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Governance Failure, Silent Privatization, and the Erosion of Universalism in Italy's National Health Service; Infertility Care as a Sentinel Indicator of Structural Healthcare Inequities

Francesco Maria Bulletti[1], Carlo Bulletti[2]*

[1]*CHUV Lausanne - DÉPARTEMENT D'HÔPITAL Maternité / Gynécologie et obstétrique. Switzerland*

[2]*President of Help Me Doctor, Department of Obstetrics, Gynecology, and Reproductive Science, NYU New York (NY) USA and Yale University, USA*

***Corresponding author:** Carlo Bulletti, MD, President of Help Me Doctor worldwide platform for 1st and 2nd medical opinions, Cattolica, Italy Past Professor Adjunct, Department of Obstetrics, Gynaecology, and Reproductive Science, NYU New York (NY) USA and Yale University, New Haven (CT), USA. Past President of the Italian Society of Fertility, Sterility, and Reproductive Medicine (SIFE-MR), Italy

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ABSTRACT

Italy's National Health Service (Servizio Sanitario Nazionale, SSN) has historically been regarded as one of the most successful examples of universal healthcare, combining broad population coverage with favorable health outcomes. However, increasing waiting times, regional disparities, workforce shortages, rising out-of-pocket expenditures, and the growing expansion of private providers have raised concerns regarding the sustainability of equitable access to care. The present policy analysis examines whether these developments represent a temporary capacity imbalance or a deeper structural governance challenge. National and international health-system data, regulatory reports, institutional documents, and comparative evidence from OECD and European healthcare systems were reviewed to explore the interactions among waiting-list management, workforce dynamics, privatization trends, accountability mechanisms, and healthcare access. Infertility care was used as a paradigmatic case study because of its time-sensitive nature and its capacity to reveal the practical consequences of delayed access within a formally universal system.

The analysis suggests that waiting time has progressively evolved from an operational problem into a de facto rationing mechanism, effectively transforming delay into an implicit economic barrier. Rising household healthcare expenditure, increasing reliance on private and hybrid providers, and persistent regional inequalities appear to reinforce one another, generating a gradual shift toward stratified access despite the preservation of universal entitlement in legal terms. Simultaneously, the absence of transparent outcome-based evaluation systems may weaken institutional accountability and obscure differences in performance among healthcare organizations and professionals. Workforce depletion, educational bottlenecks, and limited merit-based progression further threaten the resilience of the public sector. Emerging digital technologies and artificial intelligence offer opportunities to improve transparency, prioritization, and outcome monitoring, although their effectiveness depends on appropriate governance and public oversight. The findings indicate that the current challenges facing the SSN are predominantly structural rather than cyclical. Preserving universal healthcare will require explicit prioritization policies, transparent outcome measurement, merit-based leadership selection, and systematic accountability across both public and private providers. Without such reforms, universal coverage risks remaining a constitutional principle while progressively losing effectiveness as a lived reality. Future research should evaluate whether outcome-based governance models and AI-supported transparency tools can improve equity, efficiency, and public trust within universal healthcare systems.

Keywords: Reproductive Medicine; Universalism; Health Care Privatization; Private Equity; AI Supporting Equity; Efficiency and Public Trust

Abbreviations: SSN: Servizio Sanitario Nazionale; AI: Artificial Intelligence; OECD: Organisation for Economic Co-operation and Development; WHO: World Health Organization; CDC: Centers for Disease Control; OOP: Out-of-Pocket; ART: Assisted Reproductive Technologies

Introduction

Universal healthcare systems are founded on a social contract that seeks to guarantee equitable access to medical care regardless of income, geography, or social status. Since its establishment in 1978, the Italian National Health Service (Servizio Sanitario Nazionale, SSN) has been widely regarded as one of the most ambitious European implementations of this principle, combining universal coverage with favorable health outcomes and comparatively low expenditure relative to many other high-income countries [1-3]. For decades, the SSN represented a model in which solidarity, accessibility, and public financing coexisted with substantial gains in life expectancy, maternal health, and chronic disease management [3,4]. In recent years, however, increasing concerns have emerged regarding the long-term sustainability of this model. National reports, OECD analyses, and independent institutional assessments have documented growing waiting times, persistent regional inequalities, shortages of healthcare professionals, increasing out-of-pocket expenditures, and an expanding role for private healthcare providers [5-9]. Although each of these phenomena has been analyzed individually, their combined implications for the future of universal healthcare remain incompletely understood.

The present analysis starts from the observation that access to healthcare is determined not only by formal legal entitlement but also by the practical ability to obtain timely and effective care. In this context, prolonged waiting times may function as a de facto barrier to access, particularly for time-sensitive medical conditions in which delay can directly affect prognosis. Several international health policy studies have suggested that waiting lists may operate as an implicit form of rationing when demand systematically exceeds available capacity [10-12]. Whether a similar phenomenon is occurring within the Italian healthcare system deserves careful evaluation. The increasing participation of private providers within publicly funded healthcare systems represents another area of ongoing debate. Comparative international evidence indicates that private-sector involvement may contribute positively to capacity, innovation, and service delivery under certain regulatory conditions [13]. However, concerns have also been raised that insufficient transparency, fragmented accountability, or poorly aligned incentives may inadvertently exacerbate inequalities in access or outcomes [14,15]. Rather than assuming that public and private models are inherently incompatible, the critical policy question concerns the governance mechanisms through which healthcare performance is measured, monitored, and rewarded.

Reproductive medicine provides a particularly informative lens through which to examine these broader issues. Infertility affects millions of individuals worldwide and is increasingly recognized as a disease by major international organizations [16-19]. Unlike many chronic conditions, reproductive outcomes are highly time dependent. Delays in evaluation or treatment may irreversibly reduce the probability of achieving pregnancy because of age-related declines in gamete quality and reproductive potential [17,18]. Consequently, infertility care offers a useful case study for exploring the practical consequences of waiting times, unequal access, workforce limitations, and differences in healthcare organization. A further dimension of contemporary healthcare concerns the growing availability of digital technologies, large-scale health databases, and artificial intelligence (AI)-assisted analytical tools. These innovations may enable more objective evaluation of clinical performance, outcome measurement, patient stratification, and resource allocation [20-22]. At the same time, they raise important questions regarding transparency, governance, data ownership, and accountability. Whether AI can contribute to a more equitable and outcome-oriented healthcare system remains an open but increasingly relevant question [20-22].

This article does not seek to provide a comprehensive economic evaluation of the Italian healthcare system nor to compare ideological models of healthcare delivery. Instead, it presents a policy-oriented analysis examining how waiting-time dynamics, workforce challenges, private-sector expansion, governance structures, and emerging digital technologies may interact to influence access to care. We hypothesize that the most significant threats to universal healthcare are not necessarily reductions in formal entitlement, but rather the progressive emergence of structural barriers that limit effective access despite the continued existence of universal coverage in legal terms [22-24]. By integrating evidence from healthcare policy, workforce studies, reproductive medicine, governance literature, and emerging digital health technologies, this analysis aims to explore whether current trends represent temporary operational pressures or indicators of a deeper structural transition within the Italian National Health Service [23-25].

