



NHS in Scotland Firecode

Scottish Fire Practice Note 6

Arson prevention and control in NHS healthcare premises

Guidance revised December 1999
All previous guidance is superseded



About this publication

In this Scottish Fire Practice Note (SFPN), which has been prepared with the assistance of the Arson Prevention Bureau, reference to “chief executives” means chief executives of NHS trusts.

SFPN 6 – Version 2.0 replaces the guidance which was previously issued as FPN 6 in NHS in Scotland Firecode – Version 1 and dated April 1998.

Fire safety measures

The effects of fire in any premises can be serious. However, in the case of hospitals and other healthcare premises, fires have even greater significance due to the presence of large numbers of sick and bed-ridden patients. The primary remit of healthcare bodies with regard to fire safety in all premises for which they are responsible, whether owned or occupied by them, is the safety of all the patients,

visitors and health service staff in the premises. In attempting to prevent, control and detect arson, healthcare bodies will need to select a combination of measures to produce an effective policy, taking the following into account:

- this Scottish Fire Practice Note;
- other documents of Firecode cited by this SFPN;
- all statutes, regulations and guidance referred to within Firecode documents;
- the advice of the local fire and police authorities.

LIST OF REVISIONS

Some document references have changed to reflect Scottish versions recently issued.

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Disclaimer

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1.0 Introduction and scope

General application

1.1 This Scottish Fire Practice Note (SFPN) provides guidance in respect of additional fire and other safety precautions which may be necessary to prevent, control and detect arson in NHS premises. Much of the guidance is intended to prevent life-threatening fires occurring in clinical areas of hospitals. However, the principles apply equally to all parts of hospitals, and to other healthcare premises where the act of intentionally setting them or their contents on fire would pose serious threats to life, undermine their strategic importance and effectiveness, or incur high financial loss.

1.2 The recommendations of this Note should be considered during the initial planning stage of new hospitals and healthcare premises, and major extensions to existing premises. In all existing premises, a review should be undertaken of the potential for arson and its consequences. Using risk management techniques, vulnerable locations should be selected for prompt attention in accordance with the guidance in this Note. Advice should be sought from local fire and police authorities and, where appointed, the hospital security adviser, on how best to take account of the threat of arson when preparations are being made for new premises and for the refurbishment of existing ones.

Purpose of this Note

1.3 This Note provides sufficient general information and technical and management guidance to ensure that when new, extended or altered healthcare premises are being designed, suitable means for preventing arson may be incorporated within them.

1.4 The recommendations of this Note cannot take account of all the circumstances which may be found in any particular hospital or healthcare premises. They are intended to highlight those which will normally need to be considered.

Management

1.5 Chapter 3 of this Note refers to the managerial and organisational arrangements necessary to ensure that the potential for arson is recognised and taken fully into account in new schemes. In addition, as

circumstances permit, the aim should be to use the guidance to improve standards in existing premises. The guidance should form an important part of the overall fire safety strategy for hospitals and other healthcare premises, and when properly applied with that of the other Firecode documents, will reduce the number, consequences and cost of arson attacks.

1.6 The contents of this Note should be applied in such a way that straightforward "good housekeeping" measures and improved management of security arrangements are implemented as quickly as possible. No waste material should be allowed to accumulate anywhere in the premises. Well constructed metal waste bins with metal lids should be located in safe areas, and waste should be collected regularly and placed in covered metal skips outside the building prior to its disposal. Some items or raw materials are easily ignitable, and special precautions should be taken to store these in areas with maximum surveillance, preferably protected by an automatic extinguishing system. Hazardous materials and substances will also require particular safety/security actions. Measures needing technological resolution and the allocation of resources must be prioritised in the usual way as part of the health authority's annual business plan.

1.7 Arson prevention, control and detection must form an essential element of the fight against crime in all NHS premises. The subject should receive regular attention, and it must form a routine part of all training given to staff in accordance with the training requirements of the Scottish Office, Department of Health's – 'Fire Safety Policy' and Scottish Health Technical Memorandum (SHTM) 83 – 'Fire safety in healthcare premises: General fire precautions' (see Chapter 5).

1.8 Other Firecode documents, listed in Chapter 5, make provision for securing means of escape, in case of fire, from healthcare premises. It is emphasised that any arrangements for improving the security of premises must not in any way, or at any time, subvert the safety provisions for fire escape routes and fire exits.

