

Competency Standards in Clinical Artificial Intelligence

A framework for the safe, accountable use of AI by registered health professionals in Kenya.

Based on the draft annex by Dr. Neal Aggarwal (August 2026).
A draft for consideration by KMPDC and the Nursing Council of Kenya.



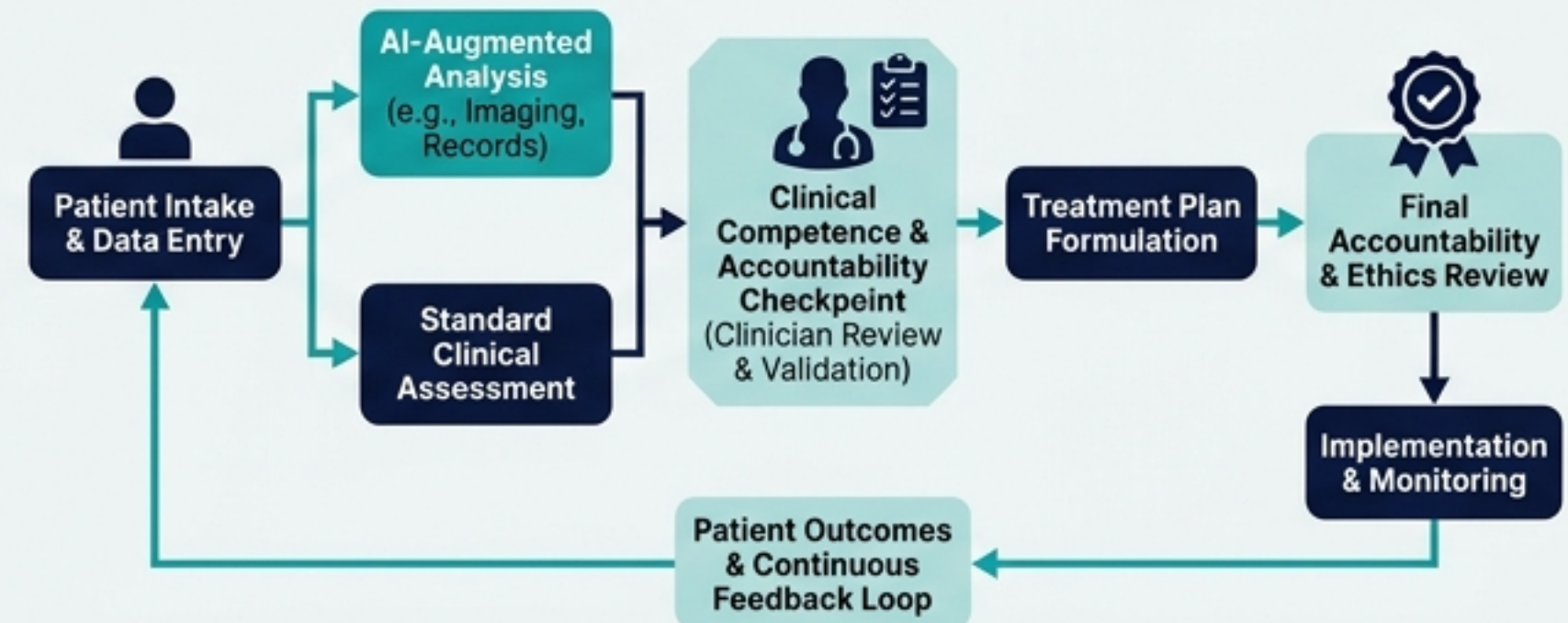
The clinical reality demands a standard that regulates the practitioner, not the software.

The Gap

Registrants are already using general-purpose AI on personal devices. Because no Council currently defines "competent use," there is no accountability, no job specification standard, and no metric for training providers.