Methods

Study Design

This study was designed as a narrative policy analysis with systematic evidence integration. The objective was not to perform a formal systematic review or meta-analysis, but rather to examine the structural, organizational, economic, ethical, and governance factors currently influencing access to healthcare within the Italian National Health Service (Servizio Sanitario Nazionale, SSN), with particular attention to waiting times, workforce dynamics, privatization trends, reproductive healthcare, outcome transparency, and the potential role of artificial intelligence in healthcare governance. The methodological approach was informed by established frameworks for health policy analysis and health systems research, recognizing that complex healthcare systems require the integration of epidemiological, organizational, economic, ethical, and regulatory evidence [23-25].

Sources of Evidence

Evidence was obtained through a structured review of multiple complementary sources between January 2000 and December 2025. Sources included:

1. Peer-reviewed scientific literature indexed in PubMed/MEDLINE, Scopus, and Web of Science.
2. International health-system reports produced by the Organisation for Economic Co-operation and Development (OECD), the World Health Organization (WHO), and the European Commission.
3. National institutional reports including publications from ISTAT, AGENAS, the Italian Ministry of Health, the Corte dei Conti, and Fondazione GIMBE.
4. National and international reports on healthcare financing, waiting times, workforce planning, healthcare governance, quality assessment, and outcome measurement.
5. Professional society documents and position statements relevant to reproductive medicine, including publications from ESHRE, ASRM, and the Centers for Disease Control and Prevention (CDC).
6. Legislative and regulatory documents relevant to healthcare governance and medically assisted reproduction in Italy and Europe.

Search Strategy

Literature searches were performed using combinations of the following terms:

- Italian National Health Service,
- Universal healthcare,
- Waiting times,
- Healthcare access,
- Healthcare governance,
- Healthcare privatization,
- Public-private mix,
- Healthcare workforce,
- Quality measurement,
- Outcome transparency,
- Reproductive medicine,
- Assisted reproductive technology,
- Infertility care,
- Artificial intelligence,
- Digital health,
- Healthcare accountability,
- Performance metrics and health policy.

Additional references were identified through manual review of bibliographies from relevant publications and institutional reports.

Eligibility Criteria

Documents were considered eligible if they:

- Addressed healthcare system performance, governance, access, financing, workforce, quality assessment, or outcome measurement;
- Reported data from Italy or included comparative analyses relevant to European healthcare systems;
- Addressed infertility care, reproductive medicine, or access to assisted reproductive technologies;
- Discussed digital health technologies, artificial intelligence, healthcare transparency, or healthcare accountability;
- Were published in peer-reviewed journals or by recognized institutional bodies.

Opinion pieces, non-documented commentaries, and publications lacking identifiable sources were used only when relevant to contextual interpretation and were not considered primary evidence.

Analytical Framework

The analysis was organized around five interrelated domains:

1. Universal healthcare and effective access to care.
2. Waiting times and implicit healthcare rationing.
3. Workforce sustainability and healthcare system resilience.
4. Reproductive medicine as a time-sensitive case study of access inequities.
5. Outcome transparency, merit-based evaluation, and the future role of artificial intelligence in healthcare governance.

Rather than evaluating these domains in isolation, the study examined their interactions within the broader framework of health-system sustainability and accountability [23-25].

Reproductive Medicine as a Sentinel Case

Infertility care was selected as a sentinel case because reproductive outcomes are highly sensitive to delays in diagnosis and treatment. Unlike many chronic diseases, fertility potential declines with age and therefore provides a useful model through which to examine the practical consequences of waiting times, unequal access, resource allocation, and healthcare system responsiveness [16-19,26,27]. Furthermore, reproductive medicine offers a unique opportunity to analyze the relationship between healthcare organization, measurable outcomes, patient choice, and emerging commercial pressures, making it particularly relevant to discussions concerning transparency and accountability. Artificial Intelligence and Outcome Transparency. A dedicated component of the analysis examined the potential role of artificial intelligence and digital health infrastructures in improving healthcare governance. Particular attention was given to AI-assisted outcome measurement, national health registries, benchmarking systems, predictive analytics, and transparent reporting mechanisms

capable of supporting evidence-based decision making at both institutional and patient levels [20-22,28,29]. The purpose was not to evaluate specific algorithms but rather to explore how emerging technologies might contribute to more objective assessment of competence, quality, efficiency, and healthcare outcomes.

Limitations

This study has several limitations. First, it represents a policy-oriented narrative synthesis rather than a formal systematic review. Second, the analysis integrates evidence originating from heterogeneous sources, including scientific literature, institutional reports, regulatory documents, and health-system databases. Third, some observations concerning governance, merit assessment, and healthcare transparency are conceptual and should be interpreted as hypotheses intended to stimulate further empirical investigation rather than as definitive causal conclusions. Nevertheless, the integration of multiple complementary data sources allows a broader examination of structural challenges affecting universal healthcare than would be achievable through a single methodological perspective.

Results

Waiting Lists as Governance Failure

Waiting lists have become the most visible manifestation of dysfunction within the Italian National Health Service (SSN) (Figure 1). In public debate, they are often framed as technical backlogs or temporary post-pandemic disruptions. However, converging national and international evidence indicates that waiting lists in Italy function as structural barriers rather than neutral queues (Table 1) [4,7,9-11]. This figure is intended for illustrative purposes and represents a conceptual synthesis of publicly available sources rather than a primary epidemiological dataset.

