

Supervision App - Complete Technical Documentation

1. Project Overview

Objective

Replace manual supervision forms with a digital, reliable, and offline-capable app for "Supportive Supervision and Monitoring of NCD services" at Health Posts/PHC/Hospitals.

Tech Stack (Updated)

- **Frontend:** Flutter
- **Backend:** Node.js with Express
- **Database:** PostgreSQL (server) + SQLite (local)
- **Cloud Backup:** OneDrive
- **Authentication:** JWT tokens

2. User Roles & Permissions

Admin User

- User account management (CRUD)
- Full CRUD operations on synced data in PostgreSQL
- Export all data to Excel
- View sync status across all users
- System configuration

Field User (Doctor)

- CRUD operations only on local SQLite data (before sync)
- Read-only access after data is synced
- View their own submission history
- Export their own data

3. Database Design

PostgreSQL (Server Database)

3.1 Users Table

```
CREATE TABLE users (  
  id SERIAL PRIMARY KEY,  
  username VARCHAR(50) UNIQUE NOT NULL,  
  email VARCHAR(100) UNIQUE NOT NULL,  
  password_hash VARCHAR(255) NOT NULL,  
  role VARCHAR(20) NOT NULL DEFAULT 'user', -- 'admin' or 'user'  
  full_name VARCHAR(100) NOT NULL,  
  created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,  
  updated_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,  
  is_active BOOLEAN DEFAULT true  
);
```

3.2 Supervision Forms Table

```

CREATE TABLE supervision_forms (
  id SERIAL PRIMARY KEY,
  user_id INTEGER REFERENCES users(id),

  -- Basic Information
  health_facility_name VARCHAR(200) NOT NULL,
  province VARCHAR(100) NOT NULL,
  district VARCHAR(100) NOT NULL,

  -- Visit Information
  visit_1_date DATE,
  visit_2_date DATE,
  visit_3_date DATE,
  visit_4_date DATE,

  -- Metadata
  form_created_at TIMESTAMP NOT NULL,
  synced_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
  last_modified_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
  sync_status VARCHAR(20) DEFAULT 'synced', -- 'local', 'synced', 'verified'

  -- Overall observations
  supervisor_signature TEXT,
  facility_representative_signature TEXT,
  recommendations_visit_1 TEXT,
  recommendations_visit_2 TEXT,
  recommendations_visit_3 TEXT,
  recommendations_visit_4 TEXT
);

```

3.3 Administration and Management Responses

```

CREATE TABLE admin_management_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

  -- A1: Health Facility Operation Committee
  a1_visit_1 VARCHAR(1), -- 'Y' or 'N'
  a1_visit_2 VARCHAR(1),
  a1_visit_3 VARCHAR(1),
  a1_visit_4 VARCHAR(1),
  a1_comment TEXT,

  -- A2: Committee discusses NCD service provisions
  a2_visit_1 VARCHAR(1),
  a2_visit_2 VARCHAR(1),
  a2_visit_3 VARCHAR(1),
  a2_visit_4 VARCHAR(1),
  a2_comment TEXT,

  -- A3: Health facility discusses NCD quarterly
  a3_visit_1 VARCHAR(1),
  a3_visit_2 VARCHAR(1),
  a3_visit_3 VARCHAR(1),
  a3_visit_4 VARCHAR(1),
  a3_comment TEXT
);

