

of the attacks rendered the removal of the people absolutely necessary and subsequent experience fully proved that many lives might have been saved had earlier accommodation been obtained. In consequence of the difficulties which had been experienced in this matter, and the great urgency of the case, I deemed it to be my duty to address a written declaration to all the local authorities in the city, calling on them to lend their aid in obtaining suitable premises. The result was, that in a few hours a suitable house was found, and the same night persons were received into it. From this time it was continually in use, and the result is thus stated by Mr. Goldney:—

“The number of inmates in the house of refuge was constantly varying. The largest number in at one time was between 50 and 60. It was visited twice a-day by a medical man, and no cholera occurred. There were occasionally cases of premonitory symptoms, but nothing serious. The total inmates admitted amounted to 210.”

The following striking illustration of the utility of the house of refuge is also given by Mr. Goldney:—

“In a certain lodging-house in Bristol there were 35 attacks of cholera and 33 deaths during the epidemic of 1832. There was then no house of refuge in existence. During the late epidemic a case of cholera occurred in the same house, and I went, and by the aid of the police turned out of it 64 people, 49 of whom were sent to the house of refuge. Out of that number not a single case of cholera took place, but there was a good deal of diarrhœa, which was immediately arrested.”

In addition to the customary district visitation of the medical officers, I recommended the practice, so useful elsewhere, of concentrating the staff on the affected localities, so as to bring as many cases under treatment in the early stage as possible, and Mr. Goldney states, as “the result of these active measures, that a very large number of cases were arrested and prevented from going into cholera, and many lives consequently saved.”

During the whole period of the epidemic a prodigious amount of diarrhœa prevailed in Bristol, but the outbursts of cholera were chiefly confined to well marked, defined, bad localities, and along the banks of the river Frome. This peculiarity of attacking particular spots and leaving the interspaces nearly unaffected, or chiefly suffering from diarrhœa, was strongly marked, and afforded many most instructive illustrations of the truth of the principles of sanitary science.

The amount of premonitory cases of all kinds treated was enormous, as the following general results of the statistics from the 10th of June to the 18th of October will show:—

PREMONITORY CASES.				CHOLERA.		
Dispensary Cases.	Diarrhœa Cases discovered.	Cases approaching to Cholera.	Total Premonitory Cases treated.	New Cases.	Deaths.	Recoveries.
10,477	3,546	717	14,730	789	415	344

The daily statistics are given in Table IX., which also exhibits the peculiarities of the epidemic seizure of Bristol. It will be observed that

the latter is made up of a succession of outbreaks of the disease, which occurred each in a different locality. The effect of the preventive measures is also well marked, by using the “Cases approaching to Cholera” as an index. The plan of relief in these local attacks was, as has been said, to concentrate the medical staff on them; and the proportion of cases arrested by this procedure is shown to have increased after each outbreak, and to have been followed by an immediate diminution of the cases reported as cholera, generally on the same day, which may be accounted for by the practice of reporting the cases every morning for the preceding 24 hours; so that, although the effect appears in the table to have been synchronous with the cause, it might have followed some hours later.

The number of premonitory cases which passed into cholera was exceedingly small; only one or two diarrhœa cases, and about half-a-dozen of those reported as approaching to cholera, having proved fatal. With one solitary, but important exception, to wit, the want of a house of refuge in the early part of the epidemic, the preventive measures were very well carried out in the city of Bristol.

SECTION V.

COMPARATIVE RESULTS OF THE TREATMENT OF CHOLERA CASES, AT HOME AND IN HOSPITAL.

THE results of the treatment of cases of cholera in hospital, as compared with those of home-treatment, have fully borne out the statement made in the first notification of the General Board of Health, in regard to the experience of the former epidemic, namely, that “the establishment of cholera hospitals was not successful.” When we consider the wretched, over-crowded dwellings occupied by a great proportion of the parochial cholera patients, and the apparent impossibility of bestowing on them that amount of medical care and assiduous nursing which they so much require; and when we contrast with this the great apparent advantages possessed in hospitals for the treatment of so virulent a disease, we should naturally expect the balance of recoveries to be in favour of the latter. The parochial surgeons had in general every disadvantage to contend with in the home-treatment of cholera, while the patients in hospital were watched over with unremitting care, by night and by day, and every appliance of the healing art brought to bear on their cases. I believe that nothing was left untried which afforded the patients a chance of recovery, and yet the statistical results of the two modes of treatment preponderate greatly in favour of leaving the patient at home.

