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Institutionalizing Responsibility in Healthcare: Epistemic Authority, Accountability and the Common Good

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Research Article

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Abstract

Contemporary healthcare depends on specialized expertise that patients, managers, payers and public decision-makers cannot independently reproduce or fully assess. This conceptual and normative article examines how scientific knowledge acquires operational authority as it is translated into recommendations, standards, technologies, procedures, reimbursement arrangements and policy decisions. It argues that scientific validity, clinical utility and institutional justification are distinct levels of judgment: a method may be scientifically valid without being clinically useful in every situation, useful without warranting routine adoption, and authorized or reimbursed without thereby becoming necessary. Responsibility must therefore follow knowledge throughout its institutional translation, preserving the visibility of evidence, uncertainty, interpretive judgment and conditions of revision while identifying who remains answerable across the decision pathway. A bounded comparative documentary analysis of routine lipid-profile testing shows how distinctions among measurement, calculation and analytical method can acquire institutional and financial significance through nomenclature and reimbursement. The article develops proportionate sufficiency as a normative criterion: the ordinary pathway must adequately meet the justified clinical need, while escalation requires identifiable additional value proportionate to its added burdens, risks and resource use. It connects this principle to lifecycle accountability and derives six operational priorities for national health policy. The common good provides the normative horizon linking appropriate care, equity, justified resource use, sustainability and trustworthy authority. Epistemic asymmetry is unavoidable in medicine; its conversion into unaccountable institutional and financial asymmetry is not.

1. Introduction

Contemporary healthcare depends upon specialized expertise that patients, professionals outside the relevant specialty, managers, payers and public decision-makers cannot independently reproduce or fully assess. This dependence is an unavoidable consequence of scientific specialization, but it creates distinctive responsibilities when expert knowledge informs diagnosis, treatment, access, expenditure and public policy. Technical accuracy is not enough: the assumptions, uncertainties, limits and judgments through which knowledge acquires authority must remain visible.

The epistemic status of an expert claim changes as it moves from observation to interpretation, recommendation and decision. These stages differ in uncertainty and normative content; the greater the inferential distance and consequences, the stronger the obligation to distinguish what is observed, inferred, interpreted and chosen. Scientific authority is also distributed: research findings are appraised by professional communities, translated into recommendations, embedded in technologies and procedures, financed through payment rules and implemented within organizations. Responsibility must therefore follow the conditions under which knowledge is generated, interpreted, operationalized and revised, rather than remain confined to the final clinician–patient encounter.

Existing scholarship illuminates successive parts of this trajectory. Evidence-Based Medicine addresses the appraisal and clinical interpretation of evidence [1]; guideline development and health technology assessment its translation into recommendations, standards and coverage decisions [2–4]; accountability scholarship the conditions of institutional answerability [5]; integrated-care research the coordination of responsibility across interdependent settings [6]; and diagnostic stewardship the appropriate use of diagnostic knowledge and resources [7]. International frameworks likewise emphasize coordinated governance, accountability, participation and institutional learning [8–10]. Yet these approaches remain largely segmented. They do not provide an integrated account of how the uncertainty and conditionality of scientific knowledge should remain visible as evidence becomes recommendation, technology, reimbursement rule and routine practice.

This article develops a conceptual and normative account of responsibility across the institutional translation of scientific knowledge in healthcare. It asks how epistemic responsibility can be preserved as expertise is converted into recommendations, standards, technologies, procedures, payment arrangements and decisions whose consequences extend from the individual patient to the healthcare system. Its central claim is that scientific validity, clinical utility and institutional justification are distinct levels of judgment. Conflating them allows contingent knowledge to acquire the appearance of finality and technical possibility to be mistaken for justified action. Responsibility must therefore follow knowledge as it moves from evidence to authority and from authority to action.

Through a targeted conceptual synthesis, the article makes four related contributions. First, it distinguishes scientific validity, clinical utility and institutional justification and the responsibilities attached to transitions between them. Second, it develops an account of institutional translation through which epistemically qualified knowledge acquires operational authority. Third, it proposes proportionate sufficiency as a normative criterion for governing escalation among scientifically admissible pathways. Fourth, it connects these claims to lifecycle accountability across the actors who evaluate, authorize, finance, implement, monitor and revise healthcare interventions.

A bounded comparative documentary analysis of routine lipid-profile testing is used heuristically to make one part of this mechanism visible. Scientific publications and official nomenclature, coding and reimbursement documents are examined across jurisdictions selected to contrast calculation, measurement, bundled pathways, separately recognized acts and method-dependent tariffs. The jurisdictions are illustrative rather than representative: the comparison does not infer national health-system performance, practice prevalence or causal effects of payment rules.

2. From Scientific Knowledge to Institutional Authority

2.1 From Scientific Evidence to Clinically Actionable Knowledge: Judgment under Uncertainty

Scientific findings do not enter healthcare as self-applying rules. Before they can guide care, they must be appraised and interpreted in relation to a defined clinical purpose, patient or population, requiring judgments about validity, applicability, benefits and harms, uncertainty and alternatives. Guideline development, GRADE Evidence-to-Decision frameworks and health technology assessment make this translation explicit by connecting evidence to recommendations, coverage and health-system decisions through structured deliberation [2–4].

