

Review Article

Management of information and messages to the population in emergency, evacuation and simulation exercise situations

M. P. Acinas

PSYCHOLOGIST. SPECIALIST IN HANDLING EMERGENCIES AND CATASTROPHES. EMERGENCY MEDICAL TECHNICIAN. SUPERVISOR OF IPSE (SPECIALIZED PSYCHOLOGICAL INTERVENTION), BURGOS, SPAIN.

ABSTRACT

The basic components of the information transmission procedure are defined, and the elements of the general public response to emergencies, evacuations and simulation exercises are summarised. A number of investigations have demonstrated that specific, consistent, true, clear, appropriate and sufficient information can promote an adequate definition of the situation among those receiving it. There are a number of implications regarding what the general public requires in terms of facilities, services and information before, during and after an emergency.

Key Words: *Information. Communication. Emergencies. Evacuations. Simulation exercises.*

INTRODUCTION

In the last few years there have been considerable advances in emergency medicine and more health care resources have been distributed throughout the country (basic and advanced vital support ambulances), with the aim of guaranteeing local emergency response. Emergency centres are beginning to specialize and re-structure by integrating new computer applications, incident location systems, and appropriate recruitment and training of call centre personnel, coordinators and supervisors.

In our country, little importance has been given in the past to aspects related to information and communication in situations of emergency and disasters¹. At least 35 different disciplines are involved in the study, management and reduction of risk²; therefore, if research were carried out and technical skills were incorporated

RESUMEN

Gestión de la información y mensajes a la población en situaciones de emergencia, evacuaciones y simulacros

En este artículo se definen los componentes básicos de transmisión de la información y se resumen los elementos de la respuesta de la población en emergencias, simulacros y evacuaciones. Algunas investigaciones han demostrado que la información, específica, consistente, cierta, clara, apropiada y suficiente puede favorecer una definición adecuada de la situación en las personas. Hay algunas implicaciones respecto a lo que la gente necesita en cuanto a prestaciones, servicios e información antes, durante y después de la emergencia.

Palabras clave: *Información. Comunicación. Emergencia. Evacuación. Simulacro.*

into all such fields, a great number of people would benefit from adequate information aiming to minimize risk in emergency situations, to increase population satisfaction and to provide due attention to real emergencies preventing call centre overload³. When such situations involve a large number of people, the perceived benefit (by the users) and the real benefit (proven with objective data) is greater.

PREVENTATIVE COMMUNICATION AND COMMUNICATION IN EMERGENCIES

Communication with the general public in an emergency situation can be made at a number of different moments in time, and will have different effects on the act of communication.

Correspondence: M. Patricia Acinas
Barrio Gimeno, nº 5, 7º C-1. 09001 Burgos
E-mail: pacinas@terra.es

Received: 14-9-2006
Accepted: 15-2-2007



TABLE 1. Main characteristics of communication types

Preventative Communication	Emergency Communication
It is a more open form of communication. It can be carried out at any time with no apparent impediments. A flexible calendar for message issue can be established. Objectives: – To issue information. – To inform the public of aspects directly affecting them. – To consolidate ideas and knowledge which can be useful in an emergency situation.	It is subject to variations due to the emergency situation itself. Information is affected by the actions of intervening parties: Police, Fire Brigade, Red Cross... Objectives: – To mobilize the population in a full and operational manner. – To issue specific information on certain action and behaviour guidelines for the public. – To refer to information previously issued during the preventative stage.

Two types of communication can be identified⁴ with a common characteristic of no improvisation possible: preventative communication and communication in emergency situations, with different messages pertaining to either case. For instance, in an emergency situation the message could state that there might be a leak of radioactive material from the nuclear power station due to a failure of the measurement systems, which has now been resolved; in preventative communication the specific production mechanisms must be explained. This enables people to understand the logic of preventative actions in a situation of real emergency after the event. If this is not done in this way, the act of communication could become⁵ a black box (Table 1).

PRECAUTIONS IN EMERGENCIES

Each culture faces the need for self-protection and prevention in a different way⁶; some are very aware that they must know and follow certain guidelines and draw up evacuation plans; others do not carry out simulations nor look after personal safety.

The precaution measures which must be carried out depend on the situation leading to the emergency, among which are the following¹: meteorological or public safety alterations, industrial accidents and natural disasters.

