DATABASE DESIGN MONASH HOSPITAL (MH) (NORMALISATION)

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Documents A:

UNF

PAT-ADMISSION (patient_id, patient_name, adm_datetime, supvdoctor_id, supvdoctor_name, (procedure_code, procedure_name, procedure_desc, reqdoctor_id, reqdoctor_name, doccarried_id, doccarried_name, carried_out_on, procedure_charge, (item_code, item_desc, item_quantity, item_charge), totalextras_charges)

1NF

PAT-ADMISSION (patient_id, adm_datetime, patient_name, supvdoctor_id, supvdoctor_name)

Dependency diagrams:
patient_id, adm_datetime → supvdoctor_id	**FULL DEPENDENCY**
patient_id → patient_name	**PARTIAL DEPENDENCY**
supvdoctor_id → supvdoctor_name	**TRANSITIVE DEPENDENCY**

PAT-PROCEDURE (_patient_id_, carried_out_on, _adm_datetime_, procedure_code, procedure_name, procedure_desc, reqdoctor_id, reqdoctor_name, doccarried_id, doccarried_name, procedure_charge, totalextras_charges)

Dependency diagrams:
patient_id, carried_out_on → procedure_code, reqdoctor_id, doccarried_id, procedure_charge, totalextras_charges	**FULL DEPENDENCY**
procedure_code → procedure_name, procedure_desc	**TRANSITIVE DEPENDENCY**
reqdoctor_id → reqdoctor_name	**TRANSITIVE DEPENDENCY**
doccarried_id → doccarried_name	**TRANSITIVE DEPENDENCY**

PAT-E-ITEM (_patient_id_, _carried_out_on_, item_code, _adm_datetime_, item_desc, item_quantity, item_charge)

Dependency diagrams:
patient_id, carried_out_on, item_code → item_quantity, item_charge	**FULL DEPENDENCY**
item_code → item_desc	**PARTIAL DEPENDENCY**

2NF

PAT-ADMISSION (*patient_id*, adm_datetime, supvdoctor_id, supvdoctor_name)
PATIENT (patient_id, patient_name)
PAT-PROCEDURE (*patient_id*, carried_out_on, *adm_datetime*, procedure_code,
        procedure_name, procedure_desc, reqdoctor_id, reqdoctor_name, doccarried_id,
        doccarried_name, procedure_charge, totalextras_charges)
PAT-E-ITEM (*patient_id*, carried_out_on, item_code, *adm_datetime*, item_quantity,
        item_charge)
E-ITEM (item_code, item_desc)

3NF

PAT-ADMISSION(*patient_id*, adm_datetime, *supvdoctor_id*)
SUPERV-DOCTOR (supvdoctor_id, supvdoctor_name)
PATIENT (patient_id, patient_name)
PAT-PROCEDURE (*patient_id*, carried_out_on, *adm_datetime*, *procedure_code*,
        reqdoctor_id, *doccarried_id*, procedure_charge, totalextras_charges)
PROCEDURE (procedure_code, procedure_name, procedure_desc)
REQ-DOCTOR (reqdoctor_id, reqdoctor_name)
DOC-CARRIEDOUT (doccarried_id, doccarried_name)
PAT-E-ITEM (*patient_id*, carried_out_on, item_code, *adm_datetime*, item_quantity,
        item_charge)
E-ITEM (item_code, item_desc)

FINAL 3NF
Attribute synthesis: combining SUPERV-DOCTOR, REQ-DOCTOR, and DOC-CARRIEDOUT into DOCTOR (doctor_id, doctor_name)

PAT-ADMISSION(*patient_id*, adm_datetime, *supvdoctor_id*)
PATIENT (patient_id, patient_name)
PAT-PROCEDURE (*patient_id*, carried_out_on, *adm_datetime*, *procedure_code*,
        reqdoctor_id, *doccarried_id*, procedure_charge, totalextras_charges)
PROCEDURE (procedure_code, procedure_name, procedure_desc)
PAT-E-ITEM (*patient_id*, carried_out_on, item_code, *adm_datetime*, item_quantity,
        item_charge)
E-ITEM (item_code, item_desc)
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 (<u>nurse_id</u>, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)

<u>Dependency diagrams:</u>
    nurse_id → nurse_fname, nurse_lname, nurse_phone,
        cert_for_childern   **FULL DEPENDENCY**

W-ASSIGNMENT (*<u>nurse_id</u>*, <u>date_assigned</u>, ward_code, ward_name, date_completed)
<u>Dependency diagrams:</u>
    nurse_id, date_assigned → ward_code, date_completed
                           FULL DEPENDENCY

    ward_code → ward_name   **TRANSITIVE DEPENDENCY**

2NF

NURSE (<u>nurse_id</u>, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)
W-ASSIGNMENT (*<u>nurse_id</u>*, <u>date_assigned</u>, ward_code, ward_name, date_completed)

3NF

NURSE (<u>nurse_id</u>, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)
W-ASSIGNMENT (*<u>nurse_id</u>*, <u>date_assigned</u>, *ward_code,* date_completed)
WARD (<u>ward_code</u>, ward_name)

COLLECTED 3NF RELATIONS:

1. **PAT-ADMISSION**(*<u>patient_id</u>*, <u>adm_datetime</u>, *supvdoctor_id*)
2. **PATIENT** (<u>patient_id</u>, patient_name)
3. **PAT-PROCEDURE** (*<u>patient_id</u>*, <u>carried_out_on</u>, *adm_datetime*, *procedure_code*, *reqdoctor_id*, *doccarried_id*, procedure_charge, totalextras_charges)
4. **PROCEDURE** (<u>procedure_code</u>, procedure_name, procedure_desc)
5. **PAT-E-ITEM** (*<u>patient_id</u>*, *<u>carried_out_on</u>*, <u>item_code</u>, *adm_datetime,* item_quantity, item_charge)
6. **E-ITEM** (<u>item_code</u>, item_desc)
7. **DOCTOR** (<u>doctor_id</u>, doctor_name)
8. **NURSE** (<u>nurse_id</u>, nurse_fname, nurse_lname, nurse_phone, cert_for_childern)
9. **W-ASSIGNMENT** (*<u>nurse_id</u>*, <u>date_assigned</u>, *ward_code,* date_completed)
10. **WARD** (<u>ward_code</u>, ward_name)