

# Connected Emergency Response Centre



By, K.S.Venkatram (AOEC 2021)

# Connected Emergency Response Centre

For the SAAI (problem solving), we propose a Connected Emergency Response Centre (CERC). This will be part of a Green Globe responsiveness (solution finding) to help sites and occupants understand, prepare for, incorporate readiness and mitigate adversity due to climate change.

In our journey to recommend the CERC, we have sent out insights to sites of different natures like residential sites, educational institutions, business sites like apparels & garments industrial units, government sites, banks, parks & gardens etc where responses from the stakeholders are still being consolidated.

We highlight that our recommendation is simple at the preliminary level but is a macro-and-micro level when being incorporated. As a gap analysis consultancy, we have been developing solution highlights or details for the macro-and-micro level and have numerous proof of concept websites and associated documents to help innovation, agility, responsiveness and risk reduction.

The preliminary highlight is the addition of an Emergency Response pin code to existing pin codes, LifeScores to sites & occupants where sense & respond systems are deployed to swiftly understand threat/disaster/accelerated risk and thereon respond to save & protect life.

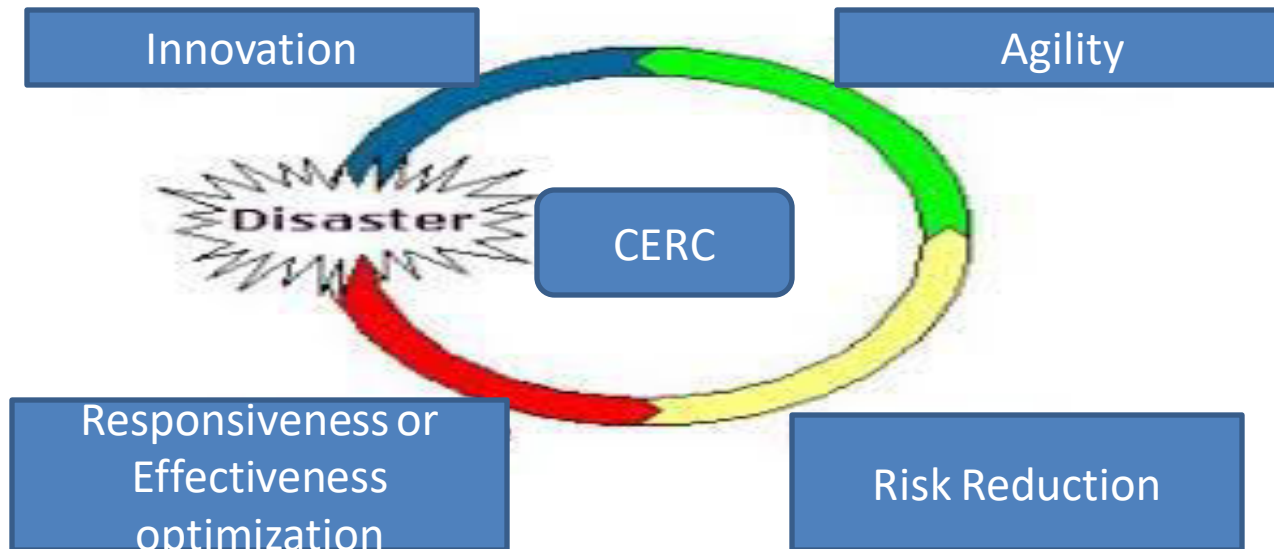
Our work in progress URL is [www.venkataoec.wixsite.com/futuregenart](http://www.venkataoec.wixsite.com/futuregenart)

# Connected Emergency Response Centre

Abstract: The Connected Emergency Response Centre (CERC) will be deployable at sites of importance to help emergency response.

The Centre will leverage Sense and Respond systems to interrelate Green Globe codification for a site and its occupants with ability to sense and respond for threat, disaster or accelerated risk.

The Centre will design problem solving using aspects of Innovation and Agility for Responsiveness / Effectiveness optimization and Risk Reduction.



# Key considerations for First-aid (At any site)

By,

K.S.Venkatram

AOEC & SSHGIEC, 2016-2021

# Key considerations

When it comes to “post lockdown” return to work, organizations may need to review involvement for **Quick Infer & Heal Synergy**. There could be different norms and guidelines for aspects like

(1) Building awareness of the need for related community education and responsiveness