In an emergency situation, a telephone support service becomes a fundamental³ component, which is why permanent telephone access should be guaranteed (land and/or mobile lines) for people who might be affected by a crisis. This reduces stress levels, although priority must always be given to emergency services in the use of the telephone network. When essential communication services are down, coordina-

tion and activation of rescue operations in a disaster situation can become very difficult⁸.

Before taking decisions regarding what to do and how to do it, assessment and awareness⁹ of the potential impact of the emergency situation, establishment of a hierarchical structure of action (distribution of responsibilities in the management of the emergency and sequence of actions to be taken) and elimination prior to action of any avoidable risks, all form part of the recommended approach.

When issuing information, a number of measures and factors must be taken into account¹:

- *Avoid disproportionate “en masse” phenomena.* Appropriate information procedures allow better control of the psychological attitude of the general public.

- *Evaluate the information received by the public.* Advance knowledge of any rumours or uncertainties which might arise allows better handling thereof (containment, redirection, etc.).

- *Only request specific assistance.* Request for assistance must not be general (for example, psychological professional help); the assistance needed must be specified (i.e. psychologists specializing in emergency and crisis handling). This allows provision of appropriate and organized resources for the situation in question (with sufficient training and experience). Furthermore, a country’s request for help when faced with a crisis situation can generate a wave of human and material solidarity which will require appropriate handling. If foodstuffs in general are requested, one runs the risk of sending rice to a rice-producing country, for instance, or pork products to a Muslim country; likewise, unnecessary resources (technical, human or material) may be sent, to the detriment of more imminent needs.

- *Time-management and sequencing of messages.* Appropriate procedures must be set up to issue regularly updated information: before, during and after the emergency. Informing

the public of how often updates will be released increases positive public perception of the body in charge and avoids disinformation leading to legal suits or uncontrollable mass phenomena.

Another aspect which must be considered in emergency management is⁹ the establishment of an appropriate monitoring system to verify whether objectives are being fulfilled, whether modifications must be introduced or whether new actions must be taken in light of new situations. Moreover, risk assessment of third parties who are not directly affected allows them to be informed of the situation and be given preventative safety measures.

Assessment is one of the most neglected aspects of emergency management, although some models¹⁰ comprising five steps (pre-crisis, initial phase, maintenance, resolution and assessment) include it as the last step.

MODELS OF INTERVENTION

Civil Protection

The nationwide structure of this body allows assistance to be provided to people in the face of risk situations. It is based on rational and caring behaviour theories¹¹ and is known as the three “C” model:

- Communication and information to citizens
- Coordination between the various institutions and bodies.
- Cooperation between society and institutions.

This social organization model in the face of disasters serves as the basis for a risk model built on three prudential principles:

- FORESIGHT: Drawing up maps and analysing risks affecting the population in order to forecast them
- CAUTION: Identify activities in society which may entail real danger for the population and regulate industrial, building and general activities (corporate and individual) which might entail some danger.
- PREVENTION: Coordinated institutional planning of administration resources in the face of disasters and design of citizen training and self-protection programmes.

Muñoz and Álvarez Model (2000)⁹

The starting point for these authors is that an ever increasing number of calls are generated in a short space of time in the face of a considerable emergency. Many of such calls are seeking information only but can overload the call centre sys-

tem and prevent those requiring emergency assistance from getting through. The negative effects are:

- Insufficient technical and human resources.
- Social disinformation leading to maladjusted behaviour.
- Generation of alarmist and/or unfounded rumours with a ‘snowball’ effect.
- Neglect of other urgent events (whether or not related to the incident).
- Creation of a distorted image of the efficacy and efficiency of emergency services.
- Psychological pressure and overload of emergency professionals.

They point out that the solutions applied so far have only managed to partially solve the problems and can lead to added difficulties. They support the creation of a FreeFone service only activated by the emergency services in the face of disaster or multiple casualty situations.

The helpline could be accessed by direct dialling or by call routing (via a computer application) by the operator who deems the call to be merely seeking information. The user could have the possibility of speaking to a health care operator after the recorded message for appropriate medical advice (Figure 1).

They conclude that their model offers the following benefits:

1. Low technical and human cost. Technical feasibility.
2. Allows simultaneous and high quality attendance of high numbers of emergency information calls and other emergency events without overloading the telephone lines.
3. Reduces public disinformation, thus reducing information distortion among those affected.
4. Allows rapid establishment of important self-protection and safety measures.

