Dissolution of Continuity of Ethical Governance in Data Science Health Research: A Diagnostic and Response Framework for Lifecycle Oversight

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Abstract

Background: Traditional research ethics governance was built for bounded protocols, identifiable investigators, and temporally limited encounters with human participants. Data science health research (DSHR) disrupts that architecture because health data, biological materials, computational representations, and models persist, travel, combine, and acquire new uses across time. The ethical problem is not simply that individual instruments such as consent forms, IRB approvals, data access agreements, model cards, or privacy notices become outdated. It is that, across the lifecycle, the authorities that make these instruments ethically meaningful may lose jurisdiction, standing, evidentiary force, or remedial control.

Conceptual contribution: This paper introduces Ethical Governance Continuity Dissolution (EGCD): the progressive and sometimes irreversible loss of domain-specific governance authority across a data, model, or biological-material lineage, such that no coherent assemblage of actors, instruments, rules, or community processes can any longer authorize, constrain, monitor, adjudicate, or remediate current use. EGCD differs from consent staleness, function creep, contextual integrity violations, algorithmic drift, and the continuity trap because it names the systemic condition in which several such failures become mutually reinforcing.

Framework: Building on prior work on representational veracity and the continuity trap, we develop a six-domain authority taxonomy, diagnostic criteria, staging categories, and a prototype Ethical Continuity Dissolution Score. We then propose an Ethical Continuity Governance and Response Mechanism consisting of a continuity registry, continuity authority matrix, trigger-based lifecycle review, a Data Lifecycle Governance Officer, a Continuity Dissolution Review Board, cross-institutional audits, and community governance integration.

Implications: EGCD provides a practical vocabulary and governance architecture for diagnosing and managing the loss of ethical

governance continuity in global DSHR. The goal is not to freeze all original consent conditions indefinitely, but to prevent silent loss of governance authority as data, models, and biological materials move through increasingly complex research and translational ecosystems.

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Dissolution of Continuity of Ethical Governance in Data Science Health Research: A Diagnostic and Response Framework for Lifecycle Oversight

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original consent conditions indefinitely, but to prevent silent loss of governance authority as data, models, and biological materials move through increasingly complex research and translational ecosystems.

Keywords: continuity dissolution; data science health research; lifecycle oversight; representational veracity; continuity trap; AI governance; health data ethics

1. Introduction

Data science health research (DSHR) uses statistical, computational, machine-learning, and artificial-intelligence methods to generate knowledge from heterogeneous health-related data. These data may include electronic health records, cohort data, registries, claims data, genomics, biospecimens, imaging, social media traces, mobile-device data, wearable sensors, administrative records, and biological materials transformed into derivative resources such as induced pluripotent stem cell lines. DSHR therefore has a lifecycle that extends beyond protocol approval, data lock, or study closure; data, models, and derivative materials persist, travel, combine, and acquire new meaning across time and contexts [1-3].

Traditional research ethics governance was designed primarily for bounded studies. A protocol is written, risks and benefits are assessed, consent is obtained or waived, recruitment begins, data are collected, and a study eventually closes. Institutional review boards (IRBs), research ethics committees (RECs), data access committees (DACs), and related bodies were built largely around this protocol-centered model. DSHR does not conform to it. Data collected in one context are reanalyzed decades later, linked to other sources, transferred across institutions, used to train models, converted into biological derivatives, or deployed in clinical and commercial settings. This creates a structural mismatch between a point-in-time governance architecture and a longitudinal data/model/material lifecycle [4-6].

The literature has examined many elements of this problem. Systemic oversight has been proposed because ethical challenges exist throughout the data-processing lifecycle rather than only at initial review [5]. Big-data ethics review has documented persistent and novel weaknesses of existing review bodies, including purview and functional gaps [6]. Consent scholarship has described the expiry problem of broad consent and the appeal, limits, and burden of dynamic or meta-consent [7-10]. AI ethics has shown that model performance and fairness may drift after deployment, while

contextual-integrity theory explains why privacy and governance failures often arise when information flows shift across social contexts [11, 12].

In this paper, we argue that DSHR ethics requires a concept for the systemic condition that emerges when these failures interact. We call that condition Ethical Governance Continuity Dissolution (EGCD). EGCD is not simply a stale consent form, an unreviewed dataset, a drifting algorithm, a context violation, or a deficient data access agreement. It is the condition in which the authorities that make governance possible lose their capacity to authorize, constrain, monitor, adjudicate, or remediate a data, model, or biological-material lineage across its lifecycle. When EGCD occurs, no single governance actor or instrument can any longer account for the ethical relationship between the data or derivative object and the persons and communities from whom it originates.

