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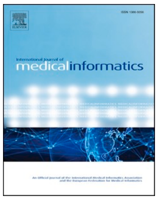

Public value and digital health: The example of guiding values in the national digital health strategy of France

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ABSTRACT

Introduction: In the WHO European Region, 44 of 53 reporting Member States (MS) have a national digital health strategy (NDHS) or policy. Their formulation is heterogenous and evolving and should best reflect public common interest. This research aims to explore how a public value approach improves the relevance of digital health policies and services, increasing their capacity to better serve the diverse range of societal interests. It utilises the guiding values within the French NDHS as an example before discussing other digital health policies such as the European Heath Data Space.

Methods: Three homogenous focus group discussions were conducted in November and December 2023. Each focus group separately gathered distinct stakeholders: public clients, health professionals, private sector. 19 participants were included in the study. Data collection comprised live polling and semi-structured discussion. Results were analysed considering the pre-defined stakeholder groups and the values discussed during the study.

Results: Findings reveal both technical and cultural challenges in digital health that highlight the need for adaptable frameworks across different contexts. Stakeholder insights informed a framework classifying public values into democratic and managerial categories, suggesting themes that may be relevant to digital health strategies in other national and regional settings.

Discussion: Public value is discussed as a multidimensional concept, and the plurality of its perceptions give basis for tailored approaches to serve different value-beneficiaries comprehensively. We propose this values-based approach as a systematic model for supra-, sub-, and national scales and additional policy topics, beyond digital health strategies.

Conclusion: The study suggests that using a public value lens considering multiple perceptions is valuable for advancing digital health policy in a responsible and ethical manner. Such an approach could promote wider governance of and adoption of digital health. To evolve the framework, application in multiple and large ecosystems at different levels should be considered.

1. Introduction

Digital health can help health systems shift towards preventing adverse health conditions instead of solely curing them [1–3], offering potential for improved outcomes and care delivery [4]. Transformation towards digital health systems redefines healthcare, emphasising prevention and citizen engagement [3]. However, that is a challenging task requiring orchestrating dedicated initiatives [5]. In a post-pandemic era, digital health is a priority on national and global agendas.[4,6–8]. 44 of 53 European states have national digital health policies (NDHS) [7].

Rumelt describes strategy as “a coherent set of analyses, concepts, policies, arguments, and actions that respond to a high-stakes challenge” (p.7) [9]. In the public sphere, it aligns organisational targets and capabilities to create public value [10,11]. Van Dijck et al. define public value as “the value that an organization contributes to society to benefit the common good” (p.22) [12]. It is thought to underpin a significant portion of public sector strategy [13,14].

Different NDHS have been analysed from a healthcare quality lens, yet value for the common good has often been overlooked [15]. Scholars like Warner et al. argue that public value conceptualisation includes

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diverse perspectives from various publics rather than a single unified conception, thereby acknowledging the existence of multiple public values [16]. Albeit difficult to perfectly encapsulate in a definition, for our context we conceptualise *public values*, or in *a value,* "a mode of behaviour, either a way of doing things or an attribute of a way of doing things, that is held to be right" (p.120) by people and organisations [17]. They encompass management and ethical considerations [18]. These values, complex and subjective, evolve over time and context, involving tensions and trade-offs [19–22]. In healthcare, understanding public values is crucial for strategic and ethical decision and policymaking [23–25].

Despite the proliferation of political discourse and initiatives for advancing digital health, these remain short of a shared theoretical foundation and systematic theoretical model(s) to do so. Addressing this lacuna, the present paper aims to discuss the importance of public value [11] assessment using the French NDHS as an illustrative case to prepare for extrapolating the approach towards additional contexts at national, supra- and subnational levels.

2. Methodology

2.1. Case framing

The French healthcare system combines centralisation and regional governance, established through reforms like the *Hôpital, Patients, Santé, et Territoires*[1] (HPST) law [26], which created the Agences Régionales de Santé (ARS)[2] to enhance efficiency and reinforce central authority [27,28]. However, reforms inspired by New Public Management (NPM) introduced tensions between efficiency-focused governance and traditional public values, revealing challenges in achieving patient empowerment [26,29]. Understanding this governance context is essential for interpreting the public value dimensions explored in this study.

