A SURVEY OF DOMESTIC BURNS AND SCALDS IN WALES DURING 1955

SOME OBSERVATIONS ON THEIR PREVENTION AND THE SOCIAL RESPONSIBILITY OF THE MEDICAL PROFESSION

BY

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During the past fifteen years there have been isolated reviews of the circumstances leading to domestic burns and scalds, the most important being that of Colebrook and Colebrook (1951). Since then, increasing publicity has been given to the prevention of domestic burns and scalds; the Heating Appliances (Fireguards) Act has been placed on the Statute Book; and at last it has been found possible to give cotton materials and cellulosic fibres a flame-resistant finish that will withstand repeated washing and yet not increase the retail price unduly.

In view of these activities it was felt desirable to find out whether there was any change in the general pattern of burns and scalds or in the attitude of the public to these tragic domestic accidents. All the cases of burns and scalds admitted to this centre during 1955 were studied, with particular emphasis on: (1) the immediate cause and sequence of events: the clothing worn at the time of the accident and the extent of the damage to the skin; (2) the social background and the past medical history of the patient and the family; and (3) the degree of appreciation shown by the parents of young children of the common hazards in the home: the danger of open fibres, the inflammability of certain fabrics, and the liability of parents to prosecution under certain circumstances if children are injured by contact with an unguarded fire.

Results of the Investigation

During 1955, 270 patients were admitted with new burns and scalds to the Burns Centre and 10 were treated as out-patients. Of these cases, 54 were industrial accidents and need not concern us further here. Of the 226 domestic accidents, 118 were burns and 108 were scalds. When analysed month by month, the burns showed a characteristic seasonal variation, with peak heights during periods of very cold weather. By contrast, the scalding accidents were fairly evenly distributed throughout the year (Fig. 1).

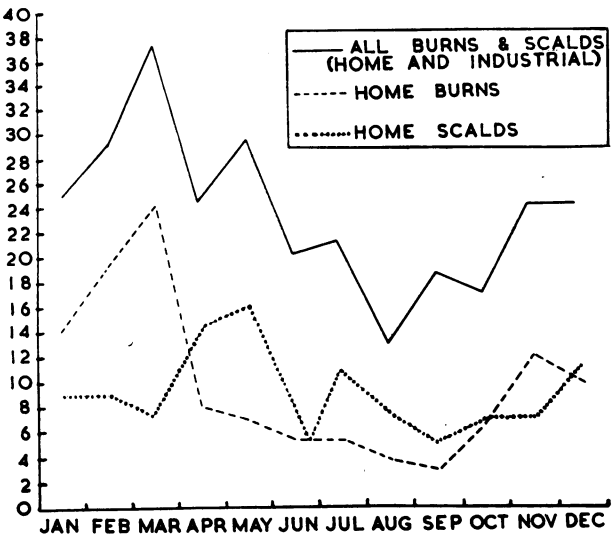

FIG. 1.—Monthly incidence of domestic burns and scalds and their seasonal variation.

In the absence of any form of compulsory notification of burns and scalds it is impossible to state whether the total number of these accidents in Wales is increasing or not. The total number of deaths in Wales from burns and scalds was 64 in 1951 (2.47), 55 in 1952 (2.13), 54 in 1953 (2.08), and 53 in 1954 (2.04)—the figures in parentheses being the death rates per 100,000 of the population.

The 118 Home Burns

The age distribution of these burns and the main agents responsible are shown in Table I.

TABLE I.—*Distribution of Home Burns in Relation to Age and the Nature of the Accident*

Nature of Accident	Age Group in Years				Total
	4 or Less	5–14	15–64	65 or More	
Direct or indirect contact with domestic fire:					
Coal, unguarded ..	4	13 (5)	25 (4)	8 (5)	50 (14)
,, guarded ..	3	—	—	—	3
Electric, unguarded ..	4	5 (1)	3	1 (1)	13 (2)
,, guarded ..	2	—	—	—	2
Gas, unguarded ..	1	1	2	—	4
,, guarded	—	—	—	—	—
Other fires	3	1	4 (2)	1 (1)	9 (3)
Principal other causes:					
Inflammable liquids ..	1	5	3	—	9
Electrical	1	1	3	—	5
Hot fat	2	2	1	1	6
Cigarettes matches, paper, candle ..	2	—	—	5 (4)	7 (4)
Conflagration ..	—	—	1 (1)	—	1 (1)
Hot-water bottle ..	1	—	2	1	4
Acid	1	—	—	—	1
Fireworks	1	3	—	—	4
Total	26	31 (6)	44 (7)	17 (11)	118 (24)
Epileptics	—	1	10	1	12
Cardiovascular accidents	—	—	5 (4)	7 (6)	12 (10)

Deaths, indicated in totals, are shown in parentheses.

