Operating Room Management System Specification

# Objective

I want to manage the operating room activity and consumption so it can help the administration take decisions and pay surgeons and medical staff based on specific calculation rules.

# Calculation Methods for Surgeons

The calculation for surgeons can be done in 2 ways. It’s based on the contract, so both methods are possible:

Method 1: Allocation of the Operating Room:

- The surgeon negotiates with the patient for the procedure price, and the patient pays the surgeon directly without the clinic’s involvement.

- After completing the surgery, the surgeon pays the clinic for the operating room allocation.

- If the clinic provides any material to the surgeon, he also pays for it.

- The operating room is allocated for a particular time and billed hourly (e.g., Surgeon 1 allocation hourly rate is 20,000 DA).

Method 2: Percentage (%):

- The clinic takes a percentage of the surgical procedure, and the surgeon takes the rest.

- Example: 60% for the clinic and 40% for the surgeon.

# Prestation Attributes

Each prestation has the following attributes:

- Code

- Designation

- Specialty (reference to the Specialty model)

- Price (Excl. Tax)

- VAT

- Duration (minutes)

- Exceeded Duration Unit (minutes)

- Exceeded Duration Fee

- Urgent Fees

# Patient

Attributes:

- Unique code (generated automatically by the system)

- NIN (National Identification Number)

- First name

- Last name

- Father’s name

- Date of birth or presumed age

- Phone

# Surgeon

Attributes:

- Code

- First name

- Last name

- Date of birth

- Phone

- Specialty (reference to the Specialty model)

# Medical Staff

Attributes:

- Code

- First name

- Last name

- Date of birth

- Phone

- Function (reference to the Function model, multiple allowed)

- Attended Surgeries {id of surgery, role (id of function)}

- Personal fees when allocated hourly

# Function Model

Attributes: Code, Name, Description.

# Specialty Model

Attributes: Code, Name, Description.

# Materials

Materials are divided into two categories:

- Consumables (sutures, gowns, gloves…) → used then discarded.

- Patient Materials (plates, prostheses, pins…) → used for a specific patient.

Both categories share the same attributes:

- Code

- Designation

- Price (Excl. Tax)

- VAT

- Specialty

- Stock

- Arrivals

- Weighted price calculation

- Each material must follow its unit of measure

- Stock alert levels

# User

Username, password, role or permisions

# Surgery

Every surgery involves multiple entities:

- Patient

- Surgeon

- Involved Medical Staff

- Prestation (surgery procedure, limited to surgeon’s specialty)

- Materials (linked to surgeon’s specialty)

Attributes:

- Unique code (generated automatically)

- Begin date/time

- End date/time

- If the duration exceeds the prestation duration, a message is displayed to apply extra fees (optional)

- Status: Urgent / Planned

- Consumed materials and their quantity

# Payment Rules

If the surgeon’s contract is Method 1 (Operating Room Allocation):

- The surgeon pays the clinic for room allocation + any used materials.

If the surgeon’s contract is Method 2 (Percentage):

- Only patient materials are considered.

Surgeon Fees Calculation:

Method 1 (Allocation): Surgeon pays allocation fees + materials + personal fees.

Method 2 (Percentage): Surgeon amount = (Prestation price – Patient materials) \* Surgeon rate from contract.

# Reports and Filters

- For every surgeon, display the total amount of all surgeries done in a given period (with filters).

- For medical staff, display the total number of surgeries they participated in during a given period.

# Development Request

I want to create this system from scratch (backend + frontend + database).

Tech stack: Express.js, MongoDB, EJS, JavaScript, Bootstrap, CSS.

Goal: Build a fully working app with a user-friendly interface.