France's historical, political, and legal grounding of the concept of common interest [30,31] provides a unique context for studying public value in digital health. Its adoption of the Government as a Platform (GaaP) approach in its digital health strategy [32] further suits public value application [33].

In France, the Ministry of Health and Prevention leads collaboration for public value creation [34], defining the national strategy and working with partners like the Ministerial Delegation for Digital Health (DNS) and the national Digital Health Agency (ANS).

During its 2022 Presidency of the Council of the European Union, France led the adoption of the European Ethical Principles for Digital Health, including: 1) basing digital health on humanistic values, 2) enabling individuals to manage their health data, 3) making digital health inclusive, and 4) implementing eco-responsible digital health [35]. This underscores the importance France places on guiding principles in digital health.

Studying public values in health requires examining diverse stakeholders separately to uncover varied perspectives [23]. We identified three sub-groups within the French public: public clients [36,37], health professionals, and the private sector. The concept of communities of practice (COP) [38–40] applies to health professionals and the private sector; health professionals have created virtual COPs [41–44]. Engaging the private sector is recommended by international bodies [45]; in France, it is represented by initiatives like "Numeum" and "France Digitale". These groups formed a simplified proxy for representing the French public's structure and guided our empirical work.

The French case is schematised in Fig. 1, mapping stakeholders into three main groups—public clients, health professionals, and the private sector—and values into two main classes: democratic and managerial [18]. While numerous values and further stakeholder divisions exist, this primary classification highlights key relationships.

Democratic values encompass more than ethics, including broader social considerations that foster trust: ethics, security, sovereignty, co-production, and patient-centricity. Security and sovereignty are perceived as public rights, justifying their classification as democratic values.

Managerial values include governance and technical aspects, often driving performance. Governance values cover practicality and sustainability, while technical values are represented by interoperability. Interoperability is technical in nature and affects data-sharing; practicality influences swift adoption; sustainability relates to durable implementation, such as through change management.

2.2. Study design

This study employed online focus group (FG) interviews, which are documented for studying public values [46]. With a focus on trustworthiness [47], we refined design, data collection, and analysis iteratively [48]. A detailed checklist of consolidated criteria for reporting qualitative research can be found as supplementary material [49].

The study involved three FG interviews to separately gather distinct stakeholder groups: public clients, health professionals, private sector (see Fig. 2 for study design). FGs were semi-structured discussions encouraging participant interaction to explore issues deeply, following consolidated methodological guidance [50–52]. FGs tend to be of smaller scale, sometimes consisting of as few as four participants [49] and on average, two or three are enough to uncover 80 % of ideas [53]. This method is common in health-related research to examine different stakeholders' perspectives [54] and aids decision-making in public health [55,56].

2.3. Data collection

Prior to the FGs, informed consent[3] as well as demographic and additional data to characterise the sample were gathered through an online questionnaire using Qualtrics (qualtrics.com). The FGs were conducted online using Google Meet™ or Microsoft Teams™, and the audio recordings transcribed and subject to discourse analysis. Quantitative data was collected during the FG session using live polling tool Mentimeter (mentimeter.com), to guide discussion and qualitative findings [47]. Guiding values and statements are listed in Table 1. The full interview guide is available on request.

In preparation of this study, five non-exhaustive guiding values were extracted from the French NDHS policy documents (described in Table 2): ethics, sustainability, interoperability, security, and sovereignty.

2.4. Sampling

Purposive sampling was used to recruit participants capable of conveying the viewpoints of a larger public and ensuring a diverse range of perspectives [47,56,69,70]. Recruitment included direct and indirect methods, with invitations sent through associations, federations, LinkedIn, and email.

2.5. Analysis

Qualitative data was analysed by stakeholder group and considering the guiding values of the French NDHS (tables 1 and 2). Care was taken to incorporate personal viewpoints, experiences, and interactions between participants, and identify patterns of agreement or disagreement [55].

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[1] [Hospitals, Patients, Health and Territories].

[2] [Regional Health Agencies].

[3] The informed consent form is attached as Supplementary material.

