Original Articles.

THE PATROL AMBULANCE AN ADJUNCT TO THE AMBULANCE SERVICE IN CITIES; A SUBSTITUTE THEREFOR IN TOWNS.¹

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The history of ambulances for military purposes goes back to the time of Napoleon, but the attempt was not made until 1869 to use ambulances in civil life.

The theory of the hospital had always been, and is now, to a lesser degree, that the hospital staff was responsible only for the care and treatment of patients within its gates. It did not concern itself with the means by which the sick or injured reached the hospital. The pushcart, delivery wagon and the public hack have all been used for conveyance, although a majority of patients have staggered in alone or supported by friends.

Bellevue, in 1869, was the first city hospital to use an ambulance in connection with its work. This ambulance and all which have followed it differ from the heavy army ambulance, built to carry three or four men at a time over rough country, by being devised for speed, the first consideration in a city service. From this beginning the New York service has developed, until today it may safely be taken as a model. Boston, however, is not lacking in transportation facilities for cases of illness or accident, and while the municipality has done little directly for an ambulance service, yet a system has been built up which, except for the feature of ambulance surgeons, cannot be excelled even by New York, while the New York lack of facilities for summoning an ambulance does not exist here.

With the growth of towns and cities outside of the great centres, and the development of local hospitals, has arisen a demand for transportation facilities which it has been hard to meet, principally on account of cost. The result has been that in many of our larger cities private individuals have purchased ambulances or substitutes therefor, and have supplied transportation to such sick or injured as could pay for it.

The demand for prompt aid for the injured in Boston and elsewhere has led to the formation of emergency hospitals, under the control of private individuals or small corporations, who, for annual contributions, are willing to give treatment and care. These institutions, however, have not confined themselves to the work which they were formed to carry out, and have injured their usefulness by developing a commercial instinct, which alienated from their support most of the profession.

Some years after the introduction of ambulances, cities found it necessary to provide means for transporting arrested persons to places of de-

tention, also means for transporting bodies of police to points of excitement or disturbance. This led to the formation of a system, connected with the Police Department, known as the Patrol Wagon System, and the usefulness of these wagons was later greatly increased by the introduction of the Police Signal Service.

It is not the purpose of this paper to show how an ambulance service can be developed as an adjunct of the modern hospital, or to enter into the details of ambulances for districts, or in connection with first-dressing stations. It is simply to show the development of one phase of first aid work which has been accomplished by the com-

FIG. 1.—Shows interior of first type of patrol wagon. Box open on left showing method of carrying stretcher and mattress. On right is shown supports for hinged seat folded back.

binéd efforts of the Massachusetts Emergency and Hygiene Association and the Police Department of Boston.

In 1898, while recovering from a severe illness, I was a witness of an accident on the street in front of my window. The man was evidently severely injured (a fracture of the leg, I afterwards learned), and it interested me to note that forty minutes elapsed before the ambulance appeared. That fall I made a careful examination of the six police ambulances and twelve patrol wagons in

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Boston, with a view to diminish the time that accident cases could be left untreated.

The report made to the Massachusetts Emergency Society in 1899 marks the beginning of our

FIG. 2.—Same as Fig. 1, showing seat unfolded, resting upon supports. Width of unfolded seat twenty-eight inches.

present system of patrol wagon ambulances, or, rather, patrol ambulances.

It was recommended to the Police Department at that time that the patrol wagons be rubber-tired; water and dust proof first-aid dressing-packets be supplied; and that these wagons, already equipped with stretchers and slings, should be used to transport accident cases when a regular ambulance could not readily be obtained.

To test the recommendation, the oldest wagon in the department was equipped, and finding that slings for the stretcher were not needed with a rubber-tired wagon, a folding seat was devised, on which the stretcher with a mattress could be placed. This proved entirely satisfactory, and in the first ten months of use 260 accident cases were carried in it, either to their homes or to a hospital. This wagon was of the old covered express-wagon type, with two steps. The interior arrangements of this (Figs. 1 and 2), as well as the other type of wagon in use at that time,

are shown by the reproductions (Figs. 3, 4 and 5). The other type of wagon in use was built with a lower running gear and had but one step (Fig. 5).

In making the interior changes in this type of wagon it was found that a drop seat would obviate lifting the patient in and out at such an acute angle, so the box on one side was taken out and the seat arranged so it could be easily dropped and the patient put in on a mattress on the floor (Figs. 3, 4 and 5).

With all wagons in Boston changed, we have on call, counting additions, nine ambulances and fifteen wagons (the same for all practical purposes as ambulances), and the extreme limit of time that any case can remain without transportation, after notifying a policeman or the Police Department by telephone, is reduced to seven minutes.

A patrol ambulance now responds to first-alarm fires and an ordinary ambulance is sent for the second.

The only thing lacking in this system is the ambulance surgeon, but as the driver and helper

FIG. 3.—Second type of wagon, with wide body. Mattress and stretcher carried in box on left. Seat on right held by supports.

of each wagon hold a diploma for emergency work, few cases can be said to suffer from this lack.

Last year, after seeing what had already been accomplished by the modified wagon, the Police Department placed an order for a patrol ambulance, and the first combination wagon was con-

driver's seat instead. This change would enable two patients to be carried at one time.

So much for what has been done in Boston. Knowing that a lack of transportation facilities existed outside of Boston, a circular letter with prepared blank was sent to the chief of police of each city in the State and to the chairmen of the boards of selectmen in towns of over 5,000 inhabitants. Answers have been received from 28 cities and 52 towns, and show clearly the great lack of service of this kind. Many of the cities can easily solve their difficulty by using the plan already given for changing the patrol wagon they now have.

Where there is an ambulance and a patrol wagon, the patrol wagon should be used solely for accident cases, leaving the ambulance for contagious cases or ordinary sickness. For the few cities and large towns where they have neither ambulance nor patrol wagon, they can purchase, when money is available, the patrol ambulance, which will do the work of both for the cost of one.

There is little need of ambulance service in towns, unless they are of sufficient size to maintain a hospital, and in such cases the cost of maintaining an ambulance falls now on the charitably inclined already contributing to the maintenance of the hospital.

FIG. 4.— Same as Fig. 3. Supports folded back; seat dropped. Mattress on stretcher on floor.

structed. A later built wagon differs from this only in detail (Figs. 6 and 7).

The points of interest about this are: First, weight, which, including two-inch rubber tires, is 1,600 lbs., a saving of 300 lbs. over the old one, without sacrificing strength. Height from ground 32 inches, the first step being 16 inches from the ground, so that it will just come over the edge of curbstone. Interior is 6 feet 8 inches long, 45 inches wide and 6 feet 1 inch high. The seat lifts up and the end swings out, giving plenty of room for mattress on floor and for attendant on seat opposite. The cost, with platform, gear, rubber tires and full equipment, is \$750. The ordinary perch gear, two springs back and one forward, would be \$100 cheaper, but inferior in every way. The amount of power necessary to start the patrol ambulance on a level, as determined by actual test, is 19 lbs.

A further improvement is possible by making both sides alike, doing away with the box for mattress on the side and carrying mattress under

FIG. 5.— Complete wagon ready for use.

A solution of the difficulty would be found by the town purchasing a patrol ambulance, and arranging with some enterprising stable, centrally

located, with a number of horses always ready, to furnish services as needed and receive compensation for each trip.

FIG. 6.—Patrol Ambulance. Seat in position, back closed.

FIG. 7.—Same, with seat up, showing supports folded back. Back open to admit stretcher.

The cost of maintaining an ambulance service of this kind in a town of 9,000 inhabitants, owning a hospital (an actual experience in this State),

was not over \$300 for a year, of which patients able to pay contributed a part.

Along the lines followed in Boston, and adopting some simple system like the one outlined in this paper, much further good may be accomplished, not only in Massachusetts, but in every city and town in the country.

The ambulances which are available in Boston, however, have reached such a number that some understanding is necessary between the Police Department and the various hospitals, so that conflicts over patients will not occur. It may even be necessary to place the responsibility for ambulance calls with the Police Department, and that all calls shall come from a central station.

In closing, I wish to thank the society for its invitation to be here tonight, and for the interest it has taken in this work.

THERAPEUTICS AND THE DRUG MANUFACTURER.¹

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On looking backward through the twenty-five years preceding the present time, it is apparent that great progress, great development and great expansion have been made in all those arts and sciences which relate to medicine. The united industry of teachers and experimenters, supplemented by that of practitioners, has been marvelous, and the results of this industry have added substantially to the welfare of human existence. The record is a brilliant one, and we may well feel elated whenever we pause from our daily labor to point to the triumphs of the last quarter of a century.

But, as Fothergill has it, "the ultimate aim of all medical research is the treatment of disease," and it may be said regarding nearly all those arts and sciences, that their activity is along lines that focus in the treatment of disease, and this art, too, the art of therapeutics, has shared in the general progress and development. Our resources of treatment are greater than ever before. Methods of attacking disease are more numerous and effective. Knowledge of remedies is more specific and accurate. Relief is more certain, more prompt; cure more frequent.

However, the path of the therapist has never been a smooth one. He stumbles at times; again, he slips and often falls down. He wanders along uncertain ways, and even appears to go backward. The same mistaken observation, the same errors of judgment, the same fallacies in reasoning may occur today that have occurred times without number in any preceding period of therapeutic activity; for the human mind still behaves very much as in the times of Hippocrates or Galen, and because this is so, the therapist is even yet inspired to many sins of omission and commission that have the age and precedent of

¹ Read before the Semi-annual Meeting of the New York State Medical Society, Oct. 15 and 16, 1901.