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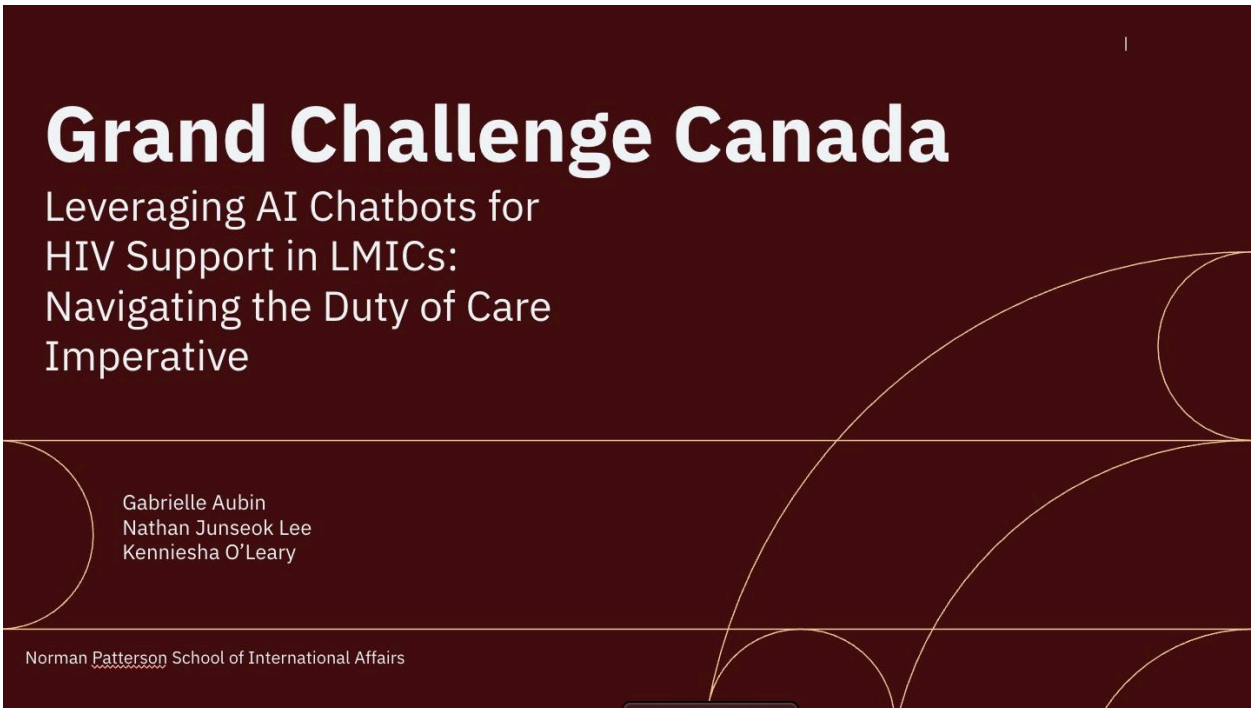

Leveraging AI Chatbots for HIV Support in LMICs:
Navigating the Duty of Care Imperative