```

3.4 Logistics Medicine Responses

```

CREATE TABLE logistics_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

```

```

-- B1: Essential NCD medicines availability
b1_visit_1 VARCHAR(1),
b1_visit_2 VARCHAR(1),
b1_visit_3 VARCHAR(1),
b1_visit_4 VARCHAR(1),
b1_comment TEXT,

-- Individual Medicine Availability (Y/N for each visit)
amlodipine_5_10mg_v1 VARCHAR(1),
amlodipine_5_10mg_v2 VARCHAR(1),
amlodipine_5_10mg_v3 VARCHAR(1),
amlodipine_5_10mg_v4 VARCHAR(1),

enalapril_2_5_10mg_v1 VARCHAR(1),
enalapril_2_5_10mg_v2 VARCHAR(1),
enalapril_2_5_10mg_v3 VARCHAR(1),
enalapril_2_5_10mg_v4 VARCHAR(1),

losartan_25_50mg_v1 VARCHAR(1),
losartan_25_50mg_v2 VARCHAR(1),
losartan_25_50mg_v3 VARCHAR(1),
losartan_25_50mg_v4 VARCHAR(1),

hydrochlorothiazide_12_5_25mg_v1 VARCHAR(1),
hydrochlorothiazide_12_5_25mg_v2 VARCHAR(1),
hydrochlorothiazide_12_5_25mg_v3 VARCHAR(1),
hydrochlorothiazide_12_5_25mg_v4 VARCHAR(1),

chlorthalidone_6_25_12_5mg_v1 VARCHAR(1),
chlorthalidone_6_25_12_5mg_v2 VARCHAR(1),
chlorthalidone_6_25_12_5mg_v3 VARCHAR(1),
chlorthalidone_6_25_12_5mg_v4 VARCHAR(1),

-- Other antihypertensive medications
atorvastatin_5mg_v1 VARCHAR(1),
atorvastatin_5mg_v2 VARCHAR(1),
atorvastatin_5mg_v3 VARCHAR(1),
atorvastatin_5mg_v4 VARCHAR(1),

atorvastatin_10mg_v1 VARCHAR(1),
atorvastatin_10mg_v2 VARCHAR(1),
atorvastatin_10mg_v3 VARCHAR(1),
atorvastatin_10mg_v4 VARCHAR(1),

atorvastatin_20mg_v1 VARCHAR(1),
atorvastatin_20mg_v2 VARCHAR(1),
atorvastatin_20mg_v3 VARCHAR(1),
atorvastatin_20mg_v4 VARCHAR(1),

other_statins_v1 VARCHAR(1),
other_statins_v2 VARCHAR(1),
other_statins_v3 VARCHAR(1),
other_statins_v4 VARCHAR(1),

metformin_500mg_v1 VARCHAR(1),
metformin_500mg_v2 VARCHAR(1),
metformin_500mg_v3 VARCHAR(1),
metformin_500mg_v4 VARCHAR(1),

metformin_1000mg_v1 VARCHAR(1),
metformin_1000mg_v2 VARCHAR(1),
metformin_1000mg_v3 VARCHAR(1),
metformin_1000mg_v4 VARCHAR(1),

glimeniride_1_2mg_v1 VARCHAR(1).

```

```
glimepiride_1_2mg_v2 VARCHAR(1),
glimepiride_1_2mg_v3 VARCHAR(1),
glimepiride_1_2mg_v4 VARCHAR(1),
```

```
gliclazide_40_80mg_v1 VARCHAR(1),
gliclazide_40_80mg_v2 VARCHAR(1),
gliclazide_40_80mg_v3 VARCHAR(1),
gliclazide_40_80mg_v4 VARCHAR(1),
```

```
glipizide_2_5_5mg_v1 VARCHAR(1),
glipizide_2_5_5mg_v2 VARCHAR(1),
glipizide_2_5_5mg_v3 VARCHAR(1),
glipizide_2_5_5mg_v4 VARCHAR(1),
```

```
sitagliptin_50mg_v1 VARCHAR(1),
sitagliptin_50mg_v2 VARCHAR(1),
sitagliptin_50mg_v3 VARCHAR(1),
sitagliptin_50mg_v4 VARCHAR(1),
```

```
pioglitazone_5mg_v1 VARCHAR(1),
pioglitazone_5mg_v2 VARCHAR(1),
pioglitazone_5mg_v3 VARCHAR(1),
pioglitazone_5mg_v4 VARCHAR(1),
```

```
empagliflozin_10mg_v1 VARCHAR(1),
empagliflozin_10mg_v2 VARCHAR(1),
empagliflozin_10mg_v3 VARCHAR(1),
empagliflozin_10mg_v4 VARCHAR(1),
```

```
insulin_soluble_v1 VARCHAR(1),
insulin_soluble_v2 VARCHAR(1),
insulin_soluble_v3 VARCHAR(1),
insulin_soluble_v4 VARCHAR(1),
```

```
insulin_nph_v1 VARCHAR(1),
insulin_nph_v2 VARCHAR(1),
insulin_nph_v3 VARCHAR(1),
insulin_nph_v4 VARCHAR(1),
```

```
other_hypoglycemic_agents_v1 VARCHAR(1),
other_hypoglycemic_agents_v2 VARCHAR(1),
other_hypoglycemic_agents_v3 VARCHAR(1),
other_hypoglycemic_agents_v4 VARCHAR(1),
```

```
dextrose_25_solution_v1 VARCHAR(1),
dextrose_25_solution_v2 VARCHAR(1),
dextrose_25_solution_v3 VARCHAR(1),
dextrose_25_solution_v4 VARCHAR(1),
```

```
aspirin_75mg_v1 VARCHAR(1),
aspirin_75mg_v2 VARCHAR(1),
aspirin_75mg_v3 VARCHAR(1),
aspirin_75mg_v4 VARCHAR(1),
```

```
clopidogrel_75mg_v1 VARCHAR(1),
clopidogrel_75mg_v2 VARCHAR(1),
clopidogrel_75mg_v3 VARCHAR(1),
clopidogrel_75mg_v4 VARCHAR(1),
```

```
metoprolol_succinate_12_5_25_50mg_v1 VARCHAR(1),
metoprolol_succinate_12_5_25_50mg_v2 VARCHAR(1),
metoprolol_succinate_12_5_25_50mg_v3 VARCHAR(1),
metoprolol_succinate_12_5_25_50mg_v4 VARCHAR(1),
```

```
isosorbide_dinitrate_5mg_v1 VARCHAR(1),
```

```

isosorbide_dinitrate_5mg_v2 VARCHAR(1),
isosorbide_dinitrate_5mg_v3 VARCHAR(1),
isosorbide_dinitrate_5mg_v4 VARCHAR(1),

other_drugs_v1 VARCHAR(1),
other_drugs_v2 VARCHAR(1),
other_drugs_v3 VARCHAR(1),
other_drugs_v4 VARCHAR(1),

-- B2: Blood glucometer functioning
b2_visit_1 VARCHAR(1),
b2_visit_2 VARCHAR(1),
b2_visit_3 VARCHAR(1),
b2_visit_4 VARCHAR(1),
b2_comment TEXT,

-- B3: Urine protein strips
b3_visit_1 VARCHAR(1),
b3_visit_2 VARCHAR(1),
b3_visit_3 VARCHAR(1),
b3_visit_4 VARCHAR(1),
b3_comment TEXT,

-- B4: Urine ketone strips
b4_visit_1 VARCHAR(1),
b4_visit_2 VARCHAR(1),
b4_visit_3 VARCHAR(1),
b4_visit_4 VARCHAR(1),
b4_comment TEXT,

-- B5: Essential equipment availability
b5_visit_1 VARCHAR(1),
b5_visit_2 VARCHAR(1),
b5_visit_3 VARCHAR(1),
b5_visit_4 VARCHAR(1),
b5_comment TEXT
);

