditions, contaminated water supplies and inadequate personal hygiene which made this population highly susceptible to diseases with low immunological status.

Heavy rains and floods may also contaminate water supplies and aid in transmission of Hepatitis A and E. In most developing countries, Hepatitis A is endemic and children are usually immune to this infection. Hence, there is low risk of large outbreaks of Hepatitis A in these regions. In Hepatitis E infection, the outbreaks follow heavy rains and floods. Although the infection is mild and self limiting, it can adversely affect pregnant woman causing a fatality of upto 25%.¹³ Sporadic Hepatitis E cases and clusters were reported from Pakistan after 2005 earthquake among the population displaced.¹⁴

Other pathogens like norovirus, toxigenic and non-toxicogenic V. cholera have been isolated among populations displaced by Hurricanes Allison (2001) and Katrina (2005) in USA.¹⁵⁻¹⁶

Leptospirosis is another infection transmitted

through direct contact with contaminated with water, food and soil (contaminated urine from infected rodents). Likelihood of exposure to infected rodents is more in areas affected by floods. Such outbreak incidences have been reported from Mumbai, Surat and Taiwan in 2000-2001.¹⁷⁻¹⁹

II. Diseases associated with overcrowding

Crowding is a common outcome of population displacement as a consequence of natural disasters. This increases the risk of infection transmission due to poor ventilation, inadequate nutrition supplies and crowded shelters. Children <15 years are particularly susceptible for Measles if non immunized.²⁰ Higher immunization coverage is required to prevent and control such outbreaks as crowded living conditions facilitate their transmission. Measles outbreaks both as sporadic and clusters were reported from Pakistan 2005 after earthquake (> 400 cases) and Indonesia 2004 after tsunami in Aceh (35 cases).²¹⁻²²

Meningitis caused by *Neisseria meningitidis* has been shown to present in Pakistan and Indonesia after the natural disasters (earthquake and Tsunami respectively)²¹⁻²². Although reports of large outbreaks are not available for this infection, mortality has been documented in affected areas and populations displaced by conflict.

Incidences of Acute Respiratory Infections (ARI) are common in children < 5 years of age and accounting for 20% of death with a majority resulting from pneumonia.²³ Lack of access to medical care, crowded camps and poor hygiene and ventilation requirements are the predisposing factors for ARIs in disaster affected areas. Bam earthquake in Iran in 2003 reported that 14% of the total population (75586) displaced acquired this infection.²⁴ Large number of deaths has been reported from Pakistan 2005 after earthquake and Aceh 2004 after Tsunami²¹⁻²². Although rare, but cases of H1N1 influenza were also reported after the earthquake in Japan in 2011.²⁵

Tuberculosis is an emerging infection in crowded shelters, refugee camps and closed quarters where displace population is accommodated post disaster. Reasons for transmission may be poor access to healthcare facilities and interruption of on-going treatment or control programs which may lead to increased burden of disease. In order to control these outbreaks TB prevention strategies should be designed on priority. An example is TB control efforts taken after Hurricane Katrina in USA in 2005.

III. Vector borne diseases

Vector borne diseases generally follow the meteorological events such as cyclones, flooding and hurricanes. These disasters can favour the mosquito breeding and transmission of diseases like malaria, dengue, leishmaniasis etc. Though the initial breeding sites wash away by heavy rains or flooding, the situation becomes congenial for new breeding sites once the water stagnates ideally few weeks after the calamity. Crowded shelters and poor sanitation facilities further contribute to the problem and promote the transmission of infection through vectors. Incidences of malaria were observed in Dominican Republic due to lack of good sanitary facilities and crowded camps.²⁶

Dengue fever has strong seasonality usually occur following heavy rainfalls and floods. *Aedes aegypti*, causative agent of Dengue breeds in clean or stagnant water. Changes in human behavior like exposure to mosquitoes or migration from non-endemic to endemic areas and also changes in habitat that promote breeding are some risk factors associated. An outbreak was reported in 2008 in Brazil following a

flood disaster wherein 67 deaths were documented out of 57010 positive cases.²⁷

IV. Infections in trauma wounds and injuries

Disasters bring with them a lot of casualties and trauma. Wound injuries bear potential risk of infections like Tetanus, Staphylococci, Streptococci and fungal infections. Contaminated wounds, particularly those infected with soil may develop tetanus (caused by *Clostridium tetani*) if non-immunized. It may lead to a serious illness or death. Cases were reported from Indonesia after Tsunami (about 2 weeks later) where 106 cases were found positive including 20 deaths. Similarly, cases were recorded in Pakistan after the earthquake.

Another risk of infection is with fungus which is found in soil in semiarid regions. Infection due to *Mucormycete Apophysomyces trapeziformis* was observed in skin and soft tissues of wound injured victims after Tornado in USA in 2011.²⁸ Other fungi include *Coccidiomycosis* which caused infections in post disaster period.²⁹

V. Infections transmitted through corpses

Deaths primarily due to a natural disaster, do not pose a threat for epidemics as the environment in which pathogens harbor is no longer available. However, Pathogens including blood-borne viruses (e.g. Ebola virus, Lassa virus, Marburg virus, Crimean-Congo hemorrhagic fever virus) and enteric pathogens (e.g., *V. cholerae*) may be transmitted through dead corpses as they remain alive in the body for some time. As suggested by Morgan³⁰, these risks of infections transmitted by dead bodies require specific precautions.