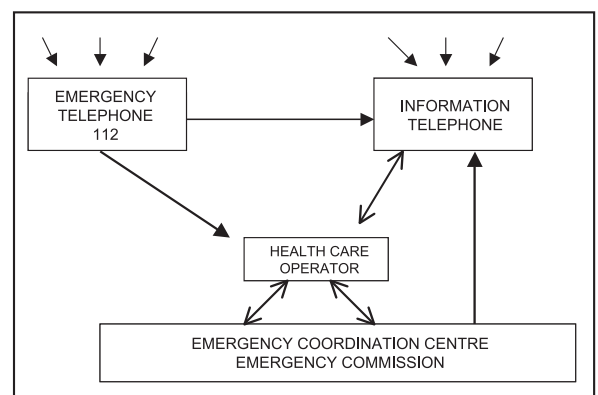


Figure 1. Psychosocial Intervention Model for telephone information in emergency situations (Muñoz and Álvarez, 2000)⁹.



PRINCIPLES IN THE MANAGEMENT OF DISASTER SITUATIONS

When disasters¹² affect many people at the same time, the priority is to save lives and rescue the wounded, to the neglect of information to be given to the general public and the media.

In the face of an event, the Centre for Information Coordination located close to the Main Operation Coordinating Centre¹³ should come into play. However, emergency management must begin with an information plan prior to the critical situation allowing the establishment of:

- Objectives to be reached (to inform, calm or warn the public).
- Messages adapted to the characteristics of the situation and objectives.
- Procedural rules:
 - To appoint the person and team responsible for the information coordination centre.
 - To appoint a spokesperson, who should be an expert in crisis situation communication.
 - To define relationship with media and information policy.
 - To specify the procedures regarding the Police, Civil Protection, Civil Guard and other public and private bodies involved.

What must be avoided is the concealment of information, as this can easily lead to rebelliousness¹⁴. In order to control a risk, the risk must be disclosed.

When fatal casualties have ensued, either at the incident or during the development of the emergency situation, the emergency is perceived as more serious by the public. If public opinion should perceive or interpret that this is due to poor management, the body managing the emergency risks losing credibility and might be subject to sabotage, rioting or more or less deliberately generated rumours¹⁵. Information on fatalities must be given with no personal details thereof, even the most basic, until the relatives have been informed.

When the coordination between the institutions involved is not full, or difficulties arise in assigning responsibilities in the face of an emergency, the approach to the situations and the statements made to the media can be altered and may lead to confusion among information receptors.

In summary¹⁴, withholding information, lack of objectivity and non-verification of news items could lead to situations that are difficult to foresee and which would increase the disaster and make it even more critical as well as expose certain people to potential danger.

An investigation carried out in Finland¹⁶ over 5 days during which various kinds of incidents and catastrophes were simulated, confirmed the importance of creating a general model for crisis situations which could be adapted to each incident in terms of organization, psychosocial assistance, etc.

Another aspect which should not be underestimated¹⁴ is the information passed on by other people; what is passed on “through the grapevine” often takes precedence over official information and, in fact, a high percentage of the public finds out about events through others (Table 2).

Nonetheless, sometimes one must go beyond what is merely visible and informative: the crises caused by a major technological accident or natural disaster have proven that, once the first phase of initial emergency (casualty rescue) is over, the problems to be solved are not related to information only¹⁴.

HOW MUST INFORMATION BE RELEASED IN EMERGENCY SITUATIONS?

In an emergency situation the messages that released to the public should be¹:

- *Clear*. Clearly understood by all persons regardless of age or cultural level. On some occasions the message may have to be issued in several languages, which will require the presence of cultural mediators and/or interpreters.
- *Specific*. Essential information with no unnecessary details.
- *Forceful*. Briefly explaining what has happened and what must be done. If they do not understand the underlying reason, many people will not do as requested.
- *Unhurried*. Devote a few minutes to prepare the information to be released, with good planning and sequencing of the information.
- *Understandable*. Eliminate any technical terms that are not absolutely necessary and adapt the language to the public whom it addresses.
- *Coordinated*. Inform that there is an agreement between the institutions involved and coordination and /or task distribution. Avoid contradictory messages as these confuse the public and causes mistaken interpretations.
- *Issued by a spokesperson*. It is important that one single person is responsible for releasing the message/s (if given in subsequent releases) as an authorized source¹⁷. Determine at all times who this may be (technical or political person in charge), their level of training/experience, degree of credibility, etc¹⁴. There may be more than one spokesperson provided that all issue the same message^{5,18} (Table 3).