An unguarded coal-fire was responsible for 50 burns: unguarded electric fires caused 13, and unguarded gas fires caused 4. Of the 50 unguarded coal-fires, 12 possessed fireguards, but the guard had been temporarily removed for stoking the fire or for other reasons such as: "One of the hooks was broken"; "The fire had only just been lit"; "The child was upstairs in bed and we never thought that she would come downstairs on her own." Throughout the year we came across only three families who had brought new gas or electric fires fitted with the standard guard specified by the Heating Appliances (Fireguards) Act, 1952. In two of the cases a child had been scalded and the newly purchased fire was not implicated. In the third case, however, the patient had taken the guard off her portable electric fire in order to clean it. The guard was accidentally broken and was not replaced. Three weeks later this woman was admitted with extensive burns due to her clothes touching the heating element of her unguarded electric fire.

Of the 118 domestic burns, 12 occurred as a complication of an epileptic fit, and 12 were associated with a cardiovascular accident.

The 108 Home Scalds

The age distribution of these accidents and the main agents responsible are shown in Table II.

In 79 instances the immediate cause was the upsetting of containers of hot or boiling liquid, and 63 of these accidents involved children under the age of 5. The most common causes were: (1) pulling teapots, cups, and jugs off the table; (2) knocking kettles and pans off the hob of unguarded fireplaces or off the top of kitchen stoves; and

TABLE II.—*Distribution of Home Scalds in Relation to Age and the Nature of the Accident*

Nature of Accident	Age Group in Years				Total
	4 or Less	5–14	15–64	65 or More	
Upset containers:					
Teapots	20	1	—	—	21
Cups	8	1	—	—	9
Pans	21	4	2	—	27
Kettles	12	4	3	1 (1)	20 (1)
Jugs	2	—	—	—	2
Pull on flex of electric kettle	6	2	—	—	8
Bath water too hot	5	1	—	—	6
Fall into bucket of hot water	11	—	—	—	11
Burst hot-water bottle	1	2	—	1	4
Total	86	15	5	2 (1)	108 (1)

Deaths, indicated in totals, are shown in parentheses.

(3) colliding with older children or adults carrying utensils full of hot liquids. A disturbing number, 8 in all, were caused by children pulling the flex of an electric kettle which had been placed on a ledge or a shelf with the cable hanging in a U-loop. The scalds were usually extensive, and skin-grafting was necessary in every case of this type that we treated. It surprised us to find that not a single scald was caused by a child pulling on a tablecloth.

A fall into a bath or a bucket of hot water caused 17 scalds.

Clothes Catching Fire

Of the 118 domestic burns, 74 were the result of clothes catching fire. Without doubt the most serious of our burns belonged to this group, and of the 24 fatal domestic burns no fewer than 21 were due to clothes catching fire.

The unguarded coal-fire was responsible for 40 of these accidents, and the other causes of ignition were as follows: electric fires, 9; gas-fires, 4; paraffin/petrol, 7; candle/matches, 5; fireworks, 3; paper, 3; conflagration, 1. None of the gas, electric, or paraffin fires were guarded at the time of the accident.

In several cases physical disability made it difficult for victims to escape from the neighbourhood of the fire or to put out the flames themselves. Two children were spastics, two adults had severe Parkinsonism, two were hemiplegics.

TABLE III.—*Burns Caused by Clothes Catching Fire. Analysis of the Different Materials Involved in Garments that were most Extensively Destroyed by Fire*

Material Involved	No. of Cases	No. of Deaths
Flannelette	13	5
Winceyette	9	2
Cotton	35	12
Rayon/cotton	2	1
Wool/cotton	3	—
Cotton net	2	—
Woollen	3	—
Silk	3	1
Nylon	1	—
Corduroy	1	—
Flannel	2	—

TABLE IV.—*Analysis of the 74 Cases in which Clothing Caught Fire, Demonstrating the Relationship Between Age and Sex of the Patient, and the Garment which Showed the Greatest Destruction by Fire*

