

General evacuation measures in disaster situations for hospitalized mental patients. Literature review and suggestions

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Original article

SUMMARY

Around the world, natural and man-made disasters cause mass human migration, mental disorders such as Post-Traumatic Stress Disorder, and economic losses. It has been estimated that each year, 130 disasters of different natures occur in the Americas and that 67% of hospitals and primary care units are located in high-risk areas. For this reason, the World Health Organization considers that disaster prevention, risk reduction, preparation, and recovery are activities which form a continuous cycle. In light of this, it has developed the "Hospitals Safe from Disasters" program and the "Hospital Safety Index", two tools to evaluate the functionality of hospitals and the likelihood that they will continue working in a disaster situation.

This paper makes a brief practical review of the general evacuation measures for the mental patients of a psychiatric hospital, as this is a highly vulnerable population due to causes which are intrinsic and extrinsic to mental illness. These measures include: the right moment to make the decision to evacuate a psychiatric hospital, the way to carry this out, evaluating patients requiring an immediate evacuation, evaluating pre- and post-incident treatment, medical drugs supply, who will be responsible for the evacuation, the place where patients will be transferred taking into account the duration of the catastrophe, patients' identification, the information which will be provided to relatives, the supervision of life in the shelters, and patients' return at the end of the catastrophe.

Finally, the paper suggests some elements to be considered for prevention, as well as some actions to evacuate a psychiatric hospital in the face of disaster situations.

These are not exclusive to this population, so they can be applied to other vulnerable groups, such as children and the elderly.

Key words: Evacuation, disasters, mental patients, psychiatric hospitals.

RESUMEN

Alrededor del mundo, los desastres naturales y los provocados por el hombre causan la migración de grandes grupos humanos, trastornos mentales como el estrés postraumático y pérdidas económicas. Así, se ha calculado que cada año ocurren 130 desastres de diferente naturaleza en las Américas y que el 67% de los hospitales o clínicas están en zonas de alto riesgo. Por tal motivo, la Organización Mundial de la Salud considera que la prevención de los desastres, la reducción del riesgo, los preparativos y la recuperación son actividades que forman parte de un ciclo continuo por lo que ha desarrollado el programa de "Hospital Seguro" y el "Índice de Seguridad Hospitalaria" que son herramientas para evaluar la funcionalidad hospitalaria y la probabilidad de continuar en funcionamiento en casos de desastre. El presente artículo hace una revisión breve y práctica de la bibliografía sobre las medidas generales para la evacuación de los enfermos mentales de un hospital psiquiátrico ya que es una población altamente vulnerable por causas intrínsecas y extrínsecas a la enfermedad mental. Estas medidas incluyen: el momento adecuado para tomar la decisión de evacuarlo, la forma de hacerlo, seleccionar a los pacientes que requieren una evacuación inmediata, evaluar el tratamiento antes y durante el siniestro así como el abastecimiento de los medicamentos, quiénes serán los responsables de la evacuación y el lugar donde serán trasladados tomando en cuenta el tiempo que durará la catástrofe; la identificación de los pacientes y la información que se deberá dar a sus familiares, así como la supervisión de la vida en los albergues y su retorno cuando culmine el evento catastrófico. Finalmente sugiere algunos elementos a tomar en cuenta para la prevención y acciones para evacuar un hospital psiquiátrico ante dichas situaciones las cuales no son exclusivas para esta población sino que también pueden aplicarse a otras poblaciones vulnerables como niños y ancianos.

Palabras clave: Evacuación, desastres, enfermos mentales, hospitales psiquiátricos.

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The Secretary General of the United Nations declared October 8 2008 the International Day for Natural Disaster Reduction, given that in recent years, the presence and consequences of natural (geological and hydro-meteorological) and anthropogenic (chemical-technological, sanitary-ecological and social-organizational) phenomena have intensified. Examples are abundant: earthquakes on August 15, 2007 in Pisco, Peru; May 12, 2008 in China; January 12, 2010 in Haiti, and February 27 in Chile the same year; the tsunamis in Sumatra in 2006 and Japan in 2011; floods caused by hurricanes Katrina, Stan, and Wilma in 2005 and 2007; floods due to intense rain in Tabasco and Chiapas States in Mexico every year between 2007-2012; and the armed conflicts in the Middle East. All of these events caused migratory movements from rural to urban areas (including to other countries), and therefore the displacement of large human groups to places that are safer or with better physical infrastructure.¹⁻⁴ Although official figures show the scale of death and injury of these catastrophic events, the data does not reflect the damage to people's mental health.