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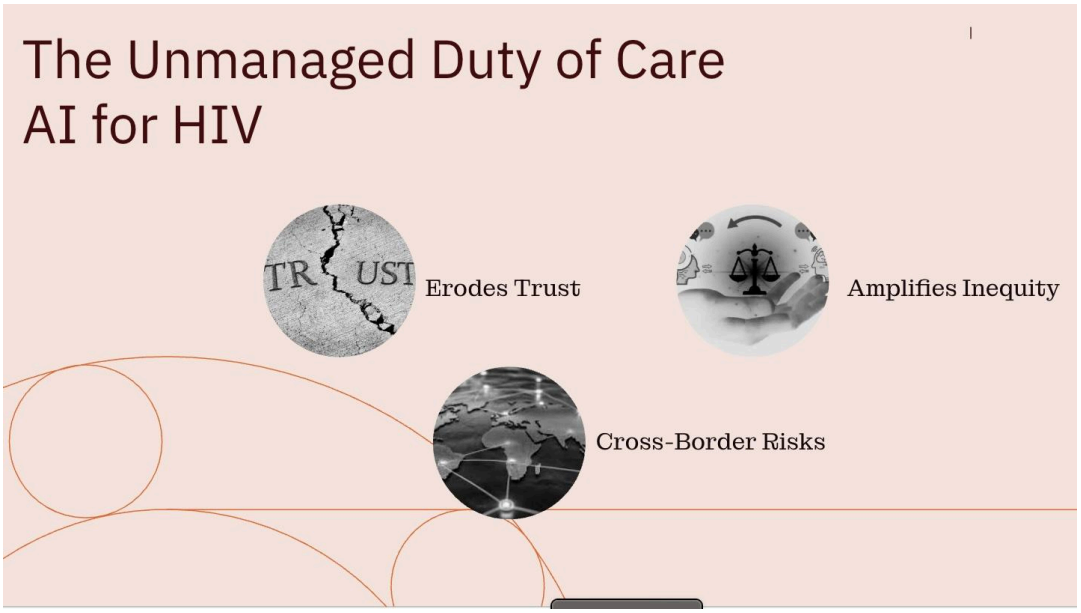

AI Chatbots: Promise (Ngcobo et al., 2024)

- 24/7, stigma-free HIV information and support
- Expands reach in resource-limited health systems
- Acts as a force multiplier for overburdened providers

The Emerging Crisis: Duty of Care Gap

- Rapid deployment outpacing safety, ethics, and governance
- Documented failures:
    - Incorrect HIV testing guidance
    - Non-contextualized risk advice
    - Misinterpretation of local language & behaviours
- Small technical errors can lead to real-world clinical harm

Why This Threatens Global Health Security

- Direct Harm (Olawade et al., 2025)
- Amplified Inequity (Wong et al., 2025)
- Cross-Border Risks (Olawade et al., 2025)

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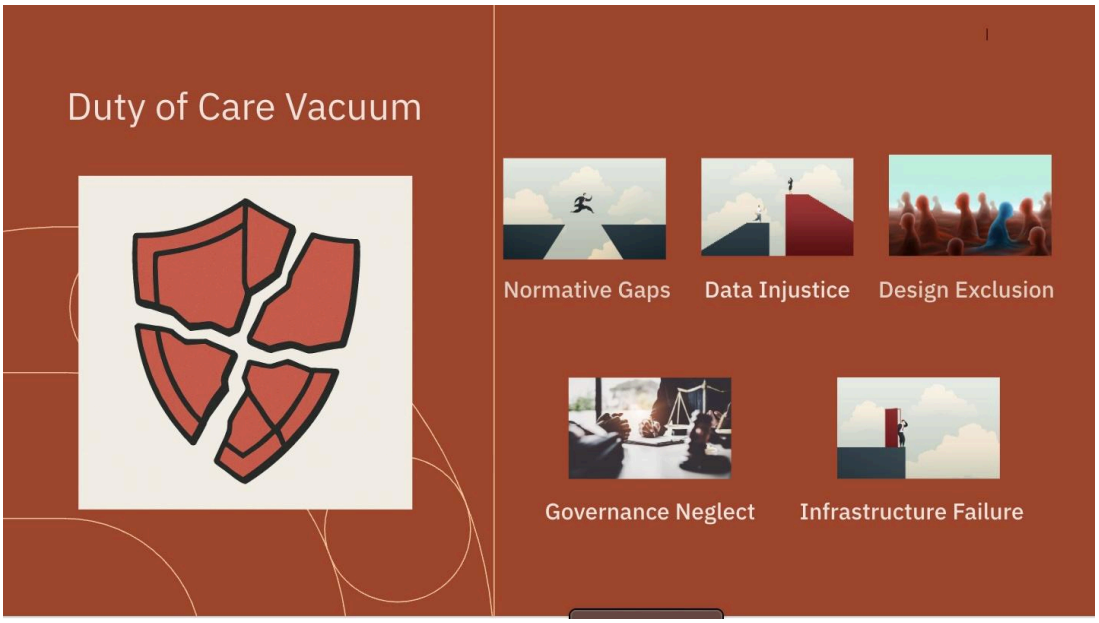