The argument builds on two prior conceptual moves. First, the framework of representational veracity holds that ethical governance of DSHR requires attention to whether data and models faithfully represent persons and communities across descriptors, ontology, provenance, authorization, values, and community legitimacy. Second, the continuity trap identifies a governance error in which visible continuity in one domain, usually data provenance or documentation, is mistaken for continuity across the full spectrum of ethical governance relationship. EGCD is broader than either concept because it describes the progressive loss of governance authority when multiple domains become disconnected from data origin, current use, affected communities, and practical remedy [13, 14].

We make five distinct contributions to the ethical discourse in this paper. First, we provide a formal definition of EGCD centered on governance authority. Second, we distinguish EGCD from adjacent concepts. Third, we propose a six-domain taxonomy of governance authorities vulnerable to dissolution. Fourth, we offer diagnostic criteria, staging categories, and a prototype Ethical Continuity Dissolution Score (ECDS). Fifth, we propose an Ethical Continuity Governance and Response Mechanism (ECGRM) that institutions can adapt across regulatory, infrastructural, and

resource settings.

2. Definition and conceptual boundaries

2.1 Definition

Ethical Governance Continuity Dissolution is the progressive and sometimes irreversible loss of domain-specific governance authority across a data, model, or biological-material lineage, such that no coherent assemblage of actors, instruments, rules, or community processes can any longer authorize, constrain, monitor, adjudicate, or remediate current use in relation to the persons and communities from whom the data or material originated.

This definition has four elements. First, EGCD is progressive. It usually accumulates through many ordinary transitions rather than through a single spectacular breach. Second, it is lineage-based. The relevant object may be a dataset, biospecimen, iPSC line, trained model, model output, digital twin, synthetic dataset, federated model, or downstream clinical product. Third, it concerns authority, not mere documentation. A consent form, approval letter, data transfer agreement, model card, or provenance trail may remain intact while its authority to govern current use has eroded. Fourth, it is relational. The ethical question is whether the current use remains connected to the persons, groups, communities, and institutions from which the data or material originated [5, 11, 13].

A governance authority is the legitimacy-bearing capacity of an actor, instrument, rule, or community process to authorize, constrain, monitor, adjudicate, or remediate a use because it remains connected to data origin, current use, affected persons and communities, and practical remedial control. This understanding makes clear that authority can be present, fragile, compromised, or dissolved. EGCD occurs when several authorities fail together or when a critical authority fails and no remedial authority can restore governance.

2.2 What EGCD is not

Not every governance weakness is EGCD. A stale consent form is not EGCD if active oversight,

provenance, community engagement, and remedial authority remain functional (Table 1). Algorithmic drift is not EGCD if the model is monitored, update procedures are authorized, deployment can be paused, and affected groups can be protected. A research/non-research classification dispute is not EGCD if there is a credible escalation pathway. EGCD is a higher-order condition. It is the failure of the governance assemblage, not merely the failure of one tool.

Table 1: Comparison of EGCD with adjacent concepts

Adjacent concept	Primary focus	How EGCD differs
Continuity trap	A specific diagnostic error: visible continuity in one domain masks discontinuity elsewhere.	EGCD is the systemic condition that may follow multiple uncorrected traps and other lifecycle failures.
Representational veracity failure	Loss of epistemic or ethical fidelity between data/model and persons or communities represented.	Representational failure is one domain of EGCD; EGCD adds authorization, oversight, classification, algorithmic assurance, and remedy.
Function creep	Expansion of a technology or dataset beyond original purpose.	EGCD includes function creep only when expanded use also dissolves authority to authorize, monitor, or remedy.
Consent staleness or expiry	Original permission no longer maps to current use or values.	Authorization decay is one mechanism; EGCD requires broader authority failure or loss of remedial control.
Contextual integrity violation	Information flows violate context-specific norms.	EGCD describes the state in which the original context and its governing norms are no longer adequate anchors for the lineage.
Algorithmic drift or fairness drift	Performance or fairness changes after deployment.	EGCD includes drift when there is no authority to monitor, update, pause, explain, or remediate.
Systemic oversight	A lifecycle approach to oversight.	Systemic oversight is a remedy architecture; EGCD is the pathology that such oversight should diagnose and prevent.