Every year in the Americas, there are around 130 disasters of various magnitudes, and it is calculated that 73% of inhabitants and 67% of clinics and hospitals in the region's 19 countries are in high-risk zones.⁴

The Pan-American Health Organization and the World Health Organization (PAHO/WHO) recognize that the prevention of disasters, risk reduction, preparation, and recovery are actions of a continuous cycle. The "Hospitals Safe from Disasters" program has defined these actions as phases: before, during, and after a disaster.⁴

A Hospital Safe from Disasters is defined as "a health facility whose services remain accessible and functioning, at maximum capacity and in the same facility, immediately following a large-scale disaster or emergency". The program was approved and made international in 2005 in Kobe, Japan, and adopted in various countries.⁴ The Secretary for International Strategy for Disaster Reduction of the United Nations (UN/ISDR) and the World Health Organization (WHO), with the support of the World Bank's Global Facility for Disaster Reduction and Recovery and together with other regional and international organizations, have made various efforts to promote hospitals that are safe in the face of natural disasters, on the basis that all disasters represent a health problem and any damage to their systems affects all sectors of society and nations as a whole. As such, all countries should be aware of the importance of this subject and commit themselves to ensuring that healthcare institutions and hospitals are resilient to natural threats. The efforts culminated with the creation of the 2008-2009 Campaign⁵ for disaster reduction with the theme "Hospitals Safe from Disasters: Reduce Risk, Protect Health Facilities, Save Lives". Three essential aspects were covered by this campaign:

1. *Before phase*: This refers to guaranteeing structural and non-structural safety, as well as the presence of a hospital Committee for emergencies and disasters. A safe hospital will not collapse during a disaster, and better internal training will improve response capacity.
2. *During phase*: A Hospital Safe from Disasters will know how to function during a disaster by putting in place action targets, trained rescue workers, integration of medical-nursing pairs, designated areas for planning and care of victims (*triage* area) and finally, strengthening critical areas where healthcare services are accessible and work at maximum capacity.
3. *After phase*: These are actions to restore functionality and activities to their normal level.⁵

The objectives of the Global Campaign for Disaster Reduction can be summarized in three points:

1. Protect the lives of patients and healthcare workers, reinforcing the structure of medical facilities.
2. Ensure the functioning of facilities and healthcare services after an emergency situation or disaster, which is when they are needed most.
3. Improve the capacity of healthcare workers and institutions to reduce risk, including emergency management.⁵

In order to do the above, the Hospital Safety Index^{6,7} was created, which is a reliable and low-cost rapid assessment tool that provides an immediate idea of the likelihood a healthcare establishment will continue functioning in the case of a disaster. Other useful elements are the Hospital Classification Card and the Safe Hospitals Checklist.^{8,9} Once a hospital's Safety Index is determined, which also includes the environment and the health services networks to which it belongs, other countries and those responsible for decision-making will have a better idea of its capacity to respond to large-scale emergencies or disasters. The Hospital Safety Index does not replace detailed and costly vulnerability studies, but given that it is economical and practical, it is the first step in prioritizing investment and improving the safety of healthcare establishments.

However, the majority of hospitals are found in high-risk zones, which makes it necessary to implement evacuation strategies for patients under certain situations which put patients' lives in danger.

The situation becomes even more crucial in the case of patients with certain mental pathology, due to the lack of staff in these hospitals to carry out the evacuation,¹⁰ coupled with the intrinsic causes of the mental illness (severe cognitive deterioration, psychomotor agitation, among others).¹¹ It is important to consider that the population of psychiatric hospitals is mostly made up of people suffering chronic and long-term illnesses, who present profound intellectual disability and have neurological illnesses or

neuropsychiatric disorders which may leave them wheelchair-bound and requiring 24-hour care.¹¹ This causes greater complexity due to said patients requiring specialized staff in the field of psychiatry or experienced staff for their care. The aim of the present article is to carry out a review of the specialized literature on measures that should be taken to evacuate a psychiatric hospital.

