

Assumptions:

(MDir-1) Staff must be allocated to one ward, and only one ward, at a time.

(MDir-2) ChargeNurse is recorded in Staff entity since ChargeNurse is considered staff.

(MDir-3) General Supply and Pharmaceutical Supplies are completely unique supplies with different primary keys so two entities are created to store their information. These are not subclasses of a "Supply" superclass because they don't share a common primary key. Do not want to create them as subclasses of an entity called something like "Supply" because this will require a primary key to be created for both General Supply and PharmSupply which is redundant data taking up additional space in the database.

(MDir-4) Supplier and Supplies relationships are 1..1 and 1..* because although two or more Suppliers cannot provide the same items as the other supplier, it is assumed that they can provide multiple different items, as long as it is not the same item supplied by another supplier.

(MDir-5) LocalClinic entity created to contain local doctor info and clinic info because local doctor cannot be apart from a localclinic. Also, query #8 from the MD view requires to "List the details for each local clinic..." which indicates that the info should be contained as a LocalClinic.

(MDir-5) Although some local doctors work for the hospital, there is no connection between the "LocalClinic" entity and the "Staff" entity because it is irrelevant - Local doctors are a different category, regardless of whether or not they work for the hospital because the local doctor works for a clinic outside the hospital. So even if a hospital doctor also had a private practice as a local doctor and was referring patients in, we would still need to record their information in the LocalClinic entity to show they have their own practice (we can always pull their hospital staff info from the Staff entity as needed).

(MDir-6) ImmFamContact entity is created because the info for Immediate Family Contacts within the patient entity is a multi-valued attribute.

(MDir-7) Consultant is a staff of the hospital so they do not get their own entity. Since Appointment is an entity to record appointment info, the consultant (staff) has a relationship "PerformsExam" with the Appointment entity instead of directly with the patient entity.

(MDir-8) Outpatients require patientNo etc., so Outpatients are subclass of Patient entity since they are still under the care of the hospital.

(MDir-9) "Patients in a ward" and "patients on a waiting list" require the same information including the Patient info so the Inpatient subclass is created with the Patient entity to

combine both categories to prevent duplication of data. The attributes "date placed on waiting list" and "date placed in ward" can be used to indicate if a patient is on a waiting list or has been placed in a ward. Also, one of the mission objectives of the project is to obtain data on "in-patients." So, "Patients currently placed in a ward and those on a waiting list for a place on a ward" are both considered Inpatients, thus creating a subclass called Inpatient that holds all information for those on a waiting list and those placed in a ward.

(CN-2) Again, the waiting list is simply combined into the Inpatient entity because it has the same exact information as patients fully admitted to a ward. Any patient on the waiting list can be identified by the the attributes "date placed on waiting list" and "date placed in ward".

(CN-3) Bed entity created to account for its unique number and which ward it is in.

(CN-3) Since patients are only prescribed medication when they enter the ward, the medication entity has a "prescribed" relationship with the Inpatient entity.

(CN-4) The Specialist subclass of the Staff entity is created to optimize the database so when the Charge Nurse needs to pull a list of specialties for the staff, the DBMS doesn't have to read every single row in the staff table thereby eliminating redundancy.

(CN-4) The Specialist can be assigned to more than one Inpatient but the Inpatient can only be assigned one Specialist.

(CN-4) Schedule entity created to track its attributes and eliminate the many-to-many relationship between staff and ward (assuming that staff can be assigned to more than one ward). Although the requirements specify that the Charge Nurse creates the schedule for the nursing staff, it is assumed other staff (like doctors, consultants, etc.) create schedules for their staff as well. Since they all fall under the staff category, "Staff" has a relationship with "Schedule" and then "Ward".

(CN-5) Requisition entity is created because the Charge Nurse can obtain supplies as needed which requires certain information to be stored to track each supply obtained, such as a requisition number, staff name and number, etc.

(CN-5) Since the Charge Nurse (staffNo) oversees a ward, the requisition/supplies are ultimately received by the ward and not the specific charge nurse (staff) to hand-off to staff, under the assumption that Charge Nurse is delegating these tasks.