Fire Incident At AMRI Hospital, Kolkata (India): A Real Time Assessment For Urban Fire

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Abstract
Cities are vulnerable from various natural and manmade disasters, as defined ‘cities at risk’. In India, Kolkata is a thickly populated city is no exception. The exposure to hazards for this coastal city is much higher in comparison to others. Also, there is no estimation about the possible impact for those probable outbreaks. People of Kolkata are having very low resilience due to lack of capacity building and understanding about the possible scenario. Also, there is a serious lack of preparedness planning. The fire outbreak in AMRI Hospital is a unique example for the necessity of an articulate preparedness plan, which can minimize the loss of life and property. This study is directed towards the real time assessment of such an incident with a strong potential to point out the demand of the day

Keywords: Hospital fire, Urban fire, Disaster, Vulnerability

Introduction
Socioeconomic variables depict a high concentration of population in the cities in terms of density per house. Kolkata has the highest number of persons per household (11 person/household) (IRAD Report, 2013) and in most vulnerable situation due to this kind of fire outbreak.

Advanced Medicare and Research Institute (AMRI) is a private hospital chain jointly promoted by the Mr. R. S. Goenka-led Emami Group and the Mr. S. K. Todi-led Shrachi Group of companies in 1996 along with Government of West Bengal. The hospital chain has its head office and 6 branches in Kolkata, West Bengal, India and 6 branches in Bangladesh. AMRI Hospital at Dhakuria, Kolkata was a ISO 9001:2000 certified and located in a densely populated area in South Kolkata.

In December 9, 2011 a massive fire broke out at annex building of AMRI Hospital Dhakuria, Kolkata in the early hours of the morning. The fire was first noticed by local residents at around 3.30a.m. Fire Control Room, Kolkata was informed about the incident at 4.10 am. Immediate response from the fire services was arrived at the site within 20min. Though the fire was primarily initiated and restricted within the basement of the hospital but poisonous smoke was sucked by air conditioning ducts that carried it through the rooms and the corridors of the seven-story centrally air conditioned hospital. Entire hospital building was filled with thick pile of smoke, caused tremendous suffocation for all the indoor patients. Ninety people choked to death, many of them are in their sleep or were not in condition to even escape. Among the list of dead persons, there are persons from other Countries and States too. There are victims from Bangladesh, Bihar, Tripura and two nurses from Kerala.

This is the second fire at AMRI hospital in three years. The fire services department, government of west Bengal warned AMRI Hospital in September, 2011 about the inappropriate and dangerous use of the hospital base-ment. It had served a notice to the hospital authorities questioning the fact that instead of parking cars, the hospital was using its basement for storing empty and filled up LPG cylinders, torn mattresses, and wooden boxes and had converted the entire space into a storehouse. With a December 5 deadline, the hospital was allowed three months’ time to comply, but it did not. The enforcement of law is also in question.

Impact Of The Incident:
As reported by the media, local people noticed the fire at Hospital building around 2.30 am and tried to enter the hospital building for rescue. The relatives of the patients, who were waiting outside the hospital overnight are also tried to help the trapped patients inside the hospital (Fig. 2). The security staff of the hospital stopped the mass for entering into the AMRI annex building, and tried to douse the fire with their own available resources. Fire Department pounced into action after receiving the distress call at 4.10 am and rushed to the spot with available sophisticated firefighting equipment. Around 25 fire engines and hydraulic ladders used for the rescue and dousing of the massive fire and smoke. It was reported by the Joint Commissioner of Police (Crime) that none of the smoke alarms activated even when smoke started billowing out of the basement. It seems that they had been in switched off mode because they would go off at the slightest smoke and disturb patients. The report also says that the sprinklers, the gas jets and other water releasing equipment that are meant to fight fire, were defunct and none of them went off to prevent the fire. Unofficial reports are such that the basement was being used as a smokers’ corner, keeping the fire alarms in switch off mode.
Figure 2: Relatives and local people in action during AMRI fire in 2011

