DATABASE DESIGN MONASH HOSPITAL (MH) (NORMALISATION)

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Documents A:

UNF

PATIENT ADMISSION (patient_id, patient_name, admission_ datetime, supvdoctor_id, supvdoctor_name (procedure_code, procedure_name, prescdoctor_id, prescdoctor_name, doctorcarried_id, doctorcarried_name, carried_out_on, procedure_charge, (item_code, item_description, item_quantity, item_charge), totalextras_charges)

note: replacement of **requested by** doctor(doctor_id and doctor_name) by **prescribed by** doctor(prescdoctor_id and prescdoctor_name) to prevent the introduction of synonyms at full conceptual model.

1NF

PATIENT ADMISSION (patient_id, admission_datetime, patient_name, supvdoctor_id, supvdoctor_name)

Dependency diagrams:

patient_id, admission_datetime → supvdoctor_id	**FULL DEPENDENCY**
patient_id → patient_name	**PARTIAL DEPENDENCY**
supvdoctor_id → supvdoctor_name	**TRANSITIVE DEPENDENCY**

PATIENT PROCEDURE (*patient_id*, carried_out_on, *admission_ datetime*, procedure_code, procedure_name, prescdoctor_id, prescdoctor_name, doctorcarried_id, doctorcarried_name, procedure_charge, totalextras_charges)

Dependency diagrams:

patient_id, carried_out_on → procedure_code, precsdoctor_id, doctorcarried_id, procedure_charge, totalextras_charges	**FULL DEPENDENCY**
procedure_code → procedure_name	**TRANSITIVE DEPENDENCY**
prescdoctor_id → prescdoctor_name	**TRANSITIVE DEPENDENCY**
doctorcarried_id → doctorcarried_name	**TRANSITIVE DEPENDENCY**

PATIENT E_ITEM (*patient_id*, *carried_out_on*, item_code, item_description, item_quantity, item_charge)

Dependency diagrams:

patient_id, carried_out_on, item_code → item_quantity, item_charge **FULL DEPENDENCY**

item_code → item_description **PARTIAL DEPENDENCY**

2NF

PATIENT ADMISSION (*patient_id*, admission_datetime, supvdoctor_id, supvdoctor_name)
PATIENT (patient_id ,patient_name)
PATIENT PROCEDURE (*patient_id*, carried_out_on, *admission_datetime*, procedure_code, procedure_name, prescdoctor_id, prescdoctor_name, doctorcarried_id, doctorcarried_name, procedure_charge, totalextras_charges)
PATIENT E_ITEM (*patient_id*, *carried_out_on*, *item_code*, item_quantity, item_charge)
EXTRA ITEM (item_code, item_description)

3NF

PATIENT ADMISSION(*patient_id*, admission_datetime, *supvdoctor_id*)
SUPERVISING DOCTOR (supvdoctor_id, supvdoctor_name)
PATIENT (patient_id ,patient_name)
PATIENT PROCEDURE (*patient_id*, carried_out_on, *admission_datetime*, *procedure_code*, *prescdoctor_id*, *doctorcarried_id*, procedure_charge, totalextras_charges)
PROCEDURE (procedure_code, procedure_name)
PRESCRIBE DOCTOR (prescdoctor_id, prescdoctor_name)
DOCTOR CARRIEDOUT (doctorcarried_id, doctorcarried_name)
PATIENT E_ITEM (*patient_id*, *carried_out_on*, *item_code*, item_quantity, item_charge)
EXTRA ITEM (item_code, item_description)

FINAL 3NF

attribute synthesis: combining SUPERVISING DOCTOR, PRESCRIBE DOCTOR, and DOCTOR CARRIEDOUT into DOCTOR (doctor_id, doctor_name)

PATIENT ADMISSION(*patient_id*, admission_datetime, *supvdoctor_id*)
PATIENT (patient_id ,patient_name)
PATIENT PROCEDURE (*patient_id*, carried_out_on, *admission_datetime*, *procedure_code*, *prescdoctor_id*, *doctorcarried_id*, procedure_charge, totalextras_charges)
PROCEDURE (procedure_code, procedure_name)
PATIENT E_ITEM (*patient_id*, *carried_out_on*, *item_code*, item_quantity, item_charge)
EXTRA ITEM (item_code, item_description)
DOCTOR (doctor_id, doctor_name)

Documents B:

UNF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern(ward_code, ward_name, date_assigned, date_completed))

1NF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)

Dependency diagrams:

nurse_id → nurse_fname, nurse_lname, nurse_phone, cert_for_childern **FULL DEPENDENCY**

WARD ASSIGNMENT (*nurse_id*, date_assigned, ward_code, ward_name, date_completed)

Dependency diagrams:

nurse_id, date_assigned → ward_code, date_completed **FULL DEPENDENCY**

ward_code → ward_name **TRANSITIVE DEPENDENCY**

2NF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)
WARD ASSIGNMENT (*nurse_id*, date_assigned, ward_code, ward_name, date_completed)

3NF

NURSE (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)
WARD ASSIGNMENT (*nurse_id*, date_assigned, *ward_code,* date_completed)
WARD (ward_code, ward_name)

COLLECTED 3NF RELATIONS:

1. **PATIENT ADMISSION**(*patient_id*, admission_datetime, *supvdoctor_id*)
2. **PATIENT** (patient_id, patient_name)
3. **PATIENT PROCEDURE** (*patient_id*, carried_out_on, *admission_ datetime*, *procedure_code*, *prescdoctor_id*, *doctorcarried_id*, procedure_charge, totalextras_charges)
4. **PROCEDURE** (procedure_code, procedure_name)
5. **PATIENT E_ITEM** (*patient_id*, *carried_out_on*, *item_code*, item_quantity, item_charge)
6. **EXTRA ITEM** (item_code, item_description)
7. **DOCTOR** (doctor_id, doctor_name)
8. **NURSE** (nurse_id, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)
9. **WARD ASSIGNMENT** (*nurse_id*, date_assigned, *ward_code,* date_completed)
10. **WARD** (ward_code, ward_name)