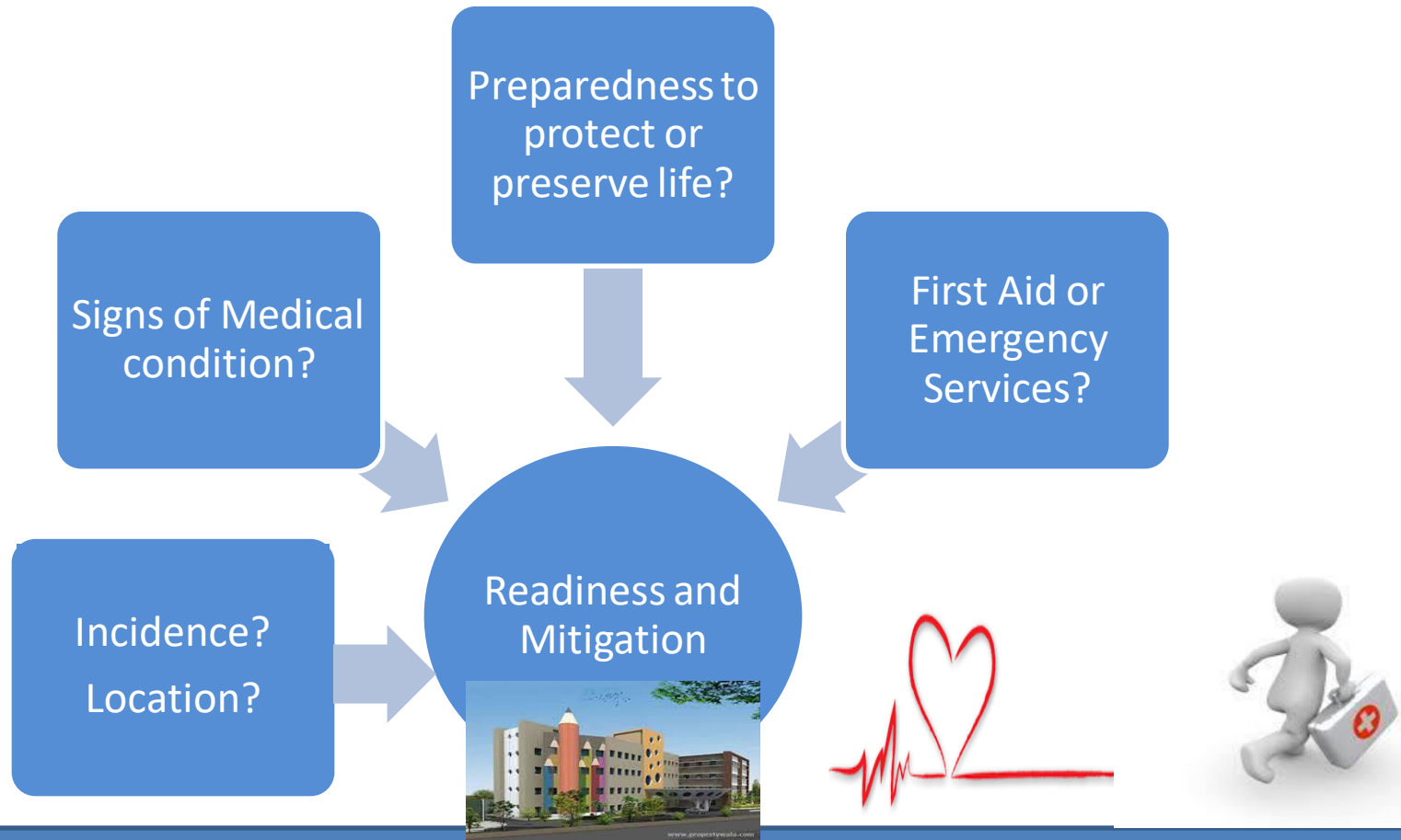
(2) Planning of recording of information at punch in and punch out. Enabling surveys once in so many days to track and infer

(3) Designing of a simple health-education plan to counsel and advise the concerned people to mitigate transmission

(4) Planning of any first-aid keeping in mind health influencers like wearing of mask, gloves and adopting of official guidelines for any **Quick Infer & Heal Synergy for burden reduction**

(5) Availing of (2020 aware) mobile healthcare units (depending upon need)

# Towards NEXT Steps Sufficiency



**Connected Emergency Response Centre**

# Connected Emergency Response Centre

The Connected Emergency Response Centre will first understand the LifeScore or Ability of site and its occupants to prepare for, sense & respond, save or protect life at the time of a threat, disaster or accelerated risk.

The Connected Emergency Response will design a Critical Path method (CPM) or Emergency Response for each occupant, community or site, where the LifeScore or Ability will decide the awareness critical for a relevant response.

The awareness will then develop sense and respond inferences which can be developed into solutions or systems via a **Design-Bid-Build** option, a **Design-Build** option or **Construction Management** option.

The awareness universally will be options that can be selected from an A-Z Integrated / Ingenuity Portfolio. The A-Z portfolio will be rated or evaluated for relevance to a site or occupant with a particular LifeScore or Ability. The A-Z Portfolio & its connected sense & respond systems will invite problem solving by architects, engineers and artists to leverage Visual / Auditory / Tactile Art and Artificial Intelligence / Machine Learning for developing deployables.

# Connected Emergency Response Centre

## The A-Z Integrated / Ingenuity Portfolio

- A – Awareness and response for **Associated Lighting and Electrical Safety**
- B – Awareness and response for **Bio-hazards / explosives**
- C – Awareness and response for a **Companion Card & Badge**
- D – Awareness and response for **Drill procedures**
- E – Awareness and response for **Exits and Emergency exits** (where they need to be unobstructed and relevant to the person)
- F – Awareness and response for **First-Aid procedures**
- G – Awareness and response for **Gas lines and installations**
- H – Awareness and response for **Occupant Health & Safety procedures**
- I - Awareness and response for **important Failure Mode Cause & Effects Analysis**
- J – Work in progress
- K – Awareness and response for **Keys, Key Cards or Access devices**
- L – Awareness and response for **site layouts, floor plans, secure routes and areas**
- M – Awareness and response for **made-to-assist surveillance systems**
- N – Awareness and response for **natural or man-made disaster first responders**



# Connected Emergency Response Centre

## The A-Z Integrated / Ingenuity Portfolio (continued)

O – Awareness and response for **open environment scenarios** of poisoning or stings or electricity line hazard

P – Awareness and response for **protecting valuables & documents**

Q – Work In progress

R – Awareness and response for **Resultant emotional outbursts** during emergency response

S – Awareness and response for **stairways**

T – Awareness and response for **timely first aid** in situations like asthmatic attack, allergic reactions, fainting or losing consciousness, burns, electrocution, fractures, foreign matter ingestion / inhalation

U - Awareness and response for **unscreened health issues**

V – Awareness and response for **ventilated air-conditioning (HVAC systems)**

W – Awareness and response for **water sprinklers, water supply hoses and connections**

X – Work in progress

Y – Work in progress

Z – Work in progress

# Connected Emergency Response Centre

## Scope or problem solving for the CERC-art label for Occupant Health & Safety



# Occupant Health & Safety

## **What is First-Aid?**

Measures (on being aware of new transmission dynamics as advised by government) to be taken immediately after an incidence or accident not with the idea to cure, and not to replace services offered by the medical community but to prevent further harm from happening.