METHODOLOGY

A search was carried out on the Medline, PsychINFO, EBSCO, Cochrane, Health Sciences Descriptors (DeCS), PubMed, Google Scholar, and SciELO websites, and of the WHO virtual library. The key words used were: disasters, care, evacuation, mental illnesses, mental disorders, shelter, measures, medications, rescue, and actions. The search was conducted in Spanish and English.

The present article uses the term "rescuers" in [Spanish: "brigadistas"] to refer to all people who provide support in carrying out an evacuation.

RESULTS

The search results can be grouped as follows:

1. What is the appropriate moment to make the decision to evacuate a psychiatric hospital?

It is important to remember that psychiatric hospitals also form part of the health sector and that they should actively participate in the Hospitals Safe from Disasters program. Through its President and Coordinator (generally the Chief of Medicine and the Chief of Emergency Services) the hospital's emergencies and disasters Committee is responsible for activating the contingency plan, whether by order of the civil authorities or by an internal decision based on a situational assessment. The decision to evacuate is taken according to the risk represented for patients and staff, in descending order: to life, to function, or to investment. The first of these points refers to safeguarding the lives of patients, the second refers to consequences as per the seriousness of the disaster: communication, shortage of drugs, and absence or contamination of food. The third regards the loss of infrastructure. Patients may become distressed in these situations, feeling frightened or losing control of their emotions; reactions not that different to those of any normal victim of a disaster. However, a patient with a mental disorder is more vulnerable to showing psychotic symptoms or psychomotor agitation, and rescuers must therefore be trained in responding to that contingency.¹²⁻¹⁸

2. What is the most suitable way of evacuating mental patients?

Once the decision has been made to evacuate, the location of muster points in certain parts of the hospital or outside it should be known, where an initial count can be taken of the patients. Rescuers should have a basic knowledge of mental health and be aware of the care needs of mental patients; it is recommended that healthcare staff from the same hospital (not external staff) is responsible for evacuation, to avoid fear and mistrust in patients. A routine count and register must be taken of patients at the muster points to avoid losing anyone. The transfer of the mental patients will depend on the cause of the catastrophe and the authorities' possible options for transport: ambulances, buses, boats, dinghies, or helicopters. A sedative should be considered in the case of anxiety crises or exacerbation of psychotic symptoms.^{12,19}

3. What types of patients require immediate evacuation?

It is important to prioritize the needs of the most vulnerable and disabled patients. This process is generally complex, given that their admission to hospital will have been motivated by the presence of acute symptoms that require close specialist care. Generally, priority will need to be given to those in wheelchairs, catatonic patients, those with dementia syndromes, or who are bedridden due to their illness. The most seriously and acutely ill patients must be the first to be transferred to another psychiatric or general hospital. Patients with less incapacitating pathologies, such as major depression (without suicidal ideation) or personality disorders (except antisocial personality disorder) are more manageable and can even assist with rescue activities.^{15,17-19}

4. What type of medication do patients require before evacuation?

The evacuation of a psychiatric hospital implies a modification to the daily activities of an institution; however, this does not imply that patients stop receiving the minimum medication while they are transferred to another place. It is convenient to maintain the therapy schedule for as long as the evacuation or incident lasts. The assessment and change of treatment is an individualized process, therefore a basic group of psychiatric medications should be available: benzodiazepines, antipsychotic ampules and pills, and antidepressants with anxiolytic action, among others.^{15,17,19}

5. Who will be responsible for the evacuation?

It is recommended that one person directs all activities (the hospital Director, the unit chief, etc.), however, this does not mean that all responsibility lands on that one person. Each hospital emergency and disasters Committee should form a team of all service and area managers, and each of those should be divided into rescue teams formed of a general doctor, psychiatrist, or psychologist; a nurse; a social worker; and an administrator. Each rescue team will be in charge of evacuating a certain section of patients, established beforehand by a list, area, or ward. Furthermore, generally all hospitals have civil protection staff, this group can be in charge of taking general evacuation measures, in other words, ensuring that all patients are evacuated, that the means of transportation is in the appropriate place, and that the evacuation is carried out through the previously-established signals (evacuation routes) in each hospital. In this way, evacuation does not fall to one person, but rather to all hospital staff.^{12-18,20}