Evidence-Based Medicine similarly sought to discipline professional authority by integrating the best available evidence with clinical expertise and patient values and circumstances [1]. It therefore did not eliminate judgment but made its evidential basis more explicit and contestable. Medical epistemic authority need not imply exclusive decisional authority: it identifies an epistemically privileged capacity grounded in expertise while leaving distinct roles for patients and other decision-makers [11]. Evidence neither selects nor interprets itself; appraisal still requires judgments about study quality, causality, applicability and the transfer of population-level findings to individual patients [12].

Biomedical evidence is also fallible. Study design, statistical power, analytical flexibility, reporting practices and institutional incentives can weaken the reliability of published claims [13]. Yet even strong and reproducible evidence cannot independently determine what ought to be done. Clinical decisions additionally involve benefits and harms, acceptable risk, patient preferences, fairness, opportunity costs and professional obligations. As Goodman [14] argues, fallibility creates responsibilities rather than removing them. Evidence constrains judgment; it does not supply its normative priorities or replace responsibility for choosing among admissible courses of action.

Knowledge consequently changes both status and authority as it moves toward action. A research finding addresses a scientific question; clinically actionable knowledge interprets its relevance; a recommendation identifies a preferred course of action under specified conditions; and an institutional rule connects that recommendation to professional expectations, procedures, eligibility, financing and accountability. Each transition adds judgments and purposes not contained in the scientific finding alone. As inferential distance increases, so does the responsibility to make those additions explicit. The relevant question is therefore not simply whether care is evidence-based, but whether the epistemic qualifications of evidence remain visible as it acquires the capacity to direct action. A scientifically defensible claim may support more than one clinically reasonable option, and clinical reasonableness does not by itself justify routine adoption, reimbursement or obligation.

2.2 Institutional Translation, Epistemic Authority and Accountability

The limits of evidence-guided clinical judgment mark the transition from clinical to institutional responsibility. Once evidence is formalized beyond the clinical encounter, organizational conditions and collective rules help determine how it acquires authority to direct conduct, allocate resources and define acceptable practice. Donabedian [15] situated quality within relations among structures, processes and outcomes, while Eddy [16] showed how evidence coordinates collective action through policies,

standards, guidelines and decision rules. The question therefore changes from whether a claim is scientifically valid or clinically relevant to how qualified knowledge acquires institutional authority.

This translation is neither automatic nor epistemically neutral. Actors assess evidence, formulate recommendations, select thresholds, recognize technologies and determine when interventions become permissible, reimbursable or obligatory. Jasanoff's account of co-production captures the reciprocal shaping of scientific knowledge and institutional order [17]. Institutional recognition, however, does not remove epistemic conditionality: a recommendation does not become a fact because it enters a guideline, authorization does not establish clinical necessity, and reimbursement does not by itself establish institutional justification. Responsible translation therefore requires traceability between evidence, added judgments, alternatives, retained uncertainties and conditions for revision.

Epistemic dependence also changes what accountability must accomplish. Decision-makers who cannot independently adjudicate technical claims can still examine the conditions under which expertise becomes authorized: competence and mandate, transparency of methods and data, disclosure of uncertainty and conflicts of interest, treatment of dissent and availability of review. Regulation, standardization and procedural safeguards are therefore mechanisms for making epistemic dependence governable, provided they preserve contestability and revision rather than convert procedural compliance into epistemic finality.

As knowledge acquires institutional force, responsibility is redistributed across professional societies, healthcare organizations, payers, regulators and clinicians. Responsibility refers to duties attached to a role or institutional function; accountability adds answerability—an obligation to explain and justify conduct before a forum able to question and evaluate it [5, 18]. Governance must therefore connect operational authority to identifiable responsibility across the pathway rather than concentrate responsibility retrospectively at the point of care. The difficulty is that healthcare decisions increasingly cross professional and organizational boundaries while accountability often remains attached to separate actors and institutions.

2.3 Integrated Care as a Test of Distributed Accountability

Integrated-care scholarship makes the problem of distributed accountability especially visible. Coordination depends on relationships across clinical, professional, organizational and system levels [6], yet corresponding mechanisms of answerability remain comparatively underdeveloped. Van Kerkvoorden et al. [19], for example, found that only two of forty-one studies in their review combined characteristics of service integration with networked accountability. This is a healthcare instance of the broader "problem of many hands": interdependent actors may collectively produce consequential outcomes while the location of responsibility becomes difficult to identify [20]. Responsibility may be distributed, but answerability must remain identifiable in actors and forums.

The difficulty is not solved by coordination alone. Information may circulate efficiently, care pathways may be integrated and professional roles may be complementary while responsibility for the resulting

decision remains unclear. Integration can therefore improve the continuity of care without necessarily securing the continuity of accountability. The latter requires more than assigning separate duties to each participant: it also requires mechanisms capable of examining how individually legitimate decisions interact to produce collective outcomes. Distributed accountability must consequently satisfy a dual requirement. It must remain actor-specific, so that each participant is answerable for decisions within their authority, and relational, so that the dependencies among those decisions can themselves be scrutinized. Otherwise, accountability risks becoming either fragmented (each actor justifying only a local decision) or diffuse, with the system invoked as the responsible entity while no identifiable actor or forum can answer for the pathway as a whole.