Though the reason of the fire outbreak is yet not known, Director of the Fire Department had his opinion that the fire was most likely due to an electrical short circuit in the basement car park. The combustible items like empty and filled up LPG cylinders, PVC pipes, rejected mattresses and wooden boxes immediately got the flame. However, the fact is that the fire didn’t spread to the other part or level of the hospital and was confined to the basement only. As the hospital was centrally air-conditioned, the smoke started billowing out of the basement and spread fast to all the floors through the air-conditioning duct. Soon thereafter, the air-conditioners went off because of the power cut and smoke started accumulating into the hospital rooms and corridors. The centrally air-conditioned hospital didn’t have windows and with glass façade walls. As a result, smoke could not be ventilated outside the building. A critical component like mechanical ventilation of centrally air-conditioned buildings was missing in the hospital building. The fire brigade later broke open the glass façade to help the gas escape, though that was too late.

Response From The Administration:
Fire Department, West Bengal lodged a FIR against the concerned authority of AMRI Hospital, Dhakuria, Kolkata and the sequence of the incident of AMRI Fire as reported by the Disaster Management Department, Govt. of West Bengal are as follows,

a) Fire Control Room received a call at about 4.10 a.m. on 09/12/2011 and from Lal Bazar Police Control Room about a fire breaking out at AMRI Hospital Annex building, Kolkata.
b) The fire was located at the upper basement of the AMRI building.
c) The hospital authority has illegally converted the upper basement floor assigned for car parking to a dumping store for inflammable waste materials.
d) There was negligence on the part of the on duty staff as they did not inform the incident to Fire Brigade for nearly one and half hours, out of their lack of understanding.
e) Smoke detector and Fire Alarm system of the building were kept non-operative out of ignorance or over simplification.
f) An FIR has duly been lodged with the Police authorities and six Board level officials of AMRI group have been arrested by Kolkata Police.
g) There was a further alarm at about 11 A.M. regarding radiation leakage from the lower basement of the building which has several machines like MRI, Cobalt Therapy etc.
h) NDRF was requisitioned and their anti Radiation Team came and checked the entire premises, no radiation was detected in the area. Government of India also sent a team of officers / scientists from Atomic Energy Regulatory Board - Emergency Response Centre, Kolkata and Meghnad Saha Institute. The team also confirmed about no radiation leakage in the area.
i) Police Control Room at 8 P.M. on 11th December confirmed the death of 89 people in the incident and 57 injured people who are undergoing treatment for injuries sustained during the said fire in different hospitals.
j) All the dead bodies have been centrally brought to SSKM hospital (Super specialty Govt. Hospital) and their post mortem is done in SSKM hospital.
k) Principal Secretary, Health & Family Welfare Department was personally supervised the post mortem process and identification of bodies and handing over the dead bodies to the next to kin.

Figure 3: Fire Services of West Bengal and National Disaster Response Force (NDRF) are in rescue operation.
Action Taken By The Administration:
Govt. of West Bengal had suspended the license of the AMRI hospital with immediate effect. A judicial probe was ordered for the entire catastrophe. The Department of Health & Family Welfare, Govt. of West Bengal had directed the hospital authority to close the hospital and transfer the patients to another hospital.

A 15-member special investigation team had been formed under the leadership of Assistant Commissioner, to investigate the case.

The fire brigade has submitted a report to the commissioner of police, on the preliminary inspection that it conducted at the hospital premises on Friday morning. It is on the basis of this report that the police arrested six directors of the hospital under four non-bailable sections of the Indian Penal Code, namely, sections 304 - culpable homicide not amounting to murder, 308 -attempt to commit culpable homicide, 285 - negligent conduct with respect to combustible materials and 34 - common interests.

Assistance and Relief:
Govt. of West Bengal had announced the ex-gratia payment of Rs. 3 lakh to each death case and provision of a government job to the cases, in which the earning member of the family has died in the incident. It was also announced that a payment of Rs. 10 thousand for next of kin of each death victim towards funeral/cremation expenses to be made. Prime Minister's office has also announced grant of ex-gratia from Prime Minister's National Relief Fund to the tune of Rs. 2 lakh to the next to 'kin of the persons deceased and Rs. 1 lakh each to the persons who got seriously injured in the fire.

