



Case Study

Community Health

Toolkit: AI for Frontline

Health Support

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How can DPGs use AI responsibly while ensuring compliance with the DPG Standard?

This case study examines how Community Health Toolkit (CHT), a digital public good, balances the opportunities and risks of AI with the foundational requirements of the DPG Standard.

Executive Summary

As a digital public good, [Community Health Toolkit](#) adopts an “AI-ready”, not “AI-first” approach. AI-first asks what the technology can do; AI-ready starts with what health workers and the teams who support them actually need, and assesses every potential AI integration against those needs. Across two tracks — supporting the health worker in the field and supporting the builder who configures and maintains national deployments — the CHT community is integrating AI in ways that ensure frontline workers remain the final decision-makers, code and knowledge remain open and inspectable, and ownership remains with the communities and governments the platform serves. This approach meets the [DPG Standard](#).

The Product

The Community Health Toolkit (CHT) is an open-source digital health platform, stewarded by Medic and built by a global community. It was first verified as a digital public good in 2022 and has remained DPG Standard compliant since.

It supports over 182,000 community health workers (CHWs) across more than 24 countries through offline-first, health-system-integrated software, with 8 governments adopting the CHT as part of their national community health systems.

The Problem

Community health workers provide primary care to millions of people, but often do so under heavy workloads, with limited supervision, and with little decision support. Local teams responsible for configuring and maintaining digital health deployments also face significant engineering constraints, leaving them dependent on limited specialised capacity to adapt tools to their own unique needs and contexts. At both ends, the people closest to these realities have the least power to shape the tools they use.

The AI Value Proposition

The CHT community is exploring how AI can help address these challenges, across two main tracks:

1. **For the Health Worker:** Augmenting clinical decision support, diagnostics through computer vision analysis, voice-to-CHT, smart task prioritisation, and route optimisation.
2. **For the Builder:** Packaging domain-specific CHT knowledge via Model Context Protocol (MCP) servers, multi-agent systems (CHT Agent), and developer tooling (CHT AI Tools) to dramatically reduce the engineering time required to build, configure, and maintain national digital health deployments.

Role of Openness

Openness is foundational to Community Health Toolkit's AI strategy. By publishing shared MCP servers, open guidelines, and open-source agent workflows, the CHT community ensures that no organisation has to build siloed AI capabilities. This approach prevents vendor lock-in, ensures code inspectability and portability, and empowers local health ministries to maintain full sovereignty over data and infrastructure.

This directly supports Platform Independence (Indicator 4) and Open Standards and Best Practices (Indicator 8) of the [DPG Standard](#).

The Approach

Responsible AI Framework

The CHT community evaluates every AI initiative against seven core guiding questions before beginning any novel AI integration:

1. Will it reach the people who need it most?
2. Will it be shaped by the people it serves?
3. Will it be owned by the communities it supports?
4. Will it address what actually limits care?
5. Will it be culturally, ethically, and linguistically appropriate?
6. Will it be transparent enough for a health worker to understand why a recommendation was made?
7. Will it reduce the burden or add to it?

The "Human-in-the-Loop" Model

Community Health Workers are embedded practitioners who know the households they support, exercise judgment, and carry the trust of their communities. For example, the frontline use case piloted in partnership with health ministries in Kenya and Uganda uses a third-party HealthPulseAI integration for malaria rapid diagnostic tests, where the AI assists with point-of-care malaria diagnostics, and the community health worker remains the final decision-maker. In Uganda, in the pilot's first phase, the AI integration produced a parallel interpretation that was deliberately kept invisible to health workers, allowing its accuracy to be assessed against health worker judgment without influencing it. A four-month review found strong agreement between health workers and AI interpretations, along with growing user confidence.

The same human-in-the-loop principle governs the builder track. In the CHT Agent, human validation checkpoints are embedded in the multi-agent architecture: a person inspects, tests, and approves code before it is available to the community.

Impact on End-Users

- **Frontline Health Workers & Supervisors:** In Zanzibar, a Swahili-language WhatsApp supervision assistant developed by D-tree as part of its Jamii ni Afya programme (built on the CHT) helps health workers' supervisors translate monthly health data into practical guidance. In pilots, 100% of supervisors felt fully prepared for monthly meetings, and 95% reported increased confidence in answering questions accurately.
- **Developers & Implementers:** Live tools such as the Kapa.ai documentation assistant and MCP knowledge servers enable local teams to quickly retrieve accurate platform architecture details, reducing the time teams spend searching for platform information.

Sustainability & Governance

Medic's AI strategy, as steward of CHT, centres on maintenance. When AI makes code generation nearly effortless, the primary work shifts from writing software to sustaining it: holding context, exercising governance, and judging what belongs in a system that health ministries depend on. Governments and local communities own their health data, and open tools are built as digital public goods to avoid vendor lock-in or proprietary tool dependencies.

