Emergency alarms

Keren N Davies

Emergency alarms can extend the care provided to disabled and vulnerable elderly people who may be unsupervised at home for much of the day and all night. The availability of alarms has widened because of the increasing number of people over 75 and a trend towards care of disabled people in the community.

Alarms are advocated for people at risk. Risk is loosely defined and might include the physically impaired, the socially isolated (living alone or with someone unable to help in an emergency), those who tend to fall, perhaps those living in poorer housing, and the very old. Any person able to operate the alarm and understand its purpose may be eligible.

Types of alarms

SIMPLE ALARMS

Simple indicators such as cards to place in a window, systems of lights, bells, or buzzers, and even whistles have been tried without success. Except for whistles (if carried) all need to be activated from a single point or require the person in need to remain mobile and dextrous. The response depends on willing neighbours and relatives, who carry a heavy burden of responsibility. Twenty four hour cover can rarely be given, and the person's vulnerability is advertised.

Telephones can be used in an emergency to summon help, but 6% of people over 75 and 20% of those over 85 have difficulties using them.¹ In a situation of stress these proportions are even higher: in 46% of accidents the victim cannot reach the telephone or dial.²

EMERGENCY ALARMS

Dispersed alarms are single unit alarms that enable residents in individual dwellings to make emergency calls. Radiotransmission or telephone based systems automatically dial either a single contact point or a sequence of prearranged numbers of relatives and friends. When several elderly people live in a small geographical area their alarms can be wired to a central (unstaffed) unit, often at a warden's flat. The signals can then be relayed by radio or telephone to the emergency centre. These grouped systems can be cheaper than true dispersed alarms because they save on individual telephone lines or radio transmitters.

Emergency centres are staffed for 24 hours every day. The operators have access to a computer database with details of the resident and nominated respondents. They respond to the call by telephoning wardens, relatives, home care teams, volunteers, or the emergency services and asking them to visit the resident.

There are several makes of emergency alarm, but most comprise a home alarm unit, a triggering device, and a link to an emergency centre. Figure 1 shows an example of an alarm unit, comprising combined telephone and alarm unit activated by pressing the red button on the unit or portable trigger, which may be worn as a clothes clip (fig 2) or a pendant. The home unit may not include a telephone, and in sheltered accommodation the units are usually only alarms and wall mounted, requiring only a power supply. If the chosen unit has a combined telephone then a telephone socket is required. The alarm is activated by a button or pull cord on the unit.

FIG 1—Piper Lifeline II and trigger

Alternative triggers may be portable radio devices (pendant, clothes clip, or wrist strap) that activate the unit from a variable distance (most will work from any point in a three bedroomed house and usually in the immediate grounds) or fixed triggers—for example, ceiling mounted pull cords or wall mounted push buttons. Fixed triggers are less satisfactory as they are usually too far above the ground to be reached after a fall. Once triggered the alarm unit will put out a call. The unit may be preset to dial a sequence of friends' or relatives' telephone numbers and then play a pre-recorded message to summon help or put a call through to the emergency centre (fig 3).

Innovations

There have been several new developments in alarm systems. Some home units have a built in loudspeaker and microphone that allows two way speech between the resident and emergency centre even if the resident cannot reach the home unit. Alternative triggers may be installed to activate the alarm—for example, smoke detectors and intruder alarms. An "inactivity" feature may be included in the home unit. These units have a 12 or 24 hour timer that is reset each time the unit is used. If unused or not reset in a predetermined period a call is automatically sent out. Some new alarms work on a "habit cycle system" and send out an alarm call if a specific event, such as water being drawn from the water main, does not take place within a predetermined period. An interface such as the Wolsey cat has been developed, which creates compatibility between different manufacturers' alarms and control centre computers.

Problems with alarms

One in six residents sustaining an accident or fall cannot activate an alarm.³ Even if a habit cycle is included the waiting period for help may be eight to 24 hours. Alarms are underused and most often used in non-critical situations. In one study 81% of 608 residents in sheltered housing had not used their alarms in an emergency over one year and 7% had not been able to activate the alarm in an emergency.⁴ In another survey over half of residents had used the

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alarm at some time but only one third had done so in an emergency.² Most alarm systems are linked to sheltered housing, and the supply of housing can no longer meet the increased demand. Therefore many people at risk are not covered by the present systems.