2.0 The extent of the problem and the motivation for arson

The increasing problem of arson in all healthcare premises

2.1 Arson is increasing in all types of premises, including hospitals and other healthcare premises. In many countries who are experiencing similar increases, arson is recognised as a major cause of fires. In this country, the incidence of arson is causing concern to those who are required to meet the costs of such fires, including government departments, fire authorities, owners and occupiers of premises, and the insurance sector.

2.2 The Criminal Damage Act 1971 preserves the common law offence of arson in Section 1 (iii), and defines it as “the unlawful damage, by fire, of property belonging to another”. In this Fire Practice Note, the term is used to cover all cases of wilful or deliberate fire-raising. “Arson” is not a term used in Scotland, where the legal term is “wilful fire-raising”.

2.3 Many fires started in healthcare premises occur in parts of the building used for storage, where the materials or commodities stored provide a ready means for the arsonist. Premises of this type, where fewer people may be encountered, present attractive targets. Other premises which are unoccupied or infrequently visited, for example by night, allow the arsonist to practise undisturbed and undetected. However, fires from arson in hospitals and similar healthcare premises are not confined to these locations or times, and the determined arsonist may strike when presented with a suitable opportunity. An arsonist may seem to have good reason to be on the premises, for example as a patient, a member of staff, or member of the public.

2.4 Fires started by arsonists may involve use of a flammable liquid as an accelerant, or merely the fuel or combustible materials available at the location. In some cases, the fire may exhibit multiple points of origin often closely related in time, either within a localised area, or in various vulnerable parts of a building.

2.5 Recent Home Office fire statistics for hospitals and healthcare premises providing sleeping accommodation show that for such premises, some 21% of fires attended by fire brigades are recorded as having been started deliberately. Appendix 5 shows the proportion of fires in hospital premises caused by

deliberate action. The differentiation between fires in hospitals accommodating people with mental illness, and those in general hospitals, is also shown. These figures probably understate the problem, as many small outbreaks of fire are quickly extinguished by hospital staff using first aid fire-fighting equipment, without the need to summon the assistance of the fire brigade.

2.6 The presence of well-trained in-house staff is essential in the case of hospitals, as increases in incidents of maliciously started fires also point to lapses in effective security measures. This results, in the main, from the “open-door” policy of many healthcare premises, a policy which is now being closely examined as part of an overall review of security.

Factors which may provide the motivation for arson

2.7 A number of factors, taken individually or collectively, may provide the drive for a person or group to undertake an act of arson. The most common of these are reviewed.

Mental instability

2.8 Arson associated with mental instability is a relatively frequent occurrence in hospital units accommodating people with mental illness and is due to:

- a. a desire to attract attention;
- b. revenge, hatred or jealousy;
- c. frustration or sexual perversion;
- d. pyromania.

Pyromaniacs are often motivated by the spectacle of a large fire, from the thrill of seeing it develop and from witnessing the arrival of the fire-fighters and their subsequent activities. Pyromaniacs may sometimes take part in fighting the fires they start because of the enjoyment and the feeling of fulfilment it imparts.



Grievances

2.9 Arson stimulated by a grievance can take on several forms. By its nature it may be common to a wide range of premises. Workplace-related factors can include:

- dismissal, fear of unemployment or job relocation;
- revenge against a colleague, superior, or the employer, perhaps due to personality conflicts, or as a response to public humiliation, or to jealousy;
- lack of advancement or appreciation of effort, and failure to achieve promotion or better pay.

Economic or political objectives

2.10 The targets for these arson attacks may be selected to demonstrate the reasons for the form of protest, for example:

- pressure-group action (for example animal rights, nationalist causes, terrorist acts);
- strikes or industrial sabotage.

Related criminal activities

2.11 Arson may be associated with further criminal acts, for example:

- to conceal a burglary or break-in, or fraudulent activities;
- to disguise sabotage;
- as part of an attempt at blackmail;
- vandalism (often associated with alcohol or drugs).

Arson by children

2.12 Children are able to gain entry to all types of premises subject to lapses in security, and may start fires, sometimes to conceal theft. Bored visiting children or inadequately supervised paediatric patients can wander into unauthorised parts of hospitals and start fires.

Fraud

2.13 Senior managers should be aware that arson is often employed as a means of destroying evidence of internal fraud or misappropriation of stock.