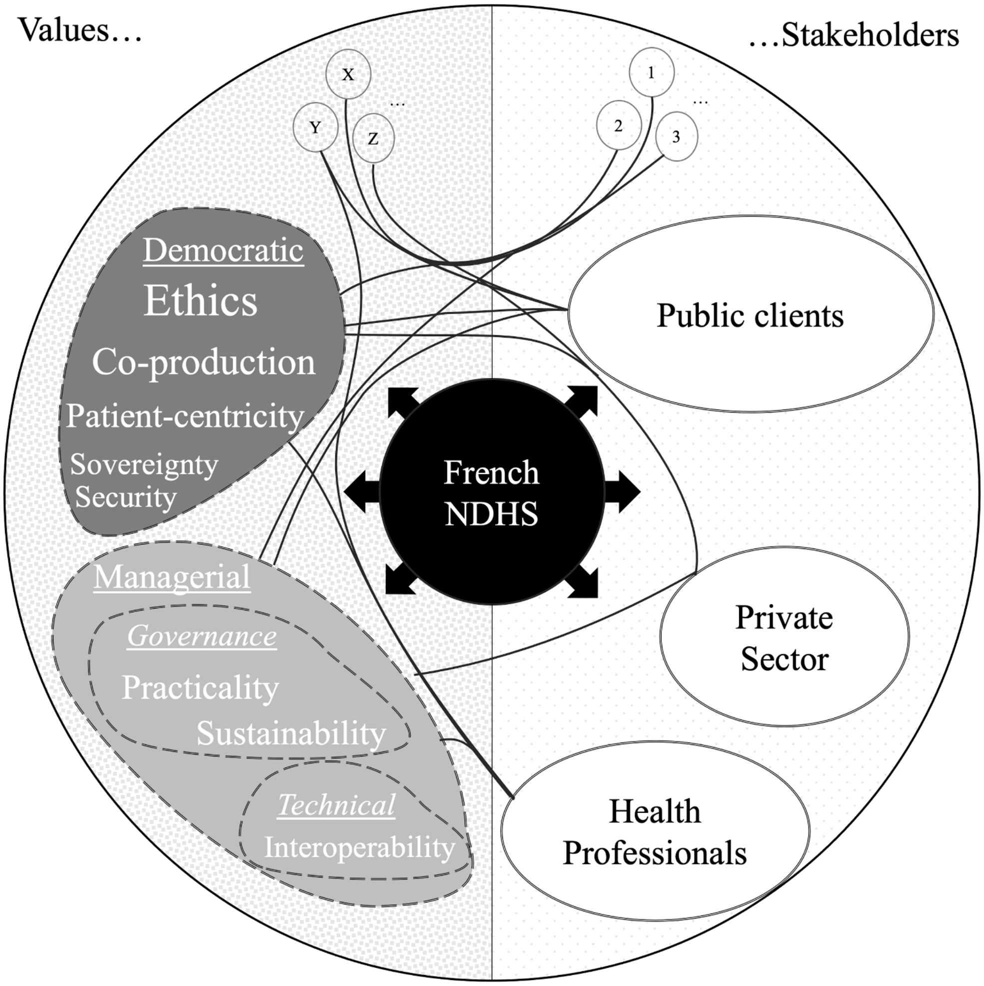

Fig. 1. "Framework of public values around French national digital health strategy".

2.6. Limitations

Despite the strength of the paper in proposing a framework for analysing public values in the NDHS, this study also has limitations that may influence interpretation. Firstly, the small sample size limits generalisability; a larger participant pool could have offered more diverse perspectives. Secondly, underrepresentation of private sector stakeholders may have omitted valuable insights from healthcare providers and businesses affected by the NDHS. Thirdly, voluntary participation may have introduced selection bias, attracting individuals more positively inclined toward digital health. Additionally, with most participants holding higher education degrees, perspectives from those with different educational backgrounds may be underrepresented. Lastly, social desirability bias may have influenced responses despite efforts to encourage open discussions. These limitations should be considered in interpreting the study's conclusions.

2.7. Ethical considerations

An informed consent form including the option to withdraw from participation at any point was collected from participants. The recordings of the FGs were stored locally and destroyed after the study. Approval from the Universidade Católica Portuguesa's (UCP) Ethics Committee was obtained under number CETCH2023-60 (see Supplementary material).