Nature of Garment	Age Group and Sex								Total	
	4 or Less		5–14		15–64		65 or More			
	M	F	M	F	M	F	M	F	M	F
Nightdress	2	6	1	7 (3)	—	4 (2)	1	3 (3)	4	20 (8)
Pyjamas	1	—	—	1	1	—	1	—	3	1
Dress/skirt	—	1	—	1	—	13 (4)	—	6 (5)	—	21 (9)
Shirt/vest	1	—	9 (1)	—	5	—	3 (3)	—	18 (4)	—
Dressing-gown	—	—	—	—	—	2	—	—	—	2
Other clothing	—	—	1	—	3	—	1	—	5	—
Total	4	7	11 (1)	9 (3)	9	19 (6)	6 (3)	9 (8)	30 (4)	44 (17)

Deaths, indicated in totals, are shown in parentheses.

Seven others were epileptics, and one adult was so drunk that he did not feel any pain as his left leg lay burning in an open coal-fire.

The type of material involved was noted in every case and confirmed the dangerous nature of cotton goods, especially those materials with a raised nap, and mixtures of wool and cotton (Table III).

FIG. 2.—This ballet frock, belonging to a child aged 6, caught fire owing to contact with a gas-ring on the floor. The flared skirt, which was made of cambric and cotton net, was extensively destroyed, and analysis showed that the vertical flame-speed over these fabrics was 1 ft. (30 cm.) per sec. The more closely fitting bodice made of wool, satin, and acetate rayon was much less extensively burnt.

If one relates the garment burnt to the age and sex of the patient, most of the victims are seen to be women, or children under the age of 14 (Table IV). These figures stress the danger of loose-fitting clothes which stand away from the body, leaving an air space which acts as a chimney once a flame is applied to the lower border of the garment (Fig. 2). For this reason pyjamas are much safer for young children's nightwear than loosely flowing nightdresses. Indeed, one of the largest multiple stores in the country no longer sells any winceyette or flannelette nightdresses for children, but only pyjamas.

Social Grouping of Parents, and Housing Conditions

The burns and scalds involving young children under the age of 14 were analysed according to the social groups* of their parents (Table V). As would be expected, most accidents occurred in social groups III, IV, and V. Except in group I, scalds were far more common than burns, and in groups IV and V were twice as common.

The maximum incidence of burns and scalds was between the hours of 3.30 and 6.30 p.m. It surprised us, however, to find that between the hours of 8 p.m. and midnight no fewer than 34 accidents occurred of which 52% involved children under the age of 16 and 48% involved children under the age of 6. In every one of the accidents occurring after 8 p.m. there was good evidence of overcrowding at home.

TABLE V.—*Home Burns and Scalds in Children Aged 14 and Under, Related to the Social Group of Their Parents, and to Overcrowding at Home*

Social Group	Burns			Scalds		
	Total No.	Over-crowding	Serious Over-crowding	Total No.	Over-crowding	Serious Over-crowding
I	3	—	—	3	—	—
II	3	—	—	7	1	—
III	28	15	4	43	21	9
IV	14	11	4	34	15	7
V	9	9	5	14	11	7

Using the official standards of overcrowding as laid down in the Housing Act, 1936 (Section 58), overcrowding was

*I=Professional classes, etc.; II=intermediate; III=skilled workers; IV=semi-skilled workers; and V=unskilled workers.

found in half of the families in groups III, IV, and V, and in half of these the overcrowding was serious. The following are two typical examples.

1. Aged 6. Parents in social group IV. Two adults and six children living in a council house of two bedrooms and one living-room downstairs. Children aged 14, 13, 11, 10, and 6 years and one aged 10 months. The child's clothes caught fire through contact with an unguarded coal-fire.

2. Aged 3. Parents in social group III. Two adults and four children living in one bedroom and one living-room. Children aged 12, 10, 7, and 3 years. Child accidentally collided with mother, who was carrying a kettle of hot water. *This same child had been scalded in a similar way one year before when living in the same house.*

In two other families where overcrowding was serious, children living in the same house had already been burnt or scalded within the preceding 18 months. Our findings support previous reports that overcrowding is an important factor in domestic accidents to children (Wilkinson, 1944; Wright, 1945; Brown *et al.*, 1945).

