PALMED Mobile Clinic ERP System

User Requirements Specification (URS)

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Project: Police Medical Aid Scheme (PALMED) Mobile Clinic Electronic Patient Management System
Status: Draft - Requires Additional Requirements Gathering

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1. EXECUTIVE SUMMARY

1.1 Project Overview

PALMED (Police Medical Aid Scheme) requires an Electronic Patient Management System (ERP) to support mobile clinic operations delivering healthcare services to police personnel and their families across South Africa. The system will serve a member base of 200,000 principal members with approximately 500,000 total beneficiaries.

1.2 Business Context

- **Client:** Police Medical Aid Scheme (PALMED)
- **Service Model:** Mobile clinic deployed via horse-and-trailer configuration
- **Target Population:** 500,000 potential beneficiaries
- **Coverage:** Initially 3 provinces, expanding nationwide
- **Delivery Timeline:** Proof of Concept by end of October 2025

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2. SYSTEM SCOPE AND OBJECTIVES

2.1 Primary Objectives

- Enable comprehensive patient data collection and management in mobile clinic environment
- Support offline operations in rural areas with intermittent connectivity
- Ensure POPI Act compliance and data confidentiality
- Integrate with existing PALMED member databases
- Facilitate route planning and appointment scheduling
- Manage medical assets and consumables inventory

2.2 System Components

1. **Electronic Patient Management System**
2. **Route Planning and Scheduling Module**
3. **Inventory Management System**
4. **User Access Control and Permissions**
5. **Integration Interface with PALMED Systems**

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3. USER ROLES AND PERMISSIONS

3.1 User Categories

3.1.1 Administrators

- **Access Level:** Full system access
- **Responsibilities:** System configuration, user management, data oversight
- **Users:** Project management team

3.1.2 Doctors

- **Access Level:** Full patient data access within assigned geographic area
- **Responsibilities:** Patient diagnosis, treatment plans, file closure
- **Registration Requirements:** MP (Medical Practice) number validation
- **Geographic Restrictions:** Access limited to assigned province/locality

3.1.3 Nurses

- **Access Level:** Patient vitals and medical history
- **Responsibilities:** Vital signs recording, medical screening data entry
- **Restrictions:** No access to doctor's notes

3.1.4 Clerks

- **Access Level:** Patient registration and appointment scheduling only
- **Responsibilities:** Patient check-in, demographic data capture, appointment booking
- **Restrictions:** No access to clinical data

3.1.5 Social Workers/Counselors

- **Access Level:** Counseling records and mental health assessments

- **Responsibilities:** Mental health screening, psychosocial counseling documentation

- **Restrictions:** No access to clinical medical data

3.2 User Management Requirements

- Self-registration capability for doctors with administrative approval

- Geographic access controls (geo-fencing)

- Role-based permissions matrix

- Audit trail for all user activities

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4. FUNCTIONAL REQUIREMENTS

4.1 Patient Management System

4.1.1 Patient Registration

- **Data Fields Required:**
  - Full name

  - Physical address

  - Telephone number

  - Email address (optional)

  - Medical aid number

- **Integration Requirement:** Auto-populate from PALMED member database using medical aid number

- **New Patient Handling:** Support for non-members and dependents

4.1.2 Clinical Workflow

1. **Clerk Registration:** Initial patient check-in and data capture

2. **Nursing Assessment:** Vital signs recording, chronic illness screening

3. **Doctor Consultation:** Diagnosis, treatment notes, prescription management

4. **Counseling Session:** Mental health assessment and support (mandatory)

5. **File Closure:** Final review and referral processing

4.1.3 Medical Data Collection

- **Vital Signs:** Blood pressure, temperature, weight, height, pulse

- **Medical History:** Chronic conditions, current medications, allergies

- **Diagnostic Equipment Integration:** Support for medical device data input

- **Clinical Notes:** Free-text entry with structured templates

- **Mental Health Screening:** Standardized assessment tools

4.2 Route Planning and Scheduling

4.2.1 Route Management

- **Geographic Coverage:** Mobile clinic deployment across all provinces of South Africa

- **Primary Locations:** Police stations as main docking points

- **Secondary Locations:** Schools and community centers for Corporate Social Investment (CSI) initiatives

- **Route Creation:** System must allow logging and creation of routes within the application

- **Location Documentation:** Each route must specify exact location (e.g., "Durban Central Police Station")

- **Scheduling Integration:** Route creation automatically enables appointment booking for that location and date

4.2.2 Route-Based Appointment System

- **Automatic Scheduling Availability:** When a route is created (e.g., "Durban for police parade and roadshow on 1st September"), the system must automatically open appointment slots for that date and location

- **Public Booking Interface:** Patients/stakeholders can book specific time slots (e.g., 10:00, 10:30) for screenings at designated locations

- **Route-Appointment Linkage:** Appointment booking directly tied to route planning - no route means no booking availability

- **Time Slot Management:** Configurable appointment durations and intervals

- **Capacity Management:** Maximum appointments per location per day

- **Location-Specific Booking:** Appointments tied to specific geographic locations and dates

