

King Edward's Hospital Fund for London



FIRE PRECAUTIONS AT VOLUNTARY HOSPITALS



MEMORANDUM

prepared by the

MANAGEMENT COMMITTEE

for the

INFORMATION OF HOSPITAL COMMITTEES



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A. INTRODUCTION

1. In 1926 the Management Committee, after consultation with Mr. A. R. Dyer, then Chief Officer of the London Fire Brigade, revised a previous Report by Sir Eyre Shaw and Sir Lionel Wells on fire precautions in Hospitals. The revised Memorandum was circulated to the Hospitals by the Fund.
2. It has been considered desirable to revise the second Memorandum and the Management Committee have now consulted Major C. C. B. Morris, M.C., the present Chief Officer of the London Fire Brigade, and with his assistance have prepared the following suggestions.*
3. The Management Committee hope that these suggestions may be of service to Hospital Committees when considering the question of fire precautions.

B. POSITION OF THE KING'S FUND

4. At the same time they desire to make clear the position of the King's Fund in this matter. The Fund considers that the responsibility for provision in case of fire must properly rest with Hospital Committees. The Fund, therefore, never attempts to form or to express any opinion on the adequacy of the precautions taken at any Hospital. It asks each Hospital every year whether the Chairman of the Committee of Management, or other responsible authority in the Hospital, is satisfied that these precautions are adequate. It then asks its own Visitors whether, as a result of their annual inspection, they desire to make any comment on the answer. Where the Visitors make a comment which the Fund thinks should be brought to the notice of the Hospital Committee, it promptly draws the attention of the Hospital to the comment and again asks if the Hospital Committee are satisfied. But it does not itself express any opinion or accept any responsibility.
5. The issue of this Memorandum does not mark any departure from the position thus described. The King's Fund does not attempt to say how far the following suggestions are applicable to any particular Hospital. This may depend on the size of the Hospital, the number of its staff, its plan, the kind of buildings,

* Mr. Dyer's suggestions were based largely on the Report of a Departmental Committee of Enquiry into fire precautions at Ministry of Pensions Hospitals, appointed after a fire at Highbury Hospital, Birmingham, in 1923. Mr. Dyer was a member of that Committee. Since then the London County Council, as the result of the Local Government Act, 1929, control not only the London Fire Brigade but also the Municipal Hospitals within their area. Major Morris, therefore, in addition to making various detailed suggestions, was able to supply the Fund with a set of standard fire instructions prepared by the London County Council for their Hospitals. These instructions are intended as a general guide and are subject to any amendments necessary to suit the individual Hospital. The Management Committee have found in them much that can be adapted to the less uniform circumstances of Voluntary Hospitals.

the way it is lighted and heated, the distance from a fire station, the urban or rural character of the immediate surroundings, and many other circumstances. But individual Hospital Committees will, it is believed, find the Suggestions useful in deciding whether they themselves are justified in feeling satisfied that the fire precautions at their Hospital are such as to comply with all reasonable requirements, and therefore to be regarded as adequate.

C. PREVENTION OF FIRE

6. **Fire Risks.** Special attention should be given to the places where outbreaks most frequently occur, amongst which may be mentioned roof spaces, kitchens, storerooms, cupboards, heating chambers and furnace rooms, workshops and laundries, ash pits and accumulations of rubbish.
7. In order to check the spread of fire and smoke from basements, storerooms, dispensaries, etc., fire-resisting separation should where possible be provided at these points, and between staircases, lift shafts and other parts of the building. In non-fire-resisting buildings hidden risks such as timber under hearths, and roof or floor timbers built into flues, should be sought and precautionary measures taken.
8. It is desirable that access for fire-fighting purposes should be provided to all roof spaces; such spaces should not be used for storage purposes, they should be cleaned out periodically and inspected after the visits of workmen, and the entrances thereto should be kept closed.
9. **Heating, Lighting, and Power.** Attention should also be paid to the need for special care in the neighbourhood of fire-places, electric stoves, gas stoves and other gas fittings, and where matches or other naked lights are likely to be used near bedding, curtains or clothing, or cotton wool used as decorations.
10. High-pressure heating pipes and boilers should never be placed within one inch of any wood-work, and, where this rule cannot be carried out, non-conducting material should be inserted between the two.
11. It is undesirable that gas and electricity services should be carried in one pipe duct; where this is unavoidable ample permanent ventilation should be provided.
12. It is desirable that a periodical inspection of all gas and electricity services should be made, particularly where the installation is not of a modern type. Care should be taken to see that electric motors are adequately ventilated.
13. Open fires and slow combustion stoves should be provided with suitable wire guards, and kerbs firmly fixed in position.
14. All gas burners should be protected by glass or wire globes, and where any naked flame is used within three feet of a combustible ceiling the protective device known as a "ceiling protector" should be provided in order to distribute the heat.
15. Gas stoves or gas rings should be provided with an incombustible base, and rubber connections should be prohibited.