Financing is part of the same architecture. Payment mechanisms allocate not only reimbursement but also risks, incentives and decision-making authority, and may support integration or reproduce fragmentation depending on their design [21, 22]. They may therefore redistribute responsibility indirectly by altering who controls choices, who bears financial consequences and which forms of activity are institutionally rewarded. Financial arrangements are consequently instruments of governance rather than neutral administrative mechanisms.

Accountability in integrated care must therefore be specific enough to identify each actor's responsibilities and relational enough to examine the dependencies and incentives through which their decisions produce collective outcomes. The challenge is not to locate a single actor responsible for an intrinsically collective process, but to ensure that collective organization does not create zones in which consequential decisions escape answerability. Healthcare organizations are consequently the next level of analysis, because it is within them that standards, technologies, financing and professional judgment are converted into practical care.

3. Institutional Responsibility in Practice: From Epistemic Authority to the Common Good

3.1 Organizational Responsibility and the Governance of Epistemic Discretion

Healthcare organizations are not neutral settings in which scientific and professional decisions merely occur. They translate recommendations, standards, regulatory requirements and financing rules into technologies, protocols, budgets and patterns of clinical work, thereby shaping what knowledge becomes available, how it is interpreted and which alternatives remain accessible. They are therefore translational actors between scientific authority and practical care, making governance an intrinsic component of epistemic responsibility. Hospital accountability accordingly requires identifiable authority, answerability and participation across clinical, managerial and public domains [23].

Institutional autonomy strengthens rather than weakens this obligation. Greater discretion over technology selection, resource allocation and operational priorities enlarges the range of decisions for

which an organization must be able to provide scientific, clinical and distributive reasons. Transparency and participation support this answerability by making consequential choices visible and open to scrutiny [24]. Organizational responsibility therefore extends beyond compliance: it requires preserving the connection between a decision's scientific basis, clinical purpose, implementation and consequences for patients and collective resources.

Diagnostic and technical practice makes this translational responsibility especially visible. Laboratory results, images and molecular classifications are not simply produced; they are selected, generated, interpreted and incorporated into decision pathways. These processes create forms of epistemic discretion concerning what should be investigated, which method should be used, how uncertainty is represented and what significance should be attributed to the result.

Diagnostic stewardship provides one institutional mechanism for governing this discretion. It is not merely a strategy for reducing testing, but the organization of diagnostic choices according to the patient, clinical situation and intended purpose, from test selection and analytical procedure to interpretation and subsequent care [7]. This gives diagnostic specialists an active epistemic role and places stewardship within quality and patient-safety governance rather than utilization control alone [7, 25]. Because no single actor controls the complete diagnostic pathway, implementation is necessarily collective [26].

Diagnostic stewardship is therefore a practical form of accountability for epistemic discretion: it connects the scientific validity of a test to its clinical purpose, conditions of use, interpretation and consequences. More generally, organizational responsibility consists in governing the points at which specialized judgment is converted into operational choices whose consequences extend beyond the immediate technical act. The following documentary analysis examines one such point: the translation of distinctions among measurement, calculation and analytical method into nomenclature and reimbursement.

3.2 Routine Lipid-Profile Testing: A Bounded Comparative Documentary Illustration

A routine lipid profile commonly reports total cholesterol (TC), triglycerides (TG), high-density lipoprotein cholesterol (HDL-C) and low-density lipoprotein cholesterol (LDL-C), although these variables need not result from four independent measurements. The Friedewald relation estimates LDL-C from measured TC, HDL-C and TG:

LDL-CHDL-C

with the appropriate unit conversion. Introduced as an alternative to preparative ultracentrifugation, the calculation remains widely used subject to recognized analytical and biological limitations [27, 28].

Mathematical derivability does not determine the institutional pathway. The possibility of calculating a variable does not establish whether it should instead be measured, nor whether either operation should

be reimbursed; those choices require separate scientific, clinical and institutional justification. Table 1 summarizes these contrasting institutional translations.

Table 1
Contrasting institutional translations of routine lipid-profile testing in the documentary sources examined

Institutional setting	Institutional unit recognized	Treatment of calculation	Treatment of additional LDL-C measurement	Method-dependent tariff differentiation	Institutional feature made visible
Tunisia	Individual lipid analytes	No explicit calculation pathway is identified in the lipid entries examined	LDL-C is listed as an individual B30 act without specification of whether the value is measured or calculated	Two methods are listed and differently rated: precipitation B30 and the method designated as immunological B100	Additive, analyte-based and partly method-dependent with limited linkage between operation and tariff eligibility
France	Integrated EAL package (exploration d'une anomalie lipidique), treated as an indivisible act	Calculated LDL-C is incorporated into the routine package	Direct enzymatic LDL-C may be added under a predefined biological condition and justified in the report	The accepted HDL-C method does not alter the package coefficient	Pathway-based classification distinguishing a routine configuration from a justified exception
Belgium	Individually listed biological acts	Calculation and direct measurement of LDL-C are institutionally distinguished	Direct LDL-C is subject to specified reimbursement conditions	No separate method-dependent tariff distinction was identified in the entry examined	Explicit institutional boundary between calculation and measurement
United States Medicare	A lipid panel, or its separately coded constituent tests	The routine panel contains the measured components from which LDL-C may be calculated	Measured LDL-C is treated as a separately coded service in the coding structure examined	No method-dependent tariff distinction was identified in the coding structure examined	Panel-based coding with separate recognition of additional measurement

