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RESEARCH ARTICLE

FAMILY AND PERSONAL PROTECTION IN DISASTER SITUATIONS

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ABSTRACT

In disaster management, the individual and/or the family are a vital unit of observation. Targeting the individual and the family in disaster scenario is seen as an effective way of zeroing in on functional units by which disaster relief and management can be well targeted. The main focus of this is basically in the buildings by which human beings interact. This paper discusses the need for protective actions and subsequent evacuation actions in case of any disaster. In disaster prevention, having and creating an emergency plan is crucial. This paper further discusses the basics of preparing an emergency plan. Additionally, the paper discusses the specific activities done before and after any disaster. In this context, having a disaster supplies kit is considered a very valuable idea.

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INTRODUCTION

An understanding of the prediction, forecast and warning systems is essential to the completion of a workable general disaster plan. It is axiomatic that if a timely warning can be given of an impending or probable event which may bring disastrous consequences in its train, then it will be possible to reduce the severity of those consequences. Protection at the personal and family level is important as it reduces the number of casualties if not eradicate them and by taking precautions, individuals assist the collective effort to reduce the general effect of an emergency. The degree to which this reduction can be affected will depend upon the interplay of three main elements:

- The accuracy of the warning
- The length of time between the warning's issuance and the expected onset of the event
- The state of pre-disaster planning and readiness. Included within this is a sub-element that is the degree to which the public responds to the warning and takes correct precautionary action.

Protection Actions and Evacuation

A high-rise building, by popular definition, is a completed, occupied structure for which the roof access level exceeds the maximum height of rescue capability from street level by the fire department. Panic of occupants of high-rise buildings

during the early stages of a fire/disaster is a danger that can contribute to high casualty losses. Smoke, gases and super-heated air make it imperative that an emergency evacuation program be established for all high-rise buildings. In evacuation, one needs to know routes to take to the safe area and location of centers that will provide food, shelter and other necessities. Protection also includes staying in the safe area until it is safe to return to the evacuated area. The record of fires in building occupancies, with resultant fatalities and heavy financial losses emphasizes the urgent need for instituting an effective evacuation programme immediately. The potential for high human losses makes it imperative that evacuation programmes be reviewed and updated as necessary. Uncontrolled evacuation complicates emergency situations.

How are Protective Actions Determined?

Because of differences in design, construction, fire-resistant qualities, height, floor layout, usage, and occupancy, each building presents unique challenges in emergency evacuations. State or provincial and local codes and regulations concerning fire and emergency evacuation should be checked, and, where variances exist, the more applicable measures should be adopted. Fire control and evacuation authorities (fire department, consultants, and insurance company) should be consulted for suggestions relating to a particular building. It is important for the community to be aware of their location so that they can make protective preparations. In case of an accident, information should be relayed in a clear and audible

manner, such as by use of radio, TV, loudspeakers, sirens, telephones, among others.

Creating an Emergency Plan

Successful and efficient evacuation and emergency plan depends on complete pre-planning, organization and supervision.

Planning should include at least these basic principles:

- Building evacuation organization
- Evacuation policy and plans
- Detection and reporting (of fire or hazard)
- Evacuation program coordination (of movement and evacuation)
- Communication to direct movement and evacuation
- Inspection and evaluation.

Written Plan

As soon as building occupancy begins, a written plan of fire and other emergency procedures should be agreed upon by building management and responsible representatives of each building tenant.

The emergency evacuation plan should include:

- An outline of the emergency evacuation organization plan and agreed-upon priorities, including responsibilities and authorities. Building and tenant representatives should agree upon these.
- Detection, emergency warning systems and reporting procedures for fire and other hazards should be provided.
- Coordination of central building emergency evacuation control with assigned floor emergency evacuation teams should provide for the orderly movement of persons. Pre-planning and "fire in progress" chain-of-command instructions should be detailed, and each tenant should be required to acknowledge and comply.
- In addition to a suitable and effective fire-detection system (both automatic and two-way voice communications), an adequate and effective system for two-way communications should be provided for every floor. The communication system will be used to direct the work assigned to floor evacuation teams and to assist in communications between buildings' communication control centres and fire department personnel using the system during fire-fighting and evacuation emergencies.
- Building management and tenants should cooperate in an education and training programme for all emergency floor-evacuation teams, employees, and building visitors. This should include a system of personal instruction for all building inhabitants and proper posting of instructions, placards and evacuation diagrams at strategic locations on every floor.