It is suggested that voluntary staff and external rescue workers report to the hospital's health staff, given that they do not know the patients or the best way of caring for them.^{16,17}

6. Where is the safest place for evacuation?

Due to dealing with mental illness, it is suggested that there be a shelter with general security measures in place so that patients do not leave the area because they are frightened or anxious, or attempt suicide due to lack of safety measures. The most recommendable course of action is to transfer them to another nearby psychiatric hospital in the region, or even a general hospital. Patients who are stable enough could even be discharged in order to avoid overpopulation of the shelter or hospital.^{13,14,17-20}

7. How are patients identified?

Lists with the names of patients should be made and kept to hand, a point which is often forgotten. The rescue team is responsible for these patients, as well as the place they are being evacuated to. As such, they should remember that they could be transferred to shelters where there are other types of people or patients with other pathologies, and patients will therefore have to be identified by a special type of clothing. Their name and place of origin should be on a piece of fabric around their neck or wrist, which will allow for rapid identification within the shelter for when they return to their place of origin.^{16,17} It is important to preserve these patients' human rights and avoid stigma, and therefore elements of identification are suggested that do not call attention to or discriminate against the patient.^{16,21}

8. What types of staff are needed to carry out the evacuation?

In an emergency situation, trained staff is preferred; however, volunteers are gladly received. In that case, the most important thing is that they are organized into the activities they will be doing during the evacuation. Information should be clear and direct, and should not deviate from their purpose. It has been noted that when there is a traumatic event, people tend to fall apart and not do anything, or in contrast, they do many different things, but neglect the activity they were assigned. Another situation to avoid is duplication of effort, in other words, doing the same activity at two different levels, which happens due to lack of communication and represents a loss of time and energy for the rescue team. It is recommended to assign a certain number of patients to a resident or student, which will reduce efforts in caring for these patients.^{12-18,20}

Psychological and psychiatric support for the rescue teams and health staff participating in the evacuation should not be forgotten. This is in order to avoid Post-Traumatic Stress Disorder, alcohol and other substance abuse, among others.^{17,18,22,23}

9. What is the anticipated duration of the catastrophic event?

The activation, and deactivation, of the disaster plan, depends on the primary hospital authority, which in turn is coordinated with the civil authorities. As such, the duration of an event will have to be assessed by other professionals: seismologists, geologists, meteorologists, etc. In any case, it is suggested that staff responsible for patient evacuation take long-term preventative measures: administering of medication, good hygiene practices, safety, feeding, and specialized medical care, etc.^{12-14,17,18,20,24}

10. How can taking and provision medication be monitored?

A team should be delegated exclusively for this process: nurses, stock and pharmacy staff. In terms of lack of medication, laboratories or businesses who deal with their distribution should be contacted, and telephone numbers, addresses, and names of those who manage this should therefore be to hand. Other humanitarian aid institutions should also be contacted, such as the Red Cross, Green Cross, other psychiatric hospitals, NGOs, etc. In terms of supervising administration of medication, it is suggested to keep to the same timetable and method; changes in therapy schedules due to this not being the case must be approved by doctors. It is important to have a record for each patient and if possible, generate temporary files to store relevant information.^{17,20}

11. Other supply arrangements: water, food, and clothing

Mental patients also feel hunger, thirst, and cold, they require personal hygiene, a bed to sleep in, and a roof over their heads. It is appropriate to form a group in charge of these activities (social workers, nurses, volunteers, and administrators), who can be obtained from the same hospital before evacuation, or drafted in from other institutions.^{20,24}

12. Communication and information

While in many Latin American psychiatric hospitals, the majority of chronic mental patients have no family, or they are not involved in their care, there is another percentage who does have family, and they will require information about the place and conditions in which their relation is being kept. It is therefore necessary to use methods of mass communication such as radio, television, and internet to publish this information, as well as lists of patients with their respective group leaders. This will allow for the local community to know that there are mental patients requiring the support and solidarity of the local area.^{12-14,16,17,20}