The documentary sources reveal distinct ways of converting the same diagnostic domain into reimbursable institutional objects. The French architecture integrates measured TC, TG and HDL-C with calculated LDL-C in the routine EAL pathway and treats direct enzymatic LDL-C as a condition-dependent, report-justified addition [29–31]. Belgium explicitly distinguishes calculation from direct LDL-

C measurement and subjects the latter to specified reimbursement conditions [32], while Medicare distinguishes the routine lipid panel from separately coded measured LDL-C [33].

The Tunisian nomenclature instead lists individual analytes and differentiates some methods by coefficient: TC B20, TG B35, LDL-C B30, HDL-C by precipitation B30 and the method designated as immunological B100. The LDL-C entry does not specify whether the reported value is measured or calculated or provide a decision rule linking that distinction to tariff eligibility [34–36]. The contrast is therefore institutional rather than merely technical: calculation may be incorporated into a routine pathway, direct measurement treated as an exception, or method choice itself made tariff-relevant.

Table 2
Tariff consequences of selected lipid-reporting configurations reconstructed from the Tunisian and French documentary sources examined

Configuration for producing the four reported lipid variables	**Tunisia: tariff construction**	**Tunisia: total coefficient**	**France: corresponding documentary pathway**	**France: total coefficient**
TC, TG and HDL-C measured by precipitation; LDL-C calculated	TC B20 + TG B35 + HDL-C by precipitation B30	B85	Integrated EAL package including calculated LDL-C	B19
Same four variables. HDL-C measured by the method designated as immunological; LDL-C calculated	TC B20 + TG B35 + HDL-C by the method designated as immunological B100	B155	Same integrated EAL package; the accepted HDL-C method does not alter the package coefficient.	B19
Four variables measured, HDL-C by precipitation	TC B20 + TG B35 + LDL-C B30 + HDL-C B30	B115	EAL plus direct LDL-C under the specified biological condition	B37
Four variables measured, using the higher-rated HDL-C method	TC B20 + TG B35 + LDL-C B30 + HDL-C B100	B185	Same EAL-plus-direct-LDL pathway; the HDL-C method does not alter the package coefficient	B37

** The table compares the internal construction and variability of the two tariff architectures, not the monetary value of their coefficients. French and Tunisian B coefficients are nationally defined and are not financially commensurable. The French values reflect the architecture documented in the 2009, 2017 and 2019 decisions examined and should not be interpreted, without further verification, as a statement of the complete current French tariff schedule. The configurations report the same nominal set of four lipid variables but should not be presumed analytically or clinically equivalent.*

The relevant comparison concerns the structure of justification created by the nomenclature, not the numerical level of nationally defined coefficients. In the Tunisian configurations reconstructed in Table 2, the coefficient varies from B85 to B185 according to whether LDL-C is calculated or measured and which HDL-C method is used, although the same nominal set of four lipid variables is reported. In the French

documentary architecture examined, the routine EAL remains B19 irrespective of the accepted HDL-C method, while condition-dependent direct LDL-C raises the pathway to B37.

The coefficients are not financially commensurable across countries; the relevant contrast is their internal institutional logic. One architecture permits substantial tariff variation through separately rated acts and methods, whereas the other packages the routine pathway and reserves additional payment for a predefined exception. The comparison therefore reveals differences in how justification is organized, not a ranking of health systems. Where financial consequences vary while criteria governing technical choice remain insufficiently explicit, epistemic discretion acquires a financial dimension that institutional governance must be able to examine.

The documentary analysis does not establish which configurations laboratories actually use, their frequency, who selects the analytical pathway, whether alternatives are clinically interchangeable in particular circumstances or whether tariffs influence provider behaviour. Nor does it demonstrate misconduct, unnecessary care or aggregate financial harm; such questions would require observational, billing, protocol, interview, outcome and medico-economic data.

Its contribution is narrower but conceptually significant. Institutional design does not merely reimburse a pre-existing scientific reality; it determines which scientific distinctions become visible, billable and subject to justification. The case thereby identifies a point at which epistemic discretion acquires institutional and financial consequences. Their magnitude is not estimated here, but repeated consequences may become relevant to household expenditure, insurance resources, public budgets and the collective capacity to sustain care.

3.3 Institutional Justification and the Common Good

The documentary analysis raises a broader question of institutional justification:

when several scientifically admissible pathways exist, by what criteria should an organization choose among them and explain the consequences?