VI. Disaster-related disruptions

Power cuts related to disasters may disrupt water treatment and supply plants leading to increased risk of water-borne diseases. Lack of power may also affect proper functioning of health facilities e.g., preservation of the cold chain. An increase in diarrhoeal incidence in New York City followed a massive power outage in the United States in 2003. Investigations revealed an association with the consumption of meat and seafood spoiled due to interruptions in refrigeration facilities.³¹

Management of communicable diseases

A. Pre-Disaster Period

a. Evaluating risk of transmission

The evaluation of the risk of an outbreak should be performed in a systematic way to identify the disaster impacts and health needs including the following²:

1. Identify the endemic or epidemic diseases commonly prevalent in the area
2. Population demographics (size, number, location and density) and living conditions
3. Availability of Safe water and adequate sanitation facilities
4. Likelihood of Proliferation and Exposure to disease vectors
5. Determine the nutritional status and immunization coverage among the population
6. Facilities to access healthcare and effective case management.
7. Extent of wound Injuries

The identified risk factors can be used for preparing and policy making before disasters. This includes collaboration with public health organizations and assessing the arrangements for equipments and

supplies, tools for rapid diagnosis of diseases, and health services needed in outbreak situations.

b. Developing Emergency Preparedness Program

Emergency response plans are needed to detect communicable disease outbreaks early and stopping the mortality, spread, and potential impact. These are developed before disasters as a multifaceted operation requiring persistent review and modification of preparedness missions.³² An Emergency Preparedness plan should include

1. Communication with organizations participating in worldwide surveillance activities
2. Training in identifying and management of specific potentially threatening diseases
3. Increasing the awareness of potentially affected population about communicable diseases
4. Development and implementation of segregation and isolation strategies;
5. Identification and assignment of staff roles and responsibilities.
6. Prerequisites for quick referral to a health facility

Emergency preparedness plans should be tested regularly to check the preparedness and follow-up actions should be appropriately taken as per the requirements identified from testing and debriefing.

B. Prevention Strategies in Post Disaster Period

a. Site Planning

Site planning must ensure the most rational organization of space, shelters and facilities required for the provision of essential goods and services and should be developed in compliance with the existing international guidelines.³³ Typical requirements include providing 3.5 m² of shelter space per person, building one latrine for every 20 persons and locating the latrines at 30 m distance from shelters and 100 m distance from water supplies.³⁴ Practically, it must provide adequate solutions to water and sanitation needs and meet the minimum space requirement per person to prevent water-borne and air-borne diseases.

b. Safe Food and Water Supplies

Food safety is critical requirement for disease prevention in natural disasters. The World Health Organization recommends five keys for ensuring the safety of food supplements following a disaster event³⁵;

- Key 1: Preserve clean - (prevents the growth and spread of hazardous microorganisms)
- Key 2: Separate cooked and raw food (microorganisms transfer prevention)
- Key 3: Cook thoroughly (kills dangerous microorganisms)
- Key 4: Preserve food at harmless temperatures (microorganisms growth prevention)
- Key 5: Consuming safe water and raw materials (contamination prevention)

Furthermore, water borne diseases are a main cause of communicable disease after disaster. Hence, ensuring constant delivery of safe drinking-water is an important preventive measure to be applied after a natural disaster. Chlorine as recommended by WHO, is a cost-effective, easily available chemical and also active against almost all waterborne pathogens.⁵ The sphere project proposes the following minimum standards for the water supply in disasters:

- Sufficient access to safe water,
- Water quality should be maintained based on

international guidelines, and

- Water consumption facilities and goods should be safe.

People should be provided with sufficient facilities and provisions to collect, store and use adequate quantities of water for drinking, cooking and personal hygiene, and to ensure that stored water remains safe until consumption.³⁶⁻³⁹

c. Sanitation Facilities

Personal hygiene is an important issue during disasters as the personal hygiene habits influence the general health status of the population. Soap and water should be provided to all disaster victims and rescue personnel. It is necessary to provide sufficient amounts of soap (minimum of 250 g per person per month) and to educate the community on personal hygiene and prevention of fecal-oral disease.⁴⁰ Latrines should be constructed under Relief programs and education must be provided to the community to use them.

d. Access to Healthcare services

Access to the primary care services is critical to prevention, early diagnosis and treatment of a variety of diseases, prevent mortality and morbidity as well as providing secondary and tertiary care.⁴¹ Although several management protocols are available, to ensure appropriate treatment at every contact point between patients and healthcare services those in accordance with the national guidelines only must be used. Rehydration therapy is the key to manage diarrheal diseases for any etiology of acute gastroenteritis and should start as soon as possible before the results of other investigations are obtained. Laboratory facilities are not a priority in initial phase of outbreak situations as the diagnosis is majorly based on clinical manifestations of the disease. These can be provided later as required and particularly rapid diagnostic tests are beneficial. Furthermore, standardized guidelines for diagnosis and treatment of the most common infectious diseases are needed. The Inter-agency Emergency Health Kit 2006 (IEHK 2006) which is designed by world health organization to meet the initial primary health care needs of a displaced population is useful in disaster scene. It can be set in immediate aftermath of a natural disaster or during an emergency and includes essential medicines, medical facilities and also clinical protocols needed in the context of emergency situations.⁴² Presently, the emergency preparedness plans are not at par with the required standards in developing countries particularly in remote areas as the surveillance systems and even basic facilities (clinical and laboratory) are not functioning and an epidemic may go unnoticed.

e. Vector-borne disease control

Specific preventive interventions for vector-borne diseases must be based on an assessment of the local situation, including the prevalent parasite species and the main vectors.

- Implementation of preventive measures against mosquito breeding should be adopted soon after the floods. These include indoor residual spraying of insecticides and distribution of insecticide-treated nets specifically long-lasting insecticide-impregnated nets in areas where their use is well-known and accepted.
- Early detection of a possible outbreak can be attained by monitoring weekly case numbers as part of the surveillance/early warning system. Periodic laboratory confirmation of rapid test-positive fever cases is recommended to track the slide/test positivity rate.