The Mandate

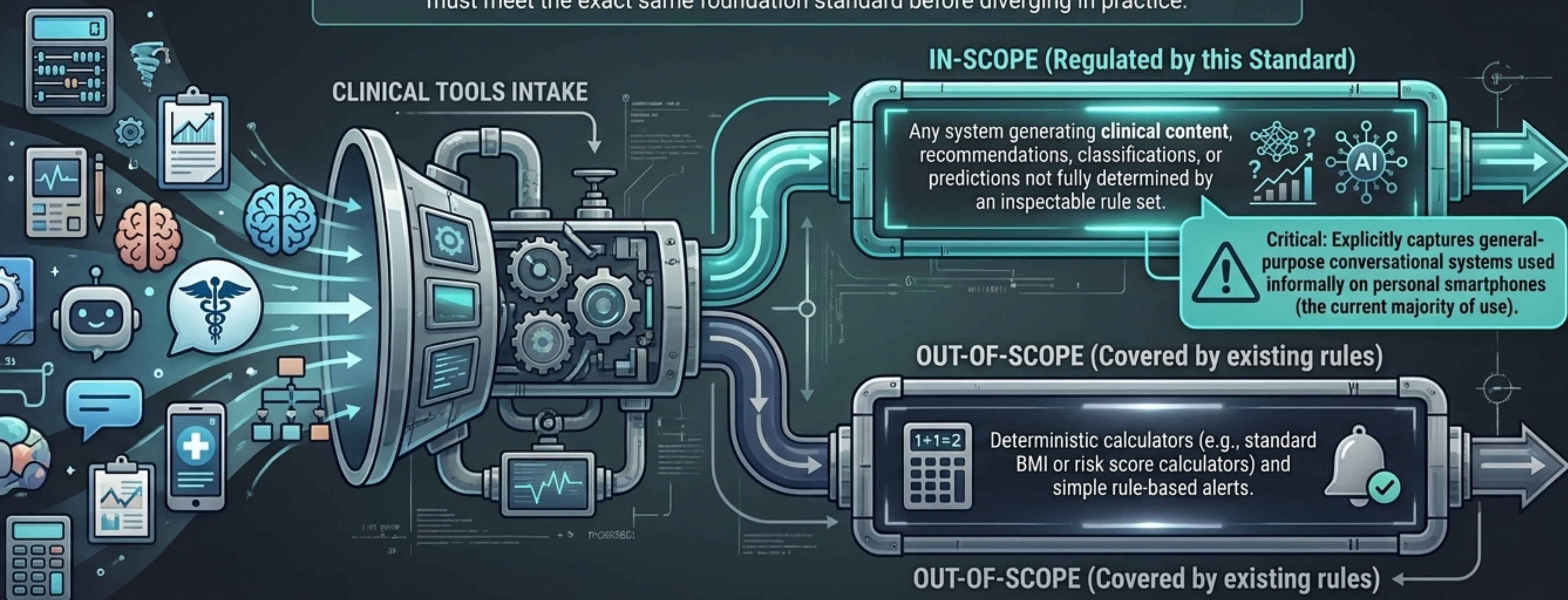
This standard dictates what a registrant must be able to do. It does not prescribe which tools they use. The core principle: The standard must survive the replacement of any particular AI system.