3. Diagnostic criteria and staging

EGCD should be diagnosed cautiously. The concept is most useful when it *prevents* institutions from treating serious lifecycle governance failures as mere administrative irregularities. A data, model, or biological-material lineage should be evaluated for EGCD when it has undergone at least one substantial transition and when existing governance records cannot show that current use remains authorized, reviewable, representationally valid, monitorable, and remediable. This is consistent with the broader shift from initial approval toward lifecycle or systemic oversight in big-data health research [5, 6, 15].

Triggering transitions for EGCD include secondary use outside the original consent context; linkage across datasets; cross-border transfer; transfer from academic to commercial actors; derivation into

iPSCs, organoids, synthetic data, or model parameters; federated or privacy-preserving aggregation; deployment into clinical or public-health operations; material change in model purpose; and end-of-lifecycle transfer, archiving, or retirement.

EGCD is present when three criteria are met:

1. At least two domain-specific governance authorities are compromised, or one critical authority is dissolved and no effective remedial authority remains.
2. The current or proposed use has plausible consequences for persons, groups, communities, institutions, or health systems beyond purely internal technical processing.
3. Existing governance instruments cannot reconstitute an ethically meaningful relationship between the lineage and the persons or communities from whom it originated.

The following staging system is proposed as a conceptual and operational guide. It requires empirical refinement before being treated as validated.

Table 2: Staging system for EGCD

Stage	Label	Diagnostic description	Required response
0	Intact continuity	All authorities are mapped, current, auditable, and connected to practical remedial control.	Routine review; maintain registry and documentation.
1	Local discontinuity	One authority is fragile or outdated, but others can investigate and repair it.	Targeted corrective action and updated documentation.
2	Cross-domain decay	Two or more authorities are weakened after a lifecycle transition, but governance remains reconstructable.	Triggered ECGRM review, authority matrix update, and corrective action plan.
3	Latent dissolution	Use continues while authorization, oversight, representation, assurance, or remedy cannot be reliably reconstructed.	Restricted access or use hold, dissolution audit, and community or regulatory engagement as appropriate.
4	Terminal EGCD	No coherent assemblage of authorities can authorize, monitor, adjudicate, or remediate current use.	Suspend or retire use; prohibit further transfer or deployment; rebuild governance before further use.

A prototype Ethical Continuity Dissolution Score (ECDS) can support triage. Each of the six authorities is scored 0 to 3: 0 = intact, 1 = fragile, 2 = compromised, 3 = dissolved. Total scores of 0-2 suggest intact or low concern; 3-5 indicate watch status; 6-9 indicate continuity decay; 10-13 indicate latent dissolution; and 14-18 indicate terminal EGCD. These thresholds are proposed sentinel triggers for deliberation, not automated determinations of ethical permissibility.

4. Six-domain taxonomy of governance authority dissolution

Here we list the authority domains of EGCD, common indicators of dissolution, and their mechanisms (Table 3).

Table 3: Domains of EGCD taxonomy

Authority domain	Authority question	Common dissolution mechanisms	Indicators
Authorization	Who or what legitimately permits current use?	Consent expiry, scope drift, unanticipated AI use, commercial transfer, community permission decay, waiver overuse.	Consent-scope distance; mismatch between consent categories and current use; absence of pathway for reauthorization.
Jurisdictional oversight	Which body has standing to review and intervene?	IRB/REC exclusion because data are de-identified; DAC limited to access only; product development outside research review; cross-border gaps.	No current review within defined interval; no accountable reviewing body; review limited to original collection.
Classification	What is the activity and which rules apply?	Boundary blurring among research, QI, care, operations, surveillance, model maintenance, and commercialization.	Classification changes without governance review; same use classified differently by partners.
Representation	Does the lineage still represent persons and communities accurately and ethically?	Descriptor drift, ontology/nosology change, provenance attenuation, aggregation across communities, proxy categories, loss of community standing.	Unrecoverable source attribution; group-level claims without community mapping; unvalidated transfer to new populations.
Algorithmic assurance	Who assures ongoing safety, performance, fairness, and deployment validity?	Model drift, fairness drift, silent updating, distribution shift, local deployment beyond validation context.	No monitoring plan; widening subgroup gaps; performance degradation; absent update governance.
Remedy and accountability	Who can pause, correct, notify, compensate, delete, unlearn, or retire?	Data/model transfer without enforceable clauses; federated aggregation; model parameters that cannot be traced; commercial product lock-in.	No actor with authority to suspend use; withdrawal cannot be honored; no CAPA owner.