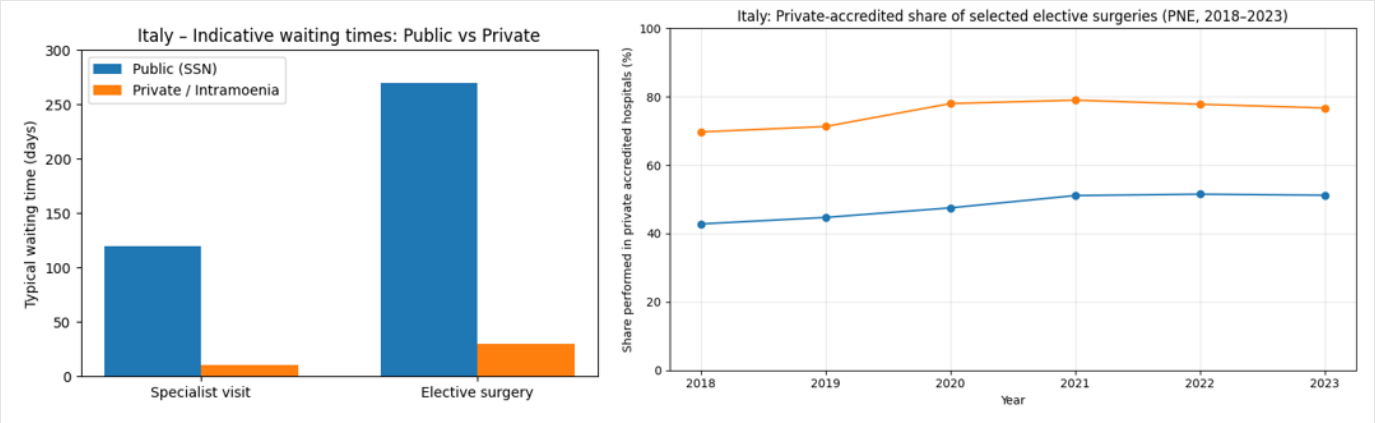

Figure 1: Waiting times and progressive reliance on private provision in Italy. Panel A shows indicative median waiting times for specialist visits and elective surgery in the public National Health Service (SSN) compared with private or intramoenia access pathways, based on aggregated data from OECD reports, Italian Ministry of Health publications, and regional monitoring systems. Panel B illustrates the proportion of selected elective orthopedic procedures performed in private-accredited facilities between 2018 and 2023 using AGENAS National Outcomes Program (PNE) data.

Table 1: Illustrative synthesis of structural determinants associated with waiting list growth in Italy, their potential consequences for equity and system performance, and policy responses supported by international health-system evidence. Numerical estimates derive from publicly available reports issued by AGENAS, GIMBE, OECD, and the Italian Ministry of Health and are presented as indicative estimates intended to illustrate structural trends rather than precise national epidemiological measurements.

Domain	Structural Cause	Systemic Consequence	Evidence-Based Solution
Demand–Supply Imbalance	+44% growth in outpatient prescriptions versus −8% delivered public services between 2019 and 2023, driven by demographic aging and defensive medicine	Progressive inflation of waiting lists, unmet health needs, and loss of public system credibility	National demand forecasting models and appropriateness-based prescription protocols integrated into primary care
Specialist Access	+31% increase in requested first specialist visits versus −10% performed in the public sector, with over 50% of first visits delivered privately	Structural transfer of access from public to private sector, reinforcing income-based inequity	Rebalancing of specialist workforce and centralized, cross-regional waitlist management systems [3]
Inappropriate Prescribing	High inter- and intra-regional variability in diagnostic and specialist prescriptions unrelated to epidemiological differences1	Hospital Performances [8]	Mandatory appropriateness codes and clinical decision-support systems embedded in electronic prescribing [14,15]

Organizational Inefficiency	Fragmented regional governance and outpatient care structures largely unchanged since the 1978 SSN reform	Inability of public services to absorb routine outpatient demand, resulting in bottlenecks and delays	System re-engineering with integrated digital booking, triage, and pathway management
Chronic Underfunding	Progressive erosion of real investment in outpatient and territorial care despite nominal funding stability	Structural insufficiency of public supply leading to private sector expansion and out-of-pocket expenditure growth	Targeted reinvestment in SSN outpatient services and public–private rebalancing rules
Equity Risks	Prolonged waits in the public sector contrasted with immediate access in private care	De facto two-tier system based on income, geography, and health literacy	Income-adjusted access guarantees and enforceable regional equity benchmarks
Patient Perception	Public system perceived as slow, opaque, and unreliable due to lack of transparent information [1]	Increased recourse to private care, delayed diagnoses, avoidance of care, and reduced trust	Transparent real-time waiting-time dashboards and structured patient navigation systems
System Sustainability	Private sector increasingly absorbs profitable, low-complexity services, leaving public hospitals with complex, high-cost cases	Financial and operational destabilization of the SSN and progressive erosion of universalism [1]	Tariff realignment, outcomes-based purchasing, and reintegration of essential services into the public sector

Between 2019 and 2023, outpatient demand increased substantially while services delivered within the SSN declined. Requests for first specialist visits rose, yet completed visits fell, resulting in a growing reliance on non-SSN channels for initial access. This pattern may reflect not only increasing demand but also limitations in governance mechanisms responsible for aligning access with clinical priority [10,11,23-25]. In effect, the system lacks mechanisms to distinguish between low-value demand and time-sensitive need. In many regions, waiting lists are managed chronologically rather than prognostically. Patients with fundamentally different clinical trajectories-diagnostic uncertainty, chronic disease management, or time-dependent interventions-are pooled into the same access channels. In the absence of robust triage and decision support, low-value or defensive prescriptions crowd out high-need cases, delaying diagnosis and fragmenting care pathways. The consequences of unmanaged waiting are most clearly reflected in the growth of out-of-pocket (OOP) expenditure. National and international sources document a sustained increase in household health spending, with Italy now exceeding levels typically observed in strongly universal systems. Between 2016 and 2023, household OOP expenditure nearly doubled, reaching approximately one quarter of total health spending-well above the European Union average [4,9,26,31,32]. The World Health Organization identifies reliance on OOP payments beyond 15–20% of total expenditure as a threshold associated with catastrophic and impoverishing health spending. Italy has exceeded this threshold for several years [30,31,33-35].

This burden is unevenly distributed. Older adults, individuals with chronic conditions, and residents of southern regions face the highest risk of forgone care and health-related financial strain What emerges is a de facto two-tier system in which formal universality coexists with informal stratification: those able to pay bypass delays, while others absorb deterioration, postponement, or unmet need [36-38]. Crucially, this pattern is not driven by the expansion of private insurance, which remains limited in Italy. Rather, it reflects the monetisation of time within a nominally universal system. Waiting itself becomes a price signal. When publicly financed care is inaccessible within clinically meaningful timeframes, delay functions as an implicit rationing mechanism that is invisible in policy discourse but decisive in practice. International comparisons suggest that persistent waiting times are less a function of aggregate spending than of coordination and accountability. Systems that integrate explicit prioritisation criteria, centralised booking, and real-time capacity monitoring achieve shorter delays with comparable resources. In Italy, by contrast, fragmented regional platforms and weak national oversight allow inequities to persist unchecked, progressively converting universal coverage into unequal access [11,12,32,39,40].

Silent Privatisation and the Drift Toward a Dysfunctional Hybrid System

The increasing participation of private providers within the SSN appears to have occurred progressively through a combination of policy drift, workforce constraints, and capacity limitations rather than through a single explicit reform, but through incremental policy drift. Prolonged underinvestment, expenditure ceilings, and workforce constraints have progressively weakened public capacity, creating space for private actors to absorb unmet demand and to reframe paid access as a pragmatic response to delay. This process has unfolded without transparent public debate, allowing structural change to proceed under the appearance of continuity [13,14,15,40]. Italy's hybridisation is distinctive in that it is driven less by private insurance than by the expanding role of accredited private providers operating under public financing arrangements. While funding remains predominantly public, delivery has increasingly shifted away from publicly managed structures. This blurs accountability, weakens planning, and obscures the trade-offs between public provision and contracted activity [41,42,43]. In practice, public resources increasingly finance care that is privately delivered without equivalent public governance.