TABLE 2. Basic rules for handling crisis and disaster situations in terms of the media (Marín, 2005)¹³

- React immediately and activate crisis communication management plan in the institutions.
- Try to get the authorities responsible for crisis management to visit the crisis scene as soon as possible.
- Inform the media of all known data, always keeping to the facts. Do not speculate about the causes of the crisis, nor about the number of casualties.
- Prepare background information of similar incidents to give to the media until the facts can be determined with full certainty.
- Treat victim relatives with respect.
- Call a press conference as soon as specific facts are available. A person belonging to the Operational Coordination Centre should attend this conference.
- Correct previous information when subsequent developments increase the severity of initial data.
- Respect response times for press requests.
- Refute any incorrect information from other sources.
- Inform on decisions taken and means used to handle the problems generated by the emergency.
- React immediately to the spreading of rumours in order to neutralize them via constant information based on fact. This is one of the aspects which can present the most difficulties, as it leads to the distortion of official data and can create social alarm.

TABLE 3.

Phases	Prevention			Emergency		
	Perception	Understanding	Action	Perception	Understanding	Action
Social behaviour						
Voluntary lack of attention	Questions Public poll	Offer results	Begin campaign	Remember campaign. Available information.	Insist. Real situation.	Act. Mobilize resources.
Rumour	Inform with objectivity.	Educate in a continued fashion.	Active control.	Set up warning systems: sirens, blackouts, loudspeakers. Use local radio station.	Radio. Issue action guidelines.	Press. Contrast information.
Reply	Set up public biofeedback mechanisms.			Containment. Safety references.	Mobilize. Cooperation references.	Postpone. Post-disaster mechanisms
Panic	Absent			Remember campaign.	Calm the public as an objective.	Prove. Solve situation.

It is also necessary to specify information guidelines^{3,14,19} to draft messages that achieve the desired effect among the public:

1. Begin the message mentioning the issuing body or the institution which has summoned the person.
2. Indicate the severity of the emergency, with sufficient

details so that all members of the public understand the repercussion and are able to seek protection⁵.

3. Give a brief description of what has happened: where, when, who or what has been affected, particularly in situations where the public may not know exactly what has happened or what is going to happen (industrial accidents, natural disasters). This reduces flight or anxiety behaviours.



4. Explain the measures in place to control, revert, neutralize, eliminate or change the situation. This helps to assimilate the event with a real and adequate perception of the severity of the situation, and increases confidence in the actions of those responsible.

5. Explain recommendations and measures that must be taken, either preventative or palliative, using the second person singular (i.e. You must). This helps the public to know what to do and to prepare physically and psychologically for any development of the emergency situation.

6. Update information regularly (mention this in the message), i.e. every 30 minutes or every hour, in order to avoid the feeling of institutional abandonment. Time intervals may be longer if the information is updated at night, if handling depends on means outside the organization (i.e. an evacuation some time after the actual danger), and the longer has elapsed since the beginning of the emergency situation.

7. Offer the possibility of complementary help and/or information; i.e. how to access the medical assistance service³.

8. Prepare messages under 5 minutes long so as not to take up telephone lines for too long a time and prevent access by the public. It could be reduced to 3 minutes, as attention cannot be held for longer periods and may lead to some people not listening to the message right to the end.

9. Give homogenous, neutral and objective information to all the public (not openly blaming another institution for the incident).

10. Prepare the information in conjunction with the Emergency Committees. This will guarantee that it has been reviewed by experts in the various areas (belonging to the service or external consultants) thus covering all emergency areas. When the message has been drafted by the proper source, its credibility increases among the general public.

In some emergencies, and provided that the mobile telephone network is working, a mobile number could be provided to which a short message such as “information” or “info” could be sent and brief updated information on the emergency could be received (handling, safety measures, meeting point for evacuation, etc). This could be updated regularly and people would have the information in writing if they should need to check it. Current technology allows the proactive issue of an SMS (short message) to all mobile phones in the area with the data deemed suitable by the authorities in charge.

Evacuations

The time taken to evacuate a population is critical to its safety, which involves the issues of many prior warnings.