3. Results

We report the results of the sampling process, before the detailed results from focus group interviews. We then present the framework of public values for NDHS thereby developed.

3.1. Participants

In total, 19 participants volunteered to participate, coming from a larger pool of 2,174 individuals who received an invitation. Their characteristics are displayed in Table 3.

The sample had diverse age groups and geographical origin but was predominantly male. While all participants had some experience with digital health, only 58 % were familiar with relevant French NDHS policy documents. Further information can be provided upon request.

Public clients represented users and patients with various backgrounds and medical conditions. Health professionals comprised constituencies of general practitioners, emergency physicians, and healthcare executives. Private sector included participants from start-ups, hospitals, consulting, and IT sector.

3.2. Focus groups findings

Each meeting had a duration comprised between 1:30 to 2:00 h. The results below are presented by stakeholder group (public clients, health professionals, private sector) and preceded by a synthesis table (Table 4).

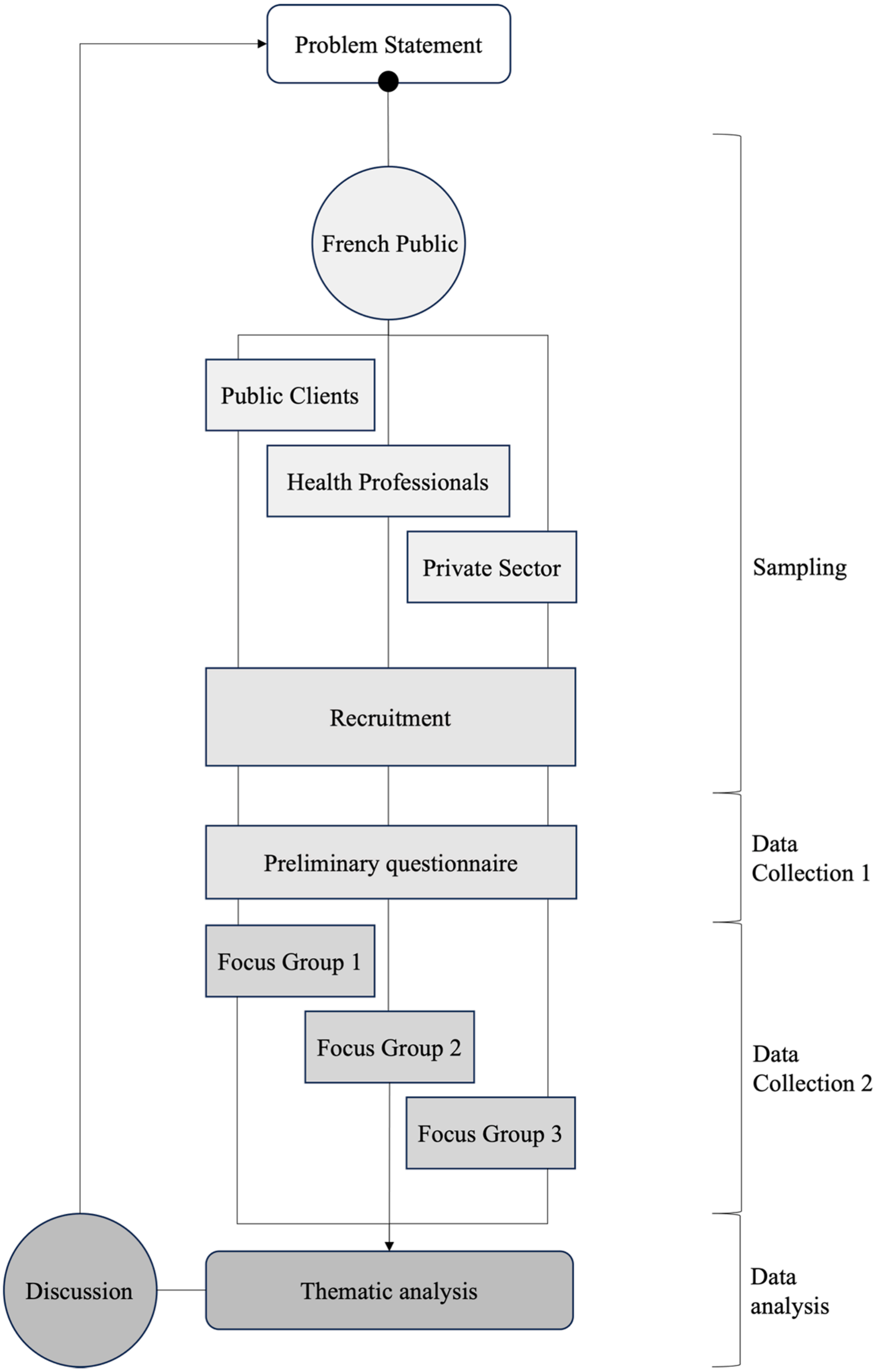

Fig. 2. “Study design overview”.

Table 1
Guiding Statements for focus group discussions.

Guiding value	Statement	Reference
Ethics	A. Ensuring ethical practices in digital health is essential to favour the development and acceptance of these services.	[57]
	B. Ethics in the NDHS guarantees fairness, access, informed consent and data protection.	[58]
Sustainability	C. Sustainable implementation of digital health requires a shift in mentality and practice in the delivery of health services.	[59]
Interoperability	D. Digital health bears characteristics which require the decompartmentalisation of health information systems.	[60]
	E. The lack of adherence to well-established common standards and guidelines is a barrier to interoperability.	[61]
Security	F. Health organisations must adopt a culture of security to protect patient information.	[62]
	G. Cybersecurity is a value creation lever, not only a source of costs / a constraint.	[63]
Sovereignty	H. Health data should be shared between states (e.g. inside the EU).	[64]
	I. The collection, use, and ownership of health data is not sufficiently transparent and does not sufficiently involve patients.	[65]

Table 2
Guiding values inferred from the French national digital health strategy.

Guiding value	Relevant definition
Ethics	Continuation of democratic principles, defining and regulating acceptable moral behaviour [17,18].
Sustainability	Ability to create long-lasting outcomes benefitting society [66].
