

Medical Device Inventory Management


Project/problem Overview

With the widespread spread of COVID-19, medical devices and equipment, tools that clinicians use to deliver patient care, have become increasingly scarce. In addition, many medical devices are extremely complex and expensive to buy and expensive to maintain. However, they are crucial to patient safety. This program aim to develop effective ways of utilizing their expensive medical equipment. We want to share expensive equipment in their service provider network, such as a hospital. Therefore, there is no need to purchase expensive equipment that is not often used. In addition, good management of equipment utilization can have an impact on clinical operations, such as surgery, which are heavily dependent on the availability of medical equipment. In other words, good management of equipment inventory means efficient use of the operating room and efficient use of clinician time and staff time.

Obviously, the effective management of medical equipment can improve the utilization rate of medical resource. At the same time, make medical establishment more efficiently and effectively by reduce unnecessary work.

Proposed Entities

1. System
2. Network
3. Enterprise: Enterprise detailed information

 Brigham and Women's Hospital, world-renowned in virtually every area of adult medicine, is a 793-bed teaching hospital of Harvard Medical School. Brigham and Women's leadership in state-of-the-art treatments and technologies, patient- and family-focused care, patient quality and safety, and biomedical breakthroughs have improved the health of people around the world.	617-732-5500 75 Francis Street Boston, MA 02115 brighamandwomens.org More info
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Annotations: Brand (points to logo), Address (points to 75 Francis Street), Phone (points to 617-732-5500), website (points to brighamandwomens.org), Description (points to the text block).

Hospital: hospital like Brigham and Women's Hospital, Massachusetts General Hospital, etc.

Supplier: supplier include many hospitals and other medical products and services provider like AllWays Health Partners(health insurance) .

4. Organization:

- Medical department: MD&DO who can apply a clinical operations and become the leader of a care team.
NP&APRN who can become the member of care team.

Emma C. Davies, MD Request Appointment

ACCEPTING NEW PATIENTS

Specialties
Comprehensive Ophthalmology
Cornea and External Disease

Affiliations
Massachusetts General Hospital

Practice Locations
Massachusetts Eye and Ear Infirmary
243 Charles Street, Boston, MA 02114 ([Map](#))

Phone
617-573-3202

- Inventory department: Warehouse manager
- Financial department: Accountant

Application Key Functionalities

Network Staff/Hospital Admin/Organization Admin:

1. Create new entities
2. Allocate account and password

Doctor:

1. Create schedule of clinical procedures
2. View all surgery scheduling
3. View time table of medical device and other detailed information of device
4. View time table of room
5. Search available room and medical device
6. Sort medical device by name and other features

Nurse:

1. Join care team of the clinical procedure
2. View themselves' scheduling time table

Warehouse manager

1. Create schedule of required medical device according to the clinical procedures created by doctor.
2. View time table of medical device and other detailed information of device
3. Sort medical device by name and other features

