

The use of the ambulance in civil practice : being a portion of the inaugural address at the Liverpool Medical Institution, session 1881-82 / by Reginald Harrison.

Contributors

Harrison, Reginald, 1837-1908.
Royal College of Surgeons of England

Publication/Creation

London : John Bale, Sons & Danielsson, 1899.

Persistent URL

<https://wellcomecollection.org/works/h8x2zv32>

Provider

Royal College of Surgeons

License and attribution

This material has been provided by This material has been provided by The Royal College of Surgeons of England. The original may be consulted at The Royal College of Surgeons of England. where the originals may be consulted. This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.

**wellcome
collection**

Wellcome Collection
183 Euston Road
London NW1 2BE UK
T +44 (0)20 7611 8722
E library@wellcomecollection.org
<https://wellcomecollection.org>

P.c. 4.

From the author

11.

THE
USE OF THE AMBULANCE
IN CIVIL PRACTICE

*BEING A PORTION OF THE INAUGURAL ADDRESS
AT THE LIVERPOOL MEDICAL INSTITUTION*

SESSION 1881-82

BY
REGINALD HARRISON, F.R.C.S.

FORMERLY PRESIDENT OF THE INSTITUTION

THIRD ISSUE



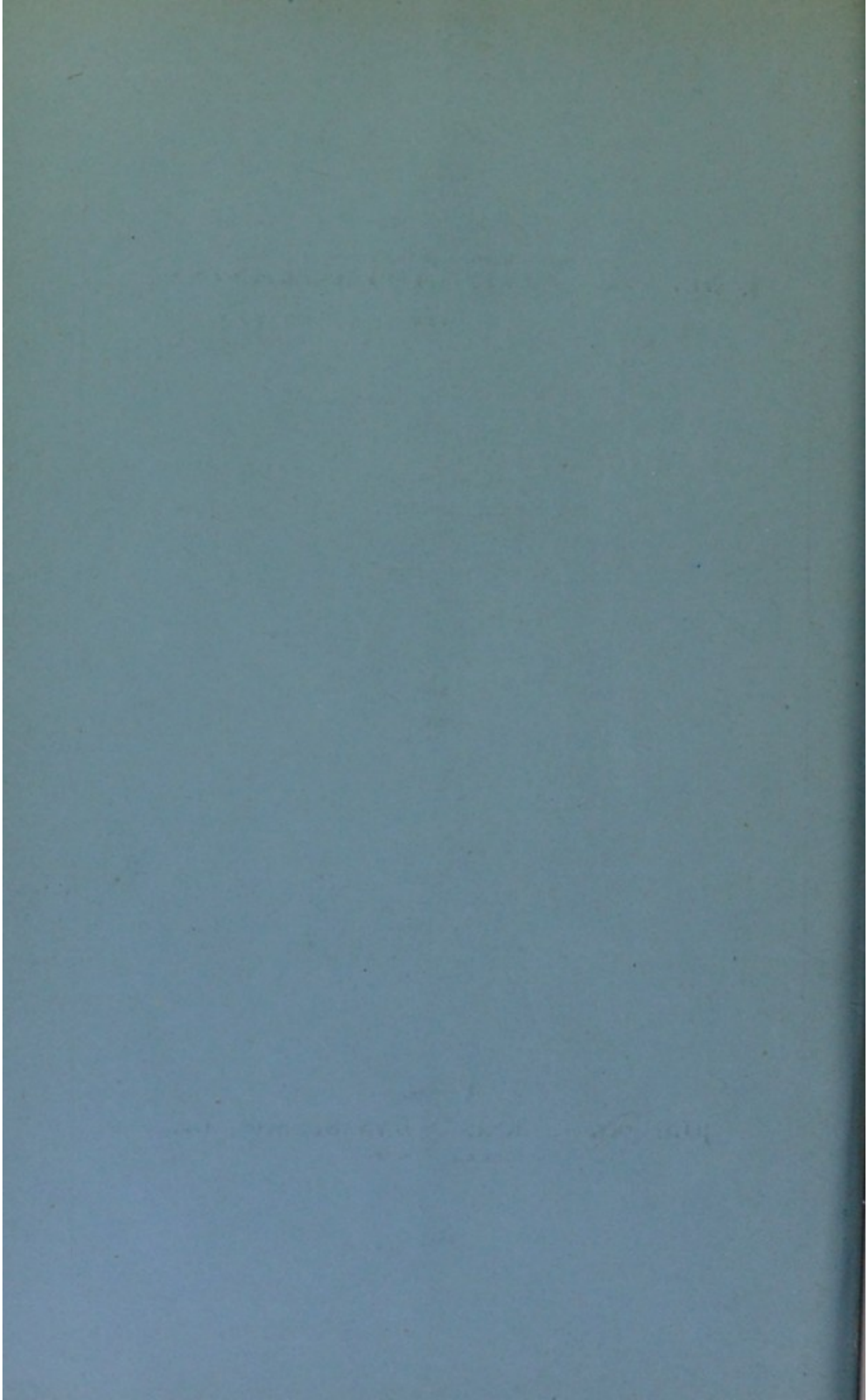
London

JOHN BALE, SONS & DANIELSSON, LTD.

OXFORD HOUSE

83-89, GREAT TITCHFIELD STREET, OXFORD STREET, W.

1899



THE
USE OF THE AMBULANCE
IN CIVIL PRACTICE

*BEING A PORTION OF THE INAUGURAL ADDRESS
AT THE LIVERPOOL MEDICAL INSTITUTION*

SESSION 1881-82

BY
REGINALD HARRISON, F.R.C.S.

FORMERLY PRESIDENT OF THE INSTITUTION

THIRD ISSUE



London

JOHN BALE, SONS & DANIELSSON, LTD.

OXFORD HOUSE

83-89, GREAT TITCHFIELD STREET, OXFORD STREET, W.

—
1899

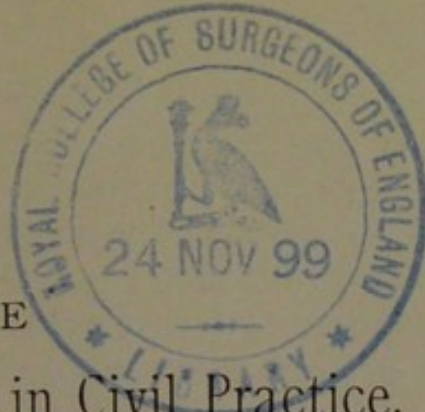
PREFACE.

IN accordance with a suggestion made to me, I have printed that portion of my second Presidential Address at the Liverpool Medical Institution which relates to the use of the Ambulance in Civil Practice. In commending this subject to the attention of those specially charged with the administration of our large institutions for the treatment of the sick and injured, as well as to our police authorities, I feel that my views met with the general approval of the large and distinguished medical audience I had the honour of addressing on the occasion referred to.