Systems using radio transmission used to suffer from problems of interference from continental broadcasting stations and local authority systems that used similar equipment. To rectify this the Department of Trade and Industry designated specific frequencies for use by local authority alarm systems. Licences for operating a radio alarm are given only to local authorities. Their main advantage is that they do not require a telephone line and are cheaper to install, but the emergency centres have to be in the locality of the population using the radio alarm, whereas telephone based systems can be linked to emergency centres anywhere in the country.

Demand for alarms has not come from residents, and alarm installation has escalated without any formal evidence of need or demand for the system being collected. Alarms do, however, give reassurance to both the residents and their relatives. The alarms do not result in reduced contact between the housebound and their families or the professional services.² The use of alarms depends on the attitude of the users and, when living in sheltered housing, the relationship with their warden; over half of interviewed residents said they would not like to live without their alarms.²

Referrals are considered from all health and social workers but may be accepted from relatives when supported by a medical opinion. Even if a resident is not eligible for a local authority alarm he or she may still be able to link into a local authority emergency centre with an alarm bought privately (so long as it is compatible with the local authority system). Thirty local authorities offer a monitoring service to residents anywhere in the United Kingdom but because of variations in determining who responds to the call it is usually better to use the nearest centre.

Provision of alarms

Some manufacturers sell or rent alarms direct to the public. Some companies run their own emergency monitoring centres. Those who do not will be able to advise on the nearest suitable centre. The Disabled

FIG 3—Call sequence for emergency alarm

Living Foundation provides information on alarm systems, which is available to the public.

Help the Aged offers advice on alarms and has a scheme to provide alarms and organise monitoring for people in most parts of the United Kingdom. There is often a waiting list for an alarm, and if means allow a donation of £220 is expected. When the alarm is no longer required it should be returned. Three charities have an established service to sell or rent units and arrange monitoring. Care Trust sells alarm units and offers monitoring anywhere in the United Kingdom. It provides an emergency centre for the London Borough of Tower Hamlets. The Home Call Trust rents units and offers monitoring at £12 a month if residents can afford it. The trust covers south west England. Oxfordshire Council for Voluntary Service sells or rents units to residents in Oxfordshire and calls are monitored by Oxfordshire central ambulance control. Other charities, such as the British Legion, may be able to help with the costs of alarms provided to war pensioners.

Many private housing associations include alarm systems in their developments, which link into local emergency centres. They can be found under housing associations, societies, and trusts in the Yellow Pages telephone directory. The commonest way to obtain an alarm, however, is from the local housing or social services department. Authorities vary as to who controls the allocation and provision of alarms. The address and telephone number of the relevant department can be found in the telephone directory. There are currently more than 200 schemes that operate either by radiotransmission or telephone. Many are an integral part of sheltered housing complexes or linked to warden supervision; some authorities provide alarms to other residents. Many authorities run their own emergency centres, and others use commercial centres. The cost of provision, maintenance, and monitoring varies throughout the country. Although the service may be provided free to residents, some authorities make a charge and use this revenue to help finance the service. Most funding comes from a single departmental budget, but in some areas there are contributions from the area health authority and housing departments. Specific details should be sought from the local departments.

Costs of alarms

Alarms may be expensive for many old people but relatives sometimes buy them as Christmas or birthday presents. If residents are buying or renting alarms they must decide if they require a monitoring service. The cheapest option is a preset autodialling unit. If monitoring is required then the unit should be compatible with the emergency centre with the lowest monitoring costs and free monitoring space.

FIG 2—Alarm in position on lapel

The items for costing include the cost of installing a telephone line, converting the socket, and renting the line; the cost of renting an alarm and monitoring (local authorities may not charge but usually the charge ranges from £80 to £160 a year; commercial firms charge about £250 for the first year and £150 for subsequent years); and the costs of buying an alarm, which ranges from £170 to £320, and monitoring fees (local authorities or charities charge £10 to £70 a year and commercial firms charge £20 to £150 a year). Alarms are zero rated for value added tax if supplied to someone who is chronically sick or disabled. Details are obtainable from the local taxation office.

I thank Tunstall Telecom, Whiteley Lodge, Whiteley Bridge, Yorkshire, for providing the photographs.

Appendix

USEFUL ADDRESSES

Help the Aged, Community Alarms Department, 16-18 St James's Walk, London (01 253 0253)

Age Concern England, 60 Pitcairn Road, Mitcham, Surrey, CR4 3LL. A guide entitled *Calling for Help, a Guide to Emergency Alarm Systems* is available from this address.