Interoperability	Ability of different systems and formats to exchange and use data seamlessly [60].
Security	Measures taken to protect healthcare organisations and systems from cyberattacks and ensure the safety and security of patient data [67,68].
Sovereignty	Control and ownership of personal health data by individuals or healthcare systems [65].

Table 3
Participants data.

Characteristic	Classification	No. of participants (n = 19)
Gender	Female	5
	Male	14
Age group	18–29	1
	30–39	6
	40–49	3
	50–59	2
	60–69	5
	70+	2
Stakeholder group	Public clients	7
	Health professionals	8
	Private sector	4

3.2.1. Public clients

Public clients recognised ethics as a crucial guiding value, expressing concerns about the accuracy and privacy of healthcare databases.

They perceived resistance among medical professionals toward digital health solutions, attributing it to doctors viewing technology as a threat to the traditional doctor-patient relationship. One client challenged the notion of omniscient doctors, warning against entrusting health to a single individual, stating they are not "Deus ex machina."[4]

Table 4
Synthesis of Focus Groups Results.

Stakeholder Group Guiding Value	Public Clients	Health Professionals	Private Sector
	perceived that [guiding value] …		
Ethics	Is foundational. Is **data related**.	Is essential. Is abstract. Is insufficient.	Is a necessary framework. Is **data related**.
Sustainability	Requires **patient-centricity**. Requires doctors' **culture** to change. Requires **simplicity** and tangible benefits.	Requires **cultural shifts** (individual; collective). Hinges on **digital literacy**. Requires **ease of use**.	Requires **tailored** cultural shifts (stakeholder groups). Involves other values.
Interoperability	Should aim for **universal solutions**. Stems from issues of inter-system connection, common language, and data quality.	Is important. Should aim for centralisation. Is utopic.	Is necessary. Requires **common standards**. Entails **security** considerations.
Security	Is essential. Is **insufficiently adhered to** by HPs. Level of security is a personal choice.	Has **technical** nature. Must be **balanced** with simplicity of use.	Entails **risk** management. Is a **constraint**, a "necessary evil".
Sovereignty	In data-sharing has **different types** for different finalities. Holds transparency and regulatory risks.	Needs **patients' data to be their own**. Requires **coproduction** with patients. Is threatened by the financialisaton of health.	Differs between **personal** or **public health data**. For public health data sharing requires **anonymisation**. Must **balance** transparency and digital health advancements.