## **Main objectives of First-Aid**

- (1) Ensure protective clothing or accessories are available and worn before any interaction
- (2) Protect and preserve life
- (3) Prevent afflicted person's condition from worsening
- (4) Promote well-being and recovery

## **Goals of First-Aid**

- (1) The immediate priority being to restore and maintain the vital functions of the person via certain steps for basic life support
- (a) Ensuring the AIRWAY is open so that the person's body gets a proper supply of oxygen

# Occupant Health & Safety

- (b) Enabling and ensuring BREATHING so that oxygen passes through lungs into the blood stream
- (c ) Helping and ensuring CIRCULATION where there must be circulation of blood to all parts of the body, so that there is sufficient supply of blood and oxygen

## **Simple 5 step Action Plan (with protection for transmission dynamics)**

It is necessary to check if the person has any life-threatening conditions, where the plan of action includes the following steps:

- (a) Check for further DANGER at location or spot, if so, then move the afflicted or injured person away carefully
- (b) Check for RESPONSE, shake gently, if conscious check for injuries
- (c) Check AIRWAYS to see if they are blocked, clear any loose material in mouth
- (d) Check for BREATHING by looking for chest rise and fall, or by listening to breathing sounds, or by feeling breath on cheeks or hand.

# Occupant Health & Safety

If there is no breathing, roll person on back with face upwards. Tilt head. Loosen and separate jaws to open airway. Give mouth to mouth resuscitation.

If there is breathing, place person in stable position (sometimes a stable side position is preferred) and check for injuries.

(e) Check CIRCULATION, feel pulse in groove beside Adam's apple.

If there is a pulse, if needed perform mouth to mouth breathing  
For children: 20 breaths per minute by puffing and blowing gently  
For adults: 12 to 15 breaths per minute by blowing fully

If there is no pulse, perform Cardio Pulmonary Resuscitation (CPR). As this needs skill and training, ensure one who is trained does this. The organization, institution or society interested in providing complete first aid services should put its team through a training on performing CPR. Today the current health hazard and its transmission dynamics needs to be well-understood & addressed

# Occupant Health & Safety

## **First-Aid Kit**

### **(A) Medicinal items**

1. Antiseptics, disinfectants
2. Antihistamine tablets and cream
3. Insulin and Tetanus vials (preserved at required temperatures)
4. Tube of petroleum jelly
5. Analgesics, Pain relievers, Anti-inflammatory medication
6. Paracetamol, Aspirin
7. Antacid
8. Life saving drugs, Oral Rehydration solution (ORS) packets, sugar sachets, glucose gel
9. Anti-diarrhoea medication
9. Laxatives

### **10. (B) Bandages**

1. Sterile dressing, cotton wool, adhesives
2. Triangular bandages, band-aids
3. Crepe bandages
4. Make-shift stretchers, crutches, splints

# Occupant Health & Safety

## (Continued) First-Aid Kit

### (C) Other items

1. Digital Thermometer, Stop clock
2. Masks, Sterilized gloves, Latex gloves
3. Towels, napkins
4. Assorted sizes of safety pins
5. Tweezers, needles, syringes, trays
6. Anti-germicidal soaps, cleansing soaps
7. Scissors
8. Torches
9. Disposable bags, garbage bags

### (D) Vital equipment (as relevant)

#### 1. PPE

2. Lancing device or portable meter to test blood sugar levels with bracelets to be put onto a person's wrist if blood sugar levels are high
3. Infusion sets/kits, Insulin in pens & ketone testing strips (stored at specified preservation temperatures)
4. Automatic blood pressure monitor with inventory of tags that record pressure with time of reading
5. Portable plastic nebulizer with disposable spacers
6. **Automated External Defibrillator** & CPR Rescue Kits, Bag Valve Masks (when trained to use them)
7. Suitable search and rescue equipment (when trained & protected to use them)

# Key considerations for related Mobile Healthcare Units (MHU) (NEXT Steps Sufficiency)

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AOEC & SSHGIEC, 2016-2021



# Gap Analysis for a MHU

- 1. Are emergency care services and disaster specific services guided by 2020 documented policies and procedures, and are they in consonance with statutory requirements and current health hazard? Yes/No/Partially
- 2. Does this also address handling of medico-legal cases? Yes/No/Partially
- 3. Do afflicted people receive care in consonance with policies? Yes/No/Partially
- 4. Do 2020 documented policies and procedures guide the triage of patient's condition for initiation of appropriate care? Yes/No/Partially
- 5. Are the MHU staff familiar with the policies and are they trained on the procedures for care of emergency case patients or disaster specific patients? Yes/No/Partially
- 6. Is there adequate access and space for the MHU to operate? Yes/No/Partially
- 7. Does the MHU adhere to statutory requirements? Yes/No/Partially

# Gap Analysis for a MHU

- 8. Is the MHU appropriately equipped? Yes/No/Partially
- 9. Is the MHU manned by trained personnel? Yes/No/Partially
- 10. Is the MHU checked on a daily basis? Yes/No/Partially
- 11. Are the equipment on board checked on a daily basis using a checklist?  
Yes/No/Partially
- 12. Are health hazard related protective equipment & medications and emergency or disaster specific formularies of medications checked daily and prior to dispatch using a checklist? Yes/No/Partially
- 13. Does the MHU have a proper communication system? Yes/No/Partially
- 14. (If relevant) Do 2020 documented policies and procedures guide the uniform use of cardio-pulmonary resuscitation or minor surgical procedures?  
Yes/No/Partially

# Gap Analysis for a MHU

- 15. Are MHU staff providing direct patient care trained and periodically updated in cardio-pulmonary resuscitation or minor surgical procedures? Yes/No/Partially
- 16. Do 2020 documented policies and procedures guide all activities of the nursing services? Yes/No/Partially
- 17. Do these 2020 documented policies and procedures reflect current standards, practices, regulations and purposes of nursing services? Yes/No/Partially
- 18. Do only qualified personnel order, plan, perform and assist in performing procedures? Yes/No/Partially
- 19. Do 2020 documented procedures exist to prevent adverse events like wrong interaction, wrong patient, wrong side and wrong procedure? Yes/No/Partially
- 20. Is informed consent taken by personnel performing the procedure, where appropriate? Yes/No/Partially