16. Disused gas fittings should be removed, and the supply sealed off by means of a screwed metal cap or plug.
17. A coloured pilot light should be provided for electrical appliances such as irons, and safety devices should be fitted to electric kettles, so as to indicate when the current is on.
18. The practice of drying clothes, etc., over gas fires should be prohibited.
19. The general use of candles or of lamps or stoves burning mineral oil should be strictly forbidden.
20. **Inflammable Material.** The storage of inflammable material such as empty packing cases, broken furniture, toys, Christmas decorations, etc., should be reduced to the minimum. Decorations made of non-inflammable paper should be used as far as possible. (See also paragraph 26.)
21. Spirit, paraffin, mineral oil and all other inflammable liquids should be stored in a place having no direct connection with the main buildings.
22. Special care should be taken in the storage and use of ether and other anaesthetics.
23. Polishing rags used with linseed oil should not be stored, as they are liable to spontaneous combustion. The practice of manufacturing floor polish or of thinning solid polishes with turpentine should not be allowed; ready-made polishes should always be used.
24. Where floor polish is in use, the polish after issue from the Hospital stores should be placed in charge of some competent person, who should be responsible for keeping it in a locked cupboard at a safe distance from all stoves or lights, and also for its issue and proper use.
25. Steel filing cabinets should be used for storing X-ray films, and they should not be kept where, if they become involved in a fire, the resulting fumes would be a source of danger to persons in the same or in any adjoining building. Discarded films should not be placed in general refuse bins or burnt in a closed vessel.
26. **Rubbish, Litter, etc.** Accumulations of dust, rubbish or other litter should be avoided, and metal receptacles with lids should be provided in which to deposit waste paper, oily rags, cotton waste and other inflammable rubbish.
27. Attention should be drawn to the danger of putting hot ashes in wooden buckets or dust bins, or in metal buckets or bins used for refuse other than ashes, and such practices should be prohibited.
28. Empty packing cases should not be allowed to accumulate in close proximity to the Hospital buildings, but should at once be removed to a safe distance from any building.
29. In rural or semi-rural districts there may be a danger of fire if long grass is allowed to grow close to buildings, and any such grass should be frequently cut and removed during the summer months.

D. FIRE EXITS

30. **Marking of Exits.** The avenues of escape should be clearly marked by means of "Fire Exit" notices placed in such a way as to indicate unmistakably the route to be followed. These notices must not be allowed to get obscured through age or the imposition of other notices.
31. **Freedom from Obstruction.** All Emergency and Ordinary Exits must always be kept clear and unobstructed.
32. **Keys.** Care should be taken that the keys of all emergency exit doors, and the keys, if any, of the places where those keys are kept, are periodically inspected and used so as to ensure that they do not get lost or rusted.

