Hospital Administration Database Design

Version 1.0

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Version Control

Version	Description
1.0	First released draft

Purpose:

The purpose for this Database Design Documentation (DBDD) is to outline a database that will track and record various assets and staff around a hospital. As critical an environment a hospital often can be, it is important to have as much organization as possible in assigning staff to certain areas as well as treatments and facilities for the patients.

Narrative:

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 oversee 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. Treatments 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.

Requirements (Actors and Roles)

<u>Nurses</u>: nurses are assigned to wards and see patients. Some oversee wards and other nurses

<u>Wards:</u> Wards are staffed by nurses and contain beds.

<u>Beds:</u> Beds are located inside wards and get occupied by patients

<u>Patients:</u> Patients get assigned to beds, receive treatments, are charged for items and get seen by both doctors and nurses

<u>Doctors:</u> Doctors see patients and assign treatments to patients.

<u>Items:</u> Items get charged to the patients for use

<u>Treatments:</u> Treatments get administered by doctors and are administered to patients.

Entities

- Nurses
- Wards
- Beds
- Doctors
- Items
- Treatments
- Patients

Entities with Nested Attributes

Nurses

- Name
- Address
- Phone Number
- Alternate Phone Number
- Medical Specialty

Wards

- Designated Number
- Descriptive Name
- Physical Location
- Phone Number

Beds

- Size (S,M,L,XL)
- Type (Elevated Electronically, Manual)

Patients

- Name
- Gender
- Date of Birth
- Address
- Phone Number
- Alternate Phone Number
- Email

Treatments

- Name
- Description
- Charge amount

Items

- Name
- Charge Amount

Doctors

- Name

- Address
- Phone Number
- Alternate Phone Number
- Email
- Medical Specialty

Business Rules

Nurses: Nurses are assigned to one or many wards and may oversee none or one ward. They may also see none or many patients. Some nurses can oversee none or many nurses, but nurses can have none or one nurse supervising them.

Wards: Wards can have one or many nurses assigned to it and can have one or many beds.

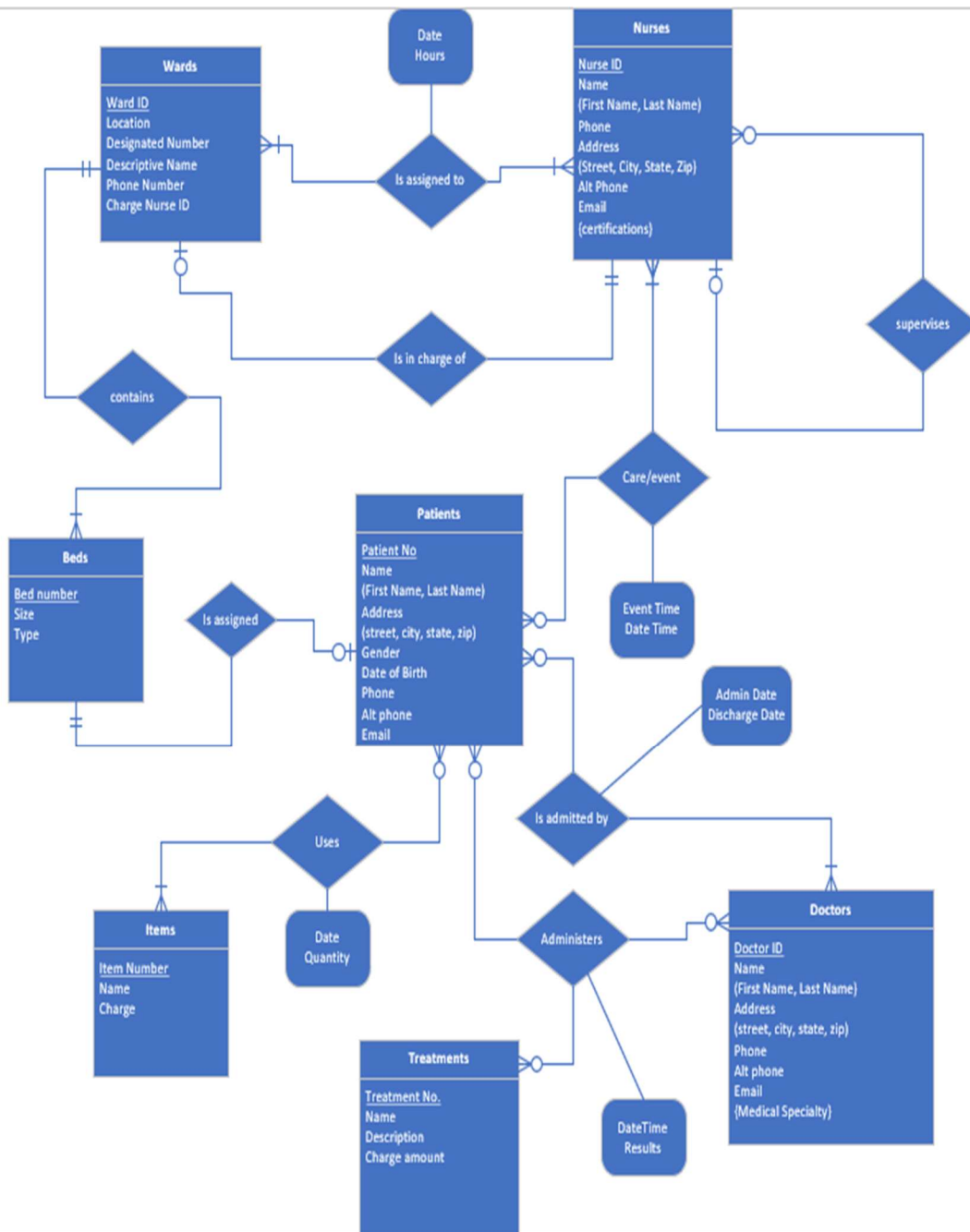Beds: A bed can be assigned to one and only one ward and may have none or only one patient assigned to it

Patients: patients can be assigned to one and only one bed and can be seen by one or many doctors. They can be seen by one or many nurses. They can be administered none or many treatments. A patient can be charged for one or many items.

Doctors: a doctor can admit none or many patients and can administer none or many treatments

Items: items can go to none or many patients

Treatments: Treatments can be administered by none or many doctors and can be administered to none or many patients.

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