Regardless of the emergency situation, the priority should always be the safety of the evacuees and those accompanying them. Evacuation is one of the most difficult decisions to be made when faced with a massive¹ disaster or emergency crisis given the consequences of such an action. Before deciding on evacuation, a number of factors must be evaluated for subsequent disclosure thereof to the population to be evacuated¹⁹:

– *Who is going to be evacuated.* Take into account the total number of persons to be evacuated, state of physical and psychological fitness thereof, actual location, existing psychosocial, family and working relationships, etc. People not meant to be evacuated can endanger the rest by overloading evacuation routes⁵. The inclusion of a message such as “people living in other areas of the city are not in danger” is thus, recommended.

– *How is the evacuation going to be implemented.* With group or private transport or on foot (consider the aged and those of impaired mobility) and the level of safety (possible hazards and ways to avoid them). This should be clearly defined²⁰: “Walk to the closest school building and/or take the bus to the main square”.

– *How long the evacuation is going to take.* Estimate the time required from initial transport, regrouping and return to starting point.

– *When it is going to take place.* Either immediately or when, at what point of the day or night, time given to get essential items before leaving. For instance: “The situation shall not become severe until 22 hours tonight, but for your safety you should be on the other side of the river by 21:45; it is now 17h 14 min.”.

– *Where they are to be taken.* What the place is like (sports centre, refugee camp), safety in the place, facilities for eating and sleeping²¹.

– *Recommendations to the population.* Take documentation, blankets, medicine, clothes, etc.

If the evacuation is not to take place and it is deemed safer for people to remain in their homes, instructions such as this one should be given: “Take shelter in the lowest part of the building, close doors and windows, switch off all air conditioning systems and computers but keep the radio on”.

Simulations

Simulations allow²² the calculation of the time required to evacuate, the detection of errors in the fire prevention system, etc. Messages¹ should have the same characteristics as those for emergencies, as well as others:

– Distinguish from an exhibition, as characteristics are quite different (Table 4).

TABLE 4.

	Simulation	Exhibition
Objective	<ul style="list-style-type: none"> - To carry out a rehearsal of a situation which may have to be carried out in future. - Get acquainted with procedures which guarantee safety in real situations. - Identify previously undetected risks and act on them. 	<ul style="list-style-type: none"> - Show range of technical and human means available. - Show possibilities of action in the event of a hypothetical emergency situation.
Actions	WHAT IS TO BE DONE	WHAT COULD BE DONE
Parties involved	<ul style="list-style-type: none"> - Any who may be endangered by a situation. - Non-professionals and occasionally some professionals. 	<ul style="list-style-type: none"> - Those who must be ready to respond to an emergency situation. - Professionals.
Situations	<ul style="list-style-type: none"> - Real situations. - Possible risks. 	<ul style="list-style-type: none"> - Hypothetical situations. - Potential risks.
Evaluation criteria	<ul style="list-style-type: none"> - Efficacy of action. - Speed and safety. - Learning how to respond to a critical situation. 	<ul style="list-style-type: none"> - Showmanship, visual display. - Public awareness of means.
Prior warning	<ul style="list-style-type: none"> - No specific warning (specific time and day) or comment on characteristics thereof, in order to assess reality-based behaviour in the event of a real emergency. 	<ul style="list-style-type: none"> - Specific announcement, even to the media, for prior awareness of what is to be done.
Audience	<ul style="list-style-type: none"> - The presence of an audience can distort actions and prevent adequate execution. 	<ul style="list-style-type: none"> - An exhibition is to be seen by a more or less large group of people.
Venue	<ul style="list-style-type: none"> - Always the place at which the emergency situation could happen. 	<ul style="list-style-type: none"> - At the place or special facilities. - Can go hand in hand with an exhibition of materials.
Relationship with training activities	<ul style="list-style-type: none"> - Could be a preliminary step leading to a training situation. 	<ul style="list-style-type: none"> - This is usually the last phase of a training process and/or an evaluation thereof.

– Prior to carrying out the simulation, all public and private emergency teams in the area should be informed (even if not directly participating therein) as should the media. Should a real incident take place parallel to the simulation, this shall be handled appropriately so that the press can inform correctly on the event.

– Evaluate the need to give advance information to the population so as to avoid unnecessary calls to emergency helplines, leading to collapse thereof and general social alarm. Occasionally it is worth assessing the effect of being informed or not on the population.

– Give information on the content and methods of the simulation. It should be organized and carefully prepared to face any possible development in the situation.

– Inform each party involved of action to be taken. This will prevent any unnecessary improvisation, accident or unforeseen behaviour in the face of incidents which might arise during the simulation.

– Announce the end of the simulation several times over

(also in exhibitions). Take steps to avoid unnecessary hazards and thank all present for their cooperation informing them, if possible, whether the result has been satisfactory.