E. FIRE APPLIANCES*

33. **Hand Appliances.** Every Hospital should be well equipped with hand fire appliances, such as chemical extinguishers of two-gallons capacity (soda-acid type) and fire buckets, and these should be distributed throughout the wards, corridors, domestic offices, etc., in conspicuous positions, so as to be readily available. Fire and sand buckets in or near the wards should be of such a size that they can be handled by women. As far as possible the fire appliances installed in any hospital and in its branches should be of a uniform or foam type as may be appropriate.
34. As a general rule, every ward, and the dispensary of the Hospital, should be supplied with water buckets, sand buckets and extinguishers. Extinguishers should be placed in a prominent position on walls. Carbon tetrachloride extinguishers are not recommended, and should be replaced, where necessary, by those of the soda-acid type.
35. Constant care should be taken to ensure that the water buckets are not less than two-thirds full of water, and that sand buckets are charged with sand.
36. In laboratories and other departments where oil or spirit is used, and in places where any such liquids are stored, the provision of foam type extinguishers is recommended.
37. **Hydrants, Pumps, etc.** Where water mains and hydrants are available, hydrants should be situated generally at intervals of not more than 150 feet apart, and the stand pipes should be invariably mounted in positions over the hydrants, due regard being given to precautions to prevent freezing. Sufficient hose should be installed in a watertight box to reach any portion of the building which the particular hydrant covers. Endeavours should be made to provide sufficient pressure and flow to enable at least two $\frac{5}{8}$ -inch jets to be thrown simultaneously over the roofs of the wards for at least one hour.
38. In Hospitals in which hydrants are not installed, corridor pumps of not less than ten-gallons capacity should be provided in sufficient numbers, in addition to the fire-buckets and extinguishers already mentioned.
39. **Charge of Appliances.** All fire appliances should be in charge of the official mentioned in paragraph 42, who should be responsible for their maintenance in good working order. Particular care should be taken with chemical appliances, as the chemical is liable to evaporate (see also paragraph 44).

* For "Alarm Apparatus" see paragraph 47.

F. FIRE ORGANIZATION, FIRE DRILLS AND PRINTED INSTRUCTIONS

40. **Fire Drills.** In order that the whole of the staff may be familiar with their duties in the event of an outbreak, and with the use of the fire appliances, fire drill should be carried out at frequent intervals. Separate plans for the movement of the staff will have to be prepared for day and night.
41. **Printed Instructions.** Printed instructions (which should be as concise as possible) should be posted up in conspicuous positions in all parts of the building, dealing with the methods of calling the fire brigade and of notifying the responsible Hospital officials, with the use of the fire appliances provided, and with any additional matters peculiar to the particular Hospital (see also paragraph 49).
42. **Responsible "Fire Officer."** The obligation of making periodical inspections and fire drills and reporting possible fire risks should be placed on a competent resident person, who should be specially selected. He should be called the "Fire Officer" or have some similar title, so as to invest him with authority. He should also have charge of the appliances, and be responsible for seeing that all members of the staff know how to act in the event of a fire. (See Sections E, G, and H.)
43. The Fire Officer should have a deputy capable of taking his place in his absence.
44. **Outside Experts.** In order to make sure that the fire drills are effectively carried out and that the fire appliances are in good order, it is suggested that there should be periodical supervision and inspection by a competent outside expert.

G. METHOD OF GIVING THE ALARM IN CASE OF FIRE

45. **General Principles.** In this connection it is necessary to provide for (a) giving the alarm by the person discovering the fire; (b) rousing the sleeping patients and staff likely to be affected; (c) calling the fire brigade; (d) taking emergency steps pending the arrival of the fire brigade. Unless all these things can be done by the same person, it is also necessary to provide for (e) summoning the help of other persons (e.g. the Fire Officer mentioned in paragraph 42) who will be responsible for some of them, and making sure that the summons has reached the persons concerned. The order in which these should be done is a matter for the consideration of the Hospital Authorities: but the Fire Brigade should always be summoned as soon as possible.
46. In arranging the method for alarm, it is important to bear in mind that the patients should not be unnecessarily startled. At the same time, however, the fire alarm, whatever system may be adopted, should be so arranged as to rouse the staff in all parts of the Hospital likely to be affected. Officers should be detailed whose duty it would be to proceed to the various wards, etc., in order to allay any tendency to panic.
47. **Alarm Apparatus.** For the purpose of rousing staff some alarm system should be provided either (a) by an electrically operated fire alarm system, of the press or release button type, with a sufficient number of call points installed in suitable positions throughout the

Hospital, and alarm bells installed in circuit with the fire alarm system in positions where, without alarming the inmates, they will summon the necessary staff, or (b) by a similar system of hand-operated fire bells. This apparatus should be in charge of the "Fire Officer" mentioned in paragraph 42.