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3.0 The responsibilities of management in preventing and controlling arson

Firecode responsibilities

3.1 The Scottish Office, Department of Health's – 'Fire Safety Policy' states that the overall responsibility for having an effective fire safety policy with satisfactory fire precautions devolves on, as appropriate, the chief executive or general manager. They must have, for each of their premises, an ongoing programme, agreed with the local fire authority, for introducing and maintaining an adequate level of fire precautions, including fire alarm and detection systems, and for training staff in first aid fire-fighting and evacuation procedures. Other Firecode documents provide detailed guidance in support of these responsibilities, and these are listed in Chapter 5.

Management strategy

3.2 Management's plan for combating arson must be part of its overall strategy for dealing with fire safety issues. It has the responsibility for delivering healthcare, and this must be maintained whatever the threat to this objective. Arson, from whatever quarter or motive, should be viewed as preventable – if not in its entirety, then to a degree such that its effects are minimised. Prior attention to the threat from arsonists will limit their ability to dislocate services, damage property and waste scarce resources.

3.3 A management plan to combat arson, as a minimum, will need to address topics which will include:

- risk management;
- security arrangements;
- systems for fire alarm and detection;
- fire containment and extinguishment;
- general fire safety policies and precautions.

Clear guidance in respect of the last three of these topics is given within the Firecode documents listed in Chapter 5, in particular SHTMs 81, 82, 83, 85 and 87. The revised version of SHTM 86, also listed, deals extensively with fire risk assessment, and SHTMs 85 and 86 refer to arson. However, further consideration is necessary in this Note, with regard to certain factors having a bearing on arson. Although security arrangements are not specific to Firecode, security is an important component in combating the arsonist. It is also a complex subject, much of which is too extensive to be addressed by this Note. Some guidance

on security is given in paragraphs 3.8 to 3.14, with reference to other literature which contains detailed information. Improved security is an essential prerequisite as a means for combating arson (see Chapter 5 and Appendices 1 to 4).

Risk management

3.4 Healthcare premises, particularly hospitals and their externally and internally located storage areas, are vulnerable to arson attacks from intruders, patients with disturbed patterns of behaviour, employees and others who may enter sites, including contractors. Stores, including those with pharmaceuticals, may be targets for theft, and fires may be started to conceal the theft.

3.5 Isolated or disused premises, and premises situated in troublesome areas or near sports grounds, etc where large crowds circulate or disturbances occur, may be particularly vulnerable. Special attention is necessary where the location has a history of criminal activity.

3.6 The arsonist is assisted by one or more of the following factors:

- a. site accessibility, often spanning 24 hours;
- b. the dispersed nature of many sites;
- c. the multiplicity of points of access and egress to and from buildings;
- d. once entered, the potential for unrestricted passage to other buildings on a number of levels, including services tunnels, plant rooms and underground walkways;
- e. the ever-changing nature of the hospital population – patients, visitors and staff;
- f. easy opportunities for theft and pilfering and the accessibility of combustible materials and flammable liquids;
- g. bad "housekeeping" measures, for example poor management of waste collection, storage and disposal;
- h. the introduction of commercial enterprises, particularly shops, into hospitals, with their stocks of combustible materials.



3.7 The security of premises with regard to fire safety should be assessed to take account of these circumstances. Premises accommodating vehicles such as ambulances, animals and medical research facilities, etc are known targets for arsonists and protest groups, and require particular attention. Central warehousing at particular premises amasses strategic resources, and their loss or contamination through arson and fire-fighting measures may have a serious effect on the delivery of healthcare over a wide area.

Security arrangements

3.8 Attention to security arrangements can make a very positive contribution to the prevention of arson. NHS trusts who insure their premises in the insurance market should be aware that their security arrangements will be of importance when their premises are assessed. Generally, security can be much improved by:

- a. keeping unauthorised persons out of vulnerable locations;
- b. quickly detecting intruders who may gain access to these locations;
- c. training staff on the need to challenge unauthorised visitors, particularly in isolated, infrequently visited or vulnerable locations.

Limitation of access

3.9 This procedure involves a variety of measures, such as:

- physical security, that is, creating zones which are secure and strictly “off limits” to all but a few authorised personnel;
- a graded system of access control (filtering out the “no-goes” from one or more of the controlled zones);
- identification and tagging of legitimate visitors and control of their access to, and egress from, designated zones (particularly contractors and servicing personnel). *

Security controls

3.10 Any security programme must include a strictly controlled system providing accountability for all keys, swipecards, codes, identification passes, etc. As part of normal close-down procedures for each day or other

specified period, consultation by a nominated person of a properly maintained register, which may be manually or electronically managed, should initiate a search for non-returned keys, passes, etc.