Awareness of Parents of Hazards in the Home, and Various Preventive Measures Available

Past experience in investigating the history of children burnt or scalded at home suggested that there was widespread ignorance about the need for fireguards, the dangers of certain types of material, and the existence of certain laws under which parents could be prosecuted for failing to guard fires adequately in the presence of young children. This ignorance seemed to be unrelated to the social group of the parents. Accordingly, all the parents of children admitted to the burns centre during 1955 were asked the following questions:

1. Did they know that under the Heating Appliances (Fireguards) Act, 1952, all new gas, electric, or oil heaters sold after October 1, 1954, must be fitted with a guard which complies with very definite specifications?
2. Were they aware that if any child under the age of 12 suffered serious injury or death through burning or scalding due to an open unguarded fire, the parents or guardians could be prosecuted and fined up to £10?
3. Did they know that certain materials were highly inflammable and thus dangerous for children's clothing?
4. Did they have any fireguards in their own house?

The positive answers to these four questions are shown in Table VI. Although many parents had fireguards for coal-fires, very few knew about the Fireguards Act. Lack of knowledge about the inflammability of certain fabrics was widespread and shared evenly amongst all the five social groups.

TABLE VI.—*Analysis of Positive Answers Given by Parents of Young Children Admitted to Hospital in* 1955 *with Burns and Scalds. Answers are Related to the Social Group of the Parents and Expressed as a Percentage of the Total Number Questioned in Each Social Group*

	Social Group of Parents				
	I	II	III	IV	V
No. of parents questioned..	8	15	89	68	46
Positive replies given to questions on:					
1. The Fireguards Act ..	62%	35%	15%	12%	2%
2. Penalties	100%	40%	33%	25%	15%
3. Inflammable clothing	31%	6%	12%	25%	15%
4. Fireguards at home ..	53%	53%	57%	50%	30%

Association of Illness with Domestic Burns and Scalds

1. Epilepsy

During the year 18 epileptics were admitted with new burns or scalds. Sixteen patients were injured at home (14 burns and 2 scalds); two patients were burnt at work. In the main, most of the burns involved the scalp, face, and neck. Though none was fatal, all were serious in depth if not in surface area. Most accidents occurred between the ages of 30 and 50, though three cases were in young people in their early twenties. Of the 14 domestic burns 12 were the result of a fall into an open unguarded coal-fire, and in five of them clothing caught fire to a significant degree. Two patients were burnt by careless application of a hot-water bottle during recovery from a fit. Another patient woke up after a fit to find his foot burning in the grate.

All the 18 patients reviewed had suffered from epilepsy for many years, the shortest history being six years and the longest 64 years. With the exception of two patients who were deluding themselves, all knew quite well the nature of their illness. All were having frequent attacks, usually every two or three weeks, and all showed some degree of mental degeneration. With the exception of one patient, all were receiving treatment with phenobarbitone. Only six were receiving phenytoin sodium in addition, and a further three patients were receiving methylphenobarbitone, troxidone, and primidone respectively. In view of recent advances in therapeutics, it would appear that several of these patients were in urgent need of clinical reassessment and trial on some of the newer drugs in an attempt to control the frequency and severity of the attacks. Only one patient had been fully investigated by a neurologist, and that had been eight years previously. Five of the patients had been burnt on previous occasions, two of them twice and one of them on three occasions.

None of the epileptic patients knew anything about the Fireguards Act, nor did their friends and relations. Only two of them had fireguards at home, and in neither instance was the fireguard in use at the time of the accident. One of the most alarming cases was that of a young mother, aged 22, with a child of 11 months, and expecting a second child. There was not a single fireguard in the house, though she had suffered from epilepsy for seven years and was having fits every three weeks. A disturbing feature was that, so far as could be ascertained, none of these patients had ever been warned by their medical advisers at home or in hospital about the importance of fireguards in the home.

Most of the epileptics who are admitted with burns are patients who are having frequent attacks, who have become careless and mentally deranged, and so neglect their treatment. There are, however, a few tragic cases in which an epileptic may have had as many as 5–15 years' freedom from attacks, when suddenly a fit occurs out of the blue and may result in a very severe injury or burn. The natural desire of every epileptic to lead as normal a life as possible should not lead us, or them, to forget that, as a general rule, "once an epileptic, always an epileptic."