- For Malaria, treatment with artemisinin-based combination (ACT) therapy should be provided to the victims in disaster-affected areas with falciparum malaria. An active search for fever cases may be helpful to reduce mortality.
- For dengue, the main preventive efforts should be directed towards vector control. Social mobilization and health education of the community should emphasize elimination of vector breeding sites as much as possible, specifically by:
 - Continuous covering of all stored water containers to prevent access to egg-laying female mosquitoes;
 - Removal or destruction of solid debris where water can collect (bottles, tyres, tins, etc.)⁴³

f. Immunization

- Mass measles immunization together with vitamin A supplementation are
- Immediate health priorities following natural disasters in areas with inadequate coverage levels. Where baseline coverage rates among those aged <15 years are below 90%, mass measles immunization should be implemented as soon as possible. The priority age groups are 6 months to 5 years, and up to 15 years if resources allow.
- Current typhoid vaccines are not recommended for mass immunization campaigns to prevent typhoid disease. Typhoid vaccination in conjunction with other preventive measures may be useful to control typhoid outbreaks, depending on local circumstances.
- Hepatitis A vaccine is generally not recommended to prevent outbreaks in the disaster area.
- Immediate provision of Tetanus Diphtheria (TD) vaccine and tetanus antitoxin to persons injured during the earthquake and those undergoing emergency surgeries, is essential.⁴⁴
- The cost of the cholera vaccine, and the logistic difficulties involved with the administration have prohibited its widespread use. Although helpful in specific circumstances, it should not be viewed as a replacement for the provision of adequate water and sanitation. The usefulness of the cholera vaccine, relative to other public health priorities, has not been evaluated in disaster-affected areas.⁴³

g. Management and handling Dead bodies

The mass management of dead bodies is often based on the false belief that they represent an epidemic hazard if not buried or burned immediately.⁴⁵

- Burial is preferable to cremation in mass casualty situations.
- Every effort should be made to identify the bodies.
- Mass burial should be avoided if at all possible.
- Families should have the opportunity, and access to materials, to conduct culturally appropriate funerals and burials according to social custom.
- Where existing facilities such as graveyards or crematoria are inadequate, alternative locations or facilities should be provided.

For workers routinely handling dead bodies

- Ensure universal precautions for blood and body fluids
- Ensure use and correct disposal of gloves
- Use body bags if available

- Wash hands with soap after handling dead bodies and before eating
- Disinfect vehicles and equipment
- Dead bodies do not need disinfection before disposal (except in case of cholera, shigellosis, or haemorrhagic fever)
- The bottom of any grave must be at least 1.5 m above the water table, with a 0.7 m unsaturated zone.

h. Healthcare Education

This is a very important component of the disaster management program with respect to prevention of communicable diseases. An educated and aware population can maintain good hygienic practices and thereby control the transmission of infections due to overcrowding. Educational programs should be designed and implemented in these settings as part of the disaster management interventions.

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DISASTER MANAGEMENT IN HOSPITALS - Lessons learnt in the Light of the Kerala floods



Dr. Anna George

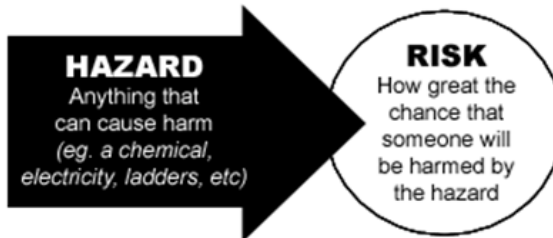
GM-Quality

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“Bad things do happen in the world, like war, natural disasters, and disease. But out of those situations always arise stories of ordinary people doing extraordinary things”

- Daryn Kegan

Risk is defined as a probability or threat of damage, injury, liability, loss, or any other negative occurrence that is caused by external or internal vulnerabilities, and that may be avoided through pre-emptive action.



A **hazard** can be **defined** as a potentially damaging physical event, social and economic disruption or environmental degradation.

A **disaster** “is a type of emergency that, due to its complexity, scope, or duration, threatens the organization’s capabilities and requires outside assistance to sustain patient and resident care, safety, or security functions.” (Kaiser Permanente)

Hazards are termed as **disasters** when they cause widespread destruction of property and human lives. Once a **hazard** becomes active and is no longer just a threat, it becomes a **disaster**. Both **hazards and disasters** are natural as well as manmade.

In India, experiences from the Gujarat earthquake of 2001, the Indian Ocean Tsunami of

2004 and the Kashmir Earthquake of 2005 have shown how disasters can bring life to a standstill. The most recent floods in Kerala in August 2018 was the worst of its kind witnessed in this century and shook the entire country and people owing to the magnitude of destruction and damage it brought along with it. According to the Kerala government, one-sixth of the total population of Kerala had been directly affected by the floods and related incidents. The Indian government had declared it a Level 3 Calamity, or "calamity of a severe nature". It was the worst flood in Kerala since 1924. Over 483 people died, 14 missing and about a million people were evacuated.

From a hospital’s perspective, majority of the hospitals and health centres were left crippled with flood water entering their structures and dwindling resources. Many hospitals had to do a forced evacuation of their patients while many hospitals found it difficult to replenish vital resources like power, water, medicines and manpower. Even those hospitals which were not directly hit by the floods found it a challenge since doctors and staff were unable to reach their place of work.