Standards bridge scientific knowledge and organizational responsibility by defining ordinary pathways, quality requirements, decision roles, documentation and justified exceptions. Medical-laboratory standards accordingly extend beyond analytical accuracy to competence, traceability and control of the complete testing process [37]. Such standards connect scientific validity and patient safety with workload, expenditure, access and resource allocation. A technically valid option may still be clinically unnecessary or institutionally insufficiently justified, just as cost reduction may be unacceptable when it produces inadequate care. Stewardship therefore directs institutional discretion toward publicly defensible healthcare purposes rather than isolated organizational interests [38].

Institutional compliance cannot be treated as epistemic finality. Knowledge, technologies, prices and organizational conditions evolve, while standards and reimbursement classifications may preserve earlier assumptions or technical distinctions. Because such rules embody scientific evidence together

with professional, regulatory, technological and social choices [17], responsible institutions must be capable not only of applying them but of explaining, evaluating and revising them.

The common good provides the normative horizon for this continuing justification. It is used here not as a comprehensive theory of social value, nor as a synonym for aggregate utility, but as the collective conditions under which individual health needs can be met through institutions that remain equitable, trustworthy and capable of continued care [39–41]. On this account, the common good concerns not the aggregation of individually justified decisions, but the conditions under which justified individual care remains collectively possible over time. It is not reducible to efficiency or cost containment: beyond resource use, it asks whether access, burdens, risks and future healthcare capacity are distributed consistently with justified care for present and other patients. Nor does it displace the obligation owed to the individual patient: a less resource-intensive pathway is unjustified when clinically inadequate, just as technical availability, novelty or reimbursement cannot by themselves justify escalation.

This perspective connects the adequacy owed to the patient before us with the equity, sustainability and institutional trustworthiness on which continued access to care depends. Because patients and payers cannot independently verify many decisions taken in their name, trustworthiness depends not on unrestricted confidence in expertise but on arrangements through which authority remains explainable, contestable and revisable [42]. Standards, documentation and accountability contribute to that trustworthiness when they preserve the connection among evidence, clinical purpose, institutional choice and collective consequences.

Figure 1 synthesizes the institutional trajectory developed above. The horizontal sequence represents the progressive acquisition of operational authority by scientific knowledge; the vertical relationships represent continuing answerability across the pathway. The common good is not its endpoint but the normative horizon governing the trajectory as a whole.

4. Governing Epistemic Asymmetry for the Common Good

4.1 From Epistemic Asymmetry to Institutional Incentives

The lipid-profile illustration makes visible a mechanism whose relevance extends beyond laboratory medicine. Imaging, prescribing, surgery, implants, preventive programmes, hospitalization and digital health all involve forms of epistemic dependence intrinsic to specialized care [43]. Epistemic asymmetry, as used here, concerns not merely unequal access to information but unequal capacity to assess the validity, relevance and implications of specialized claims. It therefore persists even when information is formally disclosed: transparency is necessary, but it cannot enable patients, payers or non-specialist decision-makers to reproduce the judgment on which they depend.

The mechanism examined here becomes institutionally salient when four conditions coincide: (i) more than one scientifically admissible pathway is available; (ii) a professional or organization controls or strongly influences the choice among them; (iii) that choice modifies payment or resource use; and (iv)

no sufficiently explicit criterion determines when the more resource-intensive pathway is justified. Their conjunction identifies settings in which epistemic discretion can acquire distributive and financial consequences while remaining difficult for patients, payers or non-specialist decision-makers to assess independently. The actor contributing to the definition of need may then also influence the remunerated intervention through which that need is met. These scope conditions diagnose a structural vulnerability in justification, not misconduct, unnecessary care or improper motive.

Payment arrangements structure the incentives within which epistemic discretion operates. Fee-for-service, bundled payment, capitation, salaries and value-based arrangements affect volume, quality, coordination and access in heterogeneous ways [22, 44]; none can be assumed to produce justified care independently of the criteria and accountability surrounding its use. In additive fee-for-service settings, discretion may acquire a financial direction when the actor influencing a choice also benefits from an additional service whose marginal value the payer cannot independently assess. Insurance redistributes expenditure but does not resolve the justification problem: the question remains whether the intervention serves an explicit clinical purpose and whether its benefits and burdens are publicly defensible.

Increasing technical sophistication does not abolish the uncertainty, conditionality or assumptions attached to knowledge. The institutional problem begins when these qualifications become less visible as knowledge acquires operational force through standards, technologies, reimbursement rules or organizational procedures. Its conditional authority may then become difficult to distinguish from administrative necessity. Institutionalization does not transform uncertainty into truth; it transforms epistemically qualified knowledge into a power to act upon others. Responsibility therefore requires its assumptions, conditions and limits to remain visible, traceable and open to revision throughout the decision pathway.

4.2 Proportionate Sufficiency and Lifecycle Responsibility

Low-value care concerns more than expenditure: interventions offering little patient-relevant benefit may produce physical, psychological and financial harm, initiate diagnostic or therapeutic cascades and consume capacities needed elsewhere [45]. Yet indiscriminate restriction creates the opposite risk of underprovision.