CONCLUSIONS

– An in-depth study of the mechanisms and phenomena involved in people's behaviour in the face of emergency situations would allow adequate planning and correct action in the event of massive disasters or emergencies.

– Preventative campaigns (via visual or written means, fliers, manuals, etc) informing of safety and self-protection measures would lead to a more ordered approach and would improve delivery of information in emergency situations, which would be more effective and better valued by the public.

– An informed population creates fewer risk situations in the event of an emergency and fosters solidarity, altruism and caring behaviour, even of a proactive nature.



– By informing the general public in an emergency situation, they are better able to face the situation, perceive risks and make decisions so as to return to normality as early as possible.

– An increase in research on emergency information will lead to the public receiving more efficient information with better guarantees of accuracy.

REFERENCES

- 1- Muñoz FA. Aspectos psicosociales, de la información a la población en emergencias. *Interv Psicosoc* 2000;9:371-7.
- 2- Bourque LB. The disaster – Public Health Nexus. Center for Public Health and Disasters. University of California. Los Angeles. [en línea] 2006. [fecha de acceso 2 de septiembre de 2006] <http://dels.nas.edu/dr/docs/dr11/bourque.ppt>
- 3- Muñoz FA, Álvarez AJ. Programa de intervención psico-social para la información a la población en emergencias masivas y catástrofes. *Emergencias* 2000;12:42-6.
- 4- Revuelta J. Información y comunicación colectiva en situaciones de riesgo o emergencia: pautas de acción informativa. *MAPFRE Segur* 1995;59:35-44.
- 5- Mileti DS, Peek L. The social psychology of public response to warnings of nuclear power plant accident. *J Hazardous Materials* 2000;75:181-94.
- 6- Fernández Millán JM. (Coord.) Apoyo psicológico en situaciones de emergencia. Madrid: Pirámide; 2005.
- 7- Wessely S. Don't panic! Short and long term psychological reactions to the new terrorism: the role of information and the authorities. *J. Mental Health* 2005;14:1-6.
- 8- Anderson PS. Adaptación de los nuevos sistemas de comunicación a la prevención de desastres en zonas urbanas. *Stop Disasters* 1997;32:11-4.
- 9- Miguel A De, Muñoz FA. Aspectos conceptuales de la Intervención en Crisis. *Rev Psiquiatría Fac Med Barna* 1998;25:177-81.
- 10- VV.AA. Crisis and emergency risk communication. [en línea] [fecha de acceso 2 de septiembre de 2006] <http://www.orau.gov/cdcynergy/erc/CERC%20Course%20Materials/Instructor%20PPT%20Slides/Overview.ppt>
- 11- DGPC Reacciones de la población en situaciones de emergencias colectivas. *Protección Civil* 2002;13:18-20.
- 12- Slaikeu KA. (coord) Intervención en crisis: Manual para la práctica y la investigación. México: El Manual Moderno; 1996.
- 13- Marín F. Gestión técnica y de la comunicación en situaciones especiales. Crisis, emergencias y negociación. Madrid: Fragua; 2005.
- 14- Pérez de Tudela C. La información en las catástrofes. Madrid: Fundación MAPFRE; 1994.
- 15- Nicolás L. De, Artetxe AI, Jáuregui A, López S. Intervención psicológica en situaciones de emergencia y desastres. Vitoria: Servicio de Publicaciones del Gobierno Vasco; 2000.
- 16- Murtomaa NR. Modelo de asistencia psicosocial para la gestión de las crisis. *Stop Disasters* 1996;27:16-7.
- 17- Robles JI, Medina JL. Intervención psicológica en las catástrofes. Madrid: Síntesis; 2002.
- 18- Turner RH, Nigg JM, Paz D. Waiting for Disaster: Earthquake match in California. University of California Press. Berkeley, CA; 1986.
- 19- DGPC Dirección General de Protección Civil. El servicio de alarma. Madrid: Ministerio del Interior; 1989.
- 20- Lindel MK, Perry RW. Behavioral foundations of Community Emergency Planning. Hemisphere Publishing, Washington, DC; 1992.
- 21- VV.AA. Estrategia para la prevención de desastres. Pine River State High School. *Stop Disasters* 1996;30:8-11.
- 22- De Pascuale M. Enseñar la autoprotección a los estudiantes: un plan de evacuación. *Stop Disasters* 1995;26:24-6.