Detection of intruders

3.11 Intrusion detection equipment will detect the presence of fire-raisers, in addition to other intruders, and may be essential for vulnerable parts of premises which are generally unattended, or with reduced surveillance for long periods (overnight, weekends, etc). Equipment must be sited in order to ensure optimum protection against sabotage, and monitored to ensure its continuing effectiveness. Technical guidance about suitable equipment is not given in this Note, but reference should be made to Chapter 5 and Appendices 2 and 3.

Security patrols

3.12 Frequent but irregularly timed visits by security staff both during and outside normal hours to vulnerable parts of premises will help to deter arsonists and can lead to the discovery of preparations for an attack. Patrols are particularly important at the onset of “silent hours”, at close of work or overtime working, especially by contractors, etc.

Precautions with personnel

3.13 A most effective defence against the arsonist is a well-briefed and alert work force. All staff should be instructed during fire safety training to challenge strangers politely and, if necessary, to report their presence, particularly in isolated, infrequently visited, strategically important or vulnerable locations.

Staff selection

3.14 Evidence from attacks of arson in NHS premises shows that some arsonists are, or have been, members of the workforce. This should be borne in mind by management, whose staff selection processes should enquire into the past history of staff, particularly those who will work without supervision for long periods, at night or in other similar circumstances. So far as is practicable, new employees, temporary staff, cleaners and contractors should be under regular surveillance and should not be left to work in isolation, undisturbed.

* Authorised persons who are cleared for access to designated zones may need further special permission to work on particular plant or equipment by means of “permits to work”, etc. Work practices involving the use of concentrated heat or naked flames need special attention.

Reporting of fires and reporting procedures

3.15 The Scottish Office, Department of Health's – 'Fire Safety Policy', Annex A, para.5 requires chief executives and general managers to report fires in premises under their command to the NHS in Scotland Management Executive in a prescribed manner and timescale.

This includes fires occurring in suspicious circumstances. Immediately following a fire started in suspicious circumstances, a fire which is suspected as arson, or one observed as being wilfully started, line managers should ensure that material evidence in any form is safeguarded, and that the person discovering the outbreak can be made immediately available for interview by the fire brigade and police, as required. In such cases, it would be helpful if the results of any police investigations into the fire could be forwarded to the Building and Estates Adviser, Scottish Executive, Health Department, Management Executive.

Attendance of security personnel at a fire

3.16 Where a 24-hour security service exists at a healthcare premises, security personnel should normally arrive quickly at the scene of a fire. It is expected that their training as observers will enable them to identify and preserve any suitable evidence for further evaluation by specialists, when arson is suspected. In premises having a fire response team, consideration should be given to including a member of the security staff within the fire team.

4.0 Technical details of security equipment and other measures to combat the arsonist

Security of access

4.1 The selection and installation of particular security measures and the technical details of equipment capable of providing high levels of security against intruders and arsonists are beyond the scope of this Note. The National Association of Health Authorities and Trusts (NAHAT) published a revision of its NHS Security Manual which contains much detailed information. Topics covered include:

- the components of a security system;
- the components of closed circuit television systems (CCTV);
- systems for controlling access;
- identification badges and security passes.

For ease of reference, Appendices 1 to 4 of this Note list the subjects included in the relevant chapters of the NHS Security Manual (1992).

Security of automatic fire alarm and extinguishment systems

Automatic fire detection

4.2 SHTM 82 (see Chapter 5) recommends the use of analogue addressable automatic fire detection and alarm systems for new hospital installations, and when upgrading existing ones. These are a current design which makes use of microprocessor-controlled technology. The use of such systems will improve the reliability, speed and accuracy of discovery of fire, particularly in those parts of hospitals that may be infrequently visited or unmanned at night. This more precise information can then be passed to the fire brigade, as and when it is called to attend.

Automatic fire extinguishment

4.3 Automatically operated sprinkler installations are recommended (see SHTM 81 and SHTM 85 in Chapter 5) for certain high risk areas in hospitals, such as underground car parks, certain stores and other locations needing this form of protection. It is not general policy at this time to install sprinkler systems in the patient care areas of hospitals. However, in a small number of cases fast response sprinklers have been

used in these areas for purposes of life, rather than property, protection.