# Gap Analysis for a MHU

- 21. Is there adherence to standard precautions and adherence to asepsis during the conduct of the procedure? Yes/No/Partially
- 22. Are patients appropriately monitored during and after the procedure? Yes/No/Partially
- 23. Are procedures documented accurately in the patient record? Yes/No/Partially
- 24. Do 2020 documented policies and procedures define rational use of ventilators, advised protection, blood and blood products? Yes/No/Partially
- 25. Do 2020 documented procedures govern the use of a ventilator, IV, and transfusion of blood and blood products? Yes/No/Partially
- 26. Are 2020 transfusion procedures governed by applicable laws and regulations? Yes/No/Partially

# Gap Analysis for a MHU

- 27. Is informed consent taken for donation and transfusion of blood and blood products? Yes/No/Partially
- 28. Does informed consent also include patient and family education about the donation and plan of care? Yes/No/Partially
- 29. Does the organization define the process for availability and use of ventilators, protection, IV, or transfusion of blood/blood components in emergency cases? Yes/No/Partially
- 30. Is a post transfusion form collected, and reactions if any identified and analyzed for corrective and preventive actions? Yes/No/Partially
- 31. Are the staff trained to implement the policies? Yes/No/Partially
- 32. Do more well-defined 2020 documented policies and procedures guide the care of people via high dependency MHU units? Yes/No/Partially

# Gap Analysis for a MHU

- 33. Is there a 2020 documented admission procedure to a nearest healthcare provider and need for treatment criteria in high dependency MHU units?  
Yes/No/Partially
- 34. Are staff trained to apply these criteria for the care of patients in the high dependency MHU units? Yes/No/Partially
- The health ministry with healthcare experts are addressing all guidelines and procedures to mitigate risk due to transmission, but the need is to ensure organizations act as soon as possible for any gaps for the post lock down return to work.

# Minimizing the environmental footprint

## **As quoted in an article on pharmaceuticals and sustainability**

In health hazard or disaster management scenarios, another important factor is to reduce the environmental footprint of healthcare. The hazardous environmental footprint that could occur is mainly due to the following:

1. Improper use or handling of protective equipment, accessories and clothing
2. Improper or not so conducive prescription of antibiotics
3. Supposed-to-work and inappropriate prescribing of medicines
4. No guideline recommended or followed to dispose leftover drugs, accessories
5. Inappropriate handling of bio-medical waste and now hazards undetermined waste

Unforeseen dynamics like 1 to 5 can add to human morbidity and mortality

Planning norms and guidelines for the functioning of surveys, screening camps and Mobile healthcare units can protect ecological and human health & improve safety.

# Minimizing the potential footprint

We as people are hearing and reading about reports on the number of people affected, possibly infected etc.

To understand the projections, we must relate to the different grounds in effect today. First being testing, second surveillance and third responsibility of the individual or connected individuals in protecting others from infection.

The orderliness and equilibrium with different periods and policies of lockdown have helped the **Government and ministry of Health and Family Welfare** control the potential number of infections. All praise and good wishes for them.

With the need to return back to work, under different policies from the government, we need to add 2 more elements to be able to control the potential footprint. Channels of social involvement opted for by a person at home, at work or for other reasons and utilization of a minimal risk methodology.

The backbone foundation between the lockdown-period's potential footprint and relaxed-lockdown-period's potential footprint is like a carrier network, where protocol can make a difference.



Social involvement channels or  
networks for everyday travel,  
buying or selling food &  
consumables etc)  
(NEXT Steps Sufficiency  
to reduce risk)

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AOEC & SSHGIEC, 2016-2021

# Minimizing the potential footprint

In a carrier network, the protocol of reducing delays in slotted and un-slotted utilization of the network's range with tolerance levels (that do not cause a network congestion problem) makes a difference. From a workforce-community perspective, a person returning to work is part of a social involvement network, where

1. Signing in and Signing out each day at work, could be helpful if one is screened or asked to fill or confirm certain details
2. The social influencers for each person reporting to work must be available to any health representative attached to the organization and/or cluster
3. In case of any issue, while signing in or signing out, the person can be responsibly assisted in taking necessary steps
4. The (social involvement) channels used by the person to travel everyday, work and return home, where the need to perform different activities should be recorded with tolerance levels that make a difference in evaluating how many people are vulnerable
5. The error reduction needed for each person should be identified and role play must be explained from a point of view of rights, roles and repeated responsibility.
6. Communicating healthy or affected status to contacts in the social involvement channels, will keep many safe.
7. Receipt of an affected status by any of the contacts in any channel used, will need representatives connected to that social involvement channel to act immediately.

# Minimizing the potential footprint

8. As the number of people using a social involvement channel will never be well known, a central site should report a probability of risk status always. Any person using a social involvement channel must register with its central site, so the person is sent messages or status updates.

9. Ensuring a non-negligible delay in controlling the footprint when the channel is used normally or in more heavily congested conditions, is a next step. This can be done by increasing the frequency of messages on the rights, roles and repeated responsibility, where a binary exponential backoff can help.

The binary exponential backoff is a priority rating given to a social involvement channel, where a 1 means normal priority whereas a 0 means reduced priority, where a contention interval is defined that identifies for how long or for which conditions must one not use the channel.

A stop and wait protocol can also be incorporated to help a social involvement channel opt for standard or as needed sanitization. This can also help reduce queues of people expecting to use the channel. For those people who are not registered into the central site for a social involvement channel, a broadcast site can be deployed that regularly sends out must-recognize-broadcasts to people with subscribed mobile services.

