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### Restructuring Radiology Scheduling in a Hospital Environment

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Hospital physicians are under growing pressure to reduce the average duration of hospital stay of patients. They require a fast, top-quality response and expect radiology to continually improve its performance in this area. In this article, we describe how radiology can improve the organisation of its appointment and scheduling management to optimise its resources.

#### Calculating the Volume of Emergencies

The first difficulty our department faced was that of accurately gauging the volume of last-minute examinations that we process. This problem is considerable in our facility (53% of scanners, 27% of MRIs), and related to our low ratio of outpatients (15% for CT-scanners, and 30% for MRIs). The chaotic impact of these sudden emergencies is well known.

Hypothetically, the more resourceful appointment scheduling is, the less likely it becomes that pre-scheduled cases will be disrupted by the flow of emergency cases. A high volume of emergencies is thus an additional argument for radiology to improve its organisation.

#### Defining Priorities

Another question concerns the definition of priorities. It is obvious that the first priority must be those patients already existing in the hospital structure, namely ER and hospital patients. But it is also essential to open up to outpatients. Not only because the current financing system encourages the performance of imaging exams prior to hospitalisation, but also because one must offer outpatients the possibility to benefit from a reference pathway, and that subcontracting is not without risk.

Indeed, a patient that turns up to a hospital's consultations who can't get their imaging procedures carried out then and there could be tempted to turn to another healthcare provider. Consequently the global imaging service offer must be improved and developed according to the hospital's needs. Consideration was therefore given to this core group of inpatients when organising appointments – after all, they make up most of our patient cohort. It was done without altering the request system, which, in the absence of electronic prescriptions, is done systematically by fax, in order to assure traceability.

#### A Time for Observation and Questioning

Before taking action, the first step involves observation and questioning, by putting oneself in the clinician's and/or the patient's shoes. Some questions we developed to inform our appointment organisation process were:

- Are adequate responses made available to referring physicians by the existing administrative structure?
- Are the opening hours appropriate?
- Is the service unbroken or interrupted on certain days?
- Is phone accessibility satisfactory?
- Do we provide a quality response?
- Are the machines' time slots filled in the best way?

Feedback from the hospital system can reveal considerable potential improvements. In this way, we discovered that 56% have poor satisfaction with phone reception, 59% with scanner appointment deadlines, 64% with MRI and 82% with phone accessibility rate.

#### Three Action Points

Given these results, we have, using the same resources, focused our work on three action points, described below.

##### First Action Point:

##### Improve Accessibility of Reservations Services

The objective was to extend the scheduling office's opening hours, to harmonise them for all modalities, to limit lowstaffing days and to reduce request processing time limits. Several measures were set up:

- Establishment of a scheduling call centre, regrouping appointment scheduling areas, which were previously spread out across three zones within a 2,500m<sup>2</sup> department. This regrouping was organised in stages, taking architectural constraints into account. The final goal was to organise a single area differentiating between a "front line" for the physical reception of people (patients or staff coming to discuss appointments), and a "back line" for the processing of phone calls and faxes;
- Increase the number of trained staff, e.g. integrating secretaries previously dealing with records processing into the scheduling pool, who gained time through the introduction of voice recognition;
- Improvement of training with the objective of becoming multi-functional in order to make every agent able to make appointments on all imaging modalities and,
- Installation of a mini switchboard, diverting unanswered calls towards other extensions.

## **Second Action Point:**

### **Improve Scheduling Office Efficiency**

- Formalisation of a written handbook, dealing extensively with appointment allocation rules (e.g., list of questions to ask patients and referrers, specific authorisations for different radiologists given their increasing imaging specialisation by organ, listing of non-feasible tests with alternative solutions, etc.);
- Improvement of our anticipation of closing jobs;
- Streamlining the processing of requests by moving to a drop-in system for certain short standard radiology tests, in order to alleviate the workload;
- Centralised management of the different research protocols and,
- Authorisation to reject non-compliant requests in the administrative system.

## **Third Action Point:**

### **Maximising the Use of Scanners & Equipment**

- Review of opening hours, of reserved time-slots for emergencies and of exam duration, taking into account technological developments;
- Anticipation of show-up time (30 minutes for CT-scanner and MRI, to take into account preparation and transportation time);
- Re-direction of underused time slots (in our case, 7 - 8 AM and 1 - 2 PM) and,
- Spotting services with a high rate of missed appointments, and collaboration on their re-organisation (e.g. lapses in transportation and cancellations orders, etc.).

An essential factor in the success of this work was to acquire a Radiological Information System (RIS) interfaced with inbuilt appointment scheduling software.

These actions were undertaken because scheduling was considered a major challenge. A manager was appointed working closely with the head of department, and accompanied by a consultant working in joint agreement with the MEAH. Our mid-term review is positive, with a net activity increase (+15% in CT scanners, for instance) and a halving of the number of unanswered calls, while the total number of calls through the call centre went up by a third.

### **Vigilance is Essential**

Difficult aspects remain, among which first is the education of referring physicians, since the non-compliance of requests is very frequent and can cause time loss and tension. Furthermore, since the scheduling office is an essential link, it must be properly manned, and not used to fill-in other functions in the department

. Indeed, any organisational malfunction results in unfilled seats and a permanent loss of time. Vigilance is thus in order. A final step, to ensure your service is sustainable, is to integrate the collection, follow-up and regular restitution of performance indicators.

### **Preventive Actions Necessary**

There remains the crucial question of the relevance of requests and medical justification of imaging tests. In order to save time and avoid having to refuse customers, it is useful to develop preventive actions: structured requests reminding of indications/non-indications, education of the referrers through weekly meetings, and definition of tests that require prior medical validation by the radiologists.

This type of organisation cannot be simply transferred to out-of-hospital requests whereas in fact this category of patients needs the correctness of referral questioned the most. We have therefore adopted the following rule: except in particular circumstances, these requests have to be made by a written request. If the relevance is not obvious, the request is followed by a phone conversation with the referrer.

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