Govt. of West Bengal took a decision on December 12, 2011 that one willing member from the family of each of the deceased persons would be eligible for a job against the Group-C / Group-D vacancies depending on the educational qualifications of the nominated member of the family as a special case.

The following procedure had been adopted for providing employment assistance to the families of the victims of the fire tragedy:

a) In case of the residents of the State, the concerned District Magistrate / Director, Disaster Management Department (in the case of Kolkata) would make an enquiry in the prescribed format and submit the same to the Disaster Management Department, which, in consultation with P&AR Department would decide about the place of appointment. Priority would be given for providing them employment in, concerned district offices. In case suitable vacancies are not available in district offices, the appointments would be made in Directorate / Secretariat.

b) In case of residents of other States, the concerned State Government would recommend grant of employment assistance to a particular member of the family. The family member nominated for the employment assistance would also have to give an undertaking that he/she would ding to work within the State of West Bengal. The enquiry report in prescribed format in this case would be forwarded by the concerned State Government to the Disaster Management Department, Government of West Bengal. The concerned State Government would also furnish the Police Verification Certificate of the member of the family along with their report and recommendation. Based on the same they would be recommended for appointment in District Offices/ Directorate / Secretariat.

Glimpses of Statutory Provisions:
Number of statutory provisions is enacted towards the safety measures of a building, but the enforcement of the byelaws and acts need a serious thought. “The West Bengal Municipal (Building) Rules, 2007”, Section 12(6) (B) depicts that the buildings exceeding 14.5 meters in height should follow the followings,

a) special requirements as to access, circulation, building services and safety, human health and Fire based on occupancies or use group as laid down in National Building Code of India, and in the West Bengal Fire Services Act, 1950; Act XVIII of 1950.

b) parking layout plan showing parking spaces, driveways together with ingress or egress arrangements;

c) width of main and alternate staircases along with balcony approach, corridor, ventilated lobby approach;

d) location and details of lift enclosures;

e) location and size of fire lift;

f) smoke-stop lobby or door, where provided;

g) details of exits including provision of ramps in the case of hospitals and for special risks;

h) location of smoke exhauarter and fan;

i) location of smoke exhauater in basement;

j) details of fire alarm network;

k) location of centralized control connecting the alarm system, built-in fire protection arrangements and public address system;

l) location and dimensions of static water storage tank and pump room along with fire service inlets for mobile pump and water storage tank;

m) location and details of fixed fire protection installations such as sprinklers, wet risers, hose reels, drenchers and carbon dioxide installation;

n) location and details of first aid equipment;
o) special requirements, if any, of occupancies for residential building, educational building, institutional building, assembly building, business building, mercantile building, storage building, industrial building and hazardous building under these rules;

p) location for installation of a sub-station for electric supply, transformer, generator and switch gear room,

q) location of the air-conditioning plant room, if any;

r) plan for installation of boilers, if any;

s) refuse chutes and refuse chamber, if any;

t) location for signs and outdoor display structures, if any;

u) conveniences for physically challenged personnel.

In Section 82: ‘Other requirements’, explains the matters relating to fire prevention and fire protection, for which recommendations had been made for provisions of the latest edition of the National Building Code and the latest edition of the National Electrical Code.

In Section 83: ‘Consultation with the Director of Fire Services before granting permission to erect a building’, explains that, no permission for the erection, addition to, or alteration of, any building other than a residential building or an educational building of less than fourteen meters and a half in height shall be granted unless the Board of Councilors in consultation with the Director of Fire Services of the Government of West Bengal or any Officer specially empowered by the Director for the purpose, is satisfied about the provision of means of exits and about the arrangements for protection against fire proposed for the building.