Five Systemic Duty-of-Care Gaps

1. Normative Gap (Murphy et al., 2021)
    - Global AI ethics principles are abstract and not operationalizable
    - Lack of context-specific duty-of-care obligations for LMIC settings
2. Data Injustice (Celi et al., 2022)
    - Dominant model of extractive data collection = “data colonialism”
    - Breaches duty to protect and empower the communities generating the data
    - Many AI HIV tools rely on incomplete datasets
3. Design Exclusion (Davis et al., 2023)
    - Top-down design fails to anticipate context-specific harms
    - Risks include: violence, stigma, and misinterpretation of behaviour or identity
    - Without community-led and participatory testing, chatbots misinterpret: local language, idioms, and risk behaviours
4. Governance Neglect (Naidoo et al., 2022)
    - AI tools often bypass review by being labeled “innovation,” not health service delivery
    - Creates regulatory blind spots and accountability gaps
5. Infrastructure Failure (Aboye et al., 2023)
    - Chatbot-only solutions assume universal digital access
    - Poor connectivity → inequitable access and inconsistent service
    - Violates duty to ensure equitable, reliable care

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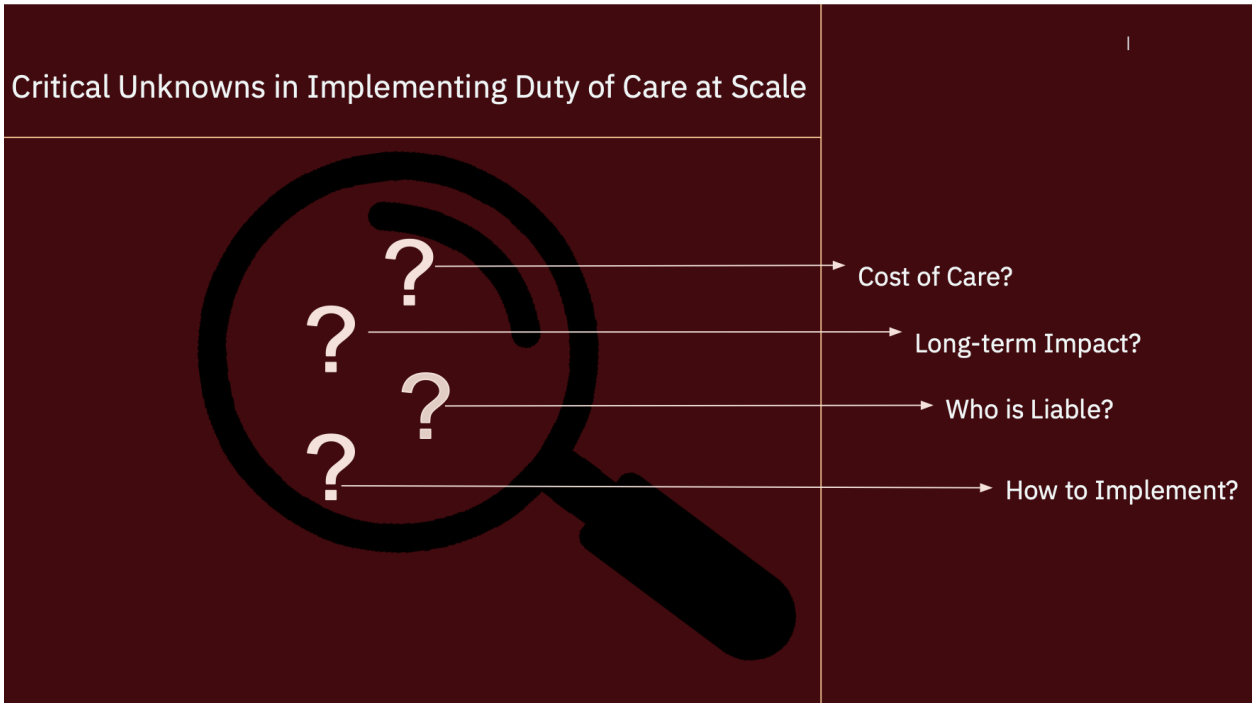