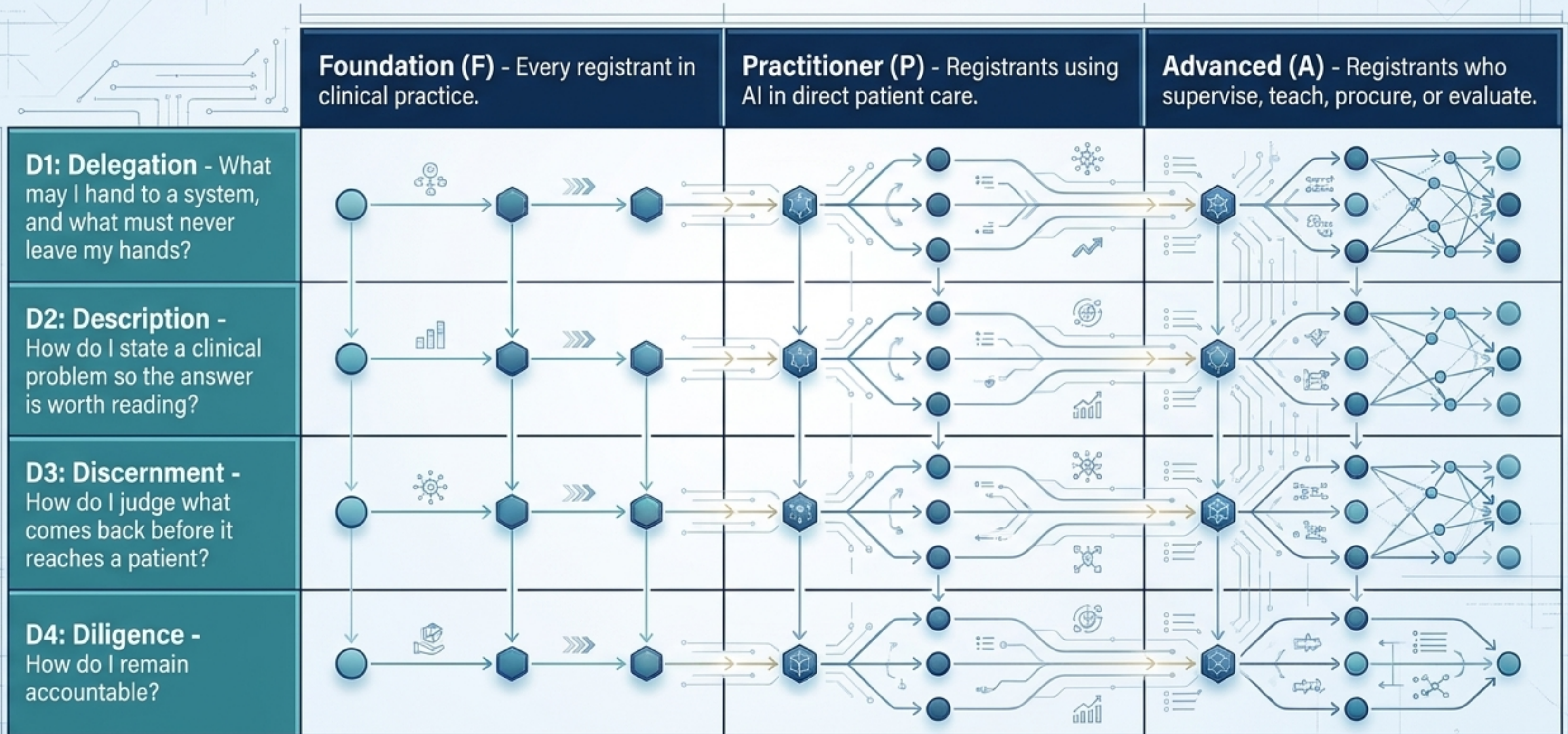
It does not authorize use outside existing scope, does not transfer accountability to the software, and does not require anyone to use AI.

Defining the regulatory boundary: non-deterministic output triggers the standard.

Target Audience: Cadre-neutral at the Foundation level. A ward nurse and a consultant surgeon must meet the exact same foundation standard before diverging in practice.



The Architecture of Competence: 3 Tiers, 4 Domains.



Domain 1 (Delegation): Identifying tasks that must never leave human hands.