Despite the constitutional framing of a "National" health service, Italy functions as a constellation of regional systems with heterogeneous performance and limited coordination. Comparative analyses describe weak national oversight and incentive structures that prioritise financial compliance over measurable population outcomes. Within this framework, managerial governance is often politically mediated, and organisational performance is assessed through budgetary targets rather than audited indicators of access, appropriateness, or patient-relevant outcomes. General managers may oversee multi-billion-euro budgets without independent boards or competence-based appointment processes, diffusing responsibility for failure [3,5,13,40]. These governance challenges has facilitated selective private expansion. Services that are scalable or financially attractive are increasingly delivered by private providers, while complex, low-margin, or high-risk care remains concentrated in public facilities [14,15,44]. Where transparency and outcome reporting are asymmetric between public and private providers, public funds may finance activity without commensurate public accountability, enabling case-mix selection and undermining equitable system planning [36-38,45-50].

Over time, this dynamic becomes self-reinforcing. As public delays lengthen, outsourcing and private purchasing are normalised; as private capacity expands, political pressure to reinvest in public delivery weakens. In such hybrid systems, timeliness and continuity are progressively purchased rather than guaranteed-an access logic incompatible with operational universalism even when formal entitlement remains unchanged. Austerity-era constraints have amplified these trends by eroding workforce resilience and limiting the system's ability to respond elastically to demand. European evidence links prolonged fiscal constraint to deteriorating working conditions, declining morale, and professional out-migration. In Italy's fragmented system, workforce strain further accelerates the displacement of demand into paid channels, reinforcing the drift toward privatisation without explicit policy choice [10,13,51]. In this context, waiting lists function as the primary engine of "silent" privatisation [10,52]. When demand rises while publicly delivered volumes stagnate or decline, delay becomes an allocation mechanism rather than a technical inconvenience. The economic meaning is clear: the longer the wait, the stronger the incentive for those who can pay to exit the queue, transforming time into an implicit price and converting nominal universalism into stratified access.

Out-of-Pocket Expenditure and the Erosion of Solidarity

The financial consequences of the SSN's structural drift are most clearly reflected in the sustained rise of out-of-pocket (OOP) health expenditure. Italy now ranks among the high-income countries with the highest proportion of healthcare costs borne directly by households, a pattern consistently documented across national and international datasets. Between 2016 and 2023, OOP spending increased steadily, surpassing thresholds that the World Health Organization associates with elevated risk of catastrophic and impoverishing health expenditure [4,6,9,30,31,40]. This burden is unevenly distributed. Older adults, individuals with chronic conditions, and residents of southern regions face a disproportionately high risk of forgone care and health-related financial strain. What emerges is a de facto two-tier system in which formal universality coexists with informal stratification: those able to pay can bypass delays, while others experience postponed diagnosis, clinical deterioration, or unmet need [39,40,53,54].

Crucially, this stratification is not primarily driven by private insurance, which remains limited in Italy, but by the monetisation of time within a nominally universal system. When access to publicly funded services is mediated by prolonged waiting, delay itself becomes a price signal-an invisible but decisive rationing mechanism. International evidence indicates that such dynamics are not inevitable consequences of constrained resources [31]. Health systems that combine explicit clinical prioritisation, centralised booking, and transparent monitoring of waiting times preserve equity even under fiscal pressure. By contrast, where prioritisation remains implicit and unmanaged, universal coverage degrades into unequal access without public acknowledgement of rationing [10,13,55].

Infertility Care as a System Stress Test

Infertility care offers a uniquely revealing stress test of the Italian National Health Service (SSN). It is intrinsically time-sensitive, emotionally burdensome, and marked by substantial regional variation-conditions that amplify the ethical and distributive consequences of delay. In reproductive medicine, time is not a neutral inconvenience but a determinant of outcome: postponement can translate into irreversible loss of reproductive potential [16-19,27]. Despite universalistic principles, access to assisted reproductive technologies (ART) in Italy remains highly uneven. Publicly funded IVF pathways reflect the decentralised architecture of the SSN, with wide regional variation in eligibility criteria, age thresholds, financing, and service capacit. Waiting times differ markedly across regions and frequently exceed clinically acceptable windows, particularly for women approaching advanced reproductive age (Figure 2) [3,26,27,41,55,56].

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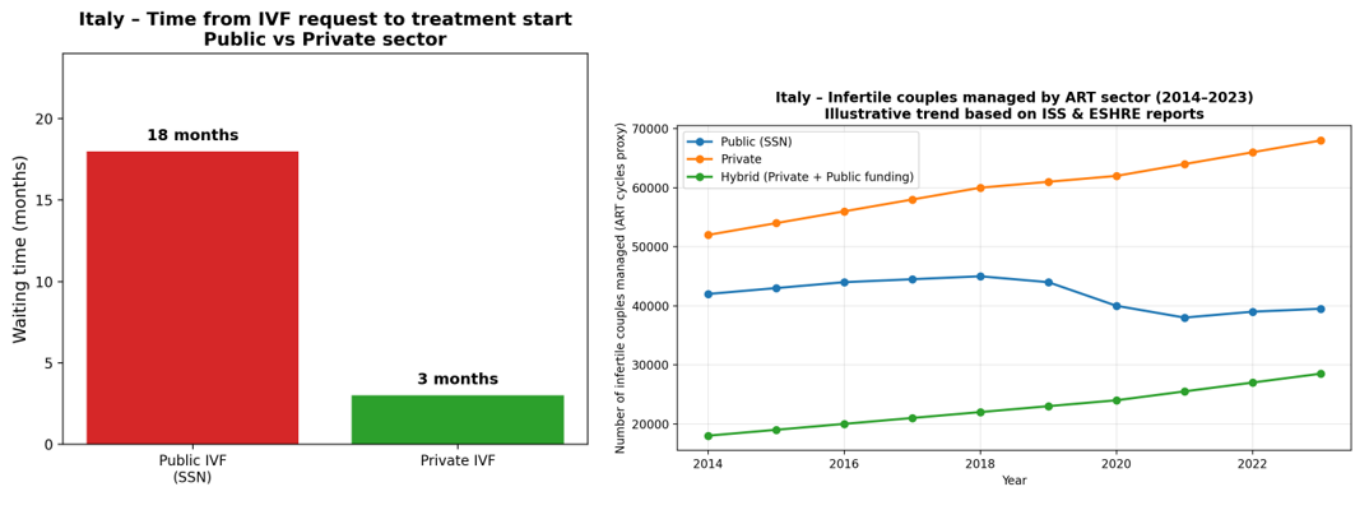

Figure 2: Infertility care as a stress test of healthcare access. Panel A illustrates representative differences between public and private IVF access pathways in Italy based on published reports and regional observations. Panel B depicts trends in ART activity from 2014–2023 using Italian National ART Registry and ESHRE reports, stratified into public, private, and hybrid providers. ART cycles are used as a proxy for infertile couples managed. The figure represents an illustrative synthesis intended to facilitate interpretation of national trends and should not be interpreted as a primary registry analysis. ART cycle numbers are presented as illustrative indicators of access to fertility treatment and should not be interpreted as direct measures of infertility prevalence.