Key Knowledge Gaps (Operationalizing Duty of Care)

1. What is the true cost of care? We lack robust models for cost-effective duty of care protocols. What does a sustainable human-in-the-loop system look like within an LMIC clinic's budget? We don't know.
2. What are the long-term impacts? We have almost no longitudinal data on how duty of care failures—or successes—affect long-term trust and clinical outcomes. Does a privacy breach today correlate with lower testing rates five years from now? We cannot say (Espino Carrasco et al., 2025; Murphy et al., 2021).
3. Who is liable when harm occurs? The accountability mechanisms are opaque. In the event of harm, where does a patient go for redress? What are the liability frameworks? This is a legal gray zone, highlighted in studies of Nigerian ethics committees (Olawade et al., 2025; Naidoo et al., 2022).
4. How do we implement ethical frameworks? There is a gap in contextual ethical translation. How do principles like Ubuntu concretely inform chatbot design and grievance mechanisms? Scholars call for it but note the lack of practical blueprints (Ochasi et al., 2025; Ferlito et al., 2024).

The takeaway is unambiguous: the current evidence base demands a precautionary, governance-first approach. Scaling AI for HIV without answering these questions is not innovation—it is irresponsible experimentation.

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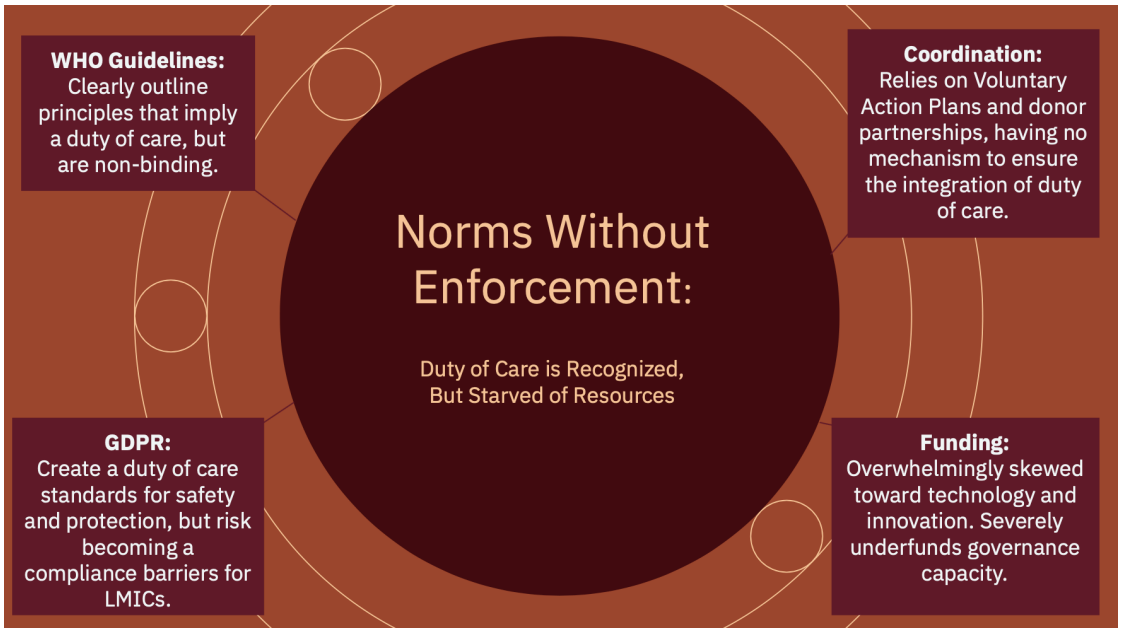

Strong global norms exist, but implementation in LMICs is weak and fragmented. The duty of care is recognized in principle but starved of resources in practice.

