

## Assignment 1

Deliverables:

1. **Model the AS-IS business process**, i.e., design a detailed BPMN process model reflecting the current state of the process – one Bizagi file per group

## Process suggested by the lecturers

### Grace Hospital

Grace Hospital is a well-known hospital in Lisbon, Portugal. This hospital was found in 1998 and has more than 800 employees working in more than 30 different departments (e.g., cardiology, orthopedics, dermatology, endocrinology, imaging, dentistry, surgery, etc).

The focus of this project will be the process of attending the patients in a typical medical consultation. A typical working day at the hospital in most departments (except for emergency unit and surgical departments) is to carry out consultations. As such, it is exactly this process that the hospital wants to focus on and improve, as it has a great impact on the hospital's daily life.



Some dissatisfaction of patients and employees led the hospital managers to decide to analyse their processes to overcome these difficulties and increase its efficiency.

The main problems that the hospital identified in this process are:

- Patient dissatisfaction with the hospital since this process is sometimes quite time consuming (sometimes the medical consultation itself takes 10 minutes but the patient is in the hospital for 1 hour, since it enters in the hospital until leaves);
- Most of the time, the medical consultations do not take place at the scheduled time (there are delays by the doctors and patients);
- Hospital internal staff and receptionists do not know how to answer patients when they ask for the time of the delay, generating again dissatisfaction;
- Sometimes the patients make a mistake on the day and time of the medical appointment (forget the appointment or go to the hospital on the wrong day or arrive late), due to the lack of a more efficient communication service between the patient and the hospital;
- Each year, the hospital spends a lot of money on supplies (papers, printer toners, etc). As such, the hospital also wants to reduce the suppliers, helping the environment and saving money;

The hospital believes that with a more careful analysis, even more problems / situations for improvement will be identified.

In general, the hospital wants to improve the patient flow in the hospital and the entire patient experience making it more enjoyable and simpler. The hospital believes that one of the main focuses is on customer service, which should not be underestimated.

### The process

The scope of this project is to understand, model, analyse, and redesign the process of attending patients on a typical medical consultation. For that, we will focus on the orthopedics department. However, the analysis can be extended to other departments that work all in a very similar way. Other processes exist within the hospital, but they are outside the scope of this project. However, you may consider those in your project, making the proper assumptions.

The Grace Hospital receives around 200 patients per day that will make a medical consultation in the orthopedics department. The department is open from 10:00 am to 6:00 pm every day.

The department has 2 receptionists, 2 internal staff and 6 doctors, receiving each 1000€, 750€, and 2000€ respectively.

### **Admission process**

When the patient arrives at the orthopedics department to make the consultations, first it needs to make the admission at the reception of the department. This process starts with the receptionist calling the patient ticket to the reception desk (the hospital has a ticket system to receive the patients). In some situations, since the patients must wait to be called and do not know how much they must wait, they leave the department. Due that, on average, when the receptionist calls for the patient ticket, it must wait around 30sec until receive the patient in the reception desk. When the patient arrives, the receptionist asks for the medical consultation and for the citizen card to insert it on the system (takes about 50sec). If it is the first time in the hospital (25% of the cases), the receptionist also needs to register the patient data in the system (takes about 1min) - name, address, phone number, email, tax number – and if it as any health system (90% of the cases), the receptionist also registers it in the system (takes about 15sec). Finally, the medical consultation is confirmed (takes about 20sec), and the patient is admitted, or in some cases the admission is not confirmed (8% of the cases) and the patient leaves the hospital (sometimes patients go to the hospital on the wrong day).

On average, this process takes about 2 minutes to be performed, per patient.

### **Call patient**

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After the patient is admitted, they must wait to be called to the doctor's office by the internal staff. The internal staff checks the list of medical appointments in the system and waits for the doctor's availability to call the patient. Sometimes the doctor is called for emergencies, and that cases always have priority over the appointments, or the appointments take longer than expected, or the doctor is late, or the patient arrives late. As such, the wait until the doctor is available takes about 10min on average but may take longer, per patient. When the internal staff sees in the system that the doctor is available, this one calls the patient and directs him to the correct office.

On average, this process of just call the patient takes about 30 seconds to be performed, per patient (excluding the waiting).

### **Make consultation**

When the patient enters in the office, the doctor makes the consultation, which takes on average of 15 minutes per patient, but it can be quite variable depending on the situation. When the doctor has seen his patient and he need to prescribe new medicines (90% of cases), the doctor registers the information in the system and the system sends a message with the prescription to the patient's cell phone. If the patient also needs the prescription on paper (50% of cases), then the doctor prints it and gives it to the patient. In some situations, when the doctor prescribes medical exams to the patient (40% of cases), he enters the information into the system and needs to print the prescription, giving it to the patient and ending the consultation.

On average, this process takes about 15 minutes to be performed, per patient.

### **Finalize consultation**

After the patient leaves the office, he or she needs, at least, to pay for the appointment. However, in 10% of cases, the patient decides to leave the hospital without paying at the time. In these situations, the system registers the lack of payment and at the end of the month the hospital sends the invoice to the patient's address to pay for the medical appointment. Note that this is not a recurrent practice. For the remaining patients (90%), the receptionist calls for the patient ticket (use the ticket system also to call the patients for the payment) and makes the payment (takes about 1min). In the case when the patient has exams or medications prescribed by the doctor on paper, the receptionist marks them with the hospital signature. Also, if the patient needs a justification for missing the work/school (35% of the cases), the receptionist prints the paper and gives it to the patient (20sec). Additionally, if the patient needs to make a new appointment in the same department (60% of the cases), he/she can make an appointment immediately, having to give to the receptionist the citizen card. The receptionist sees the agenda of the doctor and makes an appointment, printing a paper with the information regarding the new appointment (takes about 1.5min). In the case when the patient needs to make a medical

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appointment in another department then he/she cannot do it immediately (the presential medical appointments to the X department needs to be done in the X department). In this case the patient will have to go to the specific department in the hospital and make the appointment there (or, later, try to make an appointment by phone). The process ends with the receptionist delivering all the necessary papers to the patient (invoice, prescription for exams and medications, justification to the work, scheduling a new appointment) (takes about 20sec).

On average, this process takes about 2.5 minutes to be performed, per patient.