When waiting lists are managed chronologically rather than prognostically, delay itself becomes a mechanism of rationing. Evidence consistently shows that time to pregnancy is inversely related to reproductive prognosis and maternal age, rendering uniform queues clinically inequitable. Prolonged waiting systematically advantages good-prognosis patients while disproportionately excluding women over 35 years, for whom even short delays significantly reduce live birth probability [18,19,27]. In this context, private provision emerges not merely as an alternative but, for many couples, as the only viable route to care. The absence of prognosis-sensitive prioritisation within the SSN shifts demand toward private providers, reinforcing socioeconomic gradients in access and outcomes. Against a backdrop of one of the lowest fertility rates in Europe, selective public provision of oocyte cryopreservation for women with poor reproductive prognosis could represent a targeted public health intervention rather than an elective service. However, real-world utilisation remains limited: only a minority of women return to use stored oocytes, despite the psychological reassurance associated with fertility preservation. Encouraging donation of unused cryopreserved oocytes could reduce dependence on large commercial gamete banks that increasingly dominate supply chains at significant public and private cost [17,55].

This domain is particularly susceptible to market dynamics. Over the past decade, private equity–backed fertility networks have expanded rapidly, promoting consumer-oriented treatment packages and outcome guarantees that often diverge from audited registry data. Advertising strategies framed around certainty exploit emotional vulnerability and risk undermining informed consent in a clinical field governed by probabilistic outcomes. These dynamics exemplify how public underprovision, combined with weak governance, enables commercial actors to monetise scarcity rather than resolve it [38,56-58].

Regulatory Dissonance, Surrogacy, and Bodily Commodification

The Italian experience exposes a profound regulatory dissonance in the governance of bodily commodification within reproductive medicine. Law 40/2004 establishes a categorical prohibition of surrogacy and the commercialisation of gametes and embryos, articulating a strong symbolic stance against exploitation and the marketisation of reproduction [59,60]. This prohibition has been repeatedly reaffirmed through constitutional jurisprudence framing reproductive regulation primarily in terms of human dignity rather than contractual autonomy. In practice, however, access to donor gametes within Italy is structurally dependent on cross-border reproductive arrangements. Italian ART programmes routinely rely on oocytes and sperm imported from jurisdictions where donor compensation is legally permitted, effectively externalising ethically sensitive reproductive labour to foreign women while preserving domestic prohibitions. This reliance reveals a structural inconsistency: commodification is rejected in principle yet functionally incorporated through transnational supply chains [37,61].

The 2024 legislative extension of criminal liability for surrogacy pursued abroad further intensifies this symbolic–punitive axis [62]. Rather than addressing the systemic drivers of cross-border reproductive care-namely domestic underprovision, restrictive eligibility criteria, and prolonged waiting times-the reform expands criminal

sanction without resolving structural dependence. As a result, moral condemnation is amplified while demand remains unaltered. Crucially, Italian law makes no distinction between commercial and altruistic surrogacy. This absence of differentiation reflects value-based regulatory approach rather than evidence-based policy. Comparative analyses indicate that numerous countries permit regulated forms of altruistic or compensated surrogacy, embedding safeguards to protect surrogate autonomy, transparency, and clinical oversight. By contrast, the Italian approach treats all forms as inherently exploitative, irrespective of consent, compensation structure, or regulatory design.

The distributive consequences are significant. Prohibition does not eliminate demand but redistributes access along socioeconomic lines, favouring individuals able to pursue care abroad while excluding those without sufficient financial or legal resources. This pattern mirrors broader dynamics observed in cross-border reproductive care, where restrictive national frameworks displace ethical and clinical risks onto less regulated jurisdictions [6,63,64]. International data illustrate the scale of regulated alternatives. In the United States, gestational surrogacy accounts for approximately 1·5–2% of all ART births annually, operating within contractual and clinical frameworks that, while imperfect, acknowledge demand rather than deny it0. Italy's refusal to engage with comparable regulatory models leaves the system reliant on restrictiveregulatory framework that coexist uneasily with pragmatic dependence [65]. More broadly, this regulatory dissonance exemplifies a recurring governance pattern within the SSN: symbolic prohibition combined with operational outsourcing. Ethical principles are asserted domestically, while their practical costs are displaced across borders or absorbed by private actors. In this sense, reproductive medicine does not constitute an exception but rather a magnified expression of a systemic tendency to manage scarcity and ethical complexity through prohibition rather than direct regulatory engagement.

Merit, Metrics, and the Collapse of Accountable Excellence

Beyond access and regulation, the erosion of universalism within the Italian National Health Service (SSN) is closely linked to a parallel collapse in how merit and professional excellence are defined, measured, and rewarded. Clinical leadership, institutional credibility, and academic progression increasingly depend on reputational visibility rather than demonstrable contribution to patient outcomes or system performance, with significant implications for governance and accountability [41,52,66,67]. Across clinical and academic environments, symbolic metrics-media rankings, citation counts, and composite reputation indices-have progressively displaced outcome-based evaluation. Bibliometric indicators, particularly the h-index, are widely used as proxies for scientific merit despite evidence that citation volume correlates weakly with clinical competence, patient benefit, or health-system impact, and remains vulnerable to distortion through authorship practices, network effects, and topic selection [64-66]. Commercial hospital and clinician rankings exhibit analogous flaws: opaque methodologies privileging branding, web presence, and self-reported data over audited outcomes, with poor concordance with validated quality indicators despite their growing influence on patient choice and institutional prestige (Table 2) [67,68].

Table 2: These categories are heuristic constructs proposed by the authors to facilitate discussion of emerging communication and commercialization patterns in reproductive medicine. They should not be interpreted as empirically validated professional classifications. The proposed categories do not refer to identifiable individuals or institutions and are intended solely as conceptual archetypes for discussing communication and commercialization patterns in reproductive medicine.