1. Normative Foundation vs. Implementation Gap:
    - Strong Norms: WHO AI Ethics Guidelines (2021, 2024) provide clear principles for human oversight, accountability, equity (WHO, 2021; WHO, 2024).
    - Critical Gap: For LMICs, these remain non-binding. The "how" of implementation (funding, local capacity, legal integration) is missing, creating a vacuum.
2. Broken Coordination Mechanisms:
    - Relies on voluntary National Action Plans (NAPs) & ad-hoc donor partnerships.
    - Result: Leads to fragmented, project-specific solutions, not system-wide governance. Digital health ecosystems remain siloed and unsustainable without centralized coordination (Chepkirui et al., 2025; Muliokela et al., 2025).
3. Misaligned and Volatile Funding:
    - Skewed priorities: Funding is overwhelmingly directed at technology development and discrete innovations (Dzinamarira et al., 2025; EUPHA, 2025).
    - Underfunded Foundations: Core infrastructure (e.g., 67% of Kenyan facilities have unreliable connectivity) receives fraction of the investment in new tech, while architecture for oversight (regulatory training, community monitoring) is chronically underfunded (Chepkirui et al., 2025; Wong et al., 2025).

The global system is designed to fund the tool, not build the system of trust and accountability required for ethical and effective deployment.

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Core Example: Nigerian HIV chatbot pilot (Mathur et al., 2025) demonstrates both the promise of co-design and the peril of incomplete duty of care planning.

Promising Aspects (Duty of Care Strengths):

- Co-Design: Actively involved cisgender women and transgender men; feedback led to adaptations (audio, fonts) (Mathur et al., 2025).
- Anonymity: Addressed stigma, found comfortable/non-stigmatizing by users (Mathur et al., 2025).

Critical Duty of Care Gaps Exposed:

1. Crisis Protocol Gap: Unclear escalation pathway for users in distress (e.g., violence, suicidality) (Davis et al., 2023).
2. Data Stewardship Gap: No specified long-term data governance plan post-grant (Tiffin et al., 2019).
3. Regulatory Pathway Gap: Undefined approval/monitoring/integration channel into national health system (Naidoo et al., 2022).
4. Clinical Integration Gap: No method for handoff to human clinicians, breaking continuity of care (Olaboye et al., 2024).

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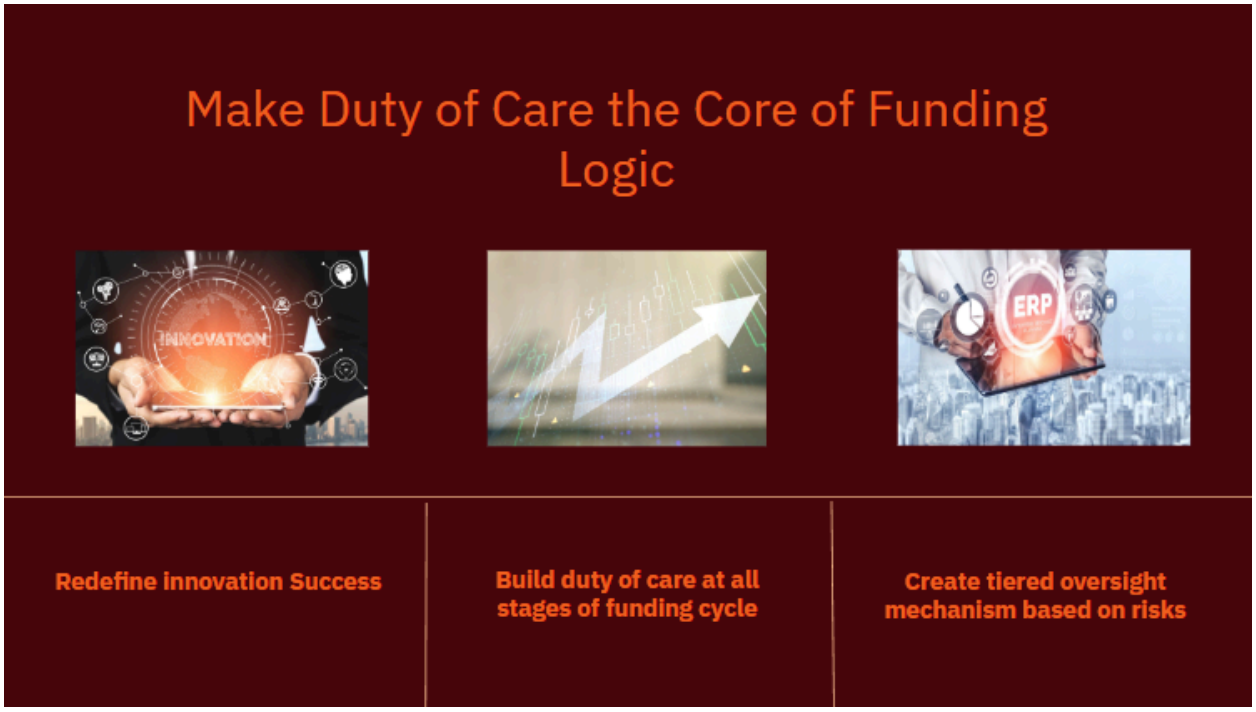

