

Hospital Administration Database

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Table of Contents

1. Narrative Summary
2. Actors and Roles
3. List of Entities
4. List of Entities with Attributed nested
6. Business Rules
7. ERD
8. EERD

1. Narrative Summary

The hospital administrator wants to create a database to track nurse assignments to their wards and nurse interactions with their patients, patient admissions by their doctors and treatments administered by doctors to their patients, bed assignments for each patient and items charged to patients during their stay. Administrator wants to record each nurse's name and address, phone and alternate phone, email and the medical specialties he or she is certified. Some nurses supervise one or more other nurses. No nurse is supervised by more than one nurse, and some nurses are unsupervised.

Each ward at the hospital has a designated number, descriptive name, physical location and phone number. Each ward has at least one nurse assigned to it. A nurse is assigned to at least one ward and rotates assignments among other wards. The assignment is tracked by the specific date and the hours worked in the assigned ward by each nurse on that date.

In addition to nurse assignments, each ward also has a charge nurse. The charge nurse is the custodian of the medical records for the ward. Not all nurses act in this capacity, but those that do are in charge of only one ward, and a ward only has one charge nurse.

A ward consists of hospital beds. The beds are inventoried to a specific ward. Information on beds including their size (small, large, extra-large) and their type (elevated electrically or manually). Most of the beds are large and manual (this is the default setting).

When a patient is admitted to the hospital they are assigned to a specific bed. Not all beds are available for use all the time, and a bed may not be assigned to more than one patient.

Information on patients is recorded: name, gender, dob, address, phone, alternate phone, email.

The date the patient is admitted to the hospital, the admitting doctor, the date the patient is discharged, and discharging doctor are also tracked.

Some doctors admit patients while others do not. Doctor information tracked: name, address, phone, alternate phone, email and their medical specialties.

The hospital tracks the treatments administered to patients and the treating doctor.

Treat-ments are tracked by name, description, and charge. The hospital also tracks the date and time of each treatment administered and the results. Some doctors treat patients while others do not.

A given patient may receive no treatments or may receive many, and some patients may receive their treatments from more than one doctor. Some treatments have yet to be used while others have been used often. In addition to treatments, patients incur other charges for items used during their stay. The hospital tracks these charges as “items” and stores information on what items have been charged to which patients, based on date and quantity. Information that is to be stored for each item includes the item name and charge. All patients incur at least one charge for consumable items used during their stay. Some items are used often while items may be new or unusual in nature and might rarely or never be charged to any patients.

Lastly, the hospital tracks nurse patient care. Each nurse patient care interaction is an event. There are several types of events: wellness check, medication, food service, assistance, treatment admin, and “other.” Given the number of shifts and ward rotations, a patient will typically be seen by more than one nurse during their stay, and a nurse most likely will interact with the same patient over several events during a single shift.

2. Actors and Roles

Ward: A ward contains one or more than one bed. A ward has one or more than one nurse assigned to it. A ward has only one charge nurse.

Nurse: A nurse is assigned to one or more than one ward. A nurse is in charge of none or one ward. A nurse cares none, one or more than one patient.

Bed: A bed is contained in one and only one ward. A bed is assigned to none or one patient.

Patient: A patient is assigned to one and only one bed, is cared by one or more than one nurse, receives one or more than one treatment, uses one or more than one item, and is admitted by one or more than one physician.

Physician: A physician admits none, one or more than one patient.

Item: An item is used by none, one or more than one patient.

Treatment: A treatment administers to none, one or more than one patient and none, one or more than one doctor.

3. List of Entities

- Ward

- Nurse
- Bed
- Patient
- Physician
- Item
- Treatment

4. List of Entities with Attributed Nested

Ward:

- Ward Name
- Location
- Phone

Nurse:

- Employee No
- Name
- Phone
- Address
- AltPhone
- Email
- Certification

Bed

- Bed No
- Size
- Type

Patient

- Patient No
- Name
- Gender
- Date of Birth
- Phone
- Address
- AltPhone
- Email
- Admit Date
- Discharge Date

Physician

- DoctorID
- Name
- Phone
- Address
- Email
- altPhone

Item

- Item No
- Name
- Charge

Treatment

- Treatment No
- Name
- Discription
- Charge

6. Business Rules

Ward: A ward contains one or more than one bed. A ward has one or more than one nurse assigned to it. A ward has one and only one charge nurse.

Nurse: A nurse is assigned to one or more than one ward. A nurse is in charge of none or one ward. A nurse cares none, one or more than one patient.

Bed: A bed is contained in one and only one ward. A bed is assigned to none or one patient.

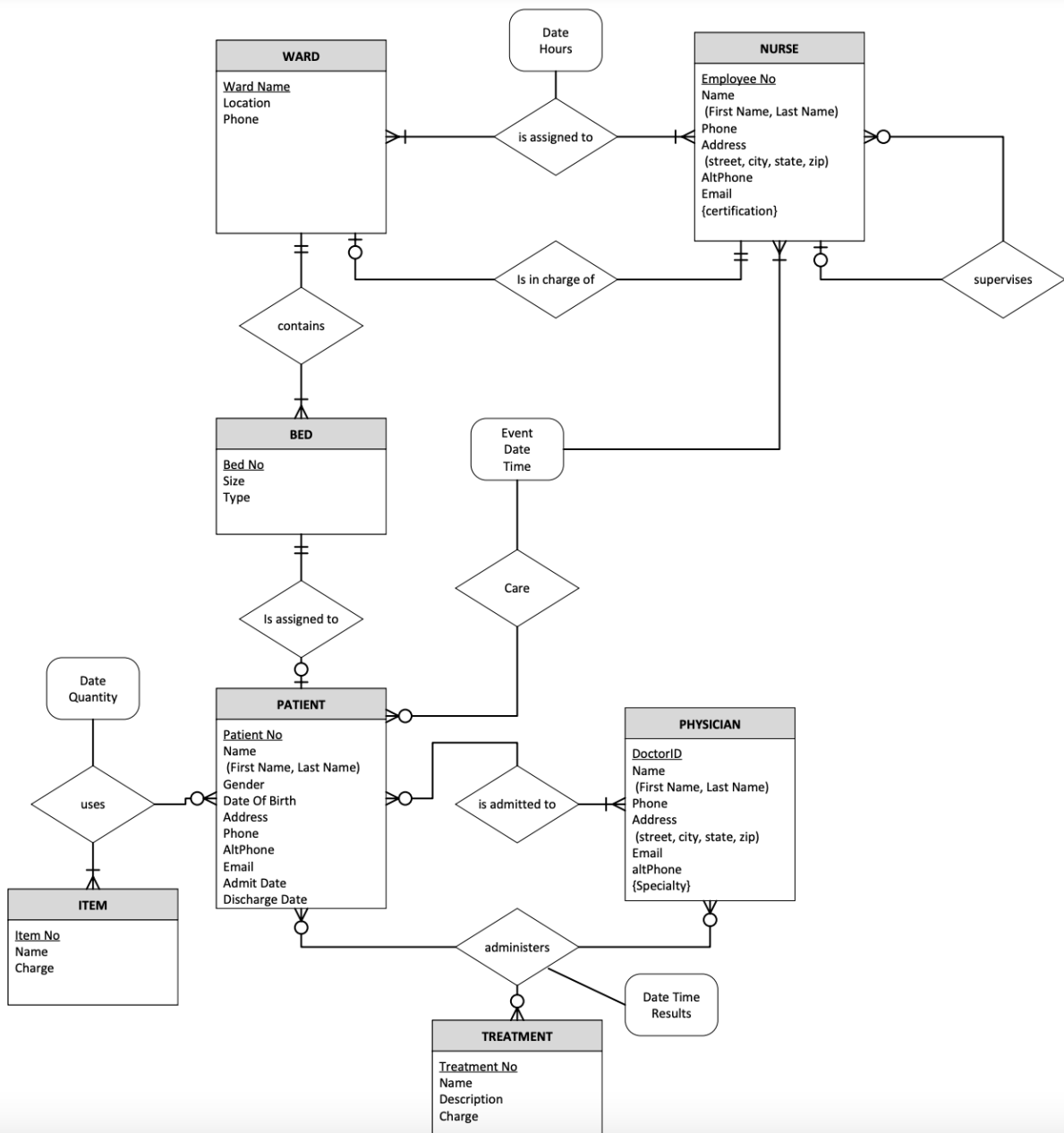
Patient: A patient is assigned to one and only one bed, is cared by one or more than one nurse, receives one or more than one treatment, uses one or more than one item, and is admitted by one or more than one physician.

Physician: A physician admits none, one or more than one patient.

Item: An item is used by none, one or more than one patient.

Treatment: A treatment administers to none, one or more than one patient and none, one or more than one doctor.

7. ERD



8. EERD