4.3 Inventory Management System

4.3.1 Asset Management

- Medical equipment tracking by serial number

- Equipment status monitoring (operational/broken/repair needed)

- Asset register integration

- Maintenance scheduling alerts

4.3.2 Consumables Management

- **Pharmaceutical Products:** Batch tracking, expiration monitoring

- **Medical Supplies:** Usage tracking, stock level monitoring

- **Traceability Requirements:**
  - Supplier information

  - Loading date onto mobile clinic

  - Expiration dates

  - Usage by location and date

  - Remaining inventory levels

4.3.3 Inventory Alerts and Reporting

- Three-month advance expiration warnings

- Automatic decommissioning recommendations

- Stock level alerts

- Usage reports by location and date

- Waste management tracking

4.4 Referral System

- Integration with PALMED doctor network

- Automated referral processing based on diagnosis

- Protocol-driven care pathways (pregnancy, HIV, TB, etc.)

- Specialist appointment coordination

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5. NON-FUNCTIONAL REQUIREMENTS

5.1 Performance Requirements

- **User Capacity:** Support up to 500,000 patient records

- **Concurrent Users:** Minimum 10 simultaneous users per mobile clinic

- **Response Time:** Maximum 3 seconds for data retrieval

- **Data Sync:** Automatic synchronization when connectivity restored

5.2 Offline Capability

- **Critical Requirement:** Full offline functionality in rural areas

- **Data Storage:** Local data persistence during connectivity outages

- **Synchronization:** Automatic data sync upon network restoration

- **Conflict Resolution:** Automated handling of data conflicts

5.3 Security and Compliance

- **POPI Act Compliance:** Full adherence to Protection of Personal Information Act

- **Data Encryption:** End-to-end encryption for all patient data

- **Access Controls:** Multi-factor authentication for sensitive roles

- **Audit Logging:** Complete audit trail of all system activities

- **Data Backup:** Automated backup and disaster recovery procedures

5.4 Integration Requirements

- **PALMED Systems:** API integration with existing member databases

- **Platform TBD:** Specific integration platform to be confirmed by PALMED steering committee

- **Data Exchange:** Bi-directional data flow for member verification and clinical updates

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6. SYSTEM ARCHITECTURE REQUIREMENTS

6.1 Platform Requirements

- **Device Support:** System-provided devices (specifications TBD)

- **Offline-First Design:** Primary requirement for rural deployment

- **Budget Constraints:** Cost-effective solution within allocated POC budget

- **Deployment Model:** To be determined based on device specifications and connectivity requirements

6.2 Technical Specifications

- **Data Storage:** Local and cloud-based hybrid storage

- **Connectivity:** Support for intermittent network conditions

- **Device Management:** Centralized device configuration and updates

- **Backup Systems:** Redundant data protection mechanisms

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7. CONSTRAINTS AND ASSUMPTIONS

7.1 Project Constraints

- **Timeline:** POC delivery by end of October 2025

- **Budget:** Fixed budget allocation (specific amount not disclosed)

- **Geographic Scope:** Initially 3 provinces, expanding based on success

- **Regulatory:** Must comply with South African healthcare regulations

7.2 Technical Assumptions

- Device specifications to be provided by project team

- Network connectivity will be intermittent in rural areas

- PALMED will approve specific integration platform

- Medical staff will receive appropriate system training

7.3 Business Assumptions

- Mobile clinic will operate according to defined schedule

- Medical staff availability as planned

- PALMED member cooperation for data integration

- Regulatory approvals will be obtained as needed

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8. OUTSTANDING REQUIREMENTS

8.1 Critical Information Gaps

The following requirements need additional clarification through stakeholder interviews:

1. **Specific data fields** for each user role beyond those mentioned

2. **Detailed workflow processes** for each clinical station

3. **Integration specifications** for PALMED systems

4. **Device specifications** and technical requirements

5. **Regulatory compliance** details beyond POPI Act

6. **Backup and disaster recovery** specific requirements

7. **Reporting requirements** for management and regulatory purposes

8. **Performance benchmarks** and service level agreements

8.2 Recommended Next Steps

1. Conduct detailed requirements gathering workshops with each user role

2. Document current PALMED system architecture for integration planning

3. Define technical specifications for mobile clinic devices

4. Establish detailed data governance and security protocols

5. Create comprehensive test scenarios for offline functionality

6. Develop detailed project timeline with sprint-based deliverables

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9. ACCEPTANCE CRITERIA

9.1 System Functionality

- All user roles can successfully complete their assigned tasks

- Offline mode operates without data loss

- Integration with PALMED systems functions correctly

- All regulatory compliance requirements are met

9.2 Performance Standards

- System supports 500,000 patient records without performance degradation

- Offline-to-online synchronization completes within acceptable timeframes

- All user interface elements respond within specified time limits

9.3 Security Validation

- POPI Act compliance verified through security audit

- Access controls function as specified

- Data encryption operates correctly across all system components

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This URS represents the initial requirements gathering based on the August 29, 2025 scoping meeting.

Additional detailed requirements gathering is essential before development commencement.