The core recommendation for Grand Challenges Canada:

Don’t stop innovating, instead, fundamentally redefine what successful innovation looks like in Global Health AI initiatives (Farlow et al., 2023).

GCC is uniquely positioned to catalyze a paradigm shift. The evidence compels a move from funding isolated *technology projects*, to creating a responsible, ethically governed health ecosystem, directly addressing the systemic gaps identified in our review (Shaw et al., 2024).

- GCC should embrace the role as the 'Duty of Care Architect.' This means the creation & integrating of a mandatory, fundable, and actionable Duty of Care Framework into the very DNA of the organization’s funding logic.

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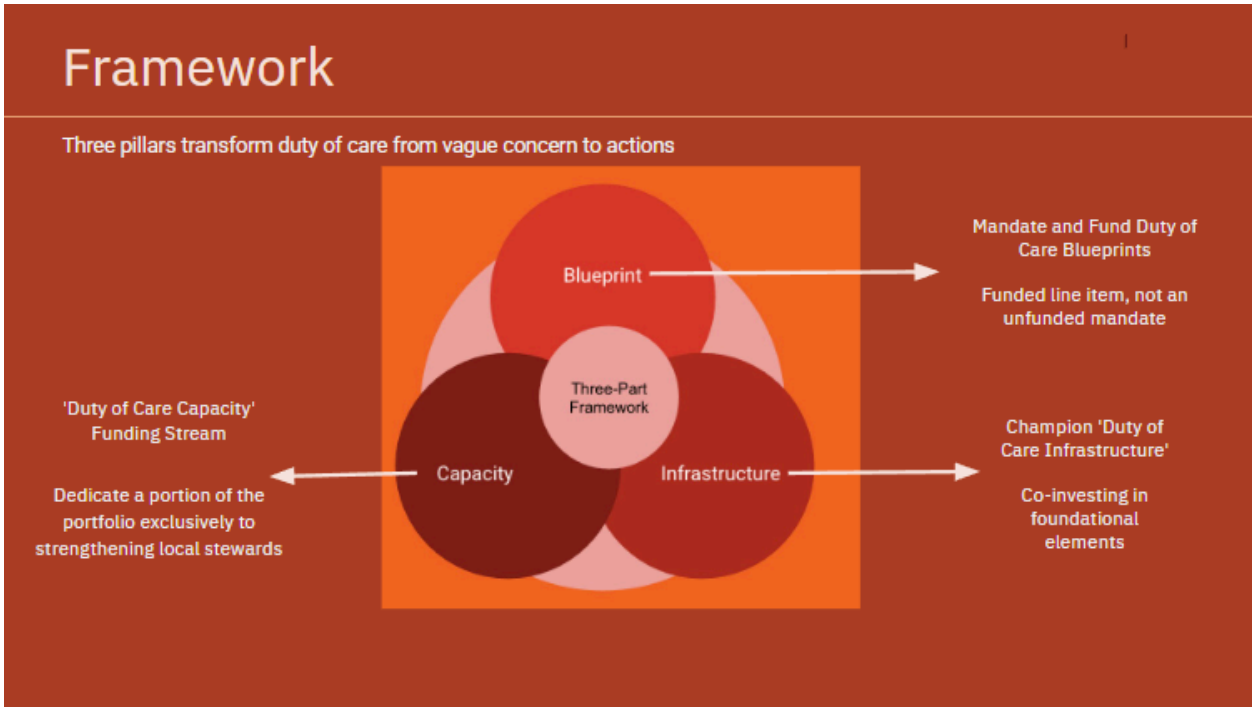