5. Case domains

5.1 Multi-source linked administrative health data

Linked administrative health platforms combine clinical records, claims, registries, pharmacy data, mortality records, social care data, and sometimes genomic or geospatial data. These systems create public value, but they can also produce EGCD. Authorization authority weakens when clinical-care data become research, audit, operations, policy, and commercial-development assets. Oversight authority weakens because no single body may review the linked platform as a whole. Classification authority becomes unstable because the same use may be described as care improvement, research, public-health surveillance, product development, or service planning. The governance challenge is

not the existence of linked data itself, but the absence of a lifecycle mechanism that maintains authority across linked uses [16, 17].

The ECGRM response should require a continuity registry for the linked platform, a continuity authority matrix for each major use category, public transparency about secondary-use pathways, periodic review by a cross-functional board, and community or public advisory mechanisms proportionate to the scale of the platform.

5.2 Commercial AI training on clinical data

Commercial AI training intensifies EGCD because it introduces strong incentives to treat clinical data as a product-development resource rather than as a relational health record. Authorization authority may not cover commercial model development. Oversight authority may be bypassed if the activity is classified as product development rather than research. Algorithmic assurance authority may be fragile when models are updated, redeployed, or embedded in proprietary systems. Remedy authority may be weak if contracts do not specify audit rights, withdrawal conditions, deletion, model-update governance, or downstream deployment limits [3, 18-20].

The ECGRM response should require contractual authority clauses such as permitted uses; prohibited uses; model-update governance; subgroup performance reporting; withdrawal and deletion where feasible; post-deployment monitoring; audit rights; public transparency; and an accountable actor with power to pause or terminate use.

5.3 Genomic consortia, biobanks, and derivative biological materials

Genomic consortia and biobanks are paradigmatic EGCD settings because they combine long time horizons, broad consent, technological change, population-level inference, cross-border data sharing, and derivative materials. A biospecimen collected for one form of research may become a renewable iPSC line, organoid, genome sequence, polygenic risk score input, or training sample for a model. The original consent may be legally broad but ethically thin when the object, use, community

consequences, and commercial context change. Representational authority is also vulnerable because aggregate signals may be detached from the communities whose data made them possible, while downstream tools may be deployed in populations for which they were not validated [7, 9, 21-24].

The ECGRM response should combine consent-scope review, representational veracity audit, community standing analysis, derivative-material registry, cross-institutional dissolution audits, and explicit benefit-sharing and remedy provisions.

5.4 Federated learning and privacy-preserving analytics

Federated learning, differential privacy, secure multiparty computation, and related approaches can reduce privacy risks, but they do not eliminate ethical governance obligations. The claim that "data never move" can itself become a continuity trap if it causes institutions to overlook functional secondary use, model extraction, gradient contribution, downstream deployment, and group consequences. Authorization authority may be weak because data are repurposed in place. Representational authority may dissolve when local contributions are absorbed into a global model. Remedy authority may be unclear if a site withdraws after model aggregation [14, 25, 26].

The ECGRM response should treat federated participation as a lifecycle transition requiring authorization mapping, protocol-level governance, model-contribution documentation, update governance, exit clauses, and deployment-context review.

5.5 AI-generated inferred identities and digital twins

Secondary-use governance becomes more fragile when AI systems infer attributes that were not collected explicitly. A data subject may have consented to share typing patterns, imaging data, clinical notes, or wearable-device measurements without authorizing inference of mental health status, cognitive decline, fertility risk, or future disease. Digital twins raise similar concerns because they create persistent simulations that may continue after consent changes, death, incapacity, or institutional transfer. In these contexts, EGCD arises when governance cannot determine whose

identity is represented, what inferences are authorized, who can contest them, and whether the derivative object can be paused, deleted, corrected, or retired [2, 3, 11].

The ECGRM response should include inference-scope review, sensitive-inference restrictions, data directives for future use, automated-consent tools only with human oversight, and clear policies for withdrawal, digital retirement, and posthumous or incapacity-related governance.

6. Ethical Continuity Governance and Response Mechanism

The governance response to EGCD must move beyond point-in-time review without assuming that every participant must be recontacted for every future use. The objective is lifecycle authority that ensures that each material change in data, model, or biological-material use should have an identifiable authority structure capable of authorization, oversight, classification, representation, assurance, and remedy [5, 15, 19].