13. Life in a shelter

Another challenge is daily life within a shelter, both for the patients themselves as well as between patients and the community. Constant daily life lived in close proximity to other mental patients can be psychiatrically destabilizing, and as such, disturb the calm in the shelter as other patients may feel their "territory" (space, place they are walking, etc.) or privacy (bed, nowhere to keep their belongings, etc.) has been invaded. On the other hand, stigma towards mental illness can be a cause of conflict between the community and the mental patients, which can lead to insistent requests to the authorities to move these patients somewhere else. In this situation, and in order to anticipate these events, it is recommendable that mental patients have their own shelter or are transferred to another psychiatric hospital. If this is not possible, it will be necessary to refer the most psychiatrically unstable or agitated patients to a hospital and keep the most adaptable patients in the shelter. In this way, the social daily life of mental patients can be considered a positive stimulus for their recovery and social reinsertion.^{16-18,20,21,24,25}

14. Create measures for returning patients to their unit or hospital once the incident has been resolved

Just as the evacuation of the hospital was planned, so, too, should be the return. This process will likely not be as pressu-

red or debilitating; however, neither should it be lax or considered less important. This process is begun with the lists and counting of the patients: a) *Location*: An important element given that some of them could have been evacuated to another shelter, hospital, community, to their family, or within the same shelter but separated in the crowds; b) *Identification*: for this process, the piece of fabric with each patient's identification is important. The use of the fabric label with the patient's general details (name, place of origin, etc.) is an emergency measure, it is not the best or most appropriate method. The ideal would be to have official identification attached to the patient's collar, or a plastic bracelet with their general information on it. In this way, patients in the shelter can be quickly identified.²⁰

Return transport must have certain safety measures which may not have been possible at the time of evacuation, such as travelling at a safe speed, use of safety belts, police escort, and entertainment activities during the journey, etc.

15. What preventative measures should be taken into account for future disasters?

Each hospital evacuation is different, and will have individual aspects according to the needs of the hospital and the type of catastrophic event. Some points to consider are: 1. Create a team within the hospital that makes decisions and is in charge of the evacuation; 2. Train healthcare staff in disaster situations; 3. Train psychiatry residents in crisis intervention, group therapy, decision-making, and triage; 4. Form a team of professionals who care for and respond to the needs of healthcare staff involved in rescue (group therapy, mental hygiene, encourage talking about the subject, etc.) in order to avoid Post-Traumatic Stress Disorder or other mental pathology in staff; 5. Always have the list of patients with their respective area managers available; 6. Promote a form of patient identification through an ID card, plastic bracelet, color of clothing, etc.; 7. Include the subject of mental health in disaster situations in the training of residents, with a focus on prevention and action; 8. Promote psycho-educational talks and training to humanitarian staff who would potentially provide help in disaster situations.^{12-18,20}

COMMENTARY

When carrying out the search, it was observed that some of the suggestions were general and not specific to our subject of interest, but could be adapted to the needs of a vulnerable group or situation.¹⁶ This observation is important, given that information is scarce, and what is set out in this document is not definitive, although it has elements that could be suggested as a guide. It seeks to generate a preventative

awareness within psychiatric hospitals and for the subject to be familiar should the need for contingency arise. The results are in number order, but this does not necessarily imply an order to be carried out in each situation. The decision on their applicability will depend on individual factors around the hospital and the type of disaster. The present article is a review, and it does not intend to generate new knowledge, but rather to put forward a question for discussion: do we have an evacuation plan in place for mental patients in our psychiatric hospitals?

It is recommendable, especially for psychiatry residents, to receive training in crisis intervention, group management (ideally group therapy), leadership (primarily for helping to organize a community or shelter), and *triage* (to assess contingency) as well as actively participating in evacuation drills and basic vital support, before attending to provide help; these aspects may seem utopian but they are feasible if there is a preventative vision in psychiatry training.¹⁶⁻¹⁸

WHO/PAHO, through their Strategic Plan for 2008-2012, set out a package of interventions and focuses that includes: advocacy, technical support for policies and legislation specific to the sector to be improved and updated; continuous staff training both in new associated organizations as well as health ministries; submission of technical-scientific information to broaden knowledge on preparation; support to improve plans and procedures, and the submission of human and financial resources specifically identified to improve disaster preparation and facilitate the creation of partnerships.⁴

Finally, WHO has made available various books, articles, and general information about disasters on its webpages: www.unisdr.org/wdrc-2008-2009, www.paho.org/desastres and <http://www.bvs.edu.sv/desastres/internas/albergues.htm>

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