The discussion highlighted the need to shift toward patient-centered care through digital health. Adoption was said to depend on simplicity, as complex tools are often abandoned. Increasing digital literacy through education was suggested, concluding that while digital health must adapt to users, users also need to adjust to it.

Participants noted a lack of interoperability in France and the EU, feeling that security measures hinder information exchange. They emphasised the need for tailored solutions, acknowledging that universal approaches may not address disparate needs.

There was concern about health professionals compromising data security by not adhering to security practices. Examples included hospital staff carelessly sharing information on paper or verbally, breaching confidentiality. One participant recalled seeing a password taped to a computer screen.

3.2.2. Health professionals

Health professionals agreed that ethical practices in digital health are essential to prevent a two-tier health system but found ethical concepts to be abstract and philosophical. They noted persistent inequalities of access and a digital divide in practice.

Participants believed sustainable digital health implementation requires shifts in mentality and practice. Challenges included low adoption of Healthcare Professional Cards and poor digital literacy affecting Electronic Patient Records usage, with suggestions ranging from coercive measures to educating health professionals on digital health benefits.

There was a common desire among health professionals for universal platforms and centralisation to reduce solution complexity, but this was

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[4] "*Deus ex machina*" (English: [god from the machine]): in Greek and Roman drama, a god lowered by stage machinery to resolve a plot or extricate the protagonist from a difficult situation [120].

considered utopian as it conflicts with private sector incentives. Concerns arose about the financialisation of health and the public sector lagging behind the private sector, leading to sovereignty risks at national and individual levels.

The group agreed on the importance of security, viewing it as a technical cultural issue. The main challenge identified was balancing security and simplicity to protect patient data.

Participants emphasized the need to identify real needs before developing solutions, stating that the first question should be “why are we doing it?” rather than “how do we do it?”.

3.2.3. Private sector

Participants expressed concerns about the digital divide across age groups and stressed the need for greater inclusivity. The importance of adhering to the General Data Protection Regulation (GDPR) was underscored, citing instances where doctors wrongly assumed ownership of patients’ data, which should morally belong to patients.

Ethics was viewed as constraining due to security considerations. An experience with the Messageries Sécurisées de Santé’s (MSS)[5] illustrated tension between short-term utility and long-term ethical considerations.

Sustainability was said to require tailored cultural shifts among health professionals, patients, government, and society, with different levels of tech-savviness needing distinct approaches. Consistency in government policies beyond political mandates was emphasised to foster ownership of digital health. Participants suggested that lasting adoption depends on perceived ease of use and performance. Security concerns were seen as obstacles to performance and adoption, exemplified by the inefficiencies leading to limited usage; one participant noted that doctors used Gmail instead of the MSS.

Breaking down barriers was deemed crucial to realise the full potential of the national shared EHR initiative (Dossier Médical Partagé—DMP). While security risks associated with interoperability were noted, the group believed the benefits justified the risks.

Private sector participants stated that cybersecurity is rooted in risk management and opportunity cost. Protecting patient information and meeting data standards were critical for attracting investor funding, where adherence to cybersecurity norms is both a basic condition and a value creation lever. Others viewed cybersecurity as a costly constraint affecting system designs. Ultimately, there was a consensus that “cybersecurity is a necessary evil.”

Sovereignty was linked to data use and ownership. Participants favored sharing public health data, emphasising that sharing at the EU level enhances Europe’s sovereignty by counterbalancing global companies. However, they were more cautious about sharing personal health data, except in specific cases, due to concerns about foreign health systems and societal maturity.

Efficiency was also emphasised, highlighting the need to align solutions with organisational requirements and user needs.

4. Discussion

We first discuss the plurality of perceptions in stakeholders’ viewpoints as basis for tailoring approaches to specific value-beneficiaries. Subsequently, we provide outlooks onto additional policy scales and contexts.

4.1. Public value as a multidimensional concept: Plurality of perceptions as basis for tailoring approaches to specific value-beneficiaries

While traditional value