6.1 Continuity Registry

Every institution conducting DSHR should maintain a Continuity Registry of active datasets, models, derivative biological materials, data-sharing agreements, consent instruments, access approvals, deployment contexts, community-governance mechanisms, and responsible stewards. In low-resource settings, the registry can be implemented as a structured spreadsheet or REDCap instrument. In high-capacity settings, it can be integrated into data catalogues, MLOps systems, contract management systems, and IRB/DAC platforms. The registry is the minimum infrastructure needed to make lifecycle authority visible and auditable [19, 27].

6.2 Continuity Authority Matrix

The Continuity Authority Matrix (CAM) is the core diagnostic tool. For each lineage, the CAM identifies the six domain authorities, the evidence supporting each authority, its review date, its trigger events, and the actor empowered to remedy failures. A CAM should be required for major

secondary uses, data linkages, AI model training, cross-border transfers, commercial partnerships, federated learning projects, and derivative biological-material use.

Table 4: Continuity Authority Matrix and its minimum content

CAM field	Minimum content
Lineage identifier	Dataset/model/material name, source, version, and steward.
Lifecycle transition	Collection, linkage, modeling, deployment, transfer, federation, derivative material, retirement.
Authorization authority	Consent/legal/community basis; scope; limitations; reauthorization pathway.
Oversight authority	IRB/REC/DAC/regulator/funder body with current jurisdiction.
Classification authority	Current classification and justification; research/QI/operations/product/public-health status.
Representational authority	Descriptor, ontology, provenance, affected communities, transferability, and community standing.
Algorithmic assurance authority	Validation, fairness/performance monitoring, update protocol, deployment constraints.
Remedy authority	Actor with authority to pause, correct, notify, delete, unlearn, compensate, or retire.
ECDS score and stage	0-18 score; stage 0-4; date and reviewer.
Management plan	Corrective actions, owner, deadline, escalation.

6.3 Data Lifecycle Governance Officer

Institutions conducting DSHR should designate a Data Lifecycle Governance Officer (DLGO). The DLGO is not a substitute for an IRB, REC, DAC, data protection officer, privacy office, or community advisory body. Rather, the DLGO coordinates across them. Core duties include maintaining the Continuity Registry, ensuring CAM completion, identifying trigger events, initiating EGCD review, coordinating corrective actions, and producing an annual continuity report. The role is analogous to but broader than data-protection compliance functions under contemporary privacy law because it coordinates ethical, representational, algorithmic, community, and remedial authorities [19, 28].

6.4 Continuity Dissolution Review Board

When the CAM identifies Stage 2 or higher risk, review should shift to a Continuity Dissolution Review Board (CDRB). The CDRB should include, at minimum, REC/IRB expertise, data-access

governance, privacy/legal expertise, AI or informatics expertise, domain science, data stewardship, and community representation when community consequences are plausible. The CDRB determines whether authority can be restored, whether use should be restricted, or whether the lineage has reached terminal EGCD requiring suspension or retirement. This board operationalizes the reforms proposed for big-data research ethics review by adding lifecycle triggers, technical competence, and remedial authority [5, 6].

6.5 Corrective and preventive action

Management of EGCD should be documented through a corrective and preventive action plan. Possible actions include reconsent, meta-consent, community re-engagement, new ethics review, data use limitation, descriptor repair, ontology harmonization, provenance reconstruction, community standing restoration, fairness and performance audit, model retraining, model quarantine, access suspension, deletion, machine unlearning where feasible, transparency reporting, benefit-sharing review, and retirement of the data/model/material lineage. These actions translate consent, oversight, fairness, and AI-lifecycle governance into an institutional response pathway [8, 9, 12, 20].

7. Global implementation

EGCD is a global phenomenon, not an LMIC-specific deficit in ethical governance of DSHR. High-income settings may have sophisticated regulation but also high-volume data infrastructures, commercial AI partnerships, and complex learning health systems that accelerate dissolution. Middle-income settings may experience rapid data infrastructure growth that outpaces legal and ethics capacity. Low-resource settings may face external data extraction, limited post-approval monitoring, under-resourced community governance, and weak negotiating power in international collaborations. The ECGRM should therefore be scaled by institutional capacity rather than framed only by national income category [1, 17, 29-32].