Emerging Communication and Commercialization Archetypes in Reproductive Medicine	
The "Compilative Communicator"	This profile constructs authority through frequent dissemination of encyclopedic information-often overlapping with publicly available sources-without contextualized outcome data. The implicit conflation between informational fluency and clinical superiority risks transforming education into indirect self-promotion.
The "Self-Proclaimed Top Performer"	Characterized by claims of superior outcomes or exclusive techniques, often without denominators, cumulative live birth rates or age-adjusted stratification. Such framing may violate proportionality principles [11].
The "Corporate Ventriloquist"	Clinical messaging closely aligned with corporate ownership narratives-emphasizing technology, laboratory uniqueness or structural superiority-without robust comparative evidence. Consolidation trends in fertility care have documented the growing role of private equity in shaping institutional priorities [13].
The "Add-On Vendor"	Routine proposal of interventions with uncertain or heterogeneous evidence-endometrial scratching, PRP, immunotherapies, time-lapse selection-presented as quasi-standard options. Systematic reviews have demonstrated limited or inconsistent evidence for several IVF add-ons [11,12].
The "Package Designer"	Commercial bundling of biologically probabilistic processes ("embryo packages," "guaranteed cycles") introduces retail semantics into stochastic medicine, creating illusion of outcome controllability.
The "Spectacle Surgeon"	Public-facing operative broadcasting and personalized hero narratives may blur distinctions between technical competence and performative visibility.

The "Data Spinner"	Selective statistical presentation without registry benchmarking or cumulative reporting constitutes omission-based distortion.
The "Hybrid Researcher"	Ambiguity between experimental intervention and standard of care risks conflating innovation with validation. Clear distinction between investigational and established procedures is ethically mandated [7].
The "Personal Brand Physician"	The transformation of medical identity into algorithmically amplified personal branding risks privileging visibility metrics over outcome transparency [2].
The "Concierge Gynecologist"	Enhanced accessibility and communication may reduce asymmetry and improve patient experience [4]. However, differential access based on payment capacity risks stratified care models.
The "Emotional Guarantor"	Implicit reassurance of success in highly vulnerable patients may exceed evidentiary boundaries.
The "Technological Determinist"	Narratives suggesting that algorithms or AI eliminate biological uncertainty may overstate current evidence [14].
The "Scarcity Amplifier"	Algorithmically reinforced messaging that frames time loss as catastrophic may increase perceived opportunity cost of delay, shifting decision-making from evidence-weighted deliberation toward urgency-mediated response [15,16].

Typology of Distorted Communication and Commercialization Patterns in Reproductive Medicine. Algorithmically reinforced messaging that frames time loss as catastrophic may increase perceived opportunity cost of delay, shifting decision-making from evidence-weighted deliberation toward urgency-mediated response. Within the SSN, these symbolic economies intersect with politicised governance. Leadership positions in local health authorities and teaching hospitals are frequently allocated through discretionary or politically mediated processes, with limited transparency and weak linkage to competence-based criteria. Meanwhile, general managers may oversee annual budgets exceeding €2 billion without systematic evaluation of outcomes, equity, or population impact, diffusing accountability and muting consequences for failure [1-5]. The absence of robust national outcome registries further widens this accountability vacuum [69]. Where performance is not routinely measured, risk-adjusted, audited, and publicly reported, symbolic metrics predictably fill the gap-obscuring excellence, rewarding compliance, and disincentivising clinicians and leaders who prioritise measurable improvement, critical appraisal, or system redesign over visibility [6-8].

International experience demonstrates that viable alternatives exist. Health systems that invest in national outcome registries, transparent benchmarking, and public reporting-such as those in Scandinavia and the United Kingdom-anchor merit to measurable contribution rather than reputation, rendering discretion visible, contestable, and accountable while aligning professional advancement with patient-centred outcomes and equity goals [69,32]. Italy's failure to implement comparable frameworks has enabled what may be described as accountable opacity: leadership without measurement, prestige without verification, and merit without metrics. (Figure 2) These dynamics are further amplified by the growing presence of private equity–backed healthcare organisations.46,58 In fertility care, private equity prioritises scalability, branding, and predictable revenue streams, often translating into consumer-oriented packages and outcome guarantees that diverge from audited registry data. Public underprovision combined with weak governance thus allows commercial actors to monetise scarcity rather than resolve it. More broadly, the same pattern recurs across the health system: professional advancement and institutional authority increasingly track visibility rather than verified outcomes or patient benefit. In the absence of transparent national registries and performance metrics, symbolic indicators continue to occupy the accountability void, accelerating disengagement and reinforcing the drift toward private provision as a perceived refuge of efficiency and recognition (Figure 3) [9-11]. Figure created by the authors using AI-assisted graphic design tools and subsequently reviewed, edited, and validated by the authors. This figure represents a conceptual framework and should not be interpreted as evidence that current AI systems are capable of independently evaluating professional competence or healthcare quality. AI is presented as a decision-support and transparency tool rather than as a substitute for clinical judgment, professional accountability, or democratic governance.

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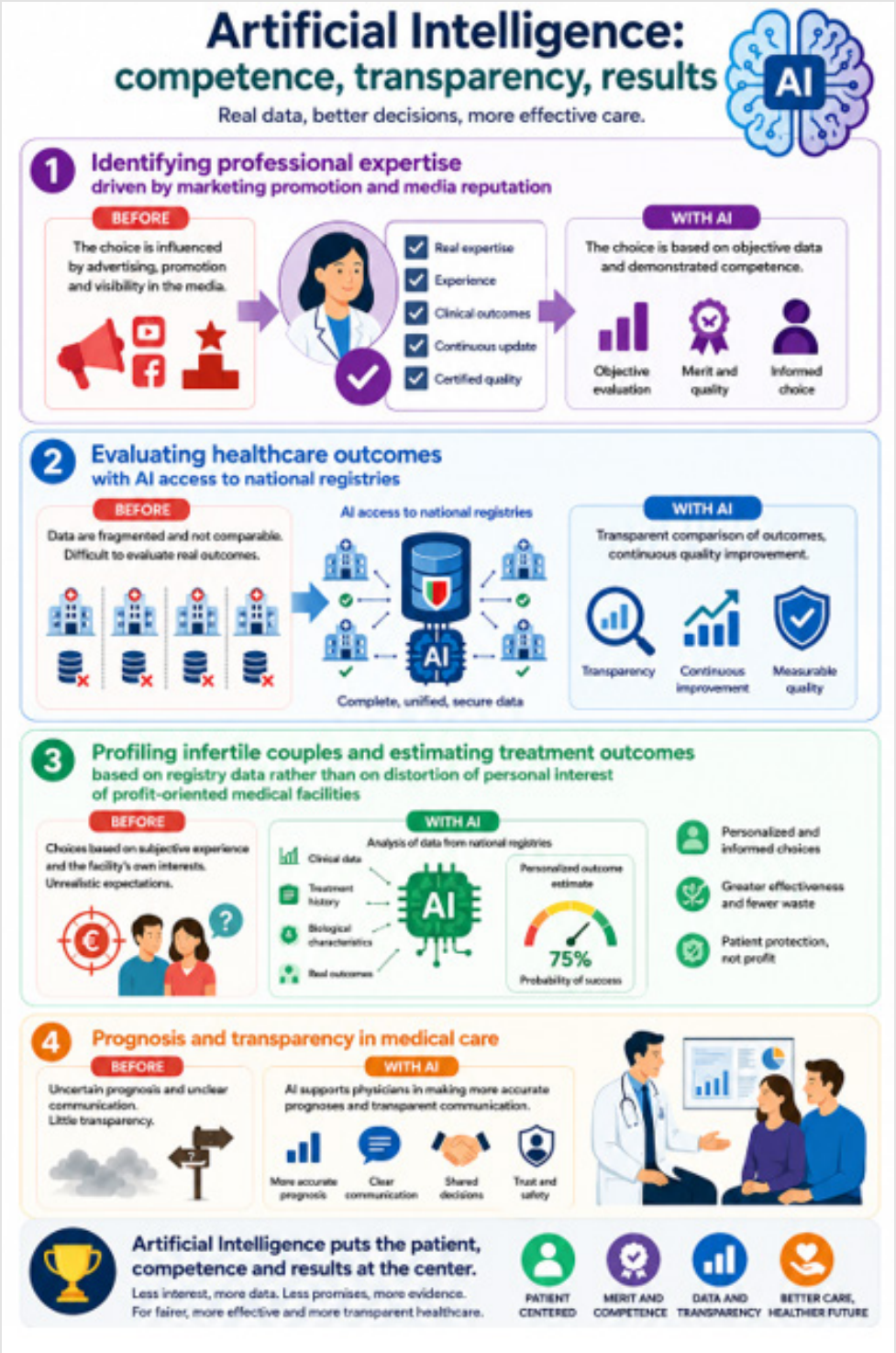