Rajagiri Hospital situated in Aluva, in Ernakulam district of Kerala was not directly hit by the flood. However, many employees and their homes were affected. Doctors and staff were did multiple shifts to ensure the smooth functioning of the hospital throughout these days. Accommodation and food was provided for these staff who were unable to return to their homes.

The hospital also acted as a nodal centre receiving patients from relief camps and stranded homes. A separate division was started in the Emergency Room for prioritizing treatment for flood victims free of

cost. Free medicines were delivered to over 20 relief camps in and around Aluva.

There were numerous relief camps set up throughout the state to cater to the accommodation and needs of people whose homes were affected due to the floods. Rajagiri Hospital set up a mini healthcare facility in the UC College, Aluva camp which was the biggest camp housing over 9000 inmates. A mini hospital including consultation, injection room, dressing room, crash cart, oxygen cylinders, ECG, nebulization, free medicines and ICU ambulance was set up to cater to the needs of the camp inmates. The ICU ambulance stationed at the camp helped to transport patients from other relief camps to the mini hospital and back. Critically ill patients were shifted to Rajagiri Hospital, Ernakulam General Hospital and Ernakulam Medical College.

A central drug depot was organized to provide free medicines to the flood affected victims. Drugs were brought in from all over the country.

What did we learn from the Kerala Floods?

1. One of the main insights received during the Kerala floods was that there still exists humanity, compassion and empathy in the hearts of our people. We witnessed a huge network created through phone, whatsapp and GPS which helped in the rescue of many stranded people. It was the Kerala youth who were the most active, who came out of the comfort of their own homes and jobs and were mentally, physically and emotionally involved in all rescue operations. The Kerala fishermen and their fishing boats saved many lives. Their bravery, presence of mind and selfless actions will be remembered by all for years to come.

2. Secondly, though there were adhoc operations being carried out by groups or individuals, a central command system and an orderly plan was not evidenced. The threat of the flood and orders for evacuation was well known in advance but nobody was prepared for the magnitude of damage it would create. It is because of this that many were stranded in their homes and unable to escape. Lack of awareness and heed to warnings by the government authorities was evidenced. A forced evacuation in the high risk areas and prior planning for set up of mass shelter homes with adequate supplies could have helped.

3. Thirdly, from purely a Hospital perspective, we saw that most hospitals are not prepared to handle a disaster due to the following reasons:

- Absence of a documented Hospital Disaster Management Plan;
- Lack of planning and preparedness to respond to disasters;
- Inadequate or complete lack of internal and external communication; and
- Lack of networking amongst hospitals.

When hospitals are affected by disasters the repercussions are three dimensional –health, social and economic. Hospitals may face both internal and external disasters. The impact of internal disasters such as a fire, hazardous material exposure, utility failures, etc., is typically limited to the hospital /healthcare facility while external disasters include scenarios such as floods, earthquakes, mass casualty events or epidemics where the hospital itself may or may not be affected but is a critical part of the larger response. As such three scenarios can be expected when disasters strike. They are as follows:

(1) Community Affected – Hospital Unaffected: During such scenarios, hospitals play a vital role in the larger disaster response being undertaken. For hospitals such scenarios would imply a sudden increase in demand because of the surge in the number of patients seeking medical attention. There is a possibility of the hospital facility getting overwhelmed if adequate preparedness and response mechanisms are not swung into action as soon as the disaster occurs.

(2) Community Unaffected – Hospital Affected: Such scenarios arise from the internal disasters of hospitals. As such, partial or complete evacuation and transfer of critical patients to networked hospitals is the key to successful response. Such scenarios also demand a high degree of preparedness on the side of the hospital administration and staff, as well as a speedy response from the surrounding community and hospitals.

(3) Community Affected – Hospital Affected: Such situations exacerbate the challenge posed to hospitals, as they not only need to cater to the existing demand on their facilities but also need to address the sudden increase in demand on their facilities because of the surrounding community being affected by a disasters. In such situations the hospitals may even find themselves facing the added challenges of loss of essential services, like water supply, electricity, medical gases, etc. and a reduction in man-power.

Disaster Management & Emergency Preparedness in a Hospital:

The three main steps in disaster preparedness for hospitals is as follows:

1. Planning:

The main objective of the Hospital Disaster Management Plan (HDMP) shall be to optimally prepare the staff, institutional resources and structures of the hospital for effective performance in different disaster situations. The HDMP shall be a written document and copies of the same shall be made available to all staff in the hospital. It shall have comprehensive actionable plans for disaster Preparedness, Response and Recovery corresponding to the Pre Disaster Phase, Disaster Phase and Post Disaster Phase respectively. All hospitals shall have a HDMP detailing but not limited to:

- (1) Hazard Vulnerability Analysis (HVA) for the hospital/health facility
- (2) Hospital Incident Response System

- (3) Individual Roles and Responsibilities
- (4) Hospital Capacity and Capability Analysis
- (5) Hospital-Community Coordination, and
- (6) Hospital Command Centre

2. Training:

Once the disaster plan is ready, all the stakeholders and staff must be trained accordingly. Each one must know their role as per the plan. For this a job sheet could be prepared and given to the appropriate personnel. The job sheet acts as a checklist and is easy to refer when faced with a real situation. It is advisable to make the training area or department specific since the staff only need to know and perform their part.

3. Mock Drills:

The efficiency and effectiveness of any plan must be tested by conducting mock drills. It could be simulation of an actual situation or even a table top exercise. It is required that a checklist be prepared based on the plan for each department/area and evaluated during the mock drill. The feedback of the mock drill must be shared with all stakeholders and corrections decided appropriately.