Wolsey Electronics Ltd, Gellihirion Industrial Estate, Pontypridd, Mid Glamorgan CF37 5SX (044385 3111)

Disabled Living Foundation, 380-384 Harrow Road, London W9 2HU (01 289 6111)

Care Trust, Care House, Bigland Street, London E1 2ND

The Home Call Trust, 34 Logan Road, Bristol BS7 8DR

Oxfordshire Council for Voluntary Service, Pratten Building, New Road, Oxford OX1 1ND

- 1 Hunt A. *The elderly at home*. London: Office of Population Censuses and Surveys HMSO, 1978.
- 2 Research Institute for Consumer Affairs. *Dispersed alarm systems: a guide for organisations installing systems*. London: Research Institute for Consumer Affairs (RICA), 1986.
- 3 Feeney R, Galer M, Gallagher M. *Alarm systems for elderly and disabled people*. Loughborough: Institute of Consumer Ergonomics, 1981.
- 4 Wilcocks AJ. *Care and housing of the elderly in the community*. Nottingham: Institute of Social Welfare, 1979.

Scientifically Speaking

Not the way to settle disputes

Bernard Dixon

I was driving straight ahead in the right hand lane of a one way system when a car slightly ahead and to the left lurched across my path without even signalling its lunatic intentions. Bang. My car's near side wing, headlight, and bonnet crumpled under the impact, and both vehicles scrunched to a halt. Dominant among the thoughts flashing through my cerebral cortex was sheer disbelief that anyone could behave so atrociously.

Then, almost as quickly as the incident itself, came sympathy, apologies, and offers of reparation. The guilty driver expressed concern for my well being and that of my passenger, admitted making a serious error, apologised repeatedly, and insisted that his company would do everything possible to see that I did not suffer financial or practical inconvenience. He offered to make a hire car available for the entire time that my own vehicle was off the road and handed me his company business card and the name of a Mr X, a colleague who would make the appropriate arrangements. Although another motorist had stopped and given his name and address as a witness prepared to confirm that I was the totally innocent party, his help would obviously not be required.

Wrong. An hour later, when I rang Mr X, the picture changed dramatically. Yes, he had received a full report on the incident from his colleague. But both now firmly rejected any suggestion of blame for the crash. The offer of a hire car was simply laughable. Everything was now in the hands of their insurers.

Over six months later the matter was finally settled. The other party's insurance company settled the repair bill and my hire car charges were met too. But I had to fight every inch of the way.

Never admit liability following a motoring accident even when it is incontrovertibly your fault and there are witnesses to confirm as much. Do not, when involved in divorce proceedings, try to persuade your lawyer to behave reasonably and as amicably as possible in the circumstances, rather than in a spirit of furious adversarial combat. Do not, as a manufacturer of alcoholic beverages, concede that your products,

although used with benefit and pleasure by many, can cause serious ill health when misused or abused.

There are many ways in which both the professional conventions and codified formalities of the legal process interfere with what would otherwise be more sensible and agreeable ways of settling disputes and dealing with issues of social responsibility. In the past scientists and their work have been affected less frequently and less damagingly by these aspects of the law than have many other sectors of life. True, the patenting of processes (and now organisms) in biotechnology is increasingly instanced as a threat to the traditional openness of the research community in communicating findings through the journals and scientific meetings. But rather than the law itself, the underlying problem here is the growing need for commercial confidentiality in domains formerly categorised as "pure" science. It is also important to remember that while the patent system undoubtedly delays publication of research results it actually *compels* disclosure.

Surprisingly, perhaps, the one discipline within which the law really is now beginning to interfere with conventional scientific intercourse is that of ecology and environmental research. As more and more sectors of the biosphere become battlefields for claims and counterclaims regarding industrial pollution, whether between companies and countries, or countries and countries, dramatic changes are occurring in the mores of what were formerly conspicuously open and co-operative fields of science. Where once there was unfettered exchange of results, ideas, and materials, field workers now complain of secrecy, suspicion, and rancour.

Research teams who pass and don't speak

Typical of the way the wind now blows is the character of the work that has developed along the Alaskan coastline since the *Exxon Valdez* spewed 11m gallons of crude oil into Prince William Sound in

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