48. **Communication with Fire Brigade.** Immediately an alarm is given the attendant should transmit the call to the fire brigade without waiting to ascertain whether the Hospital fire appliances will be sufficient or not (but see paragraph 54).
49. If the telephone is available, the fire brigade should be called by telephone as well as by the street alarm, and the printed instructions should say which is to be used first when both are available.
50. A printed slip giving the following information should be posted near the telephone* :—

"In Case of Fire"

"Call the Exchange and ask for 'Fire Brigade' (No number is required).
 "When answered by the Fire Brigade, say
 'Fire at Hospital, Street,'
 and do not ring off until the message has been clearly repeated to you."

In the case of an automatic Exchange the first line should read—

"Dial 0—give your own number, and ask for 'Fire Brigade.'"

51. The desirability of direct communication by a special telephone line with the nearest fire brigade station should be considered.
52. All the staff should be acquainted with the position of the nearest street fire alarm, and how to use it. The person who transmits the call to the fire brigade should remain at the fire alarm until the arrival of the brigade.
53. In any case, some person should be stationed at the entrance of the Hospital in order to direct the firemen to the scene of the outbreak with the least possible delay.

**H. OTHER IMMEDIATE STEPS TO BE TAKEN IN
CASE OF FIRE**

54. Arrangements should be made for a responsible official to be informed at the same time as the fire brigade is summoned, in order that he may proceed to the scene of the outbreak and direct operations, pending the arrival of the brigade, who will then take charge. This official may be, e.g., the resident foreman of works, engineer or plumber, or the resident medical officer, resident secretary or superintendent, or the matron or night sister, or the "Fire Officer" mentioned in paragraph 42.

* This information is correct for the London Telephone Directory area, but Hospitals beyond this area should make any amendments that their local exchange indicates.

55. Upon the discovery of a fire all doors and windows in the vicinity should be kept closed as far as possible, in order to exclude draught.
56. The person discovering the fire should, after having made sure that the alarm has been given and that the Fire Brigade has been summoned, attack the fire by means of the appliances available.
57. If hydrants are provided, the hose should be extended from the nearest hydrant, care being taken to keep the hose free from kinks; but the water should not be turned on unless it is evident that the extinguishers and fire buckets are insufficient to extinguish the fire.
58. If the fire is of an electrical nature, sand only should be used in the first instance, and the current should be cut off.
59. For oil, spirit and fat fires, foam type extinguishers should be used.
60. For a person's clothing alight, or if the fire is small, wraps, blankets, rugs, etc., should be used.
61. Nurses on duty should move patients from the proximity of the fire, or, if necessary, evacuate the ward. Patients may be removed on bedding if essential, but beds or furniture should not be removed.
62. The officers who have been previously detailed for the purpose (see paragraph 46) should proceed to the various wards, etc., in order to allay any tendency towards panic, while the remainder of the staff should proceed to whatever stations have been allotted to them; or should leave the building.

K. CONCLUSION

63. The above suggestions do not profess to be applicable necessarily to all Hospitals, or to cover the whole of the ground at any one Hospital. It is hoped, however, that they may be useful to Hospital Committees in the manner described in paragraphs 4 and 5.
64. The Management Committee are greatly indebted to Major C. C. B. Morris, M.C., Chief Officer of the London Fire Brigade, for his suggestions for the revision of the 1926 Memorandum, which have been of much assistance to them. They are grateful also to the London County Council for the opportunity of consulting the Council's Standard Fire Instructions and Regulations for the County Hospitals. They wish also to express their thanks to the following Hospital Officers who were called into consultation by the Sub-Committee which prepared this Memorandum: Mr. A. G. Elliott, House Governor, London Hospital; Mr. F. A. Lyon, Secretary, Seamen's Hospital Society; and Mr. H. F. Rutherford, Secretary, Hospital for Sick Children.

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