As a second issue of these remarks has been rendered necessary, I have added some information which has more recently come to hand.

As I am still asked for copies of this paper, it has been found necessary to reprint it for the third time. I am glad to find, from numerous sources, that it continues to aid in promoting the cause for which it was originally intended.

6, LOWER BERKELEY STREET, W.
November, 1899.



ON THE
Use of the Ambulance in Civil Practice.

(Being a portion of the Presidential Address delivered at the
Liverpool Medical Institution on October 6, 1881.)

DURING my recent and second visit to the United States and Canada, where again I had the opportunity of seeing everywhere signs of great professional activity and progress, I was much struck with the provision I found in some of the most important hospitals for the conveyance of the sick and injured.

When I came to compare these arrangements with the almost complete absence of them in this country, I could see at once from my own hospital experience, now extending over twenty-five years, that here we had a large gap to fill in, the doing of which would result in a considerable saving and prolongation of life, not to say anything of the diminution in suffering which would thereby be effected. Taking Liverpool (and what applies to it in this respect applies in the same degree to London and other large centres of population),* let us see how the transference of

* The condition of London in this respect is described in an article in the *British Medical Journal* of July 16, 1881, as follows:—"With the exception of a few ambulances for the use of the fever hospitals only, of a few others exclusively for conditional and pauper use, of some hand-barrow ambulances recently supplied to some of the police stations, but which do not touch the question of prompt and skilful care, or of seclusion during removal—so highly desirable—the condition of London in this particular is one of absolute destitution.

"In the entire police department there is not one ambulance waggon.