The Road Ahead:

In order to equip hospitals to be better prepared for managing such disasters, Rajagiri Hospital in collaboration with CAHO is organizing a one day conference cum workshop on **19th January, 2019 at Rajagiri Hospital, Aluva, Kerala**. The main intent behind this conference is to create an awareness among CEOs, Healthcare Professionals, Administrators, Quality & Safety Officers how to prepare a disaster plan for their hospitals and implement the same. We feel that it is need of the hour since disasters may strike at any time and we need to be prepared or else it will not only destroy the reputation of the hospital but more importantly jeopardize the lives and well-being of our patients.

To register for the conference please contact:

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ABSTRACTS OF CAHO WEBINARS CONDUCTED DURING THE LAST QUARTER

PRESERVATION OF MEDICAL RECORDS



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PRESERVATION OF MEDICAL RECORD

Medical Record is an essential component in modern health care management. It is the only reliable proof of treatment given to patient and is the basic indicator in accessing health status of the community. A lot of health information at various levels can be generated from Medical Records. Accurate and reliable information is needed for comparison of health status of the community and basic data for planning health care activities and can be obtained only from Medical Records. All these factors and the present day challenges imposed by Right to Information act 2005, Consumer protection act 1986, Medical Councils of India regulations, etc. emphasize the strengthening of Medical Records Maintenance System.

Medical Records are acceptable as useful evidence by court as per section 379 Indian Evidence Act 1872 amended in 1961 as it is agreed that documentation of facts during the treatment of a patient is genuine and unbiased.

We need to preserve medical records because they provide the health information for the following reasons: Continuity of care, past health information, Patient may forget – records reveal, for research and to produce in the court as an evidence. They provide the useful evidences for Medico legal cases Workmen's compensation cases, Insurance cases, Personal injury suits, Malpractice suits, Will cases, Income tax cases, Criminal cases, Human organ transplant cases etc. Hence they should be preserved comprehensively (simple and understandable), properly planned (avoid unnecessary forms and formats), economical (cost effective), accurate and complete, legible and timely.

When preserving the medical records, the following points needs to be considered

1. Selection of proper paper and ink otherwise the documentation may vanish in due course of time
2. Preservation (prevention of decay/ destruction)
3. Protection from insect attack: Dark and dingy places, crack, loose joints in floor and walls and presence of edible materials in the department may attract the insects / pests.
4. Protecting all documents including patient's files, registers, index cards, etc from water and dampness.
5. Preventing documents from being exposed to hot and dry climate. Regulating the temperature and humidity in the range between 22-25 degree centigrade and 45-58 % humidity respectively.
6. Safety measures against fire: Smoking, lighting of matchsticks in records department to be avoided. Providing and maintaining adequate fire extinguishers at all required places.
7. Care in handling: while filing, retrieving, transporting and returning patient records.
8. Prohibition of storing of chemicals near the records.
9. Covering with wire net (as frames) the windows and ventilators as safeguards against sabotage or pilferage.
10. Periodic facility inspection rounds to prevent electrical / plumbing / building mishaps.

How long to preserve medical records?

Medical records to be preserved ideally lifelong. However, the space constraints in the hospital will not permit them to be preserved so. Medical council of

India directives and some state laws define the duration of preservation of the records.

a) The issue of medical record keeping has been addressed in the Medical Council of India Regulations 2002 guidelines answering many questions regarding medical records. The important issues that have been addressed are as follows:

- Maintain indoor records in a standard proforma for 3 years from commencement of treatment (Section 1.3.1 and Appendix 3).
- Request for medical records by patient or authorized attendant should be acknowledged and documents issued within 72 hours (Section 1.3.2).
- Maintain a register of certificates with the full details of medical certificates issued with at least one identification mark of the patient and his signature (Section 1.3.3).
- Efforts should be made to computerize medical records for quick retrieval (Section 1.3.4).

b) PCPNDT act Section 29 / Chapter VIII 1994 on maintenance of records says that All records, charts, forms, reports, consent letters and all other documents required to be maintained under this Act and the rules shall be preserved for a period of two years or for such period as may be prescribed.

c) Under the DGHS guidelines, applicable to central government hospitals - The guidelines for the government hospitals have been published by the DGHS vide letter No. 10-3/68-MH dated 31-8-68 as follows:

- For inpatient medical records (case sheets) 10 years
- For medico-legal registers 10 years
- For outpatient records 5 years

The above requirement can be found in the "Hospital Manual" published in 2002 by the Directorate General of Health Services, MOHFW, GOI, in chapter 12 titled "Medical Record Services".

d) Under the state rules: As applicable in individual states. For example, as per Punjab Medical Manual (1934), the medicolegal record is to be preserved for 12 years.

e) Health and family welfare ministry of Kerala govt in its published GO (MS) No. 389 / 2009 / H&FWD dated 06.11.2009 has clearly defined the retention periods of medical records / other records

f) The Maharashtra Government has issued a resolution which says that OPD paper should be kept for three years, indoor case papers for a period of five years and in case of a medico-legal case, 30 years (ref GR No. JJH-29 66/49733)

g) Many state health departments have issued their laws and guidelines as to preservation of medical records.

Challenges in medical records preservations include maintaining the confidentiality and privacy, access control, storing and retrieving in a safe and secure manner and retention and destruction with preservation of confidentiality and privacy of information.

"Poor records mean poor defense, no records mean no defense", hence the importance of maintenance and preservation.

