Reflections on AI-Powered Remote Patient Monitoring (RPM)

1. Alignment with Sustainable Development Goals (SDGs)

- SDG 3 (Good Health and Well-being): Early detection of diseases, chronic care support, and improved accessibility.

- SDG 9 (Industry, Innovation, and Infrastructure): Promotes technological innovation in healthcare.

- SDG 10 (Reduced Inequalities): Increases healthcare access in rural and underserved populations.

- SDG 1 & 8 (No Poverty & Economic Growth): Reduces healthcare costs and fosters remote employment.

- SDG 5 (Gender Equality): Supports maternal health monitoring and inclusive access.

2. Ethical Risks and Mitigations

- Privacy & Data Security: Use of encryption, legal compliance, and transparent user consent.

- Bias & Discrimination: Diverse datasets and fairness audits to reduce AI bias.

- Clinical Oversight: Ensuring AI supports, not replaces, clinician judgment.

- Digital Divide: Low-tech options and training for underserved populations.

- Informed Consent: Clear, customizable data use policies and opt-out options.

- Transparency: Explainable AI with user-friendly feedback mechanisms.

3. Role of Software Engineering in Long-Term Sustainability

- Documentation: Maintains knowledge continuity and regulatory readiness.

- Testing: Ensures reliability, fairness, and safety of both software and AI components.

- Version Control: Facilitates traceability and collaborative development.

- Code Standards: Promotes maintainability and scalability.

- CI/CD: Enables rapid, secure deployment and updates.

- Monitoring: Detects operational issues and model drift in real time.

- Ethical Audits: Sustains legal compliance and public trust over time.