Figure 3: Artificial Intelligence for Competence-Based, Transparent, and Outcome-Oriented Healthcare. Figure created by the authors using AI-assisted graphic design tools and subsequently reviewed, edited, and validated by the authors. This figure represents a conceptual framework and should not be interpreted as evidence that current AI systems are capable of independently evaluating professional competence or healthcare quality. AI is presented as a decision-support and transparency tool rather than as a substitute for clinical judgment, professional accountability, or democratic governance.

This infographic illustrates the potential role of artificial intelligence (AI) in improving healthcare quality, transparency, and patient-centered decision-making. Panel 1 highlights how AI may facilitate the identification of healthcare professionals based on objective indicators such as clinical expertise, experience, certified quality, continuous professional development, and measurable outcomes, rather than media visibility, advertising, or commercial promotion. Panel 2 shows how AI-assisted access to national and international healthcare registries may enable standardized evaluation of clinical outcomes, allowing transparent benchmarking, quality assessment, and continuous improvement across healthcare institutions. Panel 3 demonstrates the application of AI to the profiling of infertile couples through the integration of clinical history, biological characteristics, treatment records, and real-world outcomes to generate individualized prognostic estimates and support evidence-based therapeutic decisions. Panel 4 illustrates how AI can assist physicians in providing more accurate prognostic information, improving communication, facilitating shared decision-making, and strengthening trust between patients and healthcare professionals. Overall, the figure proposes a model in which AI supports a transition from reputation-driven and profit-oriented healthcare toward a system centered on measurable competence, validated outcomes, transparency, and personalized patient care.

Restoring meritocracy within the SSN is therefore not a technocratic refinement but a structural prerequisite for universalism. Without transparent, outcome-based evaluation of individuals and institutions, universal coverage risks persisting as a normative claim unsupported by operational reality (Table 3, Supplementary Table 1) [20-22,70-72].

Table 3: Illustrative synthesis of available estimates regarding physician emigration and workforce mobility from Italy. This table summarises the main quantitative estimates of physician emigration from Italy over the past two decades, highlighting the substantial heterogeneity across sources due to differences in measurement strategies. Available data variously capture annual outflows, cumulative departures, stock of physicians registered abroad, or proxy indicators such as requests for certificates of good standing. Despite these methodological differences, multiple independent sources converge on a consistent pattern: sustained outward migration of Italian physicians, with evidence of acceleration following the COVID-19 pandemic and during recent phases of systemic stress within the Italian National Health Service (SSN).

Period	Evidence	Reference (AMA style)
2005–2015	>10,000 physicians emigrated	OECD. International Migration Outlook 2017. Paris: OECD Publishing; 2017.
c. 2010–2019	≈1,000 physicians/year leaving Italy	Riccò M, Vezzosi L, Gualerzi G, et al. Migrant health workforce and physician emigration from Italy: challenges and policy implications. *Acta Biomed*. 2020;91(4):e2020098.
Pre-COVID trend	≈1,000 physicians/year requesting certificates for work abroad	FNOMCeO. Rapporto sulla mobilità professionale dei medici italiani. Rome: Federazione Nazionale degli Ordini dei Medici Chirurghi e degli Odontoiatri; latest available edition.
2014–2020	Stock of Italian physicians abroad	European Commission. *Health* Workforce Mobility in the European Union. Brussels: European Commission; 2021.
2019–2021	21,397 physicians over 3 years (union estimate)	OECD. Health at a Glance: Europe 2022. Paris: OECD Publishing; 2022.
2021–2023	2,700 → 5,000 physicians leaving public sector annually	(2020) World Health Organization. Global Strategy on Human Resources for Health: Workforce 2030. Geneva: WHO.
2000–2024	Sustained outward migration of Italian healthcare professionals was documented	by OECD, WHO, FNOMCeO and European workforce reports.
2023–2024	>10,000 healthcare workers requesting expatriation	European Commission. Education and Training Monitor 2024. Brussels: European Commission; 2024.

Supplementary Table 1.

Supplemetary Box 1
What is already known about the topic? Italy's National Health Service (Servizio Sanitario Nazionale, SSN) is internationally recognized for achieving favorable population health outcomes within a universal coverage framework. However, recent evidence documents growing regional disparities, prolonged waiting times, workforce shortages, and rising out-of-pocket expenditure, suggesting increasing difficulty in translating formal entitlement into effective access to care.
What does this study add to the literature? This analysis reframes current pressures on the SSN as a structural governance failure rather than a temporary capacity shock. By examining infertility care as a time-sensitive stress test, the study demonstrates how waiting lists function as implicit rationing mechanisms, how market expansion and private equity involvement exploit governance gaps, and how symbolic performance metrics displace outcome-based accountability. The work integrates health-system data with institutional and regulatory analysis to explain how universalism erodes operationally while remaining intact constitutionally.
What are the policy implications?Restoring effective universalism requires explicit prioritization criteria, transparent outcome measurement across public and private providers, merit-based leadership selection, and governance frameworks that prevent waiting time from becoming a proxy price. Without institutional redesign, further privatization and inequity are likely to accelerate despite formal universal coverage.