Emergency fire procedure information should be prominently posted in corridors.

- One individual should be designated to establish a programme, including proper documentation for regular inspections and follow-up to maintain the detection and communication system in the best operating condition.
- An evacuation drill programme should be established that will include periodic practice of movement of occupants to refuge areas. The frequency of these drills - monthly, quarterly, among others - would depend upon the employee turnover in the area. The schedule should be maintained and documented. The drill should include the progressive movement of personnel to areas of safety. The purpose of "progressive movement" should be explained to the tenants at this time; to keep all tenants at a safe distance from the fire hazard without evacuating the building all at once.

How to Prepare for an Emergency/Disaster

Policy and Plans

When leases are signed by tenants occupying various buildings, a document describing the building's emergency evacuation policy and plans should be provided by the building management and agreed upon by the tenant. This document should describe fire detection and fire reporting systems and the emergency evacuation plans and communication systems provided by the building. Tenants should agree to furnish assigned emergency evacuation teams and a responsible representative to act for them in all matters of fire control and personal evacuation. In the event that two or more residential tenants occupy a floor of a multipurpose high-rise building, the tenants should designate a floor evacuation representative and alternate who would report to the building coordinator.

Evacuation Routes

Drawings, diagrams, evacuation routes and similar information should be included in the building's emergency evacuation plans. Furthermore, the document should include those elements of this data sheet adopted as standard procedures. Floor numbering and direction of travel should be indicated in stairwells.

Imminent Danger

The building's emergency evacuation plan should define "imminent danger" situations and provide for immediate temporary action by responsible persons assigned to emergency floor evacuation teams.

Central Control

The building's emergency evacuation plan should indicate how central control will function in the event of fire and the need to move and evacuate persons.

Floor Evacuation Teams

The building's emergency evacuation plan should include the duties and responsibilities of emergency tenant floor evacuation teams (see the accompanying "Self-Evaluation Checklist" for details).

Information to Tenants

The building's emergency evacuation plan should describe evacuation training to be provided and copies of written information furnished to occupants. Fire and emergency evacuation information should be posted at strategic locations on every floor and elevator.

Evacuation Drills

The building's emergency evacuation plan should include a schedule of programmed fire and evacuation drills. Partial building skill drills and full-dress "rehearsal for survival" should be planned.

What to do if Disaster Strikes

Movements of occupants to a refuge location, as well as total evacuation, require the utmost coordination of assigned emergency evacuation floor teams and central evacuation control. Detection, automatic alarm systems, or automatic sprinkler systems should be a part of the total disaster preparedness programme. However, if fire is detected or the start of a fire is witnessed, it should be reported immediately. Delays in reporting fires because of heroic but ineffective fire-fighting can result in needless time loss and allow a simple fire to get out of control. Fire-reporting systems must be handy, direct and not subject to any delay. Reporting by telephone or personal contact should be discouraged when faster means are available

Before Disaster

Pre-planning, evacuation priorities and proper skill drills help eliminate mistakes and misunderstanding. Plans should include possible alternate routes when particular circumstances warrant rerouting of occupants because of hazards (such as smoke, heat, and gasses) in the evacuation route. (Note: a blocked-open door can render an evacuation movement on a stairwell dangerous. Alternate routes should be planned and directed to be used until the cause of danger is removed and the stairwell is safe for use.). Chain of command pre-planning should determine those vested with authority to move persons and evacuate emergency areas as well as under what circumstances emergency temporary authority for immediate removal is provided to assign floor evacuation control teams. Central building evacuation control should take over command from floor evacuation control teams immediately. Similarly, central evacuation control should be relinquished to the fire department officials upon their arrival.