I select as illustrations the following returns from three cholera hospitals in Glasgow, and four in Liverpool, and place them in contrast with the results obtained by the district surgeons in their home treatment:—

	Cases treated at home.			Cases treated in hospital.			Percentage of deaths to cases treated at home.	Percentage of deaths to cases treated in hospital.	Excess of per-centage of deaths in hospital.
	Cases.	Deaths.	Recoveries.	Cases.	Deaths.	Recoveries.			
Glasgow .	1184	415	769	1186	649	537	35.0	54.7	19.7
Liverpool .	3984	1494	2490	854	450	404	37.5	52.7	15.2
Total .	5168	1909	3259	2040	1099	941	36.9	53.8	16.9

It will thus be seen that, out of 5168 cases treated at home, the deaths were 1909, or 36.9 per cent.; while out of 2040 cases treated in hospital the deaths were no less than 1099, or 53.8 per cent., making a difference of 16.9 per cent. in favour of home-treatment; which, on the whole number of hospital cases, would amount to the saving of about 345 lives.

There is but one circumstance which can account for this enormous difference, and that is the fact of *removal*. Many of the fatal cases were transferred to hospital in an early stage of the disease; and it was a general instruction to all parochial surgeons, on no account to direct the removal of a case to hospital which was at all approximating to the stage of collapse. I have known a patient taken out of bed with a warm skin and a good pulse arrive in a state of fatal collapse at the hospital, though not above a quarter of a mile distant. The effect of distance has even been made the subject of statistical inquiry; and although the number of cases which have been examined into is not, perhaps, large enough to obviate error, yet the results are so very striking as to be worthy of notice. At the Woodside cholera-hospital, Glasgow, it was found that, out of 32 cases brought from the immediate neighbourhood, the deaths were in the ratio of $37\frac{1}{2}$ per cent., whilst out of 64 cases, brought from more distant localities, the deaths were about 47 per cent.

A similar observation as to the effect of *distance* in increasing mortality was made by Dr. Duncan in Liverpool. The parish had three cholera hospitals; one in Queen Anne-street, at some distance from the infected districts, and other two close at hand, in the infected districts themselves. The results were as follows:—

	Cases.	Deaths.	Recoveries.	Per centage of deaths to cases.
Queen Ann-street hospital	337	102	145	56.9
Vauxhall-road and Ansdell-street hospitals	433	215	218	49.6
Excess of percentage of deaths in Queen Ann-street hospital	7.3

Dr. Duncan says, in regard to this result, "You will observe that the mortality in the Vauxhall-road and Ansdell-street hospitals, situated in the infected localities, was less than in the Queen Anne-street hospital, to which I objected, on account of its distance from the cholera districts, although the vestry had the coolness to refer to the comparative mortality as a proof that they were right, and that I was wrong."

The experience of Glasgow, in regard to hospital treatment, is worthy of being recorded, because the question received the consideration of a large and intelligent staff of medical officers; and their opinion is thus stated by Dr. J. M. Adams:—

"Almost from the instant of an attack a cholera patient may be considered as engaged in a death struggle. To be raised in this dying condition, carried along crooked stairs and narrow passages to a cholera van, to be then rattled and jolted for a distance of a half-mile or upwards, followed by a second transference to the hospital ward, cannot be considered an unimportant process by any medical man who has witnessed the disease. I set aside any consideration of the probable effect on the mind of a patient, as I have observed that in cholera the patient is singularly apathetic, presenting in this respect a contrast to a fever patient. At first, when I had all my experience to gain with regard to the treatment of cholera, I was favourably disposed to the employment of hospitals, and looked with painful apprehension to the treatment available to the sick poor residing in dwellings abounding in negations, *sans* food, fire, bedding, clothing, light, air, quiet, attendance, &c. I am now, however, clearly satisfied that a pauper patient lying on his wisp of straw, on the bare floor, with a relative or other attendant to supply him with a drink of cold water, and to surround him with a few hot bricks, has the chance of recovery fearfully diminished by removing him to all the comforts and refined treatment of an hospital. If my experience on the subject were singular, I would hesitate to venture so decided an opinion; but from careful inquiry which I have made among many of the parochial surgeons, I find their experience so entirely corroborative that I feel justified in condemning the principle of hospital treatment for cholera patients."

There are, however, circumstances under which some sort of hospital accommodation will perhaps always be required during cholera epidemics; but this should consist of scattered rooms, as near the affected houses of the worst districts as possible. A good rule to take in their selection would be to inspect carefully the usual fever nests of towns; to consider them as attacked by cholera, and to estimate the number of apartments in which it would be *impossible* to treat cholera cases. The additional accommodation should be placed as near to these localities as practicable. This is the result of the whole experience of the late epidemic; but I have no difficulty at the same time in giving a very decided opinion against "cholera hospitals," as the special means of treating the disease. The congregating together of a number of patients labouring under a mortal pestilence, and brought from all distances, under any plea of humanity, must henceforth be abandoned. It is fatal to the sick, and tends to impress upon cholera a much higher percentage of mortality than really belongs to it. So thoroughly am I convinced of this, that were it impossible to find suitable rooms near enough to the

worst districts of the worst towns, I should make the home-treatment of cholera the only alternative by providing no hospital accommodation whatever, and remove the convalescents, as soon as it could safely be done, to proper wards, in an airy, healthy locality.