The two industrial burns encountered show well the lengths to which the sufferer will go to conceal the true nature of his illness. A boiler fitter, aged 23, worked for three years in one foundry in spite of frequent "faints" at work. He eventually fell against a steam-pipe during one of these attacks and sustained a full-thickness burn of the thigh. The other, an electric welder, aged 29, had a fit

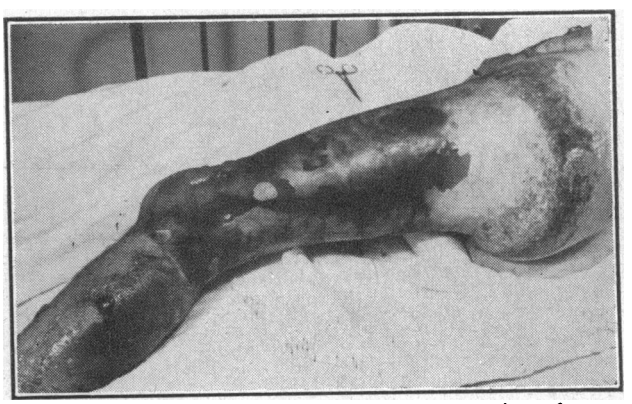

FIG. 3.—Full-thickness burns involving the whole circumference of the lower limb caused by electric welding apparatus in a man who had an epileptic fit at work.

when using his electric welding equipment and gave himself a full-thickness burn involving the full circumference of his left thigh and leg (Fig. 3). Under identical circumstances five years previously he had burnt a large area of skin in the right flank, and this too had required extensive grafting.

2. Cardiovascular Accidents

These were responsible for 12 of the home burns and 10 were fatal. The usual history was that of a stroke and a fall into an unguarded fire. In 6 cases the patient had already had previous warning attacks, and in three of the fatal cases was already so disabled by paralysis as to be virtually helpless. The fatal accidents resulted from comparatively minor causes such as lighting a candle or cigarette or falling out of a fireside chair into the hearth.

3. Other Illnesses

Three patients suffered from a gross degree of Parkinsonism, and two of them died from severe burns due to their clothes catching fire.

Three children, all spastics, were burnt through contact with an unguarded coal-fire. In each case their clothing caught alight, and one child died from a full-thickness burn involving 80% of his body surface.

Eight young children were burnt during convalescence from a recent infectious disease. The children had usually been brought downstairs " as a special treat " and placed in armchairs near an unguarded coal-fire.

In every case in which the children's clothing caught fire, the material involved was winceyette or flannelette, and one of the children died from full-thickness burns involving 75% of her body surface.

Mortality from Domestic Burns and Scalds

Of the 226 domestic burns and scalds treated during 1955, 25 proved fatal (Table VII). Most of the deaths were due either to very extensive full-thickness burns in any age group or to burns and scalds of relatively small extent in old people.

TABLE VII.—*Analysis of Deaths Due to Home Burns and Scalds*

Patient	Sex	Age	% Body Showing Full-thickness Burn	Clothes Caught Fire	Type of Fire	Other Factors
1	M	61	10	Yes	Coal-fire unguarded	Parkinsonism
2	F	65	6	,,	,, ,,	
3	F	63	60	,,	,, ,,	
4	F	17	65	,,	Gas poker	
5	F	67	50	,,	Gas ring	
6	M	8	60	,,	Coal-fire unguarded	Spastic
7	F	84	4	,,	Candle	Cardiovascular accident
8	M	84	16	,,	Paper caught fire as he lit his pipe	Parkinsonism
9	F	6	75	,,	Coal-fire unguarded	
10	M	64	3	No	,, ,,	Cardiovascular accident
11	F	77	80	Yes	,, ,,	,, ,,
12	M	78	35	,,	Candle	,, ,,
13	F	38	45	,,	Coal-fire unguarded	
14	F	5	60	,,	Electric fire unguarded	
15	F	60	80	,,	Conflagration	
16	M	75	3	,,	Lighting a cigarette	,, ,,
17	F	81	10	,,	Coal-fire unguarded	
18	M	68	10	,,	Electric fire unguarded	,, ,,
19	F	70	6	No	Scalds	,, ,,
20	M	80	4	,,	Coal-fire unguarded	,, ,,
21	M	82	32	Yes	,, ,,	,, ,,
22	F	6	60	,,	,, ,,	
23	F	62	17	,,	,, ,,	
24	F	6	60	,,	,, ,,	
25	F	63	6	No	,, ,,	

Knowledge of the General Public and the Medical Profession on Methods of Prevention