During Disaster

Specific information for emergency should be conveyed by the building control to individually selected floors, or to all floors, depending on the extent of the emergency and the need

for evacuation at specific areas. Local police and fire departments should be consulted to determine adequacy of the plan. For fire emergencies, evacuation must be by means of fire stairwells. There should be a positive means of selectivity notifying occupants to evacuate. Definite priority must be given to those floors directly involved and floors immediately adjacent to the emergency. On the emergency involved floor, evacuation should be to the nearest available exit to a safe area three floors below or street level. Provisions should be made, and direction provided by assigned floor evacuation control teams, to make sure that traffic flows out and away from the building at all exit terminal points.

After Disaster

Generally, immediate evacuation will be from the floor where a fire or explosion emergency occurs and the two floors immediately above, and the two floors immediately below the emergency floor. These occupants will be directed to a refuge area and will be given movement priority. Thereafter, movement and evacuation priorities will be determined on the basis of particular fire and smoke conditions reported by emergency evacuation floor control teams and fire department personnel. These persons will direct evacuation disciplines, assisted (as necessary) by trained building evacuation control teams.

To Prepare a Disaster Supplies Kit

A disaster supplies kit is especially helpful in case you cannot be immediately reached by relief workers. It is supposed to help your family cope with the situation until help arrives or the situation subsides. This is putting together what you might need in case of an evaluation or a home confinement. There should be minimal and should be stored in an easy to carry container.

Include such items as:

- Water supply (at least a gallon per person per day) Store water in sealed, unbreakable containers. Replace every six months so that it remains fresh.
- Essential tools and supplies such as a battery powered radio, flashlight and extra batteries, pliers, tape, whistle, large plastic sheeting, paper and pencil
- A supply of non-perishable food, at least a three-day supply. The best are foods that do not require refrigeration, cooking and preparation and little water if they have been prepared. Ready-to-eat canned meats, fruits and vegetables are ideal. Remember when disaster strikes, there is no time to go shopping.
- Also think about the source of heat you can use in such situations.
- A tin opener and a utility knife.
- A map of the area.
- Extra clothes, sturdy shoes and rain gear.
- Blankets or sleeping bags.
- A list of important family information such as family physicians.

- Credit cards and cash, extra set of keys.
- Special items for infants, elderly or the disabled such as baby formula, diapers, bottles and for adult, denture needs, eye glasses as well as some entertainment materials such as games and books for all.
- A first aid kit and prescription and non-prescriptions. Ask your doctor about storing prescription medication.
- Sanitation supplies such as toilet paper, soap and detergents, personal hygiene items, plastic garbage disposal bags and disinfectant.

Store your kit in convenient place for all family members to access. Smaller versions of the same may be kept in the car boot. There stored items - Clothes, food, water, and batteries need to be changed regularly so that they are always in a useful state.

Preparing a First Aid Kit

It is important to have a first aid kit box for the home that can also be carried in case of an evacuation, and one for the car. You can purchase one. There are many different types for home and office use or you can make one that should include:

- Sterile adhesive bandages in assorted sizes.
- Assorted sizes of safety pins.
- Cleaning agents/soap.
- Pairs of latex gloves.
- Assorted sizes of sterile gauze pads.
- Triangular bandages (3).
- Assorted sizes of sterile roller bandages.
- Scissors and Needles.
- Thermometer.
- Tongue blades.
- Antiseptic.
- Tube of lubricant.

CONCLUSION

The following is essential at any given time to minimize casualties in an event of a disaster.

1. Full-time Communications

Communications channels must be available at all times when the building is occupied by any tenant, security, or cleaning people. Direct contact to the chief of each floor's assigned evacuation control team (or designated alternates because the floor captain may be out of the area, ill or on vacation) must be available at all times.

These people must have the authority, responsibility and training to act for the building tenant on their assigned floors. There must always be a trained substitute to take over in the absence of any fire warden or acting fire warden. A system of alternates should be established so that no floor evacuation team is depleted for even as short a time as a lunch period.

2. Off-duty-hour Communication

During periods when the building is not occupied, direct signalling to the fire department should be established. At no time should anyone enter the building without his presence being duly noted in writing at a security guard entry location. It will be the security guard's duty to notify and evacuate all "off-hour" occupants in the event a fire or other emergency occurs.

3. Communications Backup

Whatever system of communication used should be backed up by at least one alternate, independent communication system to use in the event the primary system becomes inoperative.

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