Role of Openness and Platform Independence

By sharing a unified, open knowledge base through open standard tools such as MCP servers, the Community Health Toolkit makes its entire knowledge base - documentation, GitHub issues and code architecture - universally inspectable. Local health ministries and implementing partners can examine the platform's inner workings, adapt it to local needs, and use whichever AI assistants fit their existing setups thanks to open-source agent workflows—all while keeping full control over their sensitive health data and infrastructure.

This is important, as it means its open architecture directly complies with the bars set for Platform Independence (Indicator 4) and Open Standards and Best Practices (Indicator 8) and also indirectly with Do No Harm By Design (Indicator 9) of the [DPG Standard](#):

- **Platform Independence:** CHT prevents vendor lock-in by building on open-source, non-proprietary protocols. Local teams are never forced to adopt AI tools from a specific vendor; they can choose, swap, or upgrade models as technology evolves, without breaking their setup or losing past work. The commitment extends to the voice interfaces and local language work now in development, where Medic's stated conditions include open-weight models.
- **Open Standards and Best Practices:** By making its documentation, code architecture, and agent workflows fully visible and inspectable, while using open standards and best practices such as MCP, REST API, and JSON, CHT builds safety and accountability directly into the technology.

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When code can be generated in minutes, the scarce and critical work shifts from writing software to maintaining it — holding the context, governance, and accountability to judge what belongs in a system health ministries depend on. Openness is necessary but not sufficient; a maintained open system is what earns trust.

—

Andra Blaj

Co-Executive Director, Medic

Technical Architecture

The Stack & Interoperability

A DPG's maturity depends, among other factors, on modularity and interoperability, as laid out in the [DPG Maturity Indicators](#). The following section describes CHT's technical architecture for its AI integrations and how it ensures flexibility and integration with other tools. CHT offers advanced interoperability mechanisms across solution components, including software and documentation, which support high adoption readiness across contexts.

Modular Design

CHT decouples AI modules from the platform's core functionality, connecting them through standard interfaces. Frontline integrations (such as Audere's HealthPulseAI) launch via Android Intents or web components, returning structured payloads to the core form model without touching underlying data stores.

Model Agnostic Layers

Builder tools rely on the MCP, an open standard that allows any compliant AI assistant or agent to interface with CHT documentation and code repositories.

Interoperable Data Infrastructure

Standard JSON schemas and configuration files (CHT Conf) drive platform behaviour and versioned REST/CouchDB APIs. Developer tooling (CHT AI Tools) automatically validates and formats CHT JSON configuration files before changes are implemented. External agents and AI platforms can also seamlessly connect to query CHT documentation, code repositories, or configuration rules.

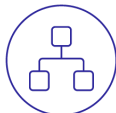
Self-Hosting

Open-source architectures enable national health systems to host data locally or on sovereign clouds while meeting low-resource and offline-first operational requirements.

Responsible Implementation Details

All AI usage by contributors is governed by public community guidelines. Developer tooling integrates automatic validation hooks and formatting checks to ensure AI-generated code and configuration files conform to CHT standards before code review, ensuring standard procedures are followed and humans retain final decision-making power.

Best Practices to Meet the DPG Standard

Challenge	Mitigation Strategy	DPG Standard Indicator
API & Vendor Lock-in	Build on open standards like MCP and support extensible local models and open-weights integrations.	Indicator 4 (Platform Independence) & Indicator 8 (Open Standards and Best Practices)  
Data Silos & Fragmented Knowledge	Maintain centralised, publicly accessible MCP servers indexing docs, forum posts, source code, and GitHub issues.	Indicator 5 (Documentation) 
Engineering Capacity Constraints	Deploy multi-agent developer tooling (CHT Agent) and no-code tools to reduce manual developer overhead.	Indicator 5 (Documentation) 
Ethical & Contextual Misalignment	Enforce the "AI-ready, not AI-first" framework, the seven guiding questions and the human-in-the-loop validation checkpoints.	Indicator 9 (Do No Harm by Design) 

Insights, Lessons Learned & Recommendations

This case study shows that DPGs can use AI responsibly while preserving flexibility and independence. The following recommendations focus on seizing AI opportunities to accelerate impact while staying true to the promise of DPGs as open, adaptable technologies designed to serve the public good.

For Policy Makers

- Prioritise “AI-ready” foundations (offline-first architecture, clear data ownership, open APIs) over hype-driven implementations. The AI layer is only as good as the infrastructure and operations beneath it.
- Evaluate every AI initiative against guiding questions that centre the people being served, name the limitations, and build in safeguards.
- Insist on human-in-the-loop workflows that keep frontline workers and health supervisors at the centre of decision-making.

For Developers

- Build open infrastructure as public goods (e.g., MCP servers, open agent workflows) so the entire ecosystem benefits from shared context.
- Integrate automated guardrails, schemas, and human review checkpoints into AI-assisted development pipelines. For tools that touch live systems, make review-before-apply an architectural requirement.

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Disclaimer

In preparing this case study, AI technology was used on August 17, 2026, to extract relevant details from the CHT source documentation and synthesise technical specifications. All output was human-reviewed and verified.

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