**LifeCare Connect: Feature Specification Document**

*A mobile software to support Community Health Workers (CHWs), Patients, and Supervisors in delivering and managing high-quality antenatal and postnatal care.*

**1. App Objectives**

1. Improve antenatal and postnatal care delivery in rural and hard-to-reach areas.
2. Support CHWs with tools for tracking, managing, and referring maternal and child health cases.
3. Enable timely communication between CHWs, mothers, and healthcare professionals.
4. Promote evidence-based practices and patient education.
5. Empower patients (pregnant and postpartum women) to track their own health, appointments, and receive education and support directly through the app.
6. Enable supervisors to monitor CHW performance, approve referrals, and track maternal and child health trends in real-time.

**2. Target Users**

**Primary:** Community Health Workers (CHWs), Pregnant and Postpartum Women (Patients) and supervisors

**Secondary:** Pregnant and postpartum women, Supervisors, Health Facilities, NGOs

**3. Core Modules & Features**

A. User Registration & Authentication

* HWs login via unique ID
* Supervisor/admin dashboard login
* Role-based access controls
* Patient Login via phone number or OTP (Make it as flexible as possible)

**B. Patient Registration & Health Records**

* New patient registration with personal info, LMP, EDD, gravidity/parity
* Antenatal visit logs (BP, weight, symptoms, lab tests)
* Postnatal follow-up tracking (up to 6 weeks postpartum)
* Vaccination tracking for newborns

**For Patients:**

* Patients can securely view their health records, track pregnancy milestones, and update self-reported symptoms or concerns
* Simplified patient view for health summaries and follow-up tracking

**C. Antenatal & Postnatal Care Checklists**

* WHO/FGN-approved antenatal and postnatal care protocols
* Automated prompts for danger signs and complications (e.g., anemia, pre-eclampsia)
* Guidance for when to refer cases
* Patients can access a simplified version of ANC/PNC checklists to track personal care and what to expect per visit

**For patients:**

* Access to daily health tips, pregnancy advice, and interactive learning modules
* Educational content (if possible delivered in local languages), with text/audio formats

**D. Appointment & Reminder System**

* Set and view upcoming visits
* SMS/WhatsApp reminders for mothers
* CHW task calendar
* Patients receive automatic alerts for appointments, medications, supplements, and child immunization schedules

**E. Health Education & Counseling Tools**

* Local language educational videos, audios, infographics
* Daily health tips for mothers
* CHW counseling script library (e.g., nutrition, birth preparedness)

**F. Referral and Teleconsultation**

* Digital referral slips (print or share via phone)
* Option for video/audio calls to healthcare experts (telemedicine)
* Emergency referral flagging
* Patients can view referral status, receive notifications, and engage in secure teleconsultations when needed

**G. Data Syncing & Offline Mode**

* Work offline and sync when internet is available
* Data encryption during sync

**H. Reporting and Monitoring**

* Auto-generated monthly reports (visits, referrals, outcomes)
* Supervisor dashboard to track CHW performance
* Exportable data for monitoring and evaluation
* Patients can view personal health history summaries and a dashboard showing their ANC/PNC progress

**I. Push Notifications & Updates**

App updates and system alerts

Training announcements or policy updates

**J. Supervisor Management & Oversight Tools**

* Dashboard to view CHW activity logs and caseload summaries
* Performance tracking tools (visits completed, referrals made, follow-ups)
* Referral approval module: view, comment, approve, or escalate
* Monthly health trends dashboard with visualized community health data
* Messaging system to communicate with CHWs
* Exportable reports for review and decision-making

1. **Technology Stack**

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| --- | --- |
| **Component** | **Technology** |
| Frontend | Flutter (cross-platform mobile app) |
| Backend | Node.js/Firebase/python |
| Database | Firebase Firestore / SQL |
| Video/Audio Calls | Twilio/Africa's Talking |
| Offline Sync | PouchDB + CouchDB / Firebase offline capabilities |
| Hosting (Dashboard) | Google Cloud |
| Security | AES encryption |

1. **Implementation Roadmap**

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| --- | --- | --- |
| Phase | Duration | Key Activities |
| Phase 1: Planning | 2-3 weeks | Needs assessment, stakeholder mapping, feature finalization  User mapping and experience flow design for both CHWs and Patients |
| Phase 2: Design | 2 weeks | UI/UX design, wireframing, user journey mapping |
| Phase 3: Development – MVP | 8–12 weeks | * Core modules: Registration, Records, ANC checklist, offline mode * Build Supervisor dashboard: performance view, referral approval, basic analytics |
| Phase 4: Pilot Testing | 4 weeks | Deploy in 1–2 communities, feedback collection, training |
| Phase 5: Iteration & Scaling | Ongoing | Incorporate feedback, expand to more CHWs, add advanced features |

**6. Potential Partners & Stakeholders**

* Local Health Authorities – For integration and policy alignment
* Telecom Providers – For SMS support and subsidized data plans
* Technology Partners – For app development and maintenance
* Donors/NGOs – For funding and program sustainability
* Academic Institutions – For evaluation and research partnerships

1. **Risks & Mitigation**

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| --- | --- |
| **Risk** | **Mitigation** |
| Low digital literacy | Provide comprehensive training and user manuals |
| Power/internet outages | Ensure offline functionality and solar power options |
| Data security concerns | Use encrypted storage and regular audits |
| Device limitations | Design for low-end Android phones |
| Low digital literacy among patients | Provide in-app tutorials, pictorial guides, and voice instructions in local languages |
| Device ownership and affordability | Optimize app for low-end Android phones and explore donation/subsidy partnerships |
| Overburdened supervisors may ignore system alerts | Use push notifications with prioritization flags; train supervisors on dashboard navigation |

**8. Monitoring & Evaluation**

* Indicators: % of ANC visits completed, % of deliveries referred, maternal health outcomes tracked
* Tools: Built-in analytics, CHW feedback surveys, maternal satisfaction reports
* % of pregnant women using the app for health education
* % of patients completing scheduled visits and follow-ups
* Patient satisfaction and engagement metrics (based on app usage)
* % of referrals reviewed and approved by supervisors
* Frequency of CHW-supervisor communication via app

**Next Steps**

1. Wireframing and mockup design?
2. Drafting a concept note or grant proposal for funding?
3. Identifying potential developers or tech partners?
4. User guide/manual for CHWs?
5. Design dual-interface wireframes for CHWs and Patients
6. Develop local-language onboarding content for first-time patient users
7. Design supervisor wireframes and role-based dashboard controls
8. Pilot test supervisor module alongside CHW and patient modules