The article develops proportionate sufficiency as a normative criterion for choices among scientifically admissible pathways. The ordinary pathway should be scientifically defensible and sufficient for the justified clinical need, while escalation should correspond to an identifiable additional benefit, protection or patient-specific need. Sufficiency sets the floor: the ordinary pathway must adequately serve the clinical purpose. Proportionality governs escalation above that floor: additional burden, risk or resource use requires identifiable additional value. The principle is neither a rule of cost minimization nor a presumption in favour of the least intensive intervention, and it differs from general appeals to appropriateness or low-value care. It should also be distinguished from sufficientarian theories of health justice, which concern thresholds of adequate health or healthcare and their distributive implications across persons [46]. Here, sufficiency is decision-relative rather than distributive: it asks whether a

pathway adequately meets a justified clinical purpose. Proportionality then governs the burden of justification for escalation beyond that level. The principle does not itself determine how healthcare resources should be distributed among persons. Its distinctive function is to structure justification when several scientifically admissible pathways exist, applying symmetrically to underprovision and unjustified escalation.

Operationally, it asks three questions: Is the ordinary pathway adequate to the clinical purpose? Does escalation provide identifiable additional value? Is that value proportionate to the additional burdens, risks and resources involved?

Health technology assessment provides an institutional framework for examining such judgments across clinical, economic, ethical, organizational and social dimensions [47]. Regulation (EU) 2021/2282 similarly separates joint clinical assessment from national judgments concerning value, pricing and reimbursement [48]. The relevant question is therefore not merely whether a technology can perform a task, but when, for whom, under what conditions, compared with which alternatives and at what individual and collective cost its use is justified.

Institutional responsibility must extend across the lifecycle of an intervention or technology: assessment and adoption, implementation and use, real-world monitoring, and reassessment, modification or withdrawal. Digital and AI systems make this particularly visible because performance may change with software, data and local use. Current governance frameworks accordingly emphasize traceability, human oversight, local validation and continuing monitoring [49, 50]. Authorization cannot constitute a permanent transfer of responsibility from the adopting institution to the developer or regulator.

Nomenclatures, benefit packages and payment schedules belong to the same lifecycle because they determine which interventions become visible, how services are bundled or separated and when additional payment is recognized. Such arrangements may become technologically obsolete or create incentives for over- or underprovision and therefore require periodic scientific, clinical, economic and distributive review. Lifecycle accountability must correspondingly map authority across those who evaluate, procure, develop, implement, finance and regulate an intervention, identifying who selects, authorizes exceptions, bears costs, monitors outcomes and answers before the relevant forum [5, 50]. The aim is neither to dissolve responsibility into “the system” nor to concentrate it retrospectively on the final professional, but to establish answerability across the lifecycle.

4.3 Cumulative Consequences, Institutional Learning and Public Accountability

Weak justification may be marginal in a single decision yet systemically significant through repetition. Modest additional costs, risks, delays or uses of capacity can accumulate across patients and time, affecting household expenditure, insurance resources, public budgets, waiting times, workforce capacity and access to other care. In import-dependent systems, recurrent choices may also affect foreign-

exchange and supply resilience. The present analysis identifies this cumulative pathway but does not estimate its prevalence or magnitude.

Cumulative consequences also introduce a temporal dimension into institutional justification. A choice that appears proportionate when considered as an isolated act may require reassessment once patterns of use, repeated expenditure, adverse effects or opportunity costs become visible at scale. Conversely, aggregate cost alone cannot retrospectively render an individually justified intervention inappropriate. What changes is the evidential basis on which future decisions must be defended. Responsibility therefore extends beyond the justification of the initial choice to the institutional capacity to detect when accumulated consequences alter the balance among benefit, burden, equity and sustainability.

Because evidence, technologies, prices and patterns of use evolve, responsibility must include the capacity to learn. A learning health system converts routine information, research and patient experience into recurrent evaluation and improvement [51]. Learning, in this sense, is not merely the accumulation of information but the ability to convert emerging evidence into reconsideration of previously authorized practices. Institutional learning is therefore the temporal counterpart of accountability: it carries the consequences of past decisions into the justification of future ones. This requires a cycle of scientific vigilance, contextual appraisal, institutional translation, implementation, monitoring and reassessment across universities, professional societies, healthcare organizations, payers and regulators.

Learning must also remain publicly intelligible. Epistemic asymmetry creates a corresponding obligation to make information, consent, billing, coverage and complaint mechanisms understandable and navigable; organizational health literacy is therefore an institutional responsibility, not merely a patient competence [52]. Public participation extends intelligibility into answerability by giving those affected a meaningful opportunity to question priorities, trade-offs and distributive consequences [53]. Participation does not displace expertise; it subjects the institutional uses and consequences of expertise to public questioning.

The complete mechanism can therefore be stated concisely: specialized knowledge creates unavoidable epistemic asymmetry; professional and organizational discretion translates knowledge into action; technologies and payment rules structure the available choices; repeated decisions generate collective consequences; and learning and public accountability determine whether those arrangements remain revisable and legitimate.

Epistemic asymmetry is unavoidable in medicine; its conversion into unaccountable institutional and financial asymmetry is not.