Concretely, we propose a three-part strategic framework, with each element directly addressing the evidence-based gaps we've diagnosed, these three pillars transform duty of care from a peripheral concern into the central pillar.

1. **Mandate & Fund 'Duty of Care' Blueprints:** Requiring every AI health grant proposal to include detailed, budgeted plan covering: crisis escalation protocols (Davis et al., 2023), data sovereignty and governance plans (Tiffin et al., 2019), funding the program, independent auditing mechanisms, and clear user redress pathways at the application stage, closing design & accountability gaps identified in pilots like the Nigerian case study (Mathur et al., 2025).
2. **Creating Dedicated 'Duty of Care Capacity' Funding Stream:** Allocate a portion of your portfolio explicitly to strengthen the local stewards of ethics. This funds the training of RECs (Olawade et al., 2026), supports AI oversight within health ministries (Naidoo et al., 2022), and empowers civil society watchdogs. These are the entities that uphold standards long after a pilot ends, transforming voluntary norms into enforceable practice.
3. **Champion 'Duty of Care Infrastructure:** Use GCC's influence and coinvestment to build foundational elements by securing local data governance systems, interoperable multi-modal platforms like SMS/USSD (Aboye et al., 2023), and regulatory sandboxes where tools can be safely tested under supervision. This tackles the infrastructure failure and equity gap detailed by Wong et al. (2025).

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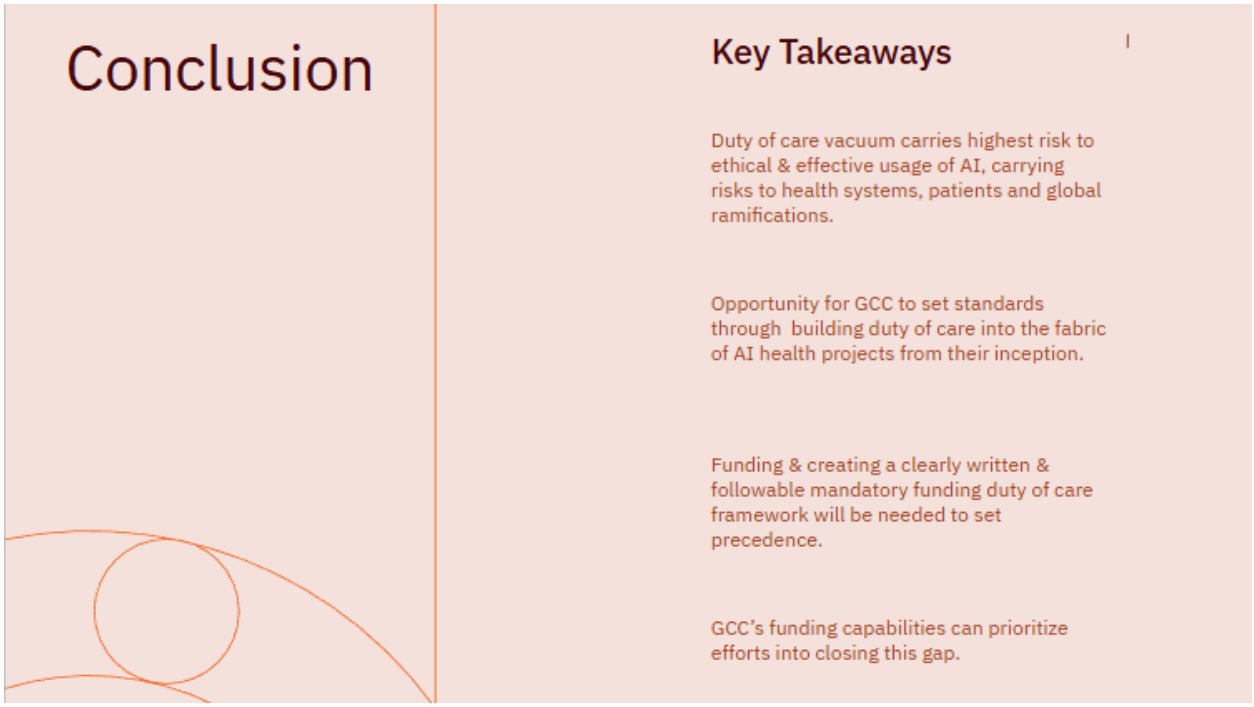