Medical Education, Workforce Depletion, and Stratification

Workforce fragility has become a central amplifier of access inequity within the Italian National Health Service (SSN). Although Italy's physician-to-population ratio is broadly comparable with that of several European peers, this aggregate indicator masks deep internal imbalances. Persistent shortages affect nursing staff, emergency medicine, anaesthesiology, and key hospital-based specialties-particularly within the public sector-reflecting deteriorating working conditions, relatively low remuneration, administrative overload, and increasingly precarious early-career trajectories rather than absolute scarcity [3,32,44].

Footnotes

a. Estimates based on certificates of good standing issued by Italian medical orders represent an upper-bound proxy for potential emigration and may overestimate realised departures.

b. Union-reported cumulative figures may include temporary or circular mobility and should be interpreted as indicative of scale rather than exact net loss.

c. Stock-based estimates (physicians registered abroad at a given time point) are not directly comparable to annual flow measures.

d. Media-reported figures typically draw on institutional or union sources and should be triangulated with registry-based data where possible.

Austerity-era hiring ceilings and governance weaknesses have progressively eroded the attractiveness of public employment, fuelling burnout and outward mobility [44]. Approximately 1,000 Italian physicians per year request authorisation to practise abroad, with cumulative departures exceeding 10,000 in the decade preceding the COVID-19 pandemic-figures that underestimate the true loss of public-sector expertise by excluding clinicians who shift to private practice within Italy [44]. This sustained outflow cannot be explained solely by wage differentials. It reflects a deeper institutional shift in how professional value is defined and rewarded (Table 3, Supplementary Table 1) [52,67]. Organisational cultures increasingly privilege compliance with protocols and administrative directives over independent diagnostic reasoning, critical appraisal, and personalised clinical judgement. When guidelines are transformed into rigid performance proxies, professional autonomy narrows and evidence-based dissent is reframed as managerial friction rather than clinical responsibility.

The selective exit of analytically independent clinicians disproportionately deprives the SSN of professionals essential to quality improvement, innovation, and accountable governance. These dynamics are reinforced by parallel transformations in medical education. The expansion of high-fee private medical schools alongside income-modulated public pathways introduces a de facto socioeconomic gradient into access to the profession [40,44]. While smaller cohorts and enhanced simulation resources are often cited as advantages, these benefits are coupled with pronounced socioeconomic selection and frequent integration with private hospital groups, raising concerns about long-term alignment with SSN staffing needs. Taken together, workforce depletion and educational stratification form a reinforcing cycle. Compliance is rewarded over competence, professional entry becomes socially filtered, and universalism persists as a formal entitlement while eroding as an operational reality. These conditions enable market actors to capitalise on delay, discretion, and professional frustration, further accelerating the drift toward private provision (Table 3).

International experience suggests that this trajectory is neither inevitable nor irreversible. Health systems that preserve universalism invest in workforce planning aligned with public need, transparent merit-based career progression, and educational pathways insulated from ability-to-pay. Without such reforms, the SSN risks reproducing within its workforce the same stratification increasingly observed in patient access-undermining both equity and sustainability [39,40,44].

Strengths and Limitations

This study integrates evidence from scientific literature, national institutional reports, OECD analyses, reproductive medicine registries, and healthcare governance frameworks, allowing a multidimensional examination of structural challenges affecting universal healthcare in Italy. However, several limitations should be acknowledged. First, the study represents a narrative policy analysis rather than a formal systematic review. Second, the evidence base includes heterogeneous sources with differing methodologies and reporting standards. Third, some conceptual frameworks proposed herein-including merit assessment, accountability mechanisms, and AI-assisted governance-should be interpreted as hypotheses intended to stimulate further empirical investigation. Finally, causal relationships cannot be inferred from observational policy analyses. Nevertheless, the convergence of multiple independent data sources strengthens the plausibility of the identified structural trends.

Discussion

The findings indicate that the SSN's crisis is not cyclical but structural (Figure 1S). Waiting time has become a de facto rationing mechanism, converting delay into cost and undermining equity without explicit policy acknowledgment [10,11,54]. Infertility care demonstrates how unmanaged scarcity, symbolic regulation, and market responses interact to produce ethically problematic outcomes. Symbolic prohibitions coexist with operational outsourcing, displacing risks rather than governing them [16,18,27]. Equally critical is the erosion of accountable excellence [41,66,67]. In the absence of outcome registries and transparent benchmarking, symbolic metrics substitute for verified performance, weakening professional trust and stewardship [20,21,70-72]. International experience shows that universalism can

be preserved through explicit prioritisation, outcome-based governance, and merit-linked leadership-supported, but not replaced, by digital tools deployed as public infrastructure [32,39,69].

Conclusion

Italy's National Health Service faces a defining test. Universalism remains enshrined in constitutional language, yet in everyday practice access is increasingly shaped by waiting, fragmentation, and the capacity to pay [1,3,32]. This drift is not inevitable. It reflects cumulative policy choices that have tolerated opaque rationing, symbolic metrics of excellence, and progressive weakening of the public workforce. As infertility care illustrates, when time-sensitive medicine meets governance failure, delay itself becomes a mechanism of exclusion and a catalyst for market expansion (Figure 3). Reaffirming universalism requires moving beyond declarative commitments toward operational accountability [40,66,72]. Leadership must be selected on competence rather than compliance, prioritisation made explicit and prognosis-sensitive, and outcomes measured transparently across public and private providers. Digital tools can support this transition only if embedded as public infrastructure rather than consumer accelerators. Universal coverage is not self-sustaining; it must be actively governed. Without such reform, universalism risks surviving only as a principle-unequal, contingent, and increasingly hollow in practice. Future research should evaluate whether outcome-based governance, transparent benchmarking systems, and AI-assisted accountability tools can improve equity, efficiency, and public trust within universal healthcare systems [20,21,29,71,72]. AI DISCLOSURE Artificial intelligence tools (ChatGPT, OpenAI) were used exclusively to support language refinement, text organization, and figure generation. All literature selection, interpretation of evidence, verification of sources, conclusions, and final editorial decisions were performed independently by the authors. The authors assume full responsibility for the accuracy, integrity, and originality of the manuscript [73-74].

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The authors declare no competing financial interests directly related to the subject matter of this manuscript. The views expressed are those of the authors and do not necessarily reflect those of any affiliated institutions or organizations.

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Conflicts of Interest

Owner of the worldwide platform Helpme Doctor for 1st and 2nd medical opinions.

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Ethics Approval

Not applicable.

Consent for Publication

Not applicable.

Data Availability

All data discussed in this manuscript are derived from publicly available sources cited in the reference list.

Author Contributions

The author conceived the study, performed the analysis, interpreted the findings, and drafted the manuscript. He reviewed the final version.

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