QUALITY PLANNING IN CLINICAL LABORATORY



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Quality planning is part of quality management focused on setting quality objectives and specifying operational processes and related resources to fulfill the quality objectives. Quality strategy includes two components, namely Quality Planning & Design and Implementing the QC Design. The QC Design should include high error detection, low false rejection and prescribe the length of analytical run. NCCLS guidelines for steps for Quality Planning includes definition of quality

requirement for the test, determining method precision & bias, identifying candidate IQC procedures, predicting IQC performance, setting goals for performance & finally selecting appropriate IQC procedure. To identify IQC performance there are scientific tools such as power function graph and operation specification chart (OPSpecs Chart). Finally, we need to adopt Total QC Strategy based on probability of error detection.

OVERVIEW OF HEALTH INFORMATICS



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Information is the key to healthcare delivery. Information technology adoption has been increasing over the last few decades. For every business need, information is being transmitted from different disparate systems to our fingertips and we get a consolidated view. Lengthy documentation charts and absence of communication between different providers, patients and clinicians, caused inefficient care as patients were treated by individual physicians, with little or no information about diagnosis and diagnostic results from other providers. The use of electronic health records (EHRs), patient portals, mobile and hand held medical devices and other tools which capture and share information across disparate clinicians' locations promotes collaborative care and enables efficient data collection that may be used for innovative and efficient best practice for better outcomes.

The challenge of managing a growing volume of health information has led to the increasing reliance on health informatics which is defined as a discipline that involves information science, computer science, and health care. It is an interdisciplinary field which involves system design, development, adoption and application of IT-based innovations in healthcare services delivery, management and planning. Health Informatics includes various technologies that span from simple charting, to more advanced decision support and integration with medical technology. It has been defined as the application of information processing involving both computer hardware and software that deals with the storage, retrieval, sharing, and use of health care information, data, and knowledge for communication and decision making. Looking at the world evolving in terms of data and the data science, we are now relying more and more on how we are going to measure vitals and different parameters coming in from both clinical and non-clinical systems. Also, if you look at lot of the start-up ecosystems that are coming up, look at the bigger companies in terms of using machine learning algorithm to get into predictive, look at genomics to come into effect of saying of how much does personalized care impact personal delivery of medication.

Health Informatics plays an important role in the care we provide to our patients as well as improve patient safety. There are evidences of significant benefits of the use of Information Technology in healthcare delivery. For example, The Internet of Things is here and is playing a vital role in Health Informatics. Application of IT in creating connected system of devices, monitoring tools and mobile apps with staff, patients and their families is creating a connected healthcare ecosystem.

Implementing Health Informatics:

1. Infrastructure-Organisation must be equipped with

necessary infrastructure for efficient and flaw less operation. The planning for infrastructure is an important exercise and must be done in totality. It is advisable to go for Public or Private cloud based on the size of operation instead of creating onsite server infrastructure. Planning for hand held devices like iPads, notepads and other mobile devices to support an anytime anywhere environment for clinicians.

2. Standardize implementation to boost quality and efficiency-Strongly consider creating an imaging-centric master file of procedure types rather than just adopting what was used in the previous system.

3. Establish clear timelines and objectives and success measures-Achieving success essentially needs changes in technology, processes, and human resources. It's important to benchmark and then achieve success.

4. Create a collaborative ecosystem-Ensure that both internal stakeholders and vendors work in tandem to achieve success.

5. Training: Training is the most important factor in the success of any project. Best of application fail in absence of effective, efficient and continuous training to the users. The training team is part and partial of the project and should be established from day one of the start of the implementation of health informatics. The team should constitute a lead trainer and members from different departments.

Benefits of Health Informatics: Technology has given a boost to the field of health informatics, which is a combination of healthcare, information technology and business.

1. Ease of Access-Health Informatics has made direct and easy access of patient records and also enables patient manage their personal health records for their own care at anytime anywhere.

2. Efficient Care Coordination-Easy access to information facilitates collaboration among multiple care providers. This transparency helps to eliminate errors and risks, such as conflicting prescriptions and treatments.

3. Improved Scheduling-Many unforeseen and counterproductive circumstances may arise during a typical care provider workday, which is compounded when staffing shortages occur. Efficient scheduling minimises chaos.

Why information technology is important in healthcare: Health Informatics makes it possible for health care providers to better manage patient care through the secure use and sharing of health information. It can improve the quality of care, even as it makes health care more cost effective.

How information technology in healthcare is improving: Technology has brought a number of

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remarkable changes to the health industry over time. It has allowed a number of cures to be created and beneficial changes to be made in treatment and care.

Effect on healthcare: The most notable change that healthcare information technology has brought about is the introduction of electronic medical records (EMRs). EMR is digital health record management solution which enables practitioners access historical and continuum data while managing current episode even through mobility platform besides conventional desktop system. Health data maintained in this format minimises the burden of paper work, thus addressing the space issue for storage and maintenance of records files as also the environmental issue by saving on paper. Health Informatics is influential in transforming the healthcare delivery. The most important ways in which Health Informatics is transforming healthcare delivery are Dramatic Savings, Shared Knowledge, Patient Participation, The Impersonalization of Care, Increased Coordination and Improved Outcomes.

Health Informatics Trends: While healthcare has historically been slow to adopt technology, the industry is about to witness significant changes over the next several years. Leading companies are already redefining themselves with digital transformation, applied to their main functional areas with customer-centric approach. The 6 major technology trends in healthcare to watch over the next few years are.

1. Telemedicine: Telemedicine with integrated healthcare Internet of Things device. The telemedicine solution enables provider and patient video interaction, integration of Internet of Things healthcare equipment and devices and data management platform facilitating remote healthcare delivery where care providers are not available. This has received national recognition and many governments are adopting. One such example is Govt of Maharashtra for its Smart Villages Program for 1000 villages.