"In the entire fire department there is not one ambulance waggon.

"In not one of the eighty-five hospitals referred to is there an ambulance waggon."

the sick and injured is effected. And the instances I shall first select are those which any of us may see for ourselves by waiting a few hours in the receiving-rooms of any one of the general hospitals in this city.

A scaffolding gives way, and a labourer falls from a height, and becomes incapable of rising without pain; a policeman comes up, and finding that the man can stand on one leg, with some assistance places him as gently as he can in a cab, by which he is conveyed to the nearest hospital, possibly over the roughest road, with all available speed. At the hospital he has to be got out of the cab—an intricate piece of business which is usually effected by the policeman and a couple of ordinary porters. Who, I ask, accustomed to visit hospitals, has not seen patients with fractured limbs actually hopping out of cabs, to avoid handling, to the very doors; or has not seen the floor of the conveyance deluged with the blood of the unfortunate sufferer? To follow the illustration I have taken, the resident surgeon, on the patient being placed on the couch in the receiving-room, at once recognises that he is suffering from a compound Pott's fracture of the ankle, the probable sequence of events being that the fall caused the fracture and the removal made it compound; that is to say, the sharp end of the fractured bone protruded through the skin, as a knife would do, for the want of proper restraint during the time the patient was being conveyed to hospital. This is a common mode by which simple fractures are converted into compound ones, in addition to the production of other complications, such as the puncturing of blood-vessels and the damaging of the soft tissues, sufficient to produce mortification, by the action of the broken bones during the process of removal.

Ever since the days of the immortal John Hunter, who was the first to bring into prominence the distinctions between simple and compound fractures, has surgery endeavoured to imitate the one and avoid the other, whilst the whole soul of Listerism lies in the endeavour to artificially surround a compound fracture with those immunities

which are attached to the simple variety. And yet in the present day the patient has often to thank the mode of his removal for treatment, for the production of the only difficulty and danger that has to be treated.

But to go back to my illustration. If the patient is found so injured as to be physically incapable of being doubled up in a cab, a stretcher is procured, upon which he is placed, and then the populace are entertained by the sight of a man—often uncharitably presumed to be drunk—being conducted to the hospital on the shoulders of half-a-dozen vigorous men of possibly very unequal statures. Certainly this man's condition is, as a rule, decidedly better than his less fortunate fellow-sufferer who precedes him in the cab.

Do not suppose that I desire to charge the police with inhumanity, or want of thought, in the execution of their duty; on the contrary, I have, as a rule, been struck with the kindness and gentleness they show whilst doing their best with the very imperfect means the community places at their disposal.

To take another phase of the question. Some twenty years ago, when I was in the habit of making many of the *post-mortem* examinations at the Infirmary, I happened to remark to the late Dr. Inman on the frequency these examinations had been made on persons suffering from various forms of heart disease, who, though previous to their admission to the Infirmary, had been chronically ill for some time, yet died within a day or so afterwards. His reply was to the effect that this result was almost entirely due to the way these persons were brought to the Infirmary. "Fancy," he said, "a patient with a cardiac dyspnœa of some weeks' standing being suddenly placed to sit bolt upright in a four-wheeled cab, and then driven a mile or two to the hospital, with the object of getting the best advice and treatment. What could advice or anything do under the circumstances in which such persons were admitted?"

And now I will illustrate some removals of injured

persons which have come under my notice in private practice in this city. Some years ago I was summoned to see two gentlemen who had their legs fractured on ocean steamers arriving at this port. It was necessary that both should be removed for further treatment at an hotel until the fractures had united. How we ever got them there from the North Docks without material damage I never could imagine. I have a very distinct recollection of the crowds we drew in the course of our journey, which was something like a royal progress. Last year I was requested to see, in consequence of the appearance of a surgical complication, an American lady of high position, who six days previously had miscarried on board a trans-Atlantic steamer. She had been removed to an hotel before I arrived, but I shall never forget the terms of indignation expressed by the husband in reference to the resources of Liverpool for meeting such a not very unheard-of emergency. "I went everywhere," he said, "to procure such an ambulance as could be had in almost any of the smaller cities in the United States, but to no purpose; the only offer I could get was a conveyance for fever patients, with a promise that it was to be specially disinfected for the occasion." Eventually this lady had to be borne on a stretcher through the crowded streets of Liverpool—an ordeal which, she often remarked to me, would never be forgotten as long as she lived, and which considerably retarded her recovery.