As mentioned above, we were disturbed to find that so few parents could give positive answers to the four questions they were asked. As a control experiment the same four questions were put to parents who had at least two children under the age of 6, none of whom had, as yet, been burnt or scalded. All the five social groups were sampled, and 50 parents were questioned in each group. The results were surprising (Table VIII). Only half of the parents in each group possessed any sort of fireguard: 30% of these were not fixed to the fire or the fireplace in any way, and many were small movable spark guards which did not cover the whole of the front of the fire. More remarkable was the uniformity of the replies to all the questions by parents in social groups I, II, III, and IV. The contrast between the replies given by parents of burnt children (Table VI) and those given by parents of unburnt children (Table VIII) supports the view that many of the parents in the former category had been influenced by information acquired *after* the accident and *before* they were questioned.

TABLE VIII.—*Analysis of Positive Answers Obtained by Questioning Parents in Each of the Five Social Groups. 50 Parents were Questioned in Each Group: All the Parents had at Least Two Children of Their Own Under the Age of 6*

Question	No. of Positive Answers in Each Social Group Expressed as a Percentage				
	I	II	III	IV	V
1. Do you know of the existence of the Fireguards Act?	10%	12%	14%	14%	2%
2. Do you know about your liability to prosecution under certain circumstances if your children are burnt or scalded owing to an unguarded fire?	10%	24%	22%	34%	10%
3. Do you know that certain materials such as winceyette and flannelette are highly inflammable?	30%	30%	28%	28%	14%
4. Have you any fireguards in your own home?	56%	52%	50%	48%	38%

It was found that sound radio and television programmes were by far the commonest sources of information in the case of those parents who gave positive answers to any of the four questions. In a few instances parents cited their own occupation (for example, builder, electrician) or their hobbies (for example, scoutmaster) as their source of information.

Groups of medical students, doctors, and nurses were asked three of the questions—those relating to the Fireguards Act, the existence of penalties, and dangers of inflammable clothing. The answers were most revealing (Table IX).

TABLE IX.—*Analysis of Positive Answers Given by Groups of Doctors, Nurses, and Medical Students to the Three Standard Questions*

Question	50 State-registered Nurses	64 Medical Students	25 Recently Qualified Doctors
1. Existence of Fireguards Act ..	7	6	3
2. Danger of certain types of clothing	6	8	8
3. Liability of parents to prosecution in certain cases ..	6	10	15

The 50 nurses and sisters were all State-registered, and several of them had taken additional specialist diplomas: 18 of them were taking the postgraduate course in plastic surgery and burns at this centre. The 64 medical students were all in their clinical period of training. The 25 recently qualified doctors had all graduated within the last three years.

Questionary Sent to County Medical Officers of Health in Wales

In April and May, 1955, a letter was sent to all the 13 county medical officers of health in Wales and to the medical officers of health for the four county boroughs of Cardiff, Merthyr, Newport, and Swansea. The purpose of the survey was explained, the interim findings of the first quarter of 1955 were given, and information was requested on the following points: (1) Are there any special arrangements in your area whereby parents in need can rent fireguards or purchase them at reduced rates? (2) Is any special propaganda in favour of fireguards displayed at antenatal clinics, school clinics, or infant welfare centres? (3) Are any measures taken to advise epileptics of the hazard of unguarded fires and the need for proper guards? (4) Are health visitors and district nurses "briefed" on the importance of domestic burns so that they can drop suitable hints and advice on their routine visits? (5) Is the advice of the county medical officer of health sought on internal safety measures when the county or borough council draws up plans for new council housing estates? This question was asked because two very serious burns, one of them fatal, had occurred in recently built council houses. In both cases the fires responsible had been unguarded wall-fixture fires installed by the council.

Analysis of the Replies

Replies were received from all the medical officers of health. Of the 17 authorities concerned, only one (Newport County Borough Council) had any arrangements for subsidizing the cost of fireguards. The scheme was brought to the notice of all mothers attending the infant welfare centres in the city. The mothers pay two-thirds of the cost of the fireguard; the remainder was paid by the infant welfare voluntary committee from their funds. The parents may pay their share in weekly instalments. During our routine questioning we came across three Newport families who were taking advantage of this scheme.

Three of the county councils did not carry out any propaganda at all in favour of fireguards, and two other authorities did so only "very occasionally."