4.4 Operational Priorities for National Health Policy

The preceding analysis supports six operational priorities, each corresponding to a vulnerability identified above: ambiguity of clinical purpose requires escalation criteria; fragmented authority requires lifecycle accountability; uncertainty among alternatives requires comparative evaluation; the financial translation of technical distinctions requires review of nomenclatures and payment rules; evolving

knowledge requires scientific vigilance and contextual HTA; and irreducible epistemic asymmetry requires intelligibility and public answerability. Implementation must be adapted to institutional capacity, but each priority should identify who is responsible, according to which rule, using what evidence, before which forum and at what point of reassessment. Without these elements, distributed responsibility cannot become operational accountability.

1. Make clinical purpose and escalation criteria explicit

Require interventions to be connected to an identifiable clinical purpose and define the ordinary pathway together with clinical, technical or patient-specific criteria for escalation. Where the information that might justify escalation is produced only after the procedure is chosen, criteria must be specified ex ante: a result must not retrospectively validate the procedure that produced it. Material differences in benefit, risk, burden or patient cost should be communicated without transferring responsibility for technical judgment to the patient.

2. Assign accountable responsibility across the complete lifecycle

Map responsibility across assessment, selection, procurement, authorization, implementation, financing, monitoring, reassessment and withdrawal. Governance arrangements should identify who defines routine use, authorizes exceptions, monitors outcomes and expenditure, and answers before the relevant forum. Digital and AI systems additionally require defined responsibility for data governance, cybersecurity and software monitoring. Patient or civil-society participation should be included where access, equity or collective priorities are materially affected.

3. Compare realistic alternatives and monitor their real-world consequences

Compare realistic alternatives before adoption, continuation or withdrawal according to scientific validity, clinical utility, safety, patient-relevant outcomes, feasibility, resource requirements, costs, equity and lifecycle consequences. After implementation, monitor utilization, variation, patient charges, adverse events and relevant outcomes. Evaluation should examine both overuse and underuse and lead to reassessment at predefined intervals.

4. Treat nomenclatures and payment rules as revisable instruments of health policy

Subject nomenclatures, benefit packages and reimbursement rules to periodic scientific, clinical, economic and distributive review. Authorities should verify that recognized acts reflect current knowledge, that related services are appropriately bundled or separated, that method- or technology-

dependent tariff differences remain justified and that additional payment corresponds to explicit conditions. Payment reforms should state their objectives and anticipate risks of unnecessary volume, underprovision, inequitable access or technological lock-in. The evidence and trade-offs supporting tariff decisions should be publicly documented.

5. Build a permanent national capacity for scientific vigilance and contextual HTA

Establish permanent national capacity for identifying emerging technologies, revised thresholds, new uses, harms and comparative-effectiveness evidence, and subject relevant developments to critical appraisal, contextual HTA and local evaluation. Universities, teaching hospitals, research centres and professional societies should contribute where international evidence is insufficient or poorly transferable. Scientific vigilance must connect to regulatory revision, implementation and reassessment rather than remain an isolated observatory function.

6. Make institutional decisions intelligible and public participation consequential

Require healthcare and financing institutions to make information, consent procedures, billing, coverage and complaint pathways understandable and navigable. Patient and civil-society bodies should have supported roles in reviewing benefit packages, nomenclatures, reimbursement rules and access barriers. Institutions should disclose conflicts of interest and document how public contributions affected decisions. Participation is meaningful only when it creates a traceable opportunity to question, modify or require justification of institutional choices.

Table 3 consolidates these priorities into an operational framework by identifying, for each, the lead authority, principal instrument, monitoring object and reassessment mechanism.

Table 3
Operationalization of the six national health-policy priorities

Policy priority	Lead authority	Main instrument	Monitoring object	Reassessment mechanism
Clinical purpose and criteria for escalation	Professional and regulatory bodies	Guidelines and ex ante criteria	Variation, escalation rates, patient outcomes	Scheduled guideline review
Lifecycle accountability	Healthcare organizations and regulators	Responsibility map and governance committee	Performance, adverse events, costs	Periodic lifecycle review
Comparative evaluation	HTA bodies and payers	Comparative assessment	Use, outcomes, charges, inequity	Predefined reassessment
Nomenclature and payment	Payers and health ministries	Tariff and benefit-package revision	Volume, underuse, overuse, budget effects	Regulatory review cycle
Scientific vigilance	National HTA/research network	Horizon scanning and contextual research	Emerging evidence and technology change	Scientific update process
Public answerability	Healthcare and financing institutions	Accessible information and formal participation	Complaints, access barriers, traceable impact	Public reporting and review

5. Conclusion: Institutionalizing Responsibility for the Common Good

This article has argued that scientific responsibility does not end with the production or accurate communication of valid knowledge. It extends through the institutional processes by which knowledge is interpreted, translated into recommendations, incorporated into technologies and procedures, recognized in nomenclatures, financed and converted into decisions affecting patients and collective resources. The central problem is therefore how to preserve the epistemic qualifications of knowledge as it acquires operational authority.