In Section 84: Power to Municipal Authority to ask for sufficient means of exits, explain the basis of the report of the Director of Fire Services of the Government or any other officer specially empowered by him, the Municipal Authority is of opinion that the means of exit from any building is insufficient to allow safe exit in the event of fire, or the in-built fire protection measures are inadequate, he may by written notice require the owner or occupier of the building to alter or reconstruct any existing staircase in such manner, or to provide such additional or emergency staircases as he may determine, or such fire protection measures, as he may, in consultation with the Director of Fire Services of the Government or any other officer specially empowered by him, determine.

Conclusion and Remarks:

In consequent to the AMRI hospital fire incident on December 2011, Government of West Bengal had modified the existing "West Bengal Act XXVI of 2010, The West Bengal Clinical Establishments (Registration and Regulation) Act, 2010" and drafted “The West Bengal Clinical Establishment Rules, 2012” with the required modifications.

Since, independence, India has lost several lives and property worth crores of Indian rupees in fire related incidents. Fire hazards are common threat to establishments and in most of the cases; it had been revealed that fire occurred due to sheer negligence. There have been many instances when the authorities have highlighted risk of fire in buildings. Following a major fire accident in Kolkata’s AMRI hospital in 2011, fire authorities conducted audits in many hospitals across the country. Fire safety audit of several major hospitals in Delhi and Mumbai revealed that more than 50% of the hospitals lack fire prevention measures. In case of high-rise buildings, the scenario is equally bad. In February 2012, the fire department in Mumbai had issued notices to as many as 383 high-rise buildings for not complying with fire safety regulations. Several high-rise buildings, approximately 60% in Gurgaon, have not renewed their no-objection certificate from the fire department. In Jaipur, a tourist hub, more than 90% of the high-rise buildings have measurably inadequate fire-fighting measures. It has often been found that most of the buildings do not adhere to fire prevention measures as described under the National Building Code of India for they do not care about getting no-objection certificates from concerned authorities, as it does not entail any major penalty.

Fire departments across the country are in desperate need of additional funds to modernize and upgrade their equipment as well as manpower skills. The most challenging part for the fire departments is to reach to the top of high-rise buildings for want of a necessary equipment to reach to the top.

As per the India Risk Survey 2012 a report prepared and published by FICCI depicted that “In India Emergency Response mechanism varies from state to state but nowhere does it caters to the requirements of International best practices. Central and state governments have been putting their efforts to provide for police stations, hospitals, fire stations and transport as nearest to the habitations as possible, but gaps remain.

For example, average police-public ratio in India is 152 policemen per 100,000 of the population, while as per United Nations standard; the ratio should be 222 police officers per 100,000 people. Similarly, while international standards recommend fire station after every 3 kms, in India, fire stations are often found at far off locations. Moreover, their response time even in cities sometimes exceeds beyond 30 minutes. The stipulated international standard response time has an upper limit of 3 minutes.

Mock fire drills take place only occasionally and that too, in metro cities. The equipment and techniques used...
are mostly out-dated and worn out. In February 2012, a woman died when her rope snapped during mock fire drill in a high rise building in Bangalore. This did take place due to low quality of equipment.

Steps were taken by the government in 1960s to strengthen the emergency response mechanism. National Safety Council (NSC) of India was set up in 1966 to generate, develop and sustain a voluntary movement on safety, health and environment at the national level. Apart from conducting various specialized training courses, conferences, seminars and workshops, NSC also conducts consultancy studies such as safety audits, hazard evaluation and risk assessment, designing and developing Health, Safety & Environment (HSE) promotional material, facilitating organizations in celebrating various campaigns, e.g., Safety day, Fire Service Week, World Environment Day, etc. NSC adopted several activities based on APELL (Awareness & Preparedness for Emergencies at Local Level) processes which includes making public aware of possible hazards within the community, encouraging formulation of co-operative plans to respond to any emergency anytime, and encouraging accident prevention, among others. It is encouraging to note that concerned agencies responsible for emergency response have become innovative with new ideas at the time of emergencies. Of late, agencies of mass media have increasingly been used to popularize ideas and to spread awareness among the general population. Still, efforts are half way. The sooner the gap is bridged, the better it will be for providing safe and secure environment for the emerging economy to thrive.”

References:
[1] West Bengal Fire Service Act 1950