With two exceptions, all the authorities advised *such epileptics as came under their care* on the need for fireguards. This was done by the health visitors, district nurses, mental health workers, and school medical officers.

All the county medical officers of health instructed their health visitors and district nurses on matters of home safety, and, as one of the replies put it, they were encouraged to "drop more than hints" on their visits.

As housing is not a responsibility of a county council, it was not possible to get replies from those authorities to question 5. The four county borough councils, which were housing authorities, did not consult their medical officers of health when planning new council housing estates.

Several of the medical officers of health made suggestions for further propaganda and action, such as: short films for commercial and private showing; more frequent items on sound radio and television; subsidies for fireguards, especially to parents in need; legislation to make it compulsory to guard all fires wherever there are any children under the age of 14; compulsory labelling of all inflammable fabrics; and compulsory notification of all domestic burns and scalds to the medical officer of health.

What is to be Done? Some Observations

The Fire

The unguarded fire remains one of the most serious hazards in our homes, and in Wales, as in other parts of Great Britain, the coal-fire is the greatest single offender. To prosecute and fine the parents after the accident has occurred is rather like bolting the stable door after the horse has gone. The police are naturally reluctant to add to the distress of the parents, and prosecutions under Section 15 of the Children's and Young Persons Act have been understandably few. Perhaps one solution would be to make all domestic burns and scalds notifiable to the medical officer of health. The home would then be visited, heating arrangements inspected, and parents warned that they must provide fireguards within a definite period. If necessary these guards could be provided at reduced rates by the local authority. If at the end of this period no safety precautions had been taken the parents should be prosecuted at once. The right of entry of the medical officer of health into the household could not be disputed and comes well within the scope of preventive medicine. Such prosecutions, after due warning, could not fail to arouse the interest of neighbours in the street or village, and might well encourage them to look to their own safety precautions with greater care and speed.

Although the Heating Appliances (Fireguards) Act, 1952, has been in force since October, 1954, it will be several years before we can expect any significant reductions in the number of burning accidents due to the use of these new guarded gas, electric, and oil fires. It is important to remember that the specifications of the British Standards Institute, on which the Act is based, state quite clearly that the guards are not intended to give complete protection to young children, the aged, or the infirm (Electric Fires, British Standard 1670: 1951: Gas Fires, British Standard 1250: 1946, Amendment No. 1, 1951). Yet our experience tells us that it is precisely these people who are most often burnt in domestic accidents. Thus any burn due to contact with a *new* guarded fire should be carefully reported and details forwarded to the Home Office for information, since it is always possible to amend a British Standard specification provided there is sufficient evidence to justify a change.

Clothing

Progress towards safer clothing for women and children is reviewed by Colebrook *et al.* (1956). They also discuss methods of measuring inflammability of fabrics and new processes for fire-proofing cotton and cellulosic fibres.

Housing

Overcrowding, which is such an important feature in families of social groups III, IV, and V, must be reduced by increasing the number of well-built council houses. Proper provision should be made in the designs of fireplaces for the fitting of fireguards as recommended by the Ministry of Health *Housing Manual* (1949).

Much more thought should be given to the planning of the kitchen, and manufacturers should be encouraged to devote more care to the design of safer and better table- and kitchen-ware.

Certain councils issue "Tenant Handbooks," which give advice on a wide variety of topics, and one of the pages in these books could be devoted to home accidents and their prevention.

Propaganda

Propaganda on all aspects of burns and scalds must be continually aimed at the whole population and not only at the "vulnerable groups." To keep the attention and interest of the public its form and emphasis must be changed constantly and each medium used to its maximum effect. Ignorance is not confined to one social group, and a different line of approach must be used for different sections of the community.

Special attention must be given to the "vulnerable groups"—the young, the aged and infirm, and the epileptics. Antenatal, infant welfare, and school clinics are all ideally suited for displays of leaflets, posters, and exhibitions illustrating one or two simple points at a time. Small leaflets could be interleaved between the pages of the family allowance books or the old-age pensioners' allowance books, and these would serve as a reminder whenever the allowances were cashed.

So far as the general public is concerned, propaganda could take the form of regular features on television and sound radio, each item driving home one particular point, perhaps drawing attention to a particular accident which had occurred that same day and which had been mentioned in a news bulletin. Displays of safe and non-inflammable fabrics; safe fireguards; well-designed kitchen and tableware; how to deal with burning accidents; first aid—all these topics are ideally suited for television or short films.