```

3.5 Equipment Responses

```

CREATE TABLE equipment_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

  -- Equipment availability (Y/N for each visit)
  sphgmomanometer_v1 VARCHAR(1),
  sphgmomanometer_v2 VARCHAR(1),
  sphgmomanometer_v3 VARCHAR(1),
  sphgmomanometer_v4 VARCHAR(1),

  weighing_scale_v1 VARCHAR(1),
  weighing_scale_v2 VARCHAR(1),
  weighing_scale_v3 VARCHAR(1),
  weighing_scale_v4 VARCHAR(1),

  measuring_tape_v1 VARCHAR(1),
  measuring_tape_v2 VARCHAR(1),
  measuring_tape_v3 VARCHAR(1),
  measuring_tape_v4 VARCHAR(1),

  peak_expiratory_flow_meter_v1 VARCHAR(1),
  peak_expiratory_flow_meter_v2 VARCHAR(1),
  peak_expiratory_flow_meter_v3 VARCHAR(1),
  peak_expiratory_flow_meter_v4 VARCHAR(1),

```

```

oxygen_v1 VARCHAR(1),
oxygen_v2 VARCHAR(1),
oxygen_v3 VARCHAR(1),
oxygen_v4 VARCHAR(1),

oxygen_mask_v1 VARCHAR(1),
oxygen_mask_v2 VARCHAR(1),
oxygen_mask_v3 VARCHAR(1),
oxygen_mask_v4 VARCHAR(1),

nebulizer_v1 VARCHAR(1),
nebulizer_v2 VARCHAR(1),
nebulizer_v3 VARCHAR(1),
nebulizer_v4 VARCHAR(1),

pulse_oximetry_v1 VARCHAR(1),
pulse_oximetry_v2 VARCHAR(1),
pulse_oximetry_v3 VARCHAR(1),
pulse_oximetry_v4 VARCHAR(1),

glucometer_v1 VARCHAR(1),
glucometer_v2 VARCHAR(1),
glucometer_v3 VARCHAR(1),
glucometer_v4 VARCHAR(1),

glucometer_strips_v1 VARCHAR(1),
glucometer_strips_v2 VARCHAR(1),
glucometer_strips_v3 VARCHAR(1),
glucometer_strips_v4 VARCHAR(1),

lancets_v1 VARCHAR(1),
lancets_v2 VARCHAR(1),
lancets_v3 VARCHAR(1),
lancets_v4 VARCHAR(1),

urine_dipstick_v1 VARCHAR(1),
urine_dipstick_v2 VARCHAR(1),
urine_dipstick_v3 VARCHAR(1),
urine_dipstick_v4 VARCHAR(1),

ecg_v1 VARCHAR(1),
ecg_v2 VARCHAR(1),
ecg_v3 VARCHAR(1),
ecg_v4 VARCHAR(1),

other_equipment_v1 VARCHAR(1),
other_equipment_v2 VARCHAR(1),
other_equipment_v3 VARCHAR(1),
other_equipment_v4 VARCHAR(1)
);