The article distinguishes scientific validity, clinical utility and institutional justification and traces the responsibilities added in moving between them. A method may be scientifically valid without being useful in every clinical situation, clinically useful without warranting routine adoption, and authorized or reimbursed without thereby becoming necessary. Because these transitions are distributed across professional bodies, healthcare organizations, payers, regulators and clinicians, answerability must follow the pathway rather than be concentrated retrospectively at the point of care. The bounded lipid-profile analysis makes one part of this trajectory visible by showing how distinctions among

measurement, calculation and analytical method can acquire institutional and financial significance through nomenclature and reimbursement.

Proportionate sufficiency provides a normative criterion for governing such choices: the ordinary pathway must adequately meet the justified clinical need, while escalation requires identifiable additional value proportionate to its additional burdens, risks and resource use. This principle protects against both underprovision and unjustified escalation; it does not equate responsible care with the cheapest care.

The common good supplies the wider normative horizon. Appropriate care for the patient before us must remain connected to equity, justified resource use, institutional sustainability and trustworthy authority. Patients and citizens need not reproduce specialized judgments, but institutions must remain able to explain the purposes, evidence, criteria and consequences of the decisions taken in their name. Institutionalizing scientific authority responsibly therefore requires institutionalizing the conditions under which that authority remains answerable, contestable and revisable.

Declarations

Author Contribution

Jamel Chahed is the sole author of the manuscript

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Figures

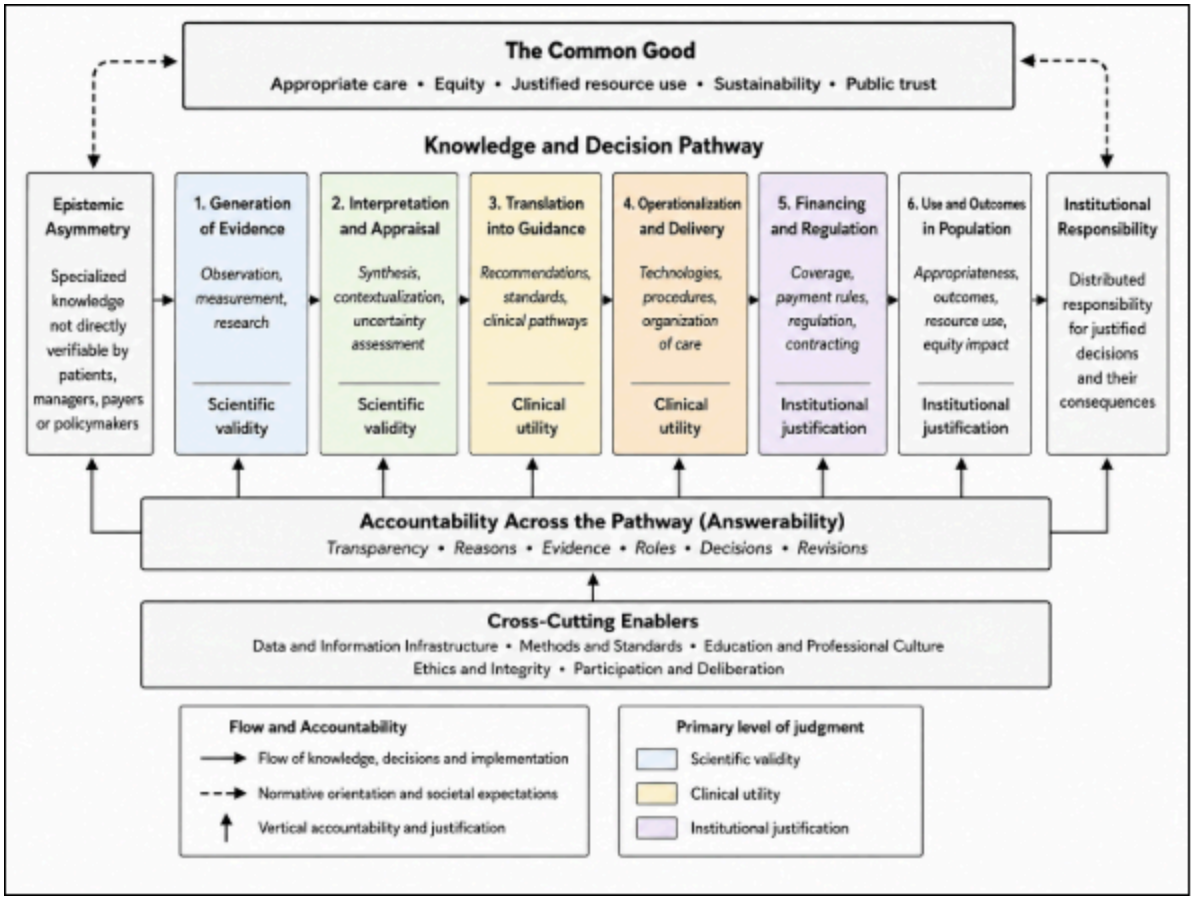


Figure 1

Institutional trajectory of knowledge, accountability and responsibility in healthcare, showing epistemic asymmetry, the knowledge and decision pathway, accountability across the pathway, institutional responsibility and the common-good horizon