# Public Rights and Education Programmes (NEXT Steps Sufficiency)

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AOEC & SSHGIEC, 2016-2021

# Public Rights and Education

**What does a disaster management committee have to plan for in post disasters or emergency situations?**

Depending upon the 2020 conditions, disaster or emergency situations, a disaster management committee will need to plan for different (social responsibility based) norms and guidelines to be followed to protect public rights and also to educate the people who worry about being in hazardous conditions.

The need for public rights and education programmes are relevant when it comes to disasters like an earthquake, flood, famine, drought, explosions, gas leaks, nuclear radiations or forewarned disasters like the outbreak of an epidemic, spreading of a harmful disease etc.

Today we need to include the concern for the current health threat.

# Public Rights and Education

- 1. Does the disaster management committee protect public rights and also counsel or educate the concerned about how to live for any mitigation of ensuing threats? Yes/No/Partially
- 2. Are concerned families informed of their roles and responsibilities in a format and language that they can understand? Yes/No/Partially
- 3. Are violations of public roles and education recorded, reviewed and corrective / preventive measures taken? Yes/No/Partially
- 4. (As relevant) Do public roles and education include respecting of any special preferences, spiritual and cultural needs? Yes/No/Partially
- 5. (As relevant) Do public roles and education include respect for personal dignity and privacy during this period? Yes/No/Partially

# Public Rights and Education

- 6. (As relevant) Do public roles and education include protection from physical abuse or neglect? Yes/No/Partially
- 7. Do public roles and education include right to complain and providing of information on how to voice a complaint? Yes/No/Partially
- 8. (As relevant) Does the committee explain to the concerned families proposed mitigation and rehabilitation, including the risks, alternatives and benefits? Yes/No/Partially
- 9. (As relevant) Does the committee explain to the concerned families the expected results for the proposed mitigation and rehabilitation? Yes/No/Partially
- 10. (As relevant) Do concerned families members have a right to information on expected costs for mitigation and rehabilitation? Yes/No/Partially

# Public Rights and Education

- 11. (As relevant) Does the committee explain to the concerned families the possible complications for the proposed mitigation and rehabilitation?  
Yes/No/Partially
- 12. (As relevant) Are concerned families counseled to make informed decisions and are they involved in the mitigation and rehabilitation planning and delivery process? Yes/No/Partially
- 13. (As relevant) Do concerned families have a right to information and education about their healthcare needs during this period? Yes/No/Partially
- 14. (As relevant) Are concerned families educated about any likely disease process, complications and prevention strategies? Yes/No/Partially
- 15. (As relevant) Are concerned families educated about due precautions to be followed to prevent transmission, disease or epidemics outbreaks?  
Yes/No/Partially



# Public Rights and Education

- 16. (As relevant) Is the concerned family educated about diet and nutrition? Yes/No/Partially
- 17. (As relevant) Is the concerned family (if and when relevant) educated about immunisations? Yes/No/Partially
- 18. (As relevant) Does the committee have a documented complaint redressal procedure? Yes/No/Partially
- 19. Are concerned families made aware of how to raise concerns or register complaints? Yes/No/Partially
- 20. Are all concerns or complaints analyzed by the committee? Yes/No/Partially
- 21. Is corrective and/or preventive action taken on the basis of the analysis of concerns or complaints, where appropriate? Yes/No/Partially

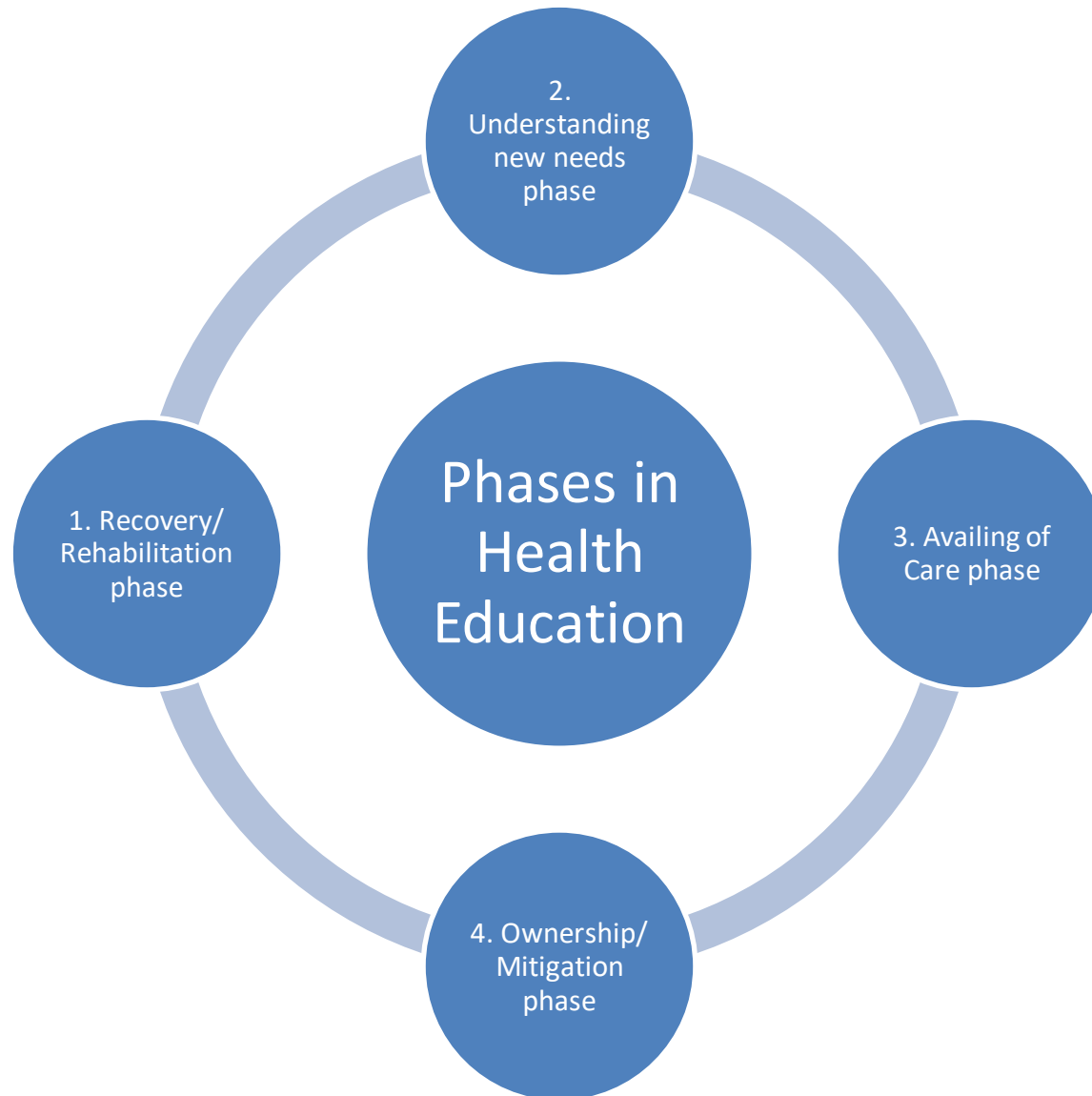
# Key considerations in 2020 hazard or disaster management specific Health education plan