The potential for sabotage of automatic fire alarm and extinguishment systems by arsonists

4.4 There are two main possibilities in the event of an arson fire. The first is that the arsonist has made no prior attempt to sabotage the fire protection equipment. In this case the equipment would be expected to perform as it should during an accidental fire. However, if an arsonist by the use of accelerants starts fires in several places in quick succession, without the benefit of an automatic sprinkler installation, a serious and widespread fire may occur. This multi-seated fire may also jeopardise the evacuation strategy by reducing the opportunities for using alternative designated escape routes.

4.5 The installation of fire alarm and detection systems which are self-monitoring is encouraged, as they routinely indicate any detector or system failures. Because of their high mounting positions, masking of detector heads by arsonists is not considered likely. Central control and indicating panels for fire alarm systems are normally accommodated in telephone switchrooms with their attendant security arrangements, and are therefore subject to constant surveillance. However, in the case of remotely monitored systems, steps must be taken to ensure that the locations housing equipment, cabling, etc are permanently inaccessible to unauthorised persons.

4.6 The second possibility is that the arsonist may have sabotaged fire protection equipment in some way, either partly or wholly. Consideration here is given only to the case of premises with automatically operated sprinkler systems, where parts of the system may be vulnerable to unwanted attention. Such systems do not normally have any intrinsic protection or monitoring capability. Therefore, security arrangements against intrusion must be applied to give mechanical or structural protection to the whole of the system. This will include the water supply system, internal and external control valves, and the entire pumping system, including the main and standby electrical supplies, and their controlling equipment. The operating positions of all control



switches and valves must be legibly and durably marked and, whenever possible, switches and valves must be locked in their operational modes. Remote monitoring of the control positions of important installations must be considered, as must the monitoring of the means of access to such installations.

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5.0 Further references

Other 'Firecode' publications

Details are given below of all other documents which together with this Note form 'NHSiS Firecode'.

NHS in Scotland Firecode

Scottish Health Technical Memoranda (SHTM)

- 81 Fire precautions in new hospitals
- 82 Alarm and detection systems. Department of Health,
- 83 Fire safety in healthcare premises: General fire precautions.
- 84 Fire Safety in residential care premises.
- 85 Fire precautions in existing hospitals.
- 86 Fire risk assessment in hospitals.
- 87 Textiles and furniture.

Scottish Fire Practice Notes

- 3 Escape bed lifts.
- 4 Hospital main kitchens.
- 5 Commercial enterprises on hospital premises.
- 7 Fire precautions in patient hotels.
- 10 Laboratories.

Documents included with NHSiS Firecode

Scottish Office, Department of Health – Fire Safety Policy.

NHS in Scotland – A Model Management Structure for Fire Safety.

Fire Protection Association (FPA)

Fire Protection Association publications are available from the Fire Protection Association, 140 Aldersgate Street, London EC1A 4HX. Tel 0171 606 3757.

Fire Safety Data Sheets

General guidance

Arson Dossier (FSD1).

Fire safety and security planning in industry and commerce (MR2).

Security against fire-raisers (MR5).

Management guide to fire investigation (AR1).

Prevention and control of arson in warehouses and storage buildings (AR2).

Guarding/training

Fire safety patrols (MR4).

Fire safety education and training of people at work (MR12).

Fire protection equipment

Automatic fire detection and alarm systems (PE1).

Fixed fire-extinguishing equipment: the choice of a system (PE6).

Automatic sprinklers: an introduction (PE9).

Automatic sprinklers: design and installation (PE11).

Automatic sprinklers: care and maintenance (PE12).

Automatic sprinklers: safety during sprinkler shutdown (PE 13).

Security precautions

Security equipment and systems (SEC1).

Site layout (SEC2).

Fences, gates and barriers (SEC3).

External security lighting (SEC4).

Closed-circuit television (SEC5).

Doors (SEC6).

Windows and rooflights (SEC7).

Access control (SEC8).

Locks (SEC9).

Hardware for fire and escape doors (SEC10).

Incendiary devices: information and guidance (AR4).

Arson Prevention Bureau (APB)

Arson Prevention Bureau publications are available from the Arson Prevention Bureau, 140 Aldersgate Street, London EC1A 4DD. Tel 0171 600 1695.

Prevention and control of arson in industrial premises.