Accountant

1. View payment history

2. Send / receive funds

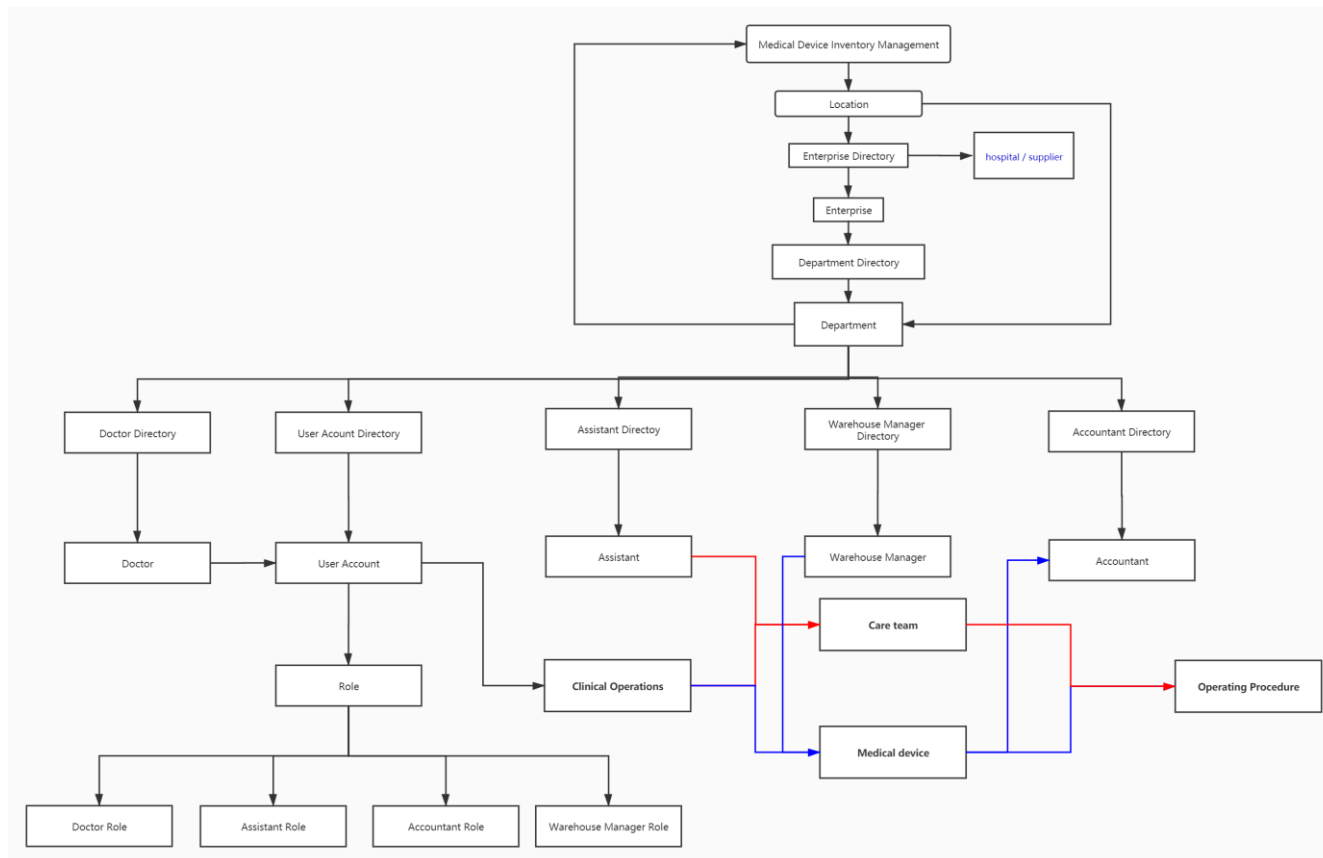


Figure 1 Architecture of ecosystem

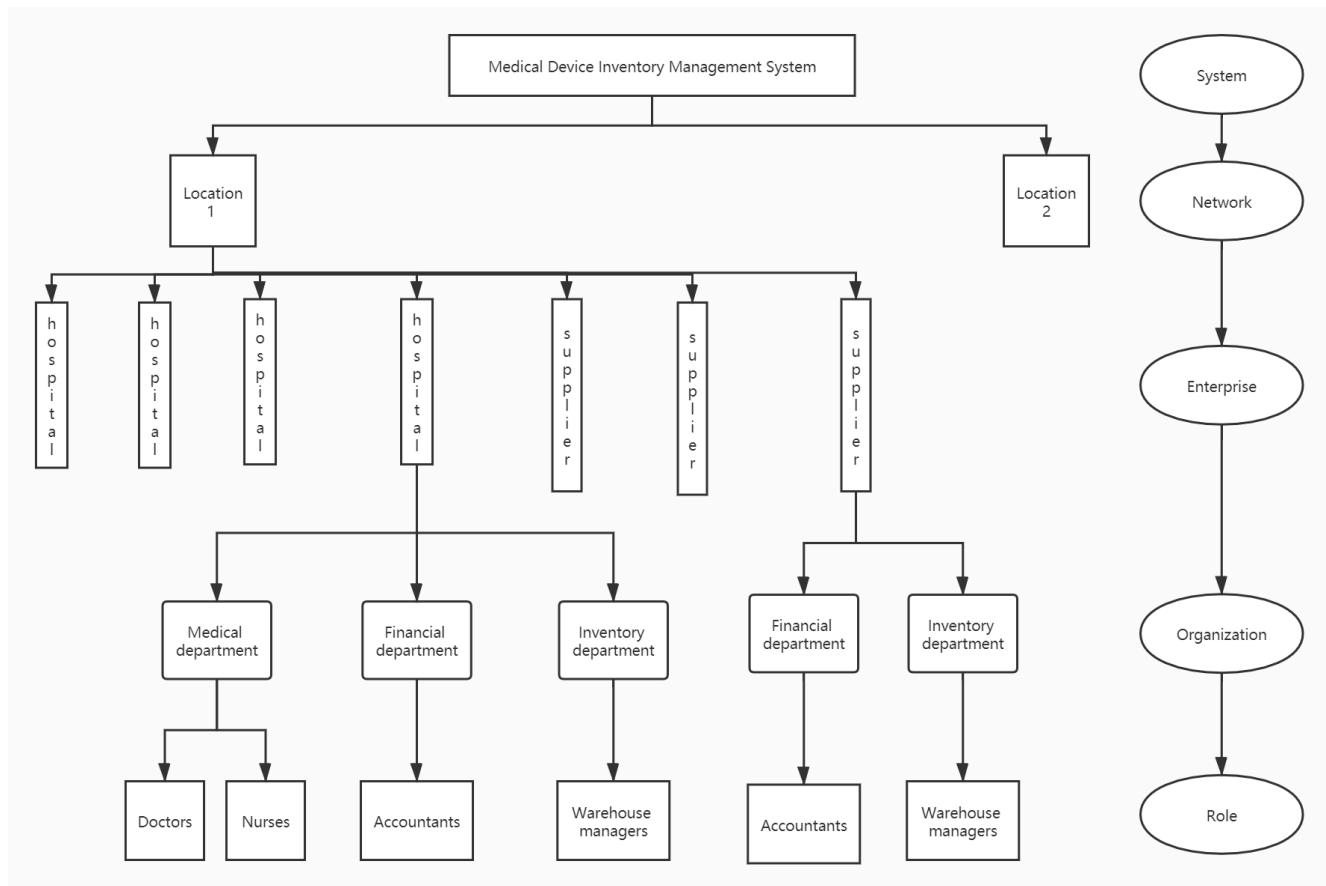


Figure 2 Hierarchical structure of ecosystem