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AOEC & SSHGIEC, 2014-2021

# Key considerations



# Key considerations

During this period in 2020, people will be known to come up with different kinds of needs. Some of these being:

1. Need for immediate healthcare in different extents
2. Need for regular screening, or follow ups to help restore life back to normalcy
3. Need for food, immunizations, medicines, clothing, and provisional accommodation or shelter
4. Need to follow strategies to live without adequate sanitation arrangements and also prevent outbreaks of epidemics or diseases
5. Need to help construct or revisit need for sanitation systems as quickly as possible to prevent spread of infections, diseases or occurrence of outbreaks
6. Need to conduct themselves in harmony and with flexibility

# Key considerations

To do all this, a workforce-community connected to an organization will need access to a simple health education plan. The plan will generally need to:

1. Diffuse the situation and any threats to health with well-rehearsed thinking
2. Protect or help save lives, or prevent incidences and outbreaks as far as possible
3. Manage all concerned people at locations via the assistance from related Mobile Healthcare Units and workforce-community education programmes
4. Establish the identities of persons concerned in a workforce-community, their need for advise or consultation to help control transmission dynamics
5. Provide best possible care to all the concerned people via surveys, screening camps, Mobile Healthcare Units or admission to nearby healthcare providers

# Key considerations

6. Minimize the hazards due to unhealthy situations where infection can spread, and also address the need to start from scratch or depend upon limited resources to live from day to day till betterment
7. Use a disaster management committee to organize resources / facilities required or make alternate arrangements with maximum efficiency so there is no oversight or negligence

To achieve this, AOEC finds that a concept called Showcased Relief can help other workforce-communities identify, learn from and implement measures needed in the risk reduction, recovery or rehabilitation phase of any disaster.

The next section looks at key aspects for Showcased Relief under headings of Health, Growth and Immunity, where all three aspects are important for a workforce-community experiencing risk or concern about life.

# Showcased Relief for HGI Improvement (NEXT Steps Sufficiency)

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# Showcased Relief for Health

- **Some of the connected issues affecting health of concerned people are**
- 1. They need to cope with the 2020 condition where there has been a concern for livelihood or one's wellbeing
- 2. They need to be helped to approach fears with proper planning and advise
- 3. They need to undergo immunisations (as and when relevant), vaccinations or regular screening to deal with possible spread of the viral infection and that of other diseases or epidemics
- 4. They need to deal with symptoms or distress via interpretations that help them understand positive health procedures
- 5. They need to be instilled with a power of reasoning to help them understand which defense mechanisms need to be built up
- They need to be provided with suitable guidance and counseling to restore self-sufficiency



# Showcased Relief for Health

- 6. They need to be helped in overcoming addictions/ special likes/ fears in not wanting to eat what may be right for one at this stage. Added to this, they need to be made to understand that one may need to drink right quantities of hot water/fluids/and other preparations as recommended by the doctors
- 7. They need to understand ways to cope with stress and condition themselves to improve risk reduction to the community
- 8. They need to deal with negative emotions and let go as prolonged distressed emotions affect positive health
- 9. There is a need to prevent adverse medication errors : As medication errors are more common in mass health management scenarios i.e. the doctors or staff in screening camps, or related MHUs should follow guidelines to ensure that errors do not occur when procuring the drug, prescribing it, dispensing it, administering it (as relevant), and monitoring its impact

# Showcased Relief for Growth

- **Some of the connected issues affecting the concerned workforce-community re**
- 1. They need to be guided about or provided well-balanced nutrition
- 2. They need to be guided about or given vitamin supplements for a short period (as relevant)
- 3. They need to be guided about or provided clean drinking water (free of germs and contamination)
- 4. They need to be counseled to observe guided personal hygiene
- 5. They need to be vaccinated or (as and when relevant) immunized for better chances of survival
- 6. They need to be taught to keep the environment around them clean
- 7. They need to be involved with some activity that makes them manage trauma, stress, and illness

# Showcased Relief for Immunity

- **Some of the connected issues affecting immunity of people are**
- 1. They need to be protected from supposed-to-work, wrong or inappropriate dosages of drugs and medicines (even antibiotics)
- 2. They need to be told that scrubbing ones hands thoroughly before cooking, or eating, or before touching articles while cooking is important as this can affect ones health if not done
- 3. They need to be told about use of protective accessories like masks / gloves
- They need to be told to hydrate themselves to purge poisons. They could be guided on how the regular use of garlic, tulsi, ginger, spices like cinnamon, clove, turmeric etc and porridge oats in cooking can improve wellness
- 4. They need to be guided on how to minimize use of contaminated water for cooking (as it can weaken the immunity)
- 5. They need to be guided on how facial and oral hygiene is important even under afflicted conditions (this is most important for children)
- 6. They need to be taught how to observe social distancing, how to keep their environment clean and free from contamination as this can otherwise lead to health risks