One more illustration, and then I have done with this unpleasant but necessary part of my subject. The friends of a captain I was seeing on board his ship, suffering from a painful affection, acting under my advice, arranged that he should be removed to an hotel, where he might undergo an operation which was necessary. I told them how imperfect our arrangements were for removing patients, but, much to my astonishment, they came to inform me in the course of the day that they had been able to procure an ambulance from the police. I was so much astonished and delighted to hear this, that I drove down about the time of

the removal of my patient to the dock, when our expectations were rewarded by seeing a two-wheeled conveyance, which reminded me of a costermonger's barrow more than anything else—a mode of locomotion no doubt well adapted for that class of hospital patients whom *Punch* immortalised in the apostrophe of the by-standing cabby, "I wish I had half his complaint," but hardly suited for an inflamed bladder. On this machine my patient was not uncomfortably conducted to his hotel. The only remark he made to me was that he could have dispensed with the attentions of the mob that accompanied him, though he was unable to avoid smiling at the somewhat irrelevant observation he overheard, to the effect, "You had better sign the pledge, old man, and not be run in on a barrow again," which probably emanated from a gentleman in the crowd who had, somewhat unconsciously, on a former occasion, made the acquaintance of the conveyance under different and less excusable circumstances. I only mention this illustration for the purpose of showing, as my patient subsequently observed, that we did not know in this country what an ambulance really means. I undertake to say that every one in New York is just as well acquainted with it as a street arab here is with a hansom cab.

And now let us turn to the remedy; and for this purpose let me take you to the recently constructed City of New York Hospital, and briefly describe to you what I saw, and what has been still further explained to me in a written communication by Mr. G. P. Ludlam, the courteous superintendent of the hospital. These arrangements have also been described in the *British Medical Journal* of July 16, 1881, by Dr. Howard, in an article entitled "The New York Ambulance System," to which reference should be made.

I must first explain to you that New York is divided into what are called police precincts, and these precincts are respectively assigned to the different hospitals having an ambulance service. The police have charge of all street accidents and emergencies. On the occurrence of an

accident or an emergency requiring medical aid, information is at once given to the police station, and by it the hospital of the precinct is informed that an ambulance is required, and where. In the City of New York Hospital there are electric bells in the room and within hearing of the surgeon or assistant who is told off for ambulance duty, as well as in the driver's room and stables; these are all governed and are simultaneously acted on by a switch in the hospital office where the telephone is placed and the messages are received. All these details, including a brief record of the message notifying the porter to open the gates, harnessing the horses and starting the ambulance, can be effected in less than a minute from the time the call reaches the hospital. This I can verify by actual observation with my watch.* Patent harness is used, which reduces the time necessary for this purpose to a few seconds, the horses, of course, being always in readiness for this duty. The rules for the ambulance service are as follows :—

RULES FOR THE AMBULANCE SERVICE OF THE NEW YORK HOSPITAL.

1. Each Ambulance shall be accompanied by a Driver and Surgeon, who shall be the Senior Assistant on the Surgical Staff, or on special occasions (with the consent of the House Surgeon) the Junior Assistant.

* What I saw is so accurately and well described by Dr. Howard, in the paper I have already referred to, that I will quote the following paragraph :—
 “ While I was talking upon this subject in the office of the superintendent of the recently built New York Hospital, the conversation was stopped by a shrill whistle. A telephonic message having been received, and as quickly answered, the superintendent remarked that the message was an emergency call. Following him on a run down a flight of stairs, and under a covered way across an inner court-yard, a surgeon was seen to step into an ambulance, which passed almost noiselessly along the concrete way under the arch and into the street. As the superintendent had telephoned both driver and doctor, before he had explained to me the nature of the interruption in our conversation, while we were simply putting on our hats, the ready-harnessed horse had been put in, the doctor had got the start of us, and I had nearly missed the performance the superintendent had asked me to witness.”

2. The Superintendent shall see that all calls for the Ambulance are responded to, by both the Surgeon and Driver, as promptly as possible.

3. On reaching the patient, the Surgeon shall determine the nature of the injury or disease, administer such temporary treatment as may be appropriate, and, except in such cases as are specified below, take the patient without delay to the Hospital.

(a) Cases of extreme gravity, or those requiring prompt relief, are to be taken to the nearer of the two Hospitals—the NEW YORK HOSPITAL or the HOUSE OF RELIEF.

(b) Cases of infectious or contagious disease are to be reported *at once* to the Board of Health through the police authorities ; and, on reaching the Hospital, a full statement of the case, according to the rules of the Board of Health, is to be sent by messenger to the office of that Board.

(c) Women *in* or *after* labour, if, in the judgment of the Surgeon, their condition warrants the removal, are to be taken to the MATERNITY RECEPTION HOSPITAL in East Twenty-sixth Street.

(d) If the patient or the friends request it, the case is to be removed to a private residence or another hospital.

4. A Record Book of the Ambulance Service shall be kept by the Surgeon, in which shall be noted the time when the call was made, that of reaching the patient and of arrival at the Hospital, together with the name and residence of the patient and the place from which the case was taken. When no case is brought, the reasons therefor shall be stated.

5. On arrival at the Hospital, the Surgeon shall superintend the removal of the patient to the Reception Ward, and notify the House Surgeon or Physician (according as the case may be a medical or surgical one), and shall then, before attending to any other duty, write out, in a book kept for that purpose, the full particulars of the case as it has come under his observation. The House Surgeon or Physician shall, without delay, make a thorough examination, and assume the care of the case.

TRANSFER OF PATIENTS.

6. After consultation with the Attending Surgeon or Physician, or the Superintendent, the House Surgeon or Physician may transfer patients to the DEPARTMENT OF PUBLIC CHARITIES AND CORRECTION ; but no person shall be transferred to whom the least danger to life or prolongation of recovery could result from such removal. Transfers are to be made between the hours of 10 a.m. and 12 m., and 1 and 3 p.m., or at such other hours as the Examining Physician

may be in attendance. The Surgeon in charge of the Ambulance shall proceed directly to the office of the Examining Physician (on Twenty-sixth Street), and follow his directions as to the further disposal of the patient. A Transfer Book shall be kept, in which shall be recorded the names and residences of patients, or their friends, the Diagnosis of the Disease or Injury, and such facts as to the history and treatment of the patient as may be of use to the Physician under whose care the case may come. These facts are to be recorded by the Ambulance Surgeon, at the dictation of the House Surgeon or Physician, who shall sign, and cause to be sent by the patient, a duplicate statement.

The ambulance is a neat, solidly-built, easy-running vehicle, provided with a sliding bed or stuffed cushion, which fills the body, and is pulled out to receive the patient, being dropped so as to lie at an angle, and pushed back into its place after the patient is put on it. The equipments of an ambulance are as follows:—Medicine chest, containing heart stimulants, sedatives, antidotes, emetics, dressings for burns, carbolic acid, spatula, dropper, medicine glass, rubber syringe, tumbler. Bandages—carbolyzed gauze and plain muslin; cotton; rubber tissue; jute; nine side splints; two long thigh splints; one rectangular tin splint; one pus basin; one pair of handcuffs; one air cushion; two pairs pillows; one stretcher, with rubber protector, and three double blankets; one box containing tourniquet, tracheotomy tube; materials for blisters, dressing, and sponges; one lantern; one fracture box. The surgeon always carries his pocket-case of instruments.*

Such is a brief sketch of the provision I have seen in America for this most important service in connection with the early treatment of persons injured or suddenly taken ill. Speaking to the late Dr. Sands, one of the

* In reference to the expense of these vehicles, as made for the City of New York Hospital, by Mr. M. Curley, 1553 Broadway, New York, I am informed that a one-horsed ambulance, furnished complete, costs 550 dollars, whilst a two-horsed one, fitted with a pole and splinter-bar, costs 585 dollars. These figures do not include boxing and shipping. Mr. Curley says:—"I make the ambulances for nearly all the cities in the United States, and am now making three for Guatemala, Central America."

surgeons to the hospital, he informed me that, in addition to the apparent advantages in connection with the system, he had no doubt that it had been the means of largely reducing the number and diminishing the severity of compound fractures, as all fractures were secured on the spot, before any damage could be done by the movement of the fragments.

It will be generally admitted that the circumstances determining the probable progress of injuries of this kind are those immediately following the casualty, which, for the most part, are traceable to the movements of the fragments. Hence it is of the first importance that the hospital should practically be brought to the very spot where the injured person lies, or to the bedside of the invalid who hopes to derive benefit from the many advantages a hospital possesses, in order that the transition may not be responsible for any serious consequences connected with it which might have been avoided. I submit that no hospital can now be regarded as complete in its equipments for the treatment of both sick and injured which is not provided with its ambulance department.

It may be urged that the expense attending such a provision will prevail against its general adoption. I cannot think this objection, even if it were valid, could be entertained, when it is proved that, without such means, life and suffering are not unfrequently at stake.

I believe that if a calculation were made, the ambulance system would be found not to cost the hospital much more than the saving it would effect by reducing the number of compound fractures, which, of all others, are about the most expensive in our hospitals, and by averting complications which considerably add to a patient's cost. A Listerian appliance, necessary where a broken bone is allowed to protrude through the skin in the process of removal to hospital, costs, I am told, something like three shillings and sixpence a dressing,* an amount more than sufficient

* Since this calculation was made in the Royal Infirmary, the cost of these dressings has been considerably reduced.

for all suitable applications, had the case been not so complicated. And so with medical cases, but perhaps to a less degree, stimulants and highly nutritious foods, not to say anything of additional nursing, are often necessary to get a patient over the fatigue attendant on removal before other treatment can be said to begin.

There is another aspect connected with the expense question which should not be entirely overlooked. When nursing was first systematically taught in this country, it was for the benefit of the poor in our hospitals; eventually, however, it extended to the rich, and became profitably practised. So with the ambulance; though primarily for the hospitals, no doubt arrangements could be advantageously made for employing them elsewhere. What a boon such a conveyance would be to many an invalid who feels sea breezes and fresh air to be new life, yet shudders at the idea of what has to be undergone before these can be attained. I should much more frequently avail myself of the convalescent hospital at Woolton if some suitable provision in the way of conveyance was provided. There are many patients who might be sent with great advantage if they could be got there without damage. Only a few weeks ago an old student of mine wrote to ask me where he could obtain, regardless of cost, an ambulance for the purpose of removing an invalid a few miles. I was sorry to answer that I did not know of such a conveyance in this part of the country which was at all worthy of the name.

Again, look at the illustrations I have given of the employment of wretched contrivances for those who would only have been too glad to hire suitable vehicles. Are people quite as scrupulous in the employment of cabs, even when they think risk of contagion has passed away, for the removal of persons to fresh air who have recently suffered from infectious disease, as they would be if they could obtain, at a moderate cost, some suitable ambulance from a responsible organisation, specially kept and adapted for these purposes, and designated by some more euphonious

title than "fever conveyances?" I think I have indicated several directions in which ambulances might be advantageously, and not unprofitably, employed.

Some years ago such a scheme as I have propounded, for this or any other of our large towns, would have been almost impracticable, by reason of our imperfect and slow means of communication. Now, however, our streets are rapidly becoming a meshwork of telegraphs and telephones, and I undertake to say that even now there are but few parts of Liverpool which might not easily be brought, by the agency of electricity, within five minutes' communication of one or other of our hospitals. The employment of electricity, in some form or another, is rapidly becoming an almost necessary equipment to our houses.

The history of modern appliances seems to indicate that, when a system of communication is developing amongst us, it is better rather to anticipate its application for the general service of the community than to wait until its adoption becomes a necessity we can no longer resist. It would not be difficult to point out how, by a little arrangement, the present means at our disposal might be utilised for the object I am advocating.

I fear I may have wearied you by some details it is necessary to go into, but as this is the last occasion I shall be privileged to address you here, from the high position which by your favour I hold, it has been my endeavour to place a subject which has occupied no little of my time and attention in a manner which might secure for it the influence of your consideration. All I claim for it is a place amongst other contributions towards the prevention of disease and the limitation of injury.

Liverpool, under the auspices of William Rathbone, some years ago, set an example to this country in the practical education of nurses for the sick which has been productive of the best results. I believe that some such measures as those I have advocated this evening are not much less pressing, and it would be a matter of great satisfaction to me to find that in this direction also this large and charitably-disposed city was again to the fore.

As exposure to sickness and to accidents are two of the conditions of living, I take it as being the duty of those whose office it is to prolong life and to cure disease so to direct the energies of the public that the pains which these contingencies necessitate shall be made as bearable as possible. More than this, as a profession, cannot be expected of us.

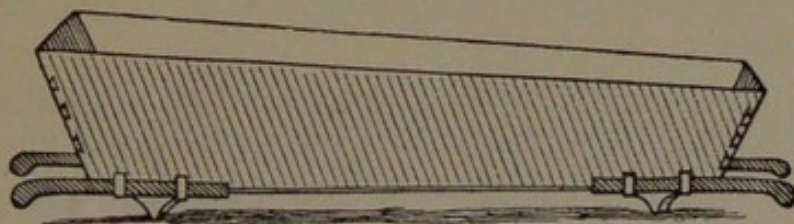
When future ages are called upon to estimate at their worth the degrees in civilisation of those that have preceded them, though much importance will properly be attached to the progress that competing races and generations have made in art, in literature, and in science, will not the conclusion be largely influenced by the attention that was at the same time paid by the people to all that related to the care and well-being of their sick?

ADDITIONAL INFORMATION.

Dr. Whittemore, the resident superintendent of the General Hospital, Boston, Massachusetts, writes me as follows in reference to their ambulance arrangements:—

“The ambulance is a plain covered vehicle, open at both ends, but with curtains that can be closed. The driver’s seat is raised a few inches above the body and under the cover. The length of the body is eight and a half feet, and the width three and a half feet. We use a stretcher like the rough sketch, which we prefer to canvas and rods, as it is firmer and much more comfortable for the patient. We use a thin mattress in it, and often make up a regular bed in transferring a patient from the house to the hospital. The stretcher is much easier for fractures, as after being put in there is no further movement until removed at the desired destination. The stretcher slides

easily into the ambulance. The width allows it to pass readily through ordinary doors, and into railway carriages. We are ready at all times with medical or surgical men, nurses, apparatus, and medicines; but practically we find that apparatus other than the simplest is seldom at first needed."



Length, 5 feet 9 inches. Width, 24 inches at top, 20 inches at foot. Depth at head, 13 inches; at feet, 7 inches. Made of white wood, $\frac{1}{2}$ -inch thick. Movable handles, 36 inches long.

In the Annual Report of this Hospital I find the following notice inserted:—

“THE AMBULANCE OF THE MASSACHUSETTS
GENERAL HOSPITAL,

“Accompanied by a Medical Officer, will be despatched to any point north of Dover and Berkeley Streets, for the conveyance of cases of *accident or urgent sudden sickness, not contagious*, to this Hospital, or elsewhere, upon notice from a physician, the police, or other responsible source, subject to the approval of the undersigned.

“In cases requiring gratuitous treatment, no charge will be made.

“By order of the Board of Trustees,

“JAMES H. WHITTEMORE, M.D.

“*Resident Physician, Mass. Gen. Hospital, Blossom St.*”

Dr. Morton, of Philadelphia, writes me thus:—“Our ambulance system of the Pennsylvania Hospital consists merely in our keeping a conveyance made for the purpose, and thoroughly adapted for careful transportation of the sick and wounded. Our Hospital is connected with the fire and police stations, and by telephone with central stations. When the gatekeeper of this Hospital receives

notification, he at once despatches the ambulance, and sometimes in large fires (such as at mills—one occurred this week, when there was no fire-escape, and some twelve or more were killed outright, and many injured) we send it before being called upon. All the four surgeons are also connected by telephone with the Hospital, so that much valuable time is saved by the rapid means of communication."

The following is from the Record Book of the Ambulance Department of the City of New York Hospital, and is filled in on each occasion this conveyance is used :—

"NEW YORK HOSPITAL—AMBULANCE DEPARTMENT.

	Date		
Call from			
To			
Time	a.m.		p.m.

Name		Nativity	
Age		Widower	Widow
Single	Married		
Occupation			
Residence			
Diagnosis			
HISTORY.		Start	
		Arrival	
		Departure	
		Return	
		Total	

Amb. Surg."