In conclusion, the duty of care vacuum outlined is the single greatest unmanaged risk to the ethical & effective usage of AI for HIV in LMICs. It's a risk to individual patients, to health system integrity, and to global health integrity. But this vacuum also represents GCC's most significant opportunity for transformational leadership. By embedding this framework into the organization's funding architecture, by mandating blueprints, building capacity, and co-investing in infrastructure, GCC can do more than fund good projects, GCC can raise the standard for the entire field of AI in global health.

This is the critical path from extractive, short-term innovation to responsible, long-term stewardship (Ochasi et al., 2025). It ensures every dollar invested into a promising AI tool is equally an investment into the local capacity to govern it, the infrastructure to support it, and the mechanisms to protect the people who use it.

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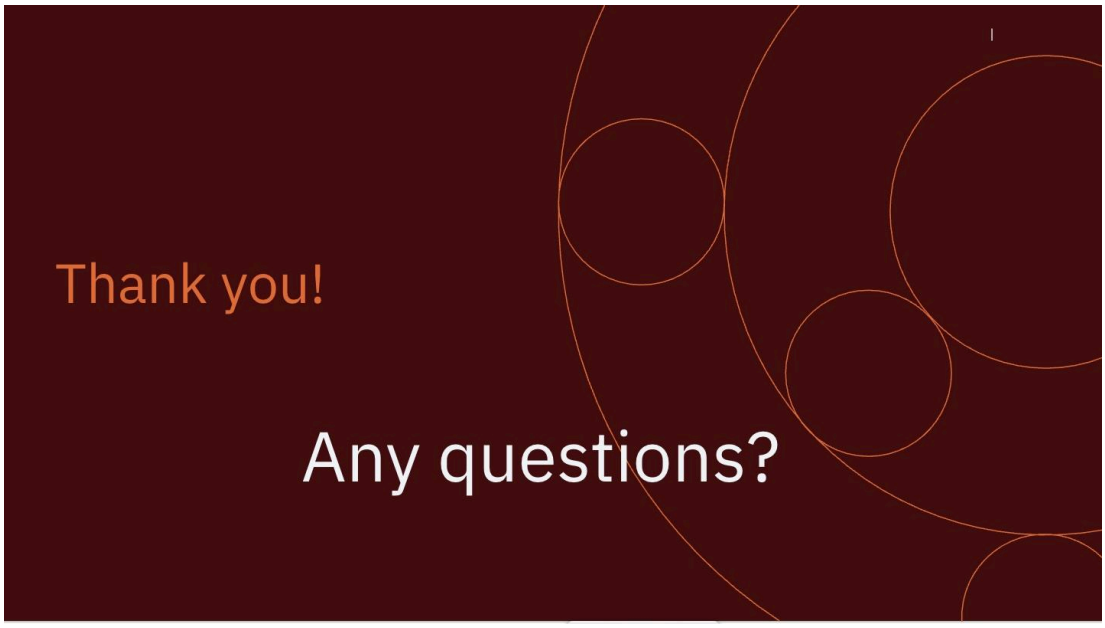

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