Conclusions

The survey carried out in 1955 confirms that the vast majority of domestic burns and scalds are preventable. Their treatment takes an inordinate amount of time and patience on the part of the surgical, nursing, and ancillary staff. The physical and mental distress experienced by the victims, both after the accident and during the many years of reconstructive surgery that may be necessary, cannot be equated in terms of blood or plasma transfused, clinical charts, or photographs.

We pay lip-service far too often to the axiom "Prevention is better than cure." Here is a problem which we know to be largely preventable. Those of us who are constantly seeing the results must take a far more active part in eradicating the causes, even though the remedy is not a new drug or an intricate surgical manœuvre, but rather an exercise in social medicine in its widest sense.

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Recent research into the intricacies of the auditory and vestibular apparatus is described in a series of well-illustrated articles in the latest *British Medical Bulletin* (Vol. 12, No. 2, May, 1956), published by the British Council at 15s. In the introduction Sir Bryan Matthews, F.R.S., shows how the theory of hearing, still very incomplete, has changed since the days when Helmholtz postulated his theory of the mechanical resonance of fibres in the cochlea. Stimulation by pure tones has shown that the disturbance of the basilar membrane is not highly localized, as expected. Though an analysis such as can be imitated by mechanical resonators does seem to take place, "it is now clear that this is in part due to properties of neurones in the pathway, with complex interaction occurring in the nuclei between the activity of the primary and secondary neurones." Investigations into the workings of the vestibular apparatus are of particular moment to aircraft crews, who may be subjected to combinations of acceleration that the labyrinth is unable to resolve. Consequently, "much training has to be devoted to overcoming the normal reactions in pilots to these abnormal stimuli and to ensure that gyroscopic instruments are believed and the impulses from the labyrinth discounted." Among the dozen or so contributors Dr. C. S. Hallpike, F.R.S., is part-author of four of the articles, Professor Otto Lowenstein contributes two, and Mr. Terence Cawthorne writes on aural surgery.

THE INCIDENCE AND PROGNOSIS OF ENDOGENOUS DEPRESSION

BY

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In the normal individual there is a swing of affect. One feels on top of the world at one time, and at another there is a reduction in vitality and everything becomes an effort. Like so many things in the world of psychiatry, pathological depression is an exaggeration of a physiological process. The depressive feelings are more profound than usual, and they last longer. They may still be so mild as to be passed off as a mood, or the aftermath of some common physical condition such as influenza or sinusitis. On the other hand, they may be so profound as to rank as one of the most exquisite forms of human suffering. Custance (1951), himself a typical manic-depressive, described the passing through the depressed phase as living in a universe of horror. Time drags to prolong the torture, which is made so much worse by the complete subjective absence of hope.

Although melancholia has been known and described since Hippocratic times, its importance has been overshadowed in the past century by the search for precise physical diagnoses. The depressed patient far more frequently presents somatic symptoms than a complaint of depression as such. The headache or the constipation tend to be blamed for causing depression, whereas in fact these physical symptoms are just an expression of the melancholia. The severe type of depression is fairly obvious, but the mild case is often missed.

Depression as a Disease Entity

The importance of depression is to-day being more and more recognized. It was considered worthy of discussion by the Section of Psychiatry at the Annual Meeting of the British Medical Association in 1954. Mayer-Gross (1954) described it as probably the commonest type of complaint in psychiatric patients to-day. Bodkin *et al.* (1953), in a study of psychiatry in general practice, state that, "of the four main types of cases that of depressive reactions looms the largest." From a purely general-practitioner point of view, Craddock (1953) groups endogenous depression with cancer and tuberculosis. He points out that all these diseases start in an insidious manner and are easily overlooked. There is, however, one very important difference. Whereas a missed case of tuberculosis or a growth in the end becomes painfully obvious, so many depressions clear spontaneously that the diagnosis is often never made. Up to now the study of endogenous depression has been largely confined to the severe types of the disorder which are seen by the psychiatrist. This point was stressed by Kraines (1943), who wrote, "Most that is written about this condition is based on studies of patients who have become ill enough to be committed to an institution, and *there is a dearth of information about the vast groups who never enter an institution.*" The italics are mine.

General Practice as a Field for Research into Depressive Disorders

Depression is largely a disease of symptoms. There is no Kahn reaction to prove or disprove its presence, and