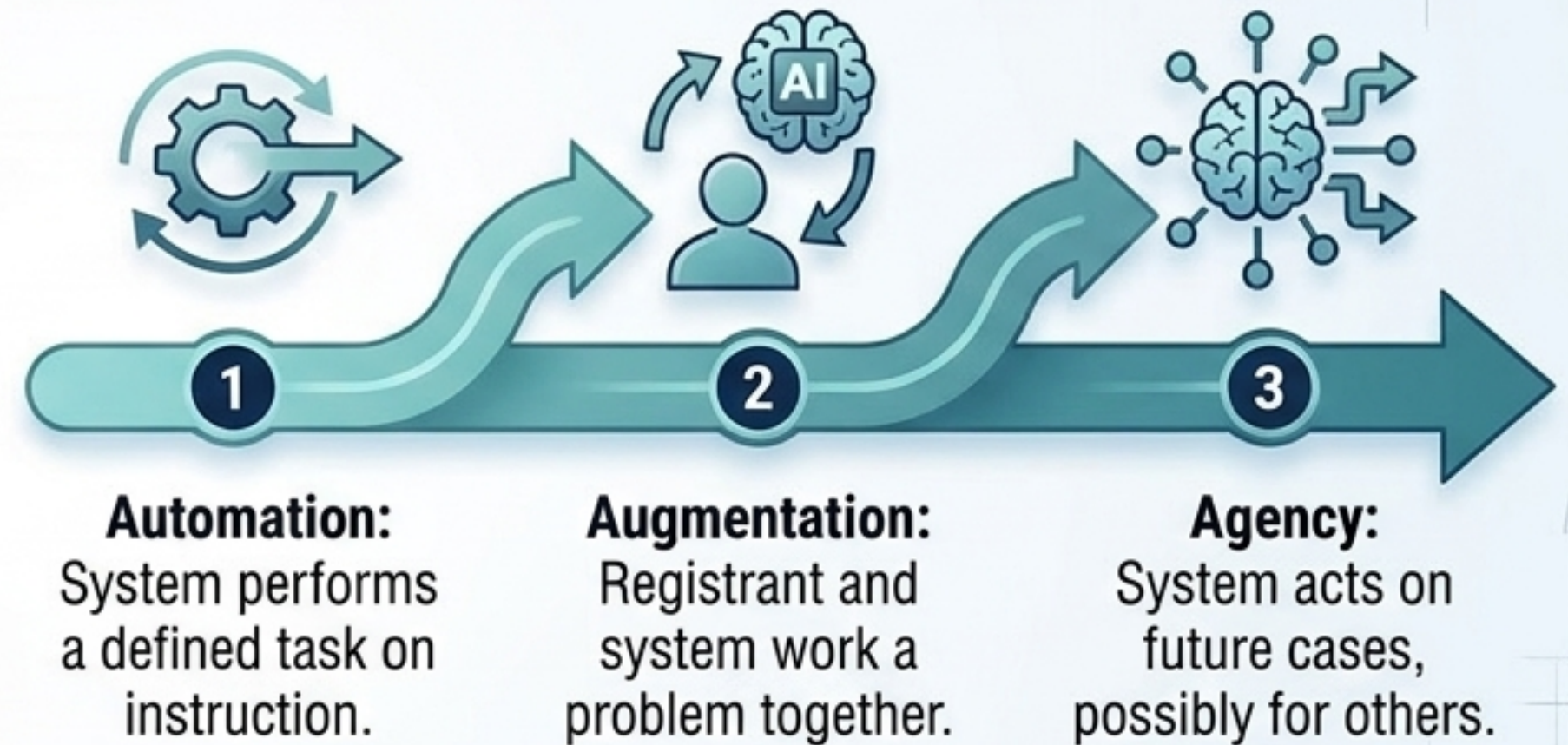
The Non-Delegable List (Foundation D1.F2)



Obtaining consent, breaking significant news, deciding on invasive procedures, committing final diagnosis to the record, prescribing, and signing.

Rule: Delegation suitability depends on the reversibility and severity of error, never convenience.

The AI Modalities Spectrum



Advanced Requirement: Governance must match the specific modality actually in use.

Domain 2 (Description): Structuring a query like a formal clinical handover.

The Search Engine Approach (Fails Standard)

Vague search terms, no local context, asks only for a conclusion.

The Competent Query (D2.F2 & D2.F3)

SBAR Structure

- Situation, Background, Assessment, Recommendation.

Context is King

- Must explicitly state the facility level, available investigations, local formulary, and local epidemiology.

Demand Rigor

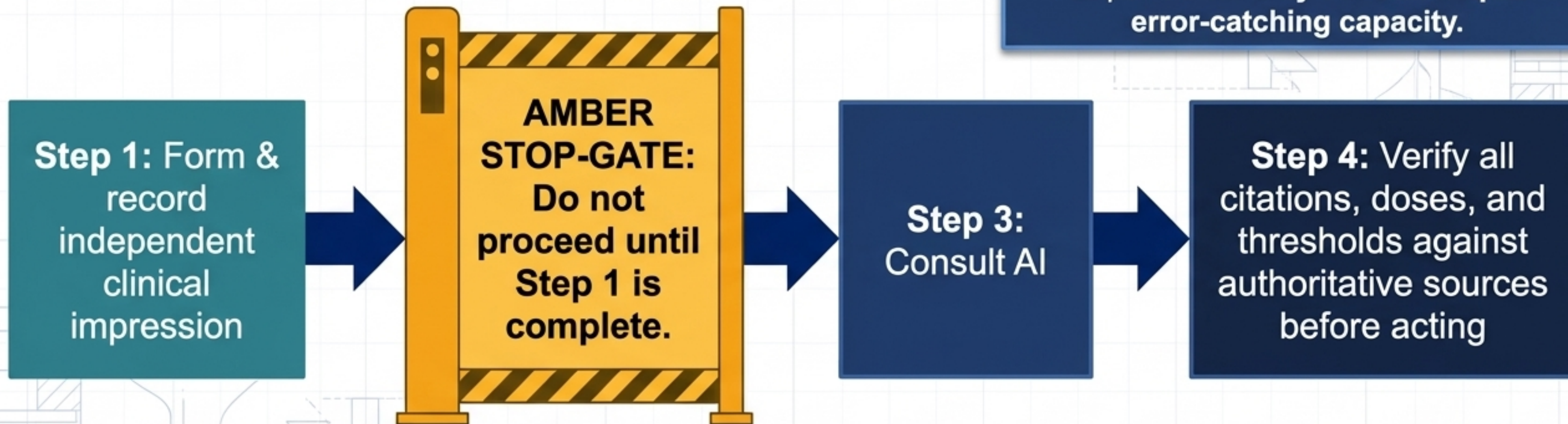
- Must request reasoning, differentials, and the case against a proposition.