# Connected Emergency Response Centre

## Scope or problem solving for the CERC-art label for First Aid



### **Use types:**

Heart attack

Burns

Fractures

Vomiting / Stomach upset

Special ability assistance

Sudden incidence of health problem

# First Aid procedures

## **(A) Heart attack**

Palpitations, profuse sweating, nausea, needing more air circulation, chest pain or heaviness affecting mobility, spreading shoulder pain or chest pain followed by a sudden loss of consciousness, has a major cause associated with it

- (1) A Critical medical condition - a Heart attack
- (2) Incidence of a heart attack due to high levels of internal stress
- (3) Incidence of a heart attack due to sleep apnoea which leads to stress
- (4) Incidence of a heart attack due to high blood pressure
- (5) Incidence of a heart attack due to a chest injury

### **First-Aid (Do's, with protection to prevent any health risk due to transmissions)**

1. Under circumstances, prevent person from falling
2. Lay the person on back facing upwards
3. Tilt head back, keep arms at right angles to body
4. Help person breathe freely (Refer 5 Step action)
5. If possible talk to the person to ask about what is being experienced
6. Check whether the person has a known heart condition. Stabilize person's condition by administering emergency medication like sorbitrate or aspirin for a heart attack. Call for expert medical assistance.

# First Aid procedures

## **(B) Burns**

### **First-Aid (Do's, with protection for health hazards due to transmission)**

1. Wrap with blankets or non-inflammable material to put off fire
2. Wear gloves and protection while attending to the injured person
3. Cool the burn – immediately apply cloth soaked in cool water for at least 5 minutes till pain subsides
4. Cover the burn – cover the burnt area with dry sterile gauge bandage but do not use cotton or any other fluffy material
5. Give an over-the-counter pain reliever
6. Take off clothes or jewelry covering burn area before swelling or blisters appear

### **First-Aid (Do not's)**

1. Do not remove cloth stuck to burn area
2. Do not wash burn area under extreme water pressure
3. Do not apply oil or ice on affected area
4. Do not attempt to puncture or break blisters

# First Aid procedures

## **(C) Fractures**

### **Symptoms**

1. Check for pain at or near site of injury (which increases with movement)
2. Check gently if movement is possible (if there is a fracture, movement will be difficult, not possible or painful)
3. Check for swelling around injured part, where later there may be bruising or discoloration
4. Check for deformity at site of fracture
5. Check if injured person is in a state of shock

### **First-Aid (Do's, with protection for hazards due to transmission)**

1. If there is bleeding, control bleeding before immobilizing site of fracture
2. Immobilize site of fracture
3. Check if injured person is in a state of shock
4. Revive the injured person using 5 step Action Plan
5. Place ice-pack on affected area to reduce pain and swelling
6. Provide proper padding to affected area before shifting to hospital etc

# First Aid procedures

## **(C) (Continued) Fractures**

### **First-Aid (Do not's)**

1. Do not move the injured person without support
2. Do not ask injured person to move independently
3. Do not move joints above or below the site of fracture
4. Do not massage the affected area
5. Do not force bones back into the wound

### **Remember the principles of RICE, with protection for hazards due to transmission**

1. REST- Give rest to injured person and injured part
2. ICE- Apply ice on injured part
3. COMPRESS - Wrap the injured area with crepe bandage
4. ELEVATE - Elevate injured area above level of heart



# First Aid procedures

## **(D) Vomiting / Stomach upset**

Work in progress

### **Do's**

Work in progress

### **Dont's**

Work in progress

# First Aid procedures

## **(E) Special ability assistance**

Work in progress

### **Do's**

Work in progress

### **Dont's**

Work in progress

# First Aid procedures

## **(F) Sudden incidence of health problem**

Work in progress

### **Do's**

Work in progress

### **Dont's**

Work in progress

# Connected Emergency Response Centre

## Scope or problem solving for the CERC-art label for Timely First Aid



Asthmatic attack  
Allergic reactions  
Fainting or losing consciousness  
Electrocution  
Foreign matter ingestion / inhalation

# Timely First Aid procedures

## **(A) Asthmatic attack or (B) Allergic reaction**

Breathlessness, gasping, bluish lips, sudden tightening of chest or profuse palpitations, parts of body covered by red blotches has a major cause associated with it i.e.

(1) An Asthmatic attack OR

An allergic reaction

### **First-Aid (Do's, with protection for health hazard due to transmission)**

1. Under circumstances, prevent person from falling
2. Lay the person on back facing upwards
3. Tilt head back, keep arms at right angles to body
4. Help person breathe freely (Refer 5 Step action)
5. If possible talk to the person to ask about what is being experienced
6. Check whether the person had a 2020 related respiratory infection or has a known respiratory or allergy problem
7. Stabilize person's condition by administering emergency medication like an antihistamine for an allergic reaction or arrange for a nebulizer for an asthmatic attack. Be careful about transmission hazard while using or handling nebulizer
8. Call for expert medical assistance

# Timely First Aid procedures

## **(C) Fainting or losing consciousness**

Loss of consciousness in times of disasters has many causes associated with it i.e.

- (1) Trauma caused by severe distress, loss of blood, severe coughing fit
- (2) Fainting on account of fatigue or low blood sugar levels or lack of oxygen
- (3) Epileptic attack or syncope or narcolepsy
- (4) Head injury, spinal cord injury

## **First-Aid (Do's, with protection for health hazards due to transmission)**

1. Under circumstances, prevent person from falling
2. Lay the person on back facing upwards
3. Tilt head back
4. Keep arms at right angles to body
5. Raise legs 8-12 inches to promote blood flow to brain
6. Pinch the person gently to check for response
7. Examine body for injuries. Check whether the person is a diabetic or ails from any known medical condition. Provide remedial action like for example administer sugar in suitable form (glucose gel) to a diabetic or if signs of epilepsy prevent person from biting off the tongue with protection on
8. Keep a record of condition of person to help medical assistance

# Timely First Aid procedures

## **(B) Fainting or losing consciousness**

### **First-Aid (Do not's)**

1. Do not crowd around the injured person
2. Do not allow the person to get up and move around immediately on regaining consciousness
3. Do not give lots of water or juice to the person as soon as he or she regains consciousness. Be moderate even in the case of loss of blood (visible or internal bleeding) or symptoms of low sugar levels or low electrolyte levels (as per recent blood test reports for the person)

## **(D) Bleeding from cuts, wounds or punctures**

### **First-Aid (Do's)**

1. Wear gloves (if possible) while attending to the injured person
2. Try to stop bleeding by elevating injured part or by applying pressure. Handle with care if fracture is suspected
3. Bandage the injured area to stop bleeding and to prevent infection of wound
4. Give a tetanus injection if required
5. If the injured person loses consciousness, apply **5 step Action Plan**

# Timely First Aid procedures

## **(D) Electrocution**

### **First-Aid (Do's)**

1. Cut off the power supply
2. Move the person away from source or spot using a non-conductive material
3. Check for breathing, carry out **5 step Action Plan** or **CPR** as needed
4. Cover the affected area with a clean dressing
5. Arrange for further medical assistance as needed

### **First-Aid (Do not's)**

1. Do not touch or attempt to move person without shutting off power supply
2. Do not move person away from spot without making arrangements for non-conductive material to help do this
3. While attending to person do not touch any non-insulated wire



# Timely First Aid procedures

## **(E) Foreign matter ingestion / inhalation**

Work in progress

### **First-Aid (Do's)**

Work in progress

### **First-Aid (Do not's)**

Work in progress

# Connected Emergency Response Centre

## Scope or problem solving for the CERC-art label for Open Environment Scenario (OES) Hazard



### **Use Types**

Poisoning

Stings

Electrocution / Electricity line hazard

# Open Environment Scenario (OES) Hazard

## **(A) Poisoning**

### **Types of poisoning**

- (1) Snake bite
- (2) Scorpion sting
- (3) Ingested poisons (orally)
- (4) Inhaled poisons (through lungs by inhaling industrial gases, flames from fire, chemical vapors etc)
- (5) Absorbed poisons (through skin via contact with poisonous sprays)

### **Signs and symptoms**

1. Bluish lips
2. Difficulty in breathing, chest pain
3. Cough
4. Abdominal pain, loose motions
5. Dizziness
6. Double vision
7. Confusion
8. Fever

# Open Environment Scenario (OES) Hazard

## **(A) Snake bite or Scorpion sting (Poisoning)**

### **First-Aid (Do's, with protection for hazards due to transmission)**

- 1.a In case of snake bite, speak to victim or search vicinity to try your best to identify the type of snake. This will be very helpful in deciding the antidote for the snake's venom. Add this sighting to the log book of the types of snakes found at the site.
- 1.b In case of scorpion sting, examine site to check if the sting is still embedded.
2. Check airway, breathing and circulation, proceed with 5-step Action Plan
3. Check for foreign matter in mouth, if found remove immediately
4. Prevent injured person from entering a state of shock
5. (If relevant) Dilute poison by giving milk or water
6. Observe colour and amount of vomit
7. Monitor vital signs
8. Arrange for immediate medical assistance

# Open Environment Scenario (OES) Hazard

## **(A) (Continued) Poisoning**

### **First-Aid (Do not's)**

1. Do not try to suck out poison from site of snake bite. This needs training and now the protection for hazards due to transmission.

Try and tie a tourniquet close to the region of snake bite, this can restrict or slow down the flow of poison from the bite site to the rest of the body

2. Do not try to remove an embedded scorpion sting unless trained to do so.

3. Do not induce vomiting unless type of poisoning known

4. Do not panic

# Open Environment Scenario (OES) Hazard

## **(A) (Continued) Inhaled, Ingested or Absorbed Poisoning**

### **First-Aid (Do's, with protection for hazards due to transmission)**

1. Check airway, breathing and circulation, proceed with 5-step Action Plan
2. Check for foreign matter in mouth, if found remove immediately
3. Prevent injured person from entering a state of shock
4. Dilute poison by giving milk or water
5. Observe color and amount of vomit
6. Monitor vital signs
7. Arrange for immediate medical assistance

### **First-Aid (Do not's)**

1. Do not induce vomiting unless type of poisoning known
2. Do not panic

# Open Environment Scenario (OES) Hazard

## **(B) Bee or wasp sting**

### **First-Aid (Do's, with protection for hazards due to transmission)**

1. In case of sting, examine site to check if the sting is still embedded
2. Wash with cold water. Apply a pain relieving and anti-inflammatory ointment
3. Monitor vital signs
4. If person shows signs of severe incidence or any other change in vital signs, arrange for immediate medical assistance

### **First-Aid (Do not's)**

1. Do not try to remove an embedded sting unless trained to do so
2. Do not panic

# Open Environment Scenario (OES) Hazard

## **(C) Electrocution / Electricity line hazard**

Work in progress

### **First-Aid (Do's)**

Work in progress

### **First-Aid (Do not's)**

Work in progress



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# Effectiveness in disasters, sudden incidences and emergencies

This booklet can help awareness and preparedness to protect and preserve life post lockdown at times of disasters or incidences like heart attacks, loss of consciousness, injury, burns, electrocution, fractures, poisoning...



Disasters/emergencies

Standards and Practices

Readiness/Mitigation

The consultant K.S.Venkatram has a B.E. in Computer Engineering, and also holds MCP, MCAD and MCSD certifications. He has 25+ years of experience in IT Service Management, manufacturing, healthcare etc