```

3.6 MHDC NCD Management Responses

```

CREATE TABLE mhdc_management_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

  -- B6: MHDC NCD management leaflets
  b6_visit_1 VARCHAR(1),
  b6_visit_2 VARCHAR(1),
  b6_visit_3 VARCHAR(1),
  b6_visit_4 VARCHAR(1),
  b6_comment TEXT,

  -- B7: NCD awareness materials
  b7_visit_1 VARCHAR(1),
  b7_visit_2 VARCHAR(1),
  b7_visit_3 VARCHAR(1),
  b7_visit_4 VARCHAR(1),
  b7_comment TEXT,

  -- B8: NCD register availability
  b8_visit_1 VARCHAR(1),
  b8_visit_2 VARCHAR(1),
  b8_visit_3 VARCHAR(1),
  b8_visit_4 VARCHAR(1),
  b8_comment TEXT,

  -- B9: WHO-ISH CVD Risk Prediction Chart
  b9_visit_1 VARCHAR(1),
  b9_visit_2 VARCHAR(1),
  b9_visit_3 VARCHAR(1),
  b9_visit_4 VARCHAR(1),
  b9_comment TEXT,

  -- B10: WHO-ISH CVD Risk Chart in use
  b10_visit_1 VARCHAR(1),
  b10_visit_2 VARCHAR(1),
  b10_visit_3 VARCHAR(1),
  b10_visit_4 VARCHAR(1),
  b10_comment TEXT
);

```

3.7 NCD Service Delivery Responses

```

CREATE TABLE service_delivery_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

  -- C1: Health Workers trained on NCDs
  designation VARCHAR(50),
  total_staff INTEGER,
  mhdc_trained INTEGER,
  fen_trained INTEGER,
  other_ncd_trained INTEGER
);

```

3.8 NCD Service Standards Responses

```

CREATE TABLE service_standards_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

  -- C2: Blood pressure measurement (40 y/o and at risk)
  c2_blood_pressure_v1 VARCHAR(1),
  c2_blood_pressure_v2 VARCHAR(1),

```

```

c2_blood_pressure_v3 VARCHAR(1),
c2_blood_pressure_v4 VARCHAR(1),

-- C2: Blood sugar measurement
c2_blood_sugar_v1 VARCHAR(1),
c2_blood_sugar_v2 VARCHAR(1),
c2_blood_sugar_v3 VARCHAR(1),
c2_blood_sugar_v4 VARCHAR(1),

-- C2: BMI measurement
c2_bmi_v1 VARCHAR(1),
c2_bmi_v2 VARCHAR(1),
c2_bmi_v3 VARCHAR(1),
c2_bmi_v4 VARCHAR(1),

-- C2: Waist circumference
c2_waist_v1 VARCHAR(1),
c2_waist_v2 VARCHAR(1),
c2_waist_v3 VARCHAR(1),
c2_waist_v4 VARCHAR(1),

-- C2: CVD risk estimation
c2_cvd_risk_v1 VARCHAR(1),
c2_cvd_risk_v2 VARCHAR(1),
c2_cvd_risk_v3 VARCHAR(1),
c2_cvd_risk_v4 VARCHAR(1),

-- C2: Urine protein measurement
c2_urine_protein_v1 VARCHAR(1),
c2_urine_protein_v2 VARCHAR(1),
c2_urine_protein_v3 VARCHAR(1),
c2_urine_protein_v4 VARCHAR(1),

-- C2: Peak Expiratory Flow Rate for COPD
c2_peak_flow_v1 VARCHAR(1),
c2_peak_flow_v2 VARCHAR(1),
c2_peak_flow_v3 VARCHAR(1),
c2_peak_flow_v4 VARCHAR(1),

-- C2: eGFR calculation
c2_egfr_v1 VARCHAR(1),
c2_egfr_v2 VARCHAR(1),
c2_egfr_v3 VARCHAR(1),
c2_egfr_v4 VARCHAR(1),

-- C2: Brief intervention for tobacco/alcohol cessation
c2_brief_intervention_v1 VARCHAR(1),
c2_brief_intervention_v2 VARCHAR(1),
c2_brief_intervention_v3 VARCHAR(1),
c2_brief_intervention_v4 VARCHAR(1),

-- Diabetes specific services
c2_foot_examination_v1 VARCHAR(1),
c2_foot_examination_v2 VARCHAR(1),
c2_foot_examination_v3 VARCHAR(1),
c2_foot_examination_v4 VARCHAR(1),

c2_oral_examination_v1 VARCHAR(1),
c2_oral_examination_v2 VARCHAR(1),
c2_oral_examination_v3 VARCHAR(1),
c2_oral_examination_v4 VARCHAR(1),

c2_eye_examination_v1 VARCHAR(1),
c2_eye_examination_v2 VARCHAR(1),
c2_eye_examination_v3 VARCHAR(1),
c2_eye_examination_v4 VARCHAR(1).