Practitioner Iteration (D2.P1 - D2.P3)

Must iterate queries, specify target populations, and explicitly account for information lost if the patient's history was taken in a language other than the query language.

Domain 3 (Discernment): The independent human impression must come first.

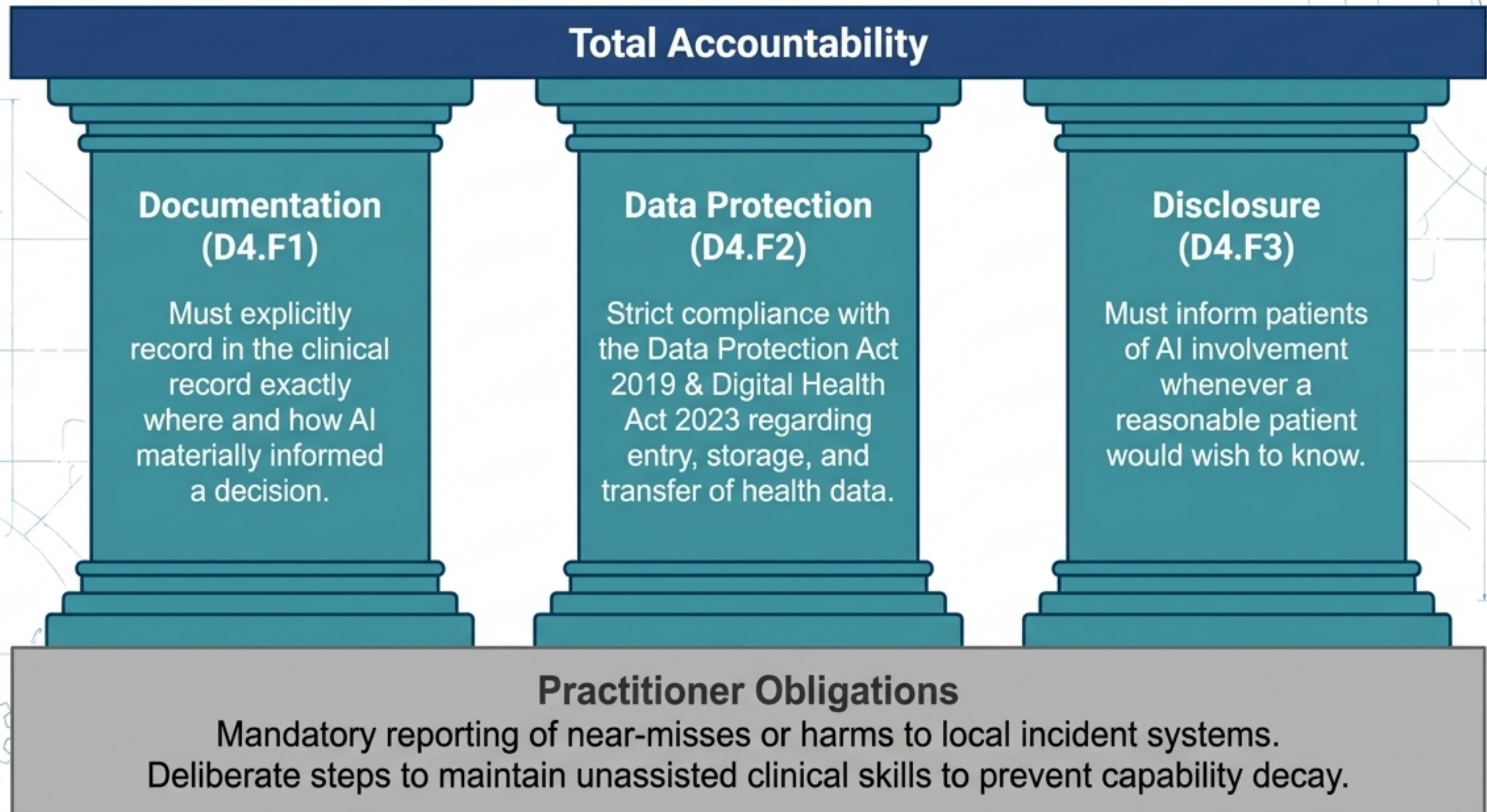
The Evidentiary Driver: A 2025 NEJM AI Trial proved that 20 hours of AI literacy training did not prevent physicians from deferring to deliberately erroneous AI output. **Familiarity does not equal error-catching capacity.**