Arson Prevention Bureau (APB)

Appendix 1

The components of a security system

The following subjects are covered in Chapter 20, Physical security, of the NHS Security Manual (NAHAT) 1992:

Defence in depth	Suiting of locks
Planning at the design stages	Key security
The ideal premises	Bolts
Controlling access	The benefits of flush bolts
Accident and emergency departments – special problems	Mortised security bolts
Accident and emergency reception arrangements	Other security fittings for doors
Security fencing – the first line of protection	Windows
Gates	Rooflights
The area between the outer perimeter and the buildings – the second line of protection	Fanlights
The perimeter of the buildings – the third line of protection	Display windows
Doors	Louvre windows
Emergency exit doors	Window bars, grilles and boswick gates
Aluminium framed doors	Types of glazing
Sliding doors	Laminated glass
Roller shutters	Polycarbonate glazing
Types of lock available	Glazing film
Mortise locks	Fall pipes, cellar gratings and wall hung ladders
The pin tumbler nightlatch and rim automatic deadlock	Security lighting
Padlocks, padlock bars and hasps and staples	Types of lamp
Locking bars	Installation of security lighting
The removable core lock	Internal areas – the fourth line of protection
Magnetically coded locks and keys	Protecting the object – the fifth line of protection
Programmable electronic locks with key operation	Strongrooms, safes and security containers
Electronic digital locks	Physical security and the control of access to communications apparatus
Card and proximity device lock release	
Mechanically operated digital locks	
Combination locks	
Electromagnetic locks	
Time locks	
Final exit shunt locks	
Electronically controlled strikes and solenoid locks	

Appendix 2

The components of closed circuit television (CCTV) systems

The following subjects are covered in Chapter 21, Closed circuit television, of the NHS Security Manual (NAHAT) 1992:

The benefits of closed circuit television

Main uses

Basic components

The switcher, video tape recorder and printer

Controls

Lighting

Monitoring – screen size and recommended viewing distances

Selecting the camera

Lenses

Fixed focal length lenses

Zoom lenses

Auto iris control

Spot filter

Monitors

Switchers

Pan and tilt units and scanners

Environmental housings

Inter-communication

Alarm sensors

Display of image on domestic television

Cables

Quality assurance

Some examples of special CCTV systems

Future developments

Appendix 3

Systems for controlling access

The following subjects are covered in Chapter 23, Access control, of the NHS Security Manual (NAHAT) 1992:

Why and where to use access control

Definition of access control

Identifying people through information stored in access control systems

The physical means of preventing access

Means of opening physical barriers

Mechanical access control systems

Electrically operated access control systems

The rules of access control checks

The basic elements of electronic access control

On-line door controlling readers

Use of intelligent stand-alone door controllers

Access control alarm information

Smart cards

Door entry systems

Supply, installation and maintenance

Appendix 4

Identification badges and security passes

The following subjects are covered in Chapter 24, Identification badges and security passes, of the NHS Security Manual (NAHAT) 1992:

The basic factors

The difference between identification badges and a pass

The benefits of introducing a personal identification badge system

Attitudes of staff

Initial considerations

The options

Types of ID badge systems available

Arrangements to introduce and administer the system

Recovery of badges on termination of employment

Design of permanent badges

Design of temporary passes

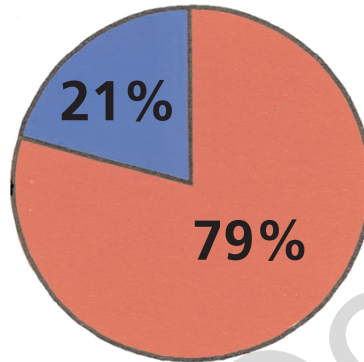
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Appendix 5

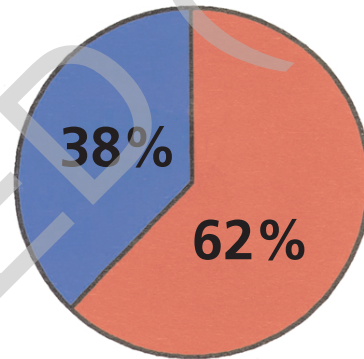
Fires in hospitals



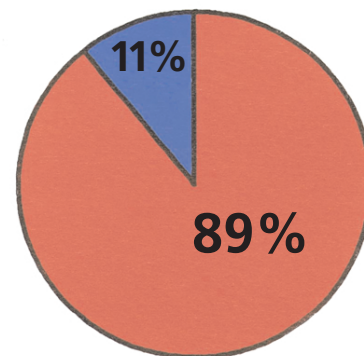
All hospitals



Hospitals for the mentally ill



General hospitals



Source: Home Office fire statistics 1991