```



```

c2_health_education_v1 VARCHAR(1),
c2_health_education_v2 VARCHAR(1),
c2_health_education_v3 VARCHAR(1),
c2_health_education_v4 VARCHAR(1),

-- C3: Examination room confidentiality
c3_visit_1 VARCHAR(1),
c3_visit_2 VARCHAR(1),
c3_visit_3 VARCHAR(1),
c3_visit_4 VARCHAR(1),
c3_comment TEXT,

-- C4: Home-bound NCD services
c4_visit_1 VARCHAR(1),
c4_visit_2 VARCHAR(1),
c4_visit_3 VARCHAR(1),
c4_visit_4 VARCHAR(1),
c4_comment TEXT,

-- C5: Community-based NCD care
c5_visit_1 VARCHAR(1),
c5_visit_2 VARCHAR(1),
c5_visit_3 VARCHAR(1),
c5_visit_4 VARCHAR(1),
c5_comment TEXT,

-- C6: School-based NCD prevention
c6_visit_1 VARCHAR(1),
c6_visit_2 VARCHAR(1),
c6_visit_3 VARCHAR(1),
c6_visit_4 VARCHAR(1),
c6_comment TEXT,

-- C7: Patient tracking mechanism
c7_visit_1 VARCHAR(1),
c7_visit_2 VARCHAR(1),
c7_visit_3 VARCHAR(1),
c7_visit_4 VARCHAR(1),
c7_comment TEXT
);

```

3.9 Health Information Responses

```

CREATE TABLE health_information_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

  -- D1: NCD OPD register updated
  d1_visit_1 VARCHAR(1),
  d1_visit_2 VARCHAR(1),
  d1_visit_3 VARCHAR(1),
  d1_visit_4 VARCHAR(1),
  d1_comment TEXT,

  -- D2: NCD dashboard updated
  d2_visit_1 VARCHAR(1),
  d2_visit_2 VARCHAR(1),
  d2_visit_3 VARCHAR(1),
  d2_visit_4 VARCHAR(1),
  d2_comment TEXT,

  -- D3: Monthly reporting
  d3_visit_1 VARCHAR(1),
  d3_visit_2 VARCHAR(1),
  d3_visit_3 VARCHAR(1),
  d3_visit_4 VARCHAR(1),
  d3_comment TEXT,

  -- D4: Number of people seeking NCD services
  d4_visit_1 VARCHAR(1),
  d4_visit_2 VARCHAR(1),
  d4_visit_3 VARCHAR(1),
  d4_visit_4 VARCHAR(1),
  d4_comment TEXT,

  -- D5: Dedicated healthcare worker for NCD
  d5_visit_1 VARCHAR(1),
  d5_visit_2 VARCHAR(1),
  d5_visit_3 VARCHAR(1),
  d5_visit_4 VARCHAR(1),
  d5_comment TEXT
);

