OpenEMIS Software Development Principals

1. Design with the User

- Develop context-appropriate solutions informed by real user needs.
- Involve all user groups throughout planning, development, implementation, and evaluation.
- Use an incremental and iterative approach to development.
- Enhance existing workflows and plan for organizational change.
- Ensure inclusivity, particularly for marginalized populations: women, children, persons with disabilities, and those affected by conflict or disaster.

2. Understand the Existing Ecosystem

- Align solutions with existing technological, legal, and regulatory environments.
- Actively engage in networks and communities of like-minded practitioners.

3. Design for Scale

- Plan for scalability from the outset, identifying and addressing potential constraints.
- Apply systems thinking to understand broader implications beyond the immediate project.
- Ensure solutions are replicable and customizable for other countries and contexts.
- Validate impact before scaling.
- Evaluate technology choices through the lens of national and regional adoption.
- Engage potential partners early and build relationships that support long-term scaling.

4. Build for Sustainability

- Plan for long-term sustainability, including financial viability and total cost of ownership.
- Prioritize investment in local developers and communities.
- Collaborate with local governments to align with national strategies and identify champions.

5. Be Data-Driven

- Design with measurable impact in mind, focusing on outcomes over outputs.
- Address gaps in data and evidence through evaluation and innovation.
- Use real-time data to support decision-making at all levels.
- Where feasible, leverage data generated from user activity to inform improvements.

6. Use Open Standards, Open Data, Open Source, and Open Innovation

- Adopt and build on existing open standards.
- Make data and functionality accessible through well-documented APIs.
- Treat software as a public good.
- Default to open source, publishing code in public repositories and supporting active developer communities.

7. Reuse and Improve

- Adapt and enhance existing tools, platforms, and frameworks whenever possible.
- Develop modular, interoperable solutions rather than monolithic systems.

8. Do No Harm

- Identify and mitigate risks to users and their data.
- Design with privacy in mind, particularly for personally identifiable information (PII).
- Promote fairness and equity in collaboration and safeguard end-user interests.

9. Be Collaborative

- Involve diverse perspectives across disciplines and industries.
- Break down silos to foster coordinated, holistic approaches.
- Document and openly share processes, results, and best practices.

10. Licensing

- OpenEMIS software is freely available under the open source **Common Development and Distribution License (CDDL) Version 1.0 (January 2005)**.

11. Architecture

- OpenEMIS is designed as a modular, loosely coupled suite of interoperable tools for data capture, management, and analysis.
- Products can operate independently or as part of the broader OpenEMIS ecosystem, allowing ministries to adopt the components most relevant to their needs.

12. Third Party Components

- Continually update third party components using tools such as Composer to ensure that there are no security vulnerabilities

13. Programming Languages

- Utilize the following open-source programming languages for all OpenEMIS software applications: PHP for backend development and Angular for front end development
- The OpenEMIS Lab is committed to continuous upgrade of OpenEMIS software applications to supported versions of these programming languages

14. Software Releases

- Provide regular software updates and make them freely available from the OpenEMIS website.