SECTION VI.

ON THE CARRYING OUT OF THE REGULATIONS IN REGARD TO THE TIMELY INTERMENT OF CORPSES OF PERSONS DYING OF CHOLERA.

IN order to ensure the speedy interment of the dead during the late epidemic, the General Board of Health issued the following regulation to meet the contemplated emergency:—

“And in case of death by cholera, or any other epidemic, endemic, or contagious disease, we hereby authorize and require the last medical attendant upon the person of the deceased, or, in case of there having been no medical attendant, the housekeeper, or person present at the death, or who is in charge of the body, forthwith to notify the fact of death to the medical officer of the district, who is charged with the execution of these orders for the prevention of the spread of such disease. And we do hereby authorize such medical officer to give such directions as may appear to him to be needful in respect to the care, removal, and the time of interment of the body, for preventing the communication and spread of the disease. And we hereby authorize and require all persons to give such information or such assistance to such medical officer, and to be otherwise aiding him, as he may need in the execution of these orders.”

For the purpose of ascertaining in what manner and to what extent these regulations were carried out, a circular was addressed to the medical officers acting under boards of guardians and parochial boards in the larger cities and towns which had been attacked by cholera, and in which the greatest necessity would naturally exist for the exercise of the powers. A number of replies have been received, of which the following is a digest.

Generally the people appear to have been aware of the necessity of interring the body as early as possible; but in a considerable number of cases, either from ignorance or indisposition, there has been a tendency to delay. In such instances the regulations of the Board have come into beneficial operation, but rather by a moral than by a legal agency.

The expostulation of the medical officer, supported, as the people knew it to be, by the power conferred by the regulations, was very frequently sufficient to effect the object.

Mr. Radcliffe, Union surgeon, Leeds, says, “The people were so universally frightened, and dreaded infection so much, that my recommendation for speedy interment was always attended to.” Mr. West, surgeon, Hull, writes as follows:—“The people have in most cases

seen the propriety of early interment, and have yielded to persuasion.” Mr. Dunn, surgeon, Wolverhampton, states that the bodies of the dead “have generally been removed without any trouble.” Mr. Pearce, surgeon, Plymouth, says that the powers conferred by the General Board of Health have been carried out “by persuasion, and by showing the parties the evils that would probably follow delay.”

Mr. Alexander, parochial surgeon, Edinburgh, states that “in one or two instances it has been necessary in order to secure early interment to tell the people that the powers given by the Board would be carried into effect.” Mr. Evans, parochial surgeon, Sunderland, says, “I have had no difficulty: the people, believing me to possess the legal power to enforce in case of refusal, have buried within reasonable time.” Dr. Dempster, staff surgeon, who was General Superintendent of the Barony parish, Glasgow, states that mild remonstrances with the people were all that was necessary. Mr. P. R. Menzies, parochial surgeon, Glasgow, writes, “I have never seen the power exerted. The mere intimation to the friends that it was possessed by the authorities, and a little gentle persuasion, succeeded in gaining their sanction to the removal.”

These replies will give an idea of the kind of influence exerted by the regulations in a great majority of the cases. In a few the medical officer went a step further. Mr. Sargent, surgeon, Plymouth, writes that the powers of the Board were carried out “by frequent persuasions, and sometimes by threats.” Mr. Walton, of Liverpool, states that the object was attained “by sending persons with the hearse and threatening them with the police.” Mr. Garthside, of Liverpool, states that “the police have in a few instances very much facilitated the arrangements for the early interments, without waiting for the ordinary routine.” One medical practitioner states that the powers of the Board were “threatened to be enforced once in private practice.”

In a few cases, apparently among the Irish poor, force had to be used; but it is evident from the replies that these cases constituted a small minority. Mr. Noble, surgeon, Manchester, writes that the regulations were enforced “by means of the police, who have met with no decided opposition.” Mr. M'Ewan, surgeon, Glasgow, says, “The regulations in my district had never but once to be enforced.” Dr. Young, Parkhead, near Glasgow, writes, “The police have been called in when necessary, but there were few cases where this was necessary.” Dr. Duncan, Officer of Health, Liverpool, states that the powers of removal have been exercised “not frequently, persuasion having generally been found effectual. Men sent by the parish authorities removed the bodies while the police ‘kept the peace.’” Mr. James Harvey, surgeon, Glasgow, states that “in two instances the people left the house and locked the door; the police had to break it open and bury the corpse.” Dr. M'Cowan, Edinburgh, says that the power of removal was exercised “by sending the parochial officers, and the people have generally consented.”

Such cases have, however, been exceptional; but even where the power was exercised the people have generally consented readily. Dr. Dunbar, of Edinburgh, states in regard to this point, that “the people generally well received the power exercised.” Dr. Anderson, of Edin-