Local Calibrations (D3.P2)

Practitioners **must recognize Kenyan failure modes**: degraded performance on darker skin (dermatology), localized drug nomenclature discrepancies, and AI recommendations assuming unavailable facility-level resources.

Domain 4 (Diligence): Remaining accountable under Kenyan health data law.



Conjunctive Requirements: The 'Fatal Fails' of AI Competence

The Philosophy: Competence cannot be averaged. Excellence in one area does not excuse fatal safety breaches, identical to a fatal drug error in a conventional OSCE.



Fatal Fail 1 (D2.F1)

The Error: Entering identifiable patient data into any system the registrant or their employer does not control.

Status: Absolute prohibition.



Fatal Fail 2 (D3.P1)

The Error: Failure to detect seeded clinical error in a simulated encounter at or above the standard-set threshold.

Status: Automatic assessment failure, regardless of aggregate score.

Assessment Specification: Competence is inferred from performance, not attendance.

Standard Setting: Pass marks must use formal methods (modified Angoff for knowledge, borderline regression for performance). Arbitrary percentages are unacceptable.

Advanced: Practitioner + substantial piece of work (evaluation, audit, or taught program) assessed against published criteria

Practitioner: Foundation + simulation-based assessment with seeded error + logbook of ≥ 20 supervised, countersigned encounters

Foundation: Invigilated knowledge assessment (blueprinted item bank) + 1 observed simulated encounter
(References for structure for a supervisor, or  or <Image 0>)

Psychometric Obligation

Accredited providers must conduct item analysis post-sitting, withdraw items with negative discrimination, and publish instrument reliability.

CPD Mapping and the Principle of Skill Decay.

KMPDC Proposed Mapping

- Foundation Certificate: 12 points
- Practitioner Certificate: 40 points
- Advanced Certificate: 60 points
- Certified Instructor: 40 points
- 2-Year Recertification: 10 points

Nursing Council of Kenya

Points intentionally pending (TBD).
Primary confirmation required due
to conflicting secondary sources on
overall annual requirements.

The Decay Principle

Competence in this domain decays, and technology changes rapidly. Assessed recertification is mandatory every 2 years.



Translating Framework to Regulation: The 6 Operating Clauses.

Immediate Standards of Practice (Clauses 1-5)

1. Registrant retains total accountability; cannot delegate to software or supplier.
2. Prohibition on identifiable data in uncontrolled systems.
3. Mandatory documentation in the clinical record.
4. Prohibition of acting upon output outside the registrant's existing competence.
5. Mandatory incident reporting for AI-contributed harm.

The Regulatory Hook (Clause 6)

The Council specifies competencies and may require evidence of them as a condition of retention on the register.

Phased Implementation: Building capacity before imposing obligations

Critical Milestone Gate: Imposing requirements before capacity exists brings the standard into disrepute. Phase 4 activates only when adequate accredited training capacity exists in county facilities, not just Nairobi.

Phase 1 (Day 0)

Clauses 1-5 active as immediate standards of practice. Competencies published as guidance.

Phase 2 (+12 Months)

Foundation competencies expected of registrants using AI in patient care; provider accreditation open.