Table 5: Implementation of ECGRM, their required elements and settings

Implementation tier	Required elements	Appropriate settings
Minimum viable ECGRM	Continuity Registry, CAM for high-risk uses, named DLGO or equivalent, trigger checklist, annual review.	Any institution conducting DSHR, including low-resource settings.
Intermediate ECGRM	Standing CDRB, ECDS scoring, documented CAPA, community-governance mapping, cross-institutional audit clauses.	Research-intensive institutions, biobanks, genomic consortia, national registries.
Advanced ECGRM	Automated registry integration, MLOps monitoring, fairness dashboards, contract-trigger alerts, independent audits, public transparency reports.	Large health systems, national data platforms, AI-development partnerships, high-volume repositories.

International collaborations should treat absence of community governance, weak post-approval monitoring, or inability to enforce remedy as dissolution indicators, not as reasons for default approval. Data transfer agreements and consortium agreements should include continuity clauses specifying authority mapping, trigger events, audit rights, community engagement, benefit sharing, and remedies for downstream use. Existing responsible data-sharing frameworks provide useful foundations, but EGCD requires an explicit continuity layer that tracks authority after data and models cross institutional boundaries [1, 27].

8. Discussion

EGCD provides a way to see familiar ethical problems as interacting components of a systemic lifecycle pathology. Consent staleness, function creep, review evasion, boundary blurring, representational attenuation, fairness drift, and remedy failure are not merely separate defects requiring separate fixes. In DSHR, they can mutually reinforce one another. A broad consent may permit future research, but if the activity is reclassified as product development, no IRB has jurisdiction, the community of origin is lost, the model drifts after deployment, and no actor can pause downstream use, the problem is no longer consent alone. It is governance continuity dissolution [5, 6, 11, 12].

The relationship to systemic oversight is especially important. Systemic oversight argues that ethical review must be adaptive, flexible, monitored, responsive, reflexive, and inclusive across the data

lifecycle. EGCD complements that view by naming the condition that systemic oversight is designed to detect and prevent. In clinical terms, systemic oversight is the care model; EGCD is the syndrome requiring diagnosis and management [5].

The relationship to representational veracity is equally central. EGCD does not replace representational veracity; it depends on it. Representational veracity explains why governance cannot be reduced to privacy or consent. If descriptors, disease categories, population labels, provenance records, or community categories become inaccurate or ethically misleading, then downstream governance is impaired even when data are de-identified and legally accessible. EGCD adds that representational failure becomes a governance dissolution problem when no authority can detect, adjudicate, or remedy the failure [13].

The relationship to the continuity trap is diagnostic. A dataset may appear continuous because it has a stable identifier, provenance trail, data access agreement, or IRB number. Yet the continuity of one artifact may conceal discontinuity in consent scope, community standing, classification, deployment context, or algorithmic performance. The continuity trap identifies this substitution error. EGCD describes the cumulative state that can emerge when the error is repeated across the lifecycle [14].

This framework has limitations. It is conceptual and requires empirical validation. The proposed ECDS and staging thresholds are not validated metrics. The DLGO and CDRB may be difficult to implement in resource-constrained environments unless adapted to existing governance structures. The framework does not fully solve the political economy of DSHR, including commercial incentives, asymmetries between data contributors and data users, and global inequities in bargaining power. Finally, community governance is not always straightforward: communities may be multiple, overlapping, contested, or difficult to identify after data aggregation.

Future research should validate the ECDS across case studies; examine whether CAMs improve IRB, REC, and DAC deliberation; test implementation in biobanks, cancer registries, and AI partnerships; compare community perceptions of dissolution risk; and evaluate whether ECGRM adoption reduces

governance failures, improves trust, and preserves scientific value.

9. Conclusion

Ethical Governance Continuity Dissolution names a central failure mode in data science health research: the loss of authority across the lifecycle of data, models, and biological materials. It is not enough to ask whether data were once consented, once reviewed, once de-identified, once documented, or once validated. The ethical question is whether current use remains authorized, reviewable, classifiable, representationally faithful, algorithmically assured, and remediable. EGCD provides a framework for diagnosing when those authorities have dissolved and for managing the problem through lifecycle governance. The task for global DSHR governance is not to preserve every original condition forever, but to ensure that authority does not silently disappear while data and models continue to act on the lives, identities, and communities from which they were made.

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Supplementary Files

TOC/Feature image for homepages

Image shows how continuity dissolution can occur and linkage to governance response mechanisms.