```

3.10 Integration Responses

```
CREATE TABLE integration_responses (
  id SERIAL PRIMARY KEY,
  form_id INTEGER REFERENCES supervision_forms(id) ON DELETE CASCADE,

  -- E1: Health workers aware of PEN programme
  e1_visit_1 VARCHAR(1),
  e1_visit_2 VARCHAR(1),
  e1_visit_3 VARCHAR(1),
  e1_visit_4 VARCHAR(1),
  e1_comment TEXT,

  -- E2: Health education on tobacco, alcohol, diet, physical activity
  e2_visit_1 VARCHAR(1),
  e2_visit_2 VARCHAR(1),
  e2_visit_3 VARCHAR(1),
  e2_visit_4 VARCHAR(1),
  e2_comment TEXT,

  -- E3: Screening for raised blood pressure and blood sugar
  e3_visit_1 VARCHAR(1),
  e3_visit_2 VARCHAR(1),
  e3_visit_3 VARCHAR(1),
  e3_visit_4 VARCHAR(1),
  e3_comment TEXT
);
```

3.11 Sync Status Tracking

```
CREATE TABLE sync_logs (
  id SERIAL PRIMARY KEY,
  user_id INTEGER REFERENCES users(id),
  form_id INTEGER REFERENCES supervision_forms(id),
  sync_type VARCHAR(20), -- 'create', 'update', 'delete'
  sync_timestamp TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
  device_id VARCHAR(100),
  sync_status VARCHAR(20) DEFAULT 'completed', -- 'pending', 'completed', 'failed'
  error_message TEXT
);
```

SQLite (Local Database)

The SQLite database will mirror the PostgreSQL structure but with additional fields for local tracking:

Additional Fields for Local Tables

```
-- Add these fields to each table in SQLite
local_id INTEGER PRIMARY KEY AUTOINCREMENT,
server_id INTEGER, -- Maps to PostgreSQL id after sync
is_synced BOOLEAN DEFAULT 0,
needs_sync BOOLEAN DEFAULT 1,
local_created_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
local_modified_at TIMESTAMP DEFAULT CURRENT_TIMESTAMP,
deleted_locally BOOLEAN DEFAULT 0
```

4. API Endpoints

4.1 Authentication Endpoints

```
POST /api/auth/login
POST /api/auth/refresh
POST /api/auth/logout
```

4.2 User Management (Admin Only)

```
GET /api/users - List all users
POST /api/users - Create new user
PUT /api/users/:id - Update user
DELETE /api/users/:id - Delete user
GET /api/users/:id - Get user details
```

4.3 Supervision Forms

```
GET /api/forms - Get forms (filtered by user role)
POST /api/forms - Create new form
PUT /api/forms/:id - Update form (only if not synced for users)
DELETE /api/forms/:id - Delete form (only if not synced for users)
GET /api/forms/:id - Get specific form
```

4.4 Sync Endpoints

```
POST /api/sync/upload - Bulk upload from mobile
GET /api/sync/download - Download updates for mobile
POST /api/sync/status - Update sync status
GET /api/sync/logs - Get sync history
```

4.5 Export Endpoints

```
GET /api/export/excel - Export to Excel
GET /api/export/excel/:user_id - Export user-specific data
```

4.6 OneDrive Integration

```
POST /api/backup/onedrive - Trigger OneDrive backup
GET /api/backup/status - Check backup status
```

5. Flutter App Structure

5.1 Key Packages Required

```
dependencies:
  flutter:
    sdk: flutter
  sqflite: ^2.3.0 # Local SQLite database
  http: ^1.1.0 # API calls
  shared_preferences: ^2.2.2 # Local storage
  connectivity_plus: ^5.0.1 # Network connectivity
  excel: ^4.0.2 # Excel export
  path_provider: ^2.1.1 # File system access
  flutter_secure_storage: ^9.0.0 # Secure token storage
  provider: ^6.1.1 # State management
  intl: ^0.19.0 # Date formatting
```

5.2 App Structure

```
lib/ ├── main.dart ├── models/ ├── user.dart ├── supervision_form.dart ├── form_responses.dart ├── sync_status.dart ├── services/ ├──
database_service.dart ├── api_service.dart ├── sync_service.dart ├── auth_service.dart ├── export_service.dart ├── screens/ ├── login_screen.dart ├──
home_screen.dart ├── form_list_screen.dart ├── form_entry_screen.dart ├── form_sections/ ├── ├── admin_management_section.dart ├── ├──
logistics_section.dart ├── ├── equipment_section.dart ├── ├── service_delivery_section.dart ├── ├── service_standards_section.dart ├── ├── health_info_section.dart
| | ├── integration_section.dart ├── sync_screen.dart ├── admin/ ├── user_management_screen.dart ├── data_management_screen.dart ├──
export_screen.dart ├── widgets/ ├── custom_form_field.dart ├── yes_no_radio.dart ├── sync_indicator.dart ├── form_section_header
```