2. Artificial intelligence (AI): Artificial intelligence is poised to become a transformational force in healthcare. Artificial intelligence is bringing revolutionary changes in the healthcare delivery. Huge amount of clinical data accumulated over time can be retrieved and stored at other storage devices where it can be converted into information and decision support system using well designed algorithm.

3. Internet of Things (IoT): The network of physical devices, vehicles, home appliances and other items embedded with electronics, software, sensors, actuators and connectivity, which enables these objects to connect and exchange data. The impact of Internet of Things is far more immediate than any other technology that has been built for consumers. Artificial Intelligence and Virtual Reality provides indepth knowledge and perspective but the technologies are much behind as far as their use is concerned.

4. Data-Driven Healthcare: Over the years health care providers and delivery organisations have collected vast amount of patient data on various diseases, diagnoses and treatment plans for their research. Unfortunately, this huge amount of information is stored in site specific databases or resides with providers only. The advent of big data analytics is able to harness the power of data by linking patient information sitting in various databases and also maintain confidentiality of the data.

5. Big Data & Analytics: Technological advances of the recent years have led to the dramatic growth in the amount of medical and health data gathered about individuals. Health informatics professionals are able to use big data to care providers for making quicker diagnosis and better treatment. Big data not only helps providers in diagnosis but also help delivery organisations in improving the process and bring efficiency within a healthcare organisation. Payer organisations are also immensely benefitted by the use of big data and may offer customised insurance products to citizens.

6. Block Chain: Blockchain is simply a distributed and a write-once-read-only record of digital events in a chronological order that is shared in a peer-to-peer network. Blockchain records transactions and exchanges in a distributed database for the use of authorized users which can not be altered or deleted and no further transaction can take place unless all users validate. Blockchain does not need any central administrator which makes it unique and safe. With blockchain, all the users are in control of all their information and transactions. Healthcare delivery deals with confidential patient information which should be available quickly when needed, blockchain in a single go, offers access security, scalability, and data privacy.

For the archived presentations please visit CAHO - Resource centre.

CAHO - A LEGACY OF EXCELLENCE



Dr Lourdu Shruthi. F
Assistant Medical Administrator
Sagar Hospitals - DSI, B'lore

The right choice is right here

"I can surely say that if I did not attend the CAHO training programme in Oct 2018, I would have missed it.

It gave me an inspiration to truly embrace quality and lit a spark that will stay alight for the rest of my life.

My Best memory at CAHO Training Program

The intensity of the training course certainly tested us all, be it through group discussions in the middle of night to complete a fishbone analysis through some funky guesses or the early morning archery shooting to the KAHOOT game.

The relaxing game, movie & Dr Lallu's session kept us like a live wire throughout the programme.

A tinge of HSSC by Dr Vijay Agarwal- A changing face of quality across global coverage as a healthcare quality implementer was motivating.

Personal Gains

The CPQIH Advanced with its diversity of participants, excellent trainers & intense training, was an outstanding opportunity to test my strengths and personal boundaries, both as a leader and a group member.

It gave me the ability to prepare for the role but definitely provided a network of healthcare professionals who will last for a lifetime.

Way forward:

As quality is the journey & not the destination, With CAHO, we will be working towards a healthier community being Quality Implementer. I wish CAHO Team all the best for their future endeavours.

CAHOTECH 2018 – HIGHLIGHTS

INAUGURAL CEREMONY



HOSPITAL & HEALTH CARE INDUSTRY PRESENTATIONS





HEALTHCARE START UPS PRESENTATIONS



CAHOTECH 2016 - BEST AWARDED INNOVATIONS : PRESENT STATUS



Legal way of Reprocessing Catheters - Mr. Vikram Goel, Founder, Incredible devices.



Tracking of Development Delay - Dr. Nandini Mundkur, Paediatrician.

PANEL DISCUSSION : CHALLENGES IN ADOPTING NEW TECHNOLOGIES



SPEAKERS & CHAIRPERSONS FELICITATION









VALEDICTORY CEREMONY : BEST HEALTHCARE STARTUPS



Oncology AI Platform for better treatment decisions – Mr. Dinesh Koka, Founder Onwardhealth



Heart rate variability a novel tool for early diagnosis of NCDs – Dr. Shashank Devapur, Hridayin Mobihealth

ENTERTAINMENT







BLOCK YOUR DATES

FOR CAHOTECH 2019 - 28th Sep @ IIT Research Park, CHENNAI !!

CAHO ACTIVITIES - A QUICK GLIMPSE

CAHO AFFILIATED CQP INAUGURAL



Nirmal's Eye Hospital, Chennai (16th Dec)

NEW TRAINING PROGRAMS : LAUNCH



Fire Safety & Emergency Preparedness Training Program – Bangalore Baptist Hospital, Bangalore (28th Sep)



Basic Course on Cyber Security in Hospitals- Ramaiah University of Applied Sciences, Bangalore (30th Sep)



Basic Nursing Communication Training Program – Dr. Mehta’s Hospital, Chennai (28th Oct)

NEW PROGRAM : CONTENT VALIDATION WORKSHOP



CPHIC Advance – Ramaiah Medical College & Hospital (9th Dec)

TRAINING OF TRAINERS WORKSHOP



Enhanced Clinical Communication Workshop – Bangalore Baptist Hospital, Bangalore (28th Sep)



CPHIC Basic Training Workshop – Ramaiah University of Applied Sciences, Bangalore (30th Sep)

TRAINING PROGRAMS (Oct'18 – Dec'18)



CPHIC Basic – Medilink Hospital, Ahmedabad (6th Oct) CPHIC Basic – Madhuraj Hospital Pvt. Ltd., Kanpur (27th Oct)



CPQIH Advance – Royal Orchid Resort & Convention Centre, Bangalore (6th-9th Oct)



CPQIH Basic- Jabalpur Hospital & Research Centre, Jabalpur (27th -29th Oct)



Fire Safety & Emergency Preparedness Training - Regency Hospital, Kanpur (28th Oct)



CPHIC Basic – GNRC, Dispur (31st Oct)



CPHIC Basic – NIMHANS, Bangalore (29th Oct)



National Disaster Life Support Basic Training- NIMHANS, Bangalore (14th Nov)



Enhanced Clinical Communication Workshop – NIMHANS, Bangalore (15th Nov)



Fire safety & Emergency Preparedness Training- KMC Attavar, Mangalore (16 Nov)



Enhanced Clinical Communication Workshop – Lourdes Hospital, Kochi (17th Nov)



Fire Safety & Emergency Preparedness Training– NHS Jalandhar (18th Nov)



CPHIC Basic – Sankar Eye Hospital, Bangalore (18th Nov)



Fire Safety & Emergency Preparedness Training – Max Superspeciality Hospital, Vaishali (24Nov)



CPQIH Basic – GNRC Dispur (24th -26th Nov)



Fire Safety & Emergency Preparedness Training –Narayana Health City, Bangalore (25th Nov)



Basic Nursing Communication Training- Dr. Jeyasekharan Hospital, Nagercoil (30th Nov)



Basic Nursing Communication Training - Rajagiri Hospital, Aluva (1st Dec)



Fire Safety & Emergency Preparedness Training – Rajagiri Hospital, Aluva (2nd Dec)



Basic Nursing Communication Training – Ramaiah Medical College Hospital- Bangalore (8th Dec)



CPHIC Basic- Peerless Hospital & Research Centre, Kolkata (14th Dec)



Basic Nursing Communication Training , MMHRC, Madurai (15th Dec)



CPQIH Basic - Nirmal's Eye Hospital, Chennai (15th – 17th Dec)



CPHC Basic – SPMM , Salem (22nd Dec)



Fire Safety & Emergency Preparedness Training- Vijaya Hospital, Chennai (22nd Dec)



Enhanced Clinical Communication Workshop – Healthworld Hospital, Kolkata (23rd Dec)

UPCOMING TRAINING PROGRAMMES

- 5th Jan** : Fire Safety & Emergency Preparedness Training Program - Meenakshi Mission Hospital, Madurai
- 9th Jan** : Fire Safety & Emergency Preparedness Training Program - Belle Vue Clinic, Kolkata
- 10th Jan** : CPHIC Basic Training Program - D Y Patil Hospital, Mumbai
- 12th Jan** : CPHIC Basic Training Program - RST, Regional Cancer Centre & Research Hospital, Nagpur
- 19th Jan** : Basic Nursing Communication Training - Bhagat Chandra Hospital, Delhi
- 19th -21st Jan** : CPQIH Basic - Meenakshi Hospital, Thanjavur
- 20th Jan** : Basic Nursing Communication Training Program - Shanti Mukand Hospital, Delhi
- 20th Jan** : CPHIC Basic Training Program - Maharaja Agrasen Hospital, Delhi
- 25th Jan** : National Disaster Life Support Basic Training - Apollo Institute of Medical Sciences & Research Centre, Hyderabad
- 3rd Feb** : CPHIC Basic Training Program - Mahatma Gandhi College & Research Institute, Pondicherry
- 5th Feb** : Fire Safety & Emergency Preparedness Training Program - MSRMH, Bangalore
- 9th Feb** : CPHIC Basic Training Program - Baby Memorial Hospital, Calicut
- 9th -11th Feb** : CPQIH Basic Training Program - Madhuraj Hospital Pvt. Ltd, Kanpur
- 16th Feb** : CPHIC Basic Training Program - Ernakulam Medical Centre, Kochi
- 17th Feb** : CPHIC Basic Training Program - QRG Hospital, Faridabad
- 23rd Feb** : National Disaster Life Support Basic Training - IMS & SUM Hospital, Bhubaneswar
- 23rd Feb** : Enhanced Clinical Communication Workshop - Apollo Institute of Medical Sciences & Research Centre, Hyderabad
- 23rd – 26th Feb** : CPQIH Advance Training Program - Siloam, Shillong
- 24th Feb** : Basic Nursing Communication Training Program - Dr. Mehta's Hospital, Chennai

CAHOCON 2019 : PREPARATORY MEETING



Organizing Committee Introductory Videocon (24th Nov)



Committee Meeting – PD Hinduja Hospital, Mumbai (30th Nov)

CAHOCON 2019
CONFERENCE 13th & 14th April, 2019 | **PRE CONFERENCE WORKSHOP** 12th April, 2019
 5th International Conference of Consortium of Accredited Healthcare Organizations (CAHO)
THEME: Healthcare Quality Should Impact Outcome | **VENUE:** The Lalit, Mumbai
[REGISTER NOW](#)

CATEGORY	EARLY BIRD (Till 15 th Jan)	REGULAR (Till 10 th April)	SPOT
Delegate	4000	4500	6000
Student	2500	3000	6000
CPQIH/ CPQIL	3000	3500	6000
CAHO Member	3500	4000	6000
Banquet (optional for all categories)- 1500			
International Delegate (with hotel stay 2 nights & banquet) - USD 500			

MASTER CLASS/ PRE CONFERENCE WORKSHOP (12 TH APRIL, 2019)			
	1500	2000	2500

On registration for both Conference & Pre Conference, 500/- discount will be provided

- ✓ No Refund on cancellation of registration
- ✓ For Group discounts, more than 5 contact help desk

KNOWLEDGE PARTNERS

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