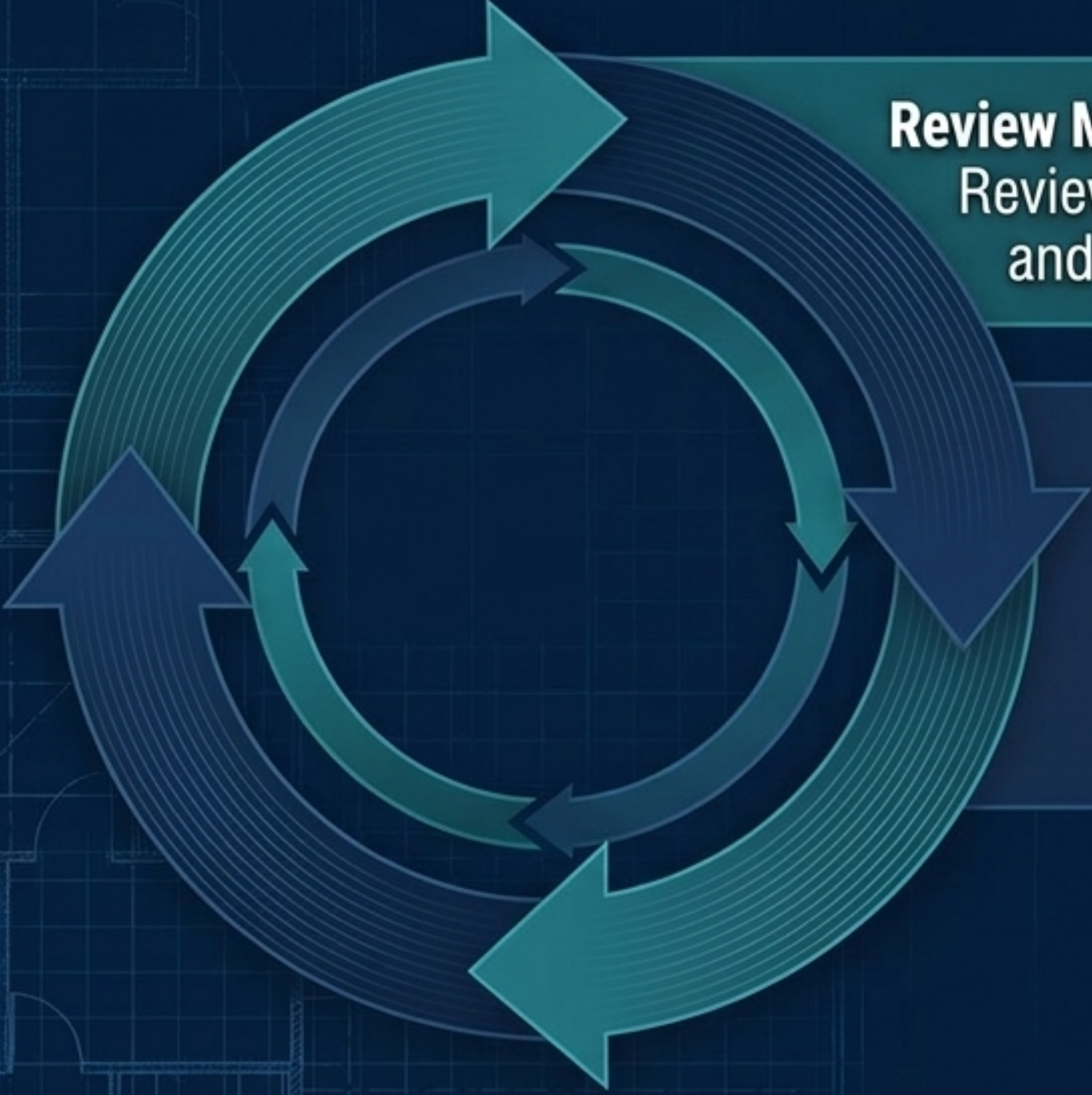
Phase 3 (+24 Months)

Foundation required for new registrants. CPD credit system goes live.

Phase 4 (+36 Months)

Practitioner competence required of registrants using AI in direct patient care in accredited facilities.

Dynamic Governance: A standard that hasn't been reviewed in two years is presumed out of date.



Review Mandate: The standard must be reviewed every 18 months. Reviews must be informed by real-world data: error-catch rates and reported incidents where AI use contributed to harm.

Framework Attribution: Domains adapted from the AI Fluency Framework by Prof. Rick Dakan (Ringling) and Prof. Joseph Feller (UCC) / Anthropic.

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*Document prepared by Dr. Neal Aggarwal (August 2026)
in a personal capacity as a draft for comment.*