

Solution Design Document

National COVID Management System (NCMS)

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1. Introduction

The “National COVID Management System (NCMS)” is a software system which helps the Ministry of Health (MoH) of the particular country to immediately and efficiently manage the situation, as the COVID19 is spreading all over the world so fast. MoH authorities do the overall management of the healthcare system of the country. So the NCMS system is controlled by MoH authority. Following are the functionalities that the system will provide.

Citizens who show COVID19 symptoms can register to the NCMS including his details like name, age, blood group, geolocation of the home. The system will search for hospitals with available beds and allocate a bed of the nearest hospital to the patient and inform the patient. At the same time patient details are visible to the hospital staff. So when a patient arrives as possible as doctors can get immediate action.

MoH authorities do the overall management of the healthcare system of the country. Considering the number of patients in the queue, if it exceeded the maximum count, MoH will lead to build new hospitals in the relevant district.

The application also has the capability of representing patient statistics including daily updates and overall status until then, with country level, district level and hospital level for both MoH and citizens. MoH authorities have the administration privileges. They are able to check hospitals and bed statistics also.

2. Design Views

2.1 Entity-relation diagram(ER)

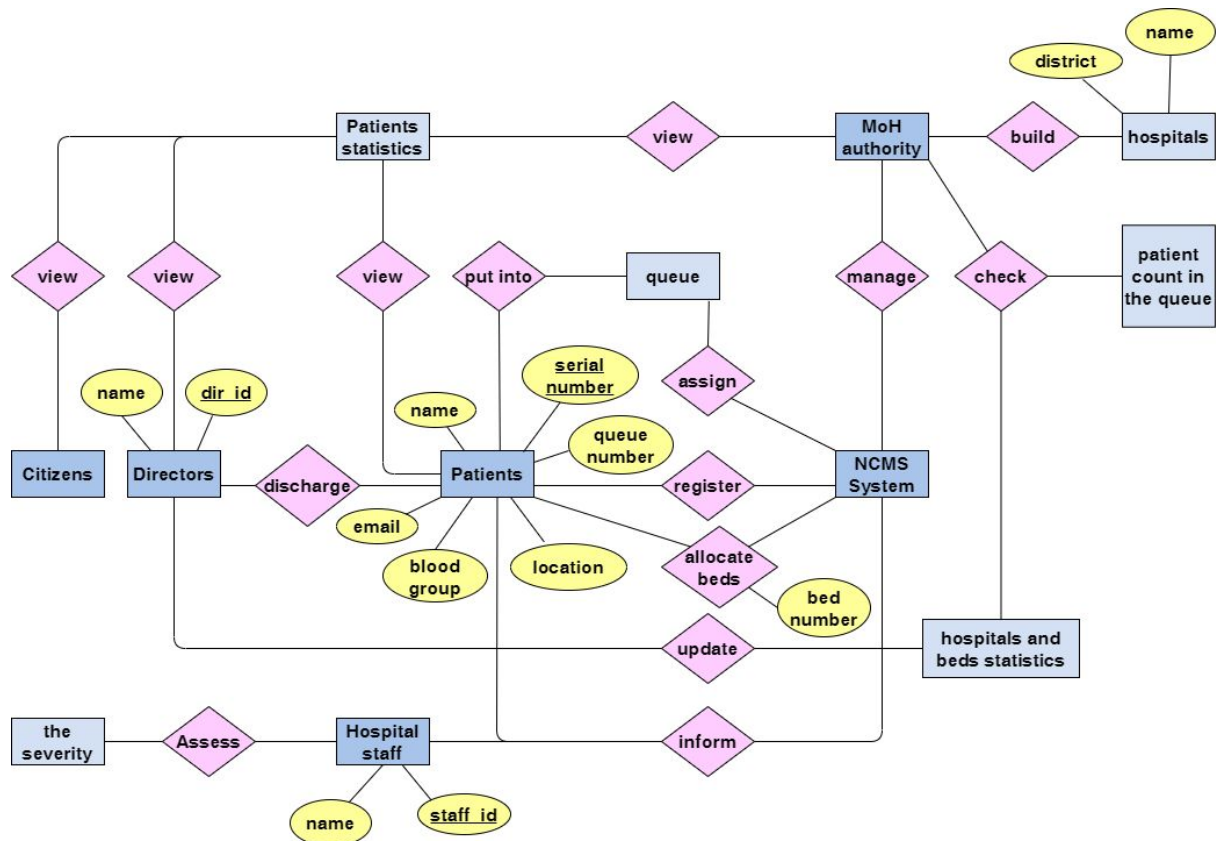


Figure 1: E-R diagram of NCMS system

Entities:

- Patients
- MoH authority
- NCMS system
- Hospital staff
- Directors
- Citizens

Relations:

- Patients register to the NCMS system.
- The NCMS system allocates beds for patients.
- The NCMS system checks hospitals and beds availability.
- The NCMS system assigns queues if beds are not available.
- Patients are put into a queue until they get a bed.
- The NCMS system checks patient count in the queue.
- NCMS systems build new hospitals if patient count exceeds the maximum.
- The NCMS system informs hospital staff providing patient details.

- The NCMS system informs patients giving his admitting details.
- Hospital staff Assess the severity.
- Directors can discharge patients when they recover.
- Directors update hospitals and beds availability daily.
- Patients view patient statistics.
- Directors view patient statistics.
- Citizens view patient statistics.
- MoH authority views patient statistics.

2.2 Use Case diagram

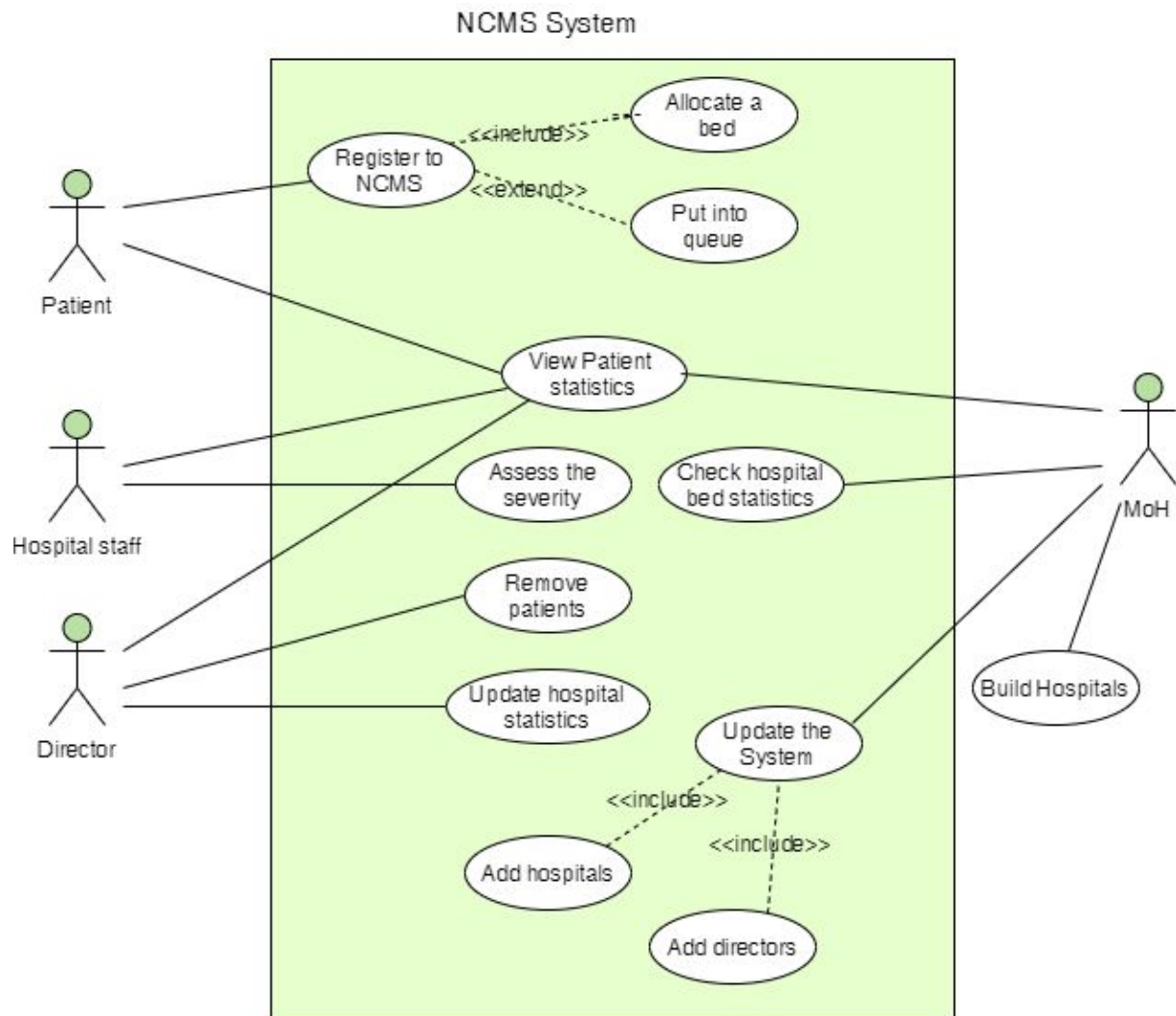


Figure 2: Use case diagram of NCMS system

2.3 Class Diagram

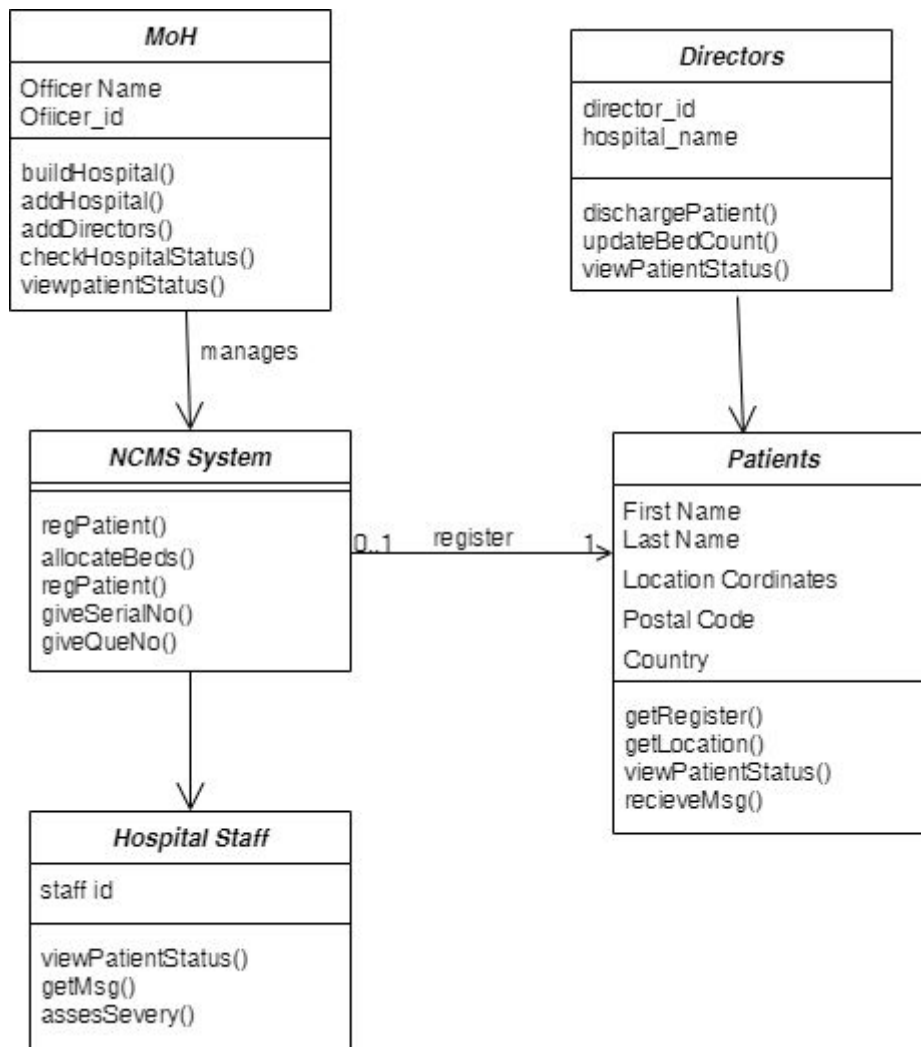


Figure 3: Class diagram of the system