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Reorganising Patient Transportation

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The University Hospital Gasthuisberg (Leuven,Belgium) is a major hospital complex with approximately 1,900 beds, 8,200 staff members and 65,000 admissions per year. Central Patient Transportation (CPT) is a service department responsible for internal patient transportation (between hospital units, operating theatres, functional units, etc.). The 77 CPT staff members (26 full-time and 51 part-time) take care of more than 1200 transports per day.

In early 2005, CPT management listed a number of problems in the department such as increasing work volume, increasing percentage of bed transport, new layouts, difficulties in personnel planning, increasing waiting times, etc. A lack of controllability of the transportation process was apparently leading to a lack of performance, a reduced motivation of staff (stress symptoms and high absentee levels) and a perception of quality loss.

Analysis of Transport Operations

In order to gain insight into the situation, a detailed study of operations was carried out. Detailed observation, questionnaires, in depth interviews and an analysis of historical data were used. This included a detailed analysis of patient waiting times (both for forward and return transport) and idle time at specific units.

The influence of 'patient preparation' on waiting times and idle times was established. The procedures for forward and return transport were analysed in connection with the supporting computer system. It turned out that the myopic planning system, not linking forward and return transport, was causing problems. The system's performance was also hindered by physical elements, e.g. non-availability of wheelchairs or a second transport operator, elevator problems, etc. Elevators were found to cause bottlenecks (high occupancy rate, failure level, alternative use by personnel and goods...). A lack of supervision of the vast CPT staff seemed to be an issue as well. The existing (rough) performance measures (e.g. number of transports/day/person) may result in postponing difficult and lengthy transports ('you get what you measure'). Finally, human and social aspects emerged. Transportation personnel often face physically burdening jobs, are required to walk long distances (15 to 20 km per day), are directly affected by the absenteeism of colleagues, and have to face complaints from both patients and medical personnel. The high number of different working schemes (23) for CPT staff is the result of a desire to fit individual preferences, but generates complexity and planning problems.

Proposals for Improvement

Summarising the above results, the following proposals were made:

- Improve "Patient Preparation" for Transport

CPT organised meetings with the staff of the hospital units in order to sensitize them to the required preparation of patients before transportation and illustrating the effect on the workload of CPT.

- Link Forward and Return Transport in the Computer System

In the past forward transport was requested through a computer system, but return transport was requested by lights in the waiting rooms indicating where patients were ready for transport. This dual system caused inefficiency as forward and return transport were not linked. By upgrading the software and motivating functional staff to request return transport through the computer system, CPT members are able to select a matching forward and return transport simultaneously.

- Introduce Demand for Transport Earlier in the System

The hospital and functional units were required to make the request for transport as soon as possible. The earlier the expected number of transports is known, the better the workforce can be assigned.

- Visualize Demand and Waiting Time at Certain Points

By visualizing the demand and expected waiting time, the hospital units are able to estimate when the patient will be transported and thus when the patient should be ready. When the expected waiting time is too high, hospital unit staff can bring patients to the functional units.

- Improve Elevator Availability (renovation + priority rules)

An elevator renovation programme has been established, starting with the elevators that are most used by patient transportation. Hospital personnel have been encouraged to use stairs or visitor elevators for all non patient transportation movements.

- Reduce Complexity of Personnel Working Schemes

The high number (23) of working schemes generates complexity and difficulties in planning. Reducing this to 13 variants solved this problem while keeping enough flexibility. Motivating this decision made it rather easily accepted by staff.

Towards Decentralised Operations

It was felt that the above measures, although necessary, would not fully solve the difficult personnel situation. A fundamental reengineering was required. Its objectives should be: tighter problem ownership through a smaller action radius, a reduced span of control, availability of spare capacity and improved supervision and support.

As a result, a decentralised structure was developed, within which staff members were allocated to one of three decentralised transport units in charge of a subset of units (this allocation being based on a separate study).

However, a small central transportation department was kept. This central service unit will be staffed with the most experienced members, will offer an overall view of the operations and may provide ad hoc support and assistance. Moreover, it may be seen as a career development goal for decentralised CPT staff.

Furthermore, a team leader has been selected for each of the transport units, based on his/her ability to coach, to supervise operations, etc. These people are financially rewarded for the additional responsibility.

Implementation Problems

The new system clearly differentiates three separate hospital areas. In principle, these areas operate independently and should not overlap. But after many years of interrelationship between all units (they all gave each other a hand), this new situation caused some misunderstandings. Less freedom in transportation choice was also perceived negatively by some of the workers. However, these problems were quickly solved by a clear explanation and justification of the new procedures.

Another problem was the clinical nature of some hospital units. For example, transporting mainly patients with cancer caused mental stress for some people. Psychological help and group talk sessions improved the situation.

Initially, all CPT members were treated equally. The possibility of promotion to the central service unit and eventually to the position of team leader triggered some internal competition.

Results

The overall quality perception of the CPT increased. This is mainly due to the increased control of staff members over their employees, enabled by the introduction of the forward and return transport, which gives out information on the amount of transports per staffer. Everyone now knows his/her responsibility and blaming someone else is no longer adequate.

Small problems between the hospital or functional units and CPT members are in general solved quickly by the team leaders. This approach has turned out to be very fruitful.

Waiting times have been remarkably reduced although they are still higher than expected. Analysis showed that in the corresponding period, the total number of transports increased by approximately 10%. This has been justified by the increased workload on the hospital and functional units during the same period. Therefore, waiting times are expected to decrease further when the total number of transports again reaches the 'normal' level (which is expected).

Conclusions

We can conclude that the new organisation offers controllability of the service department. By keeping a central unit, problems due to peak periods and sudden absenteeism can be solved. Team leaders keep control of their unit and can solve frequent small problems. This results in an increased quality perception of the service department and should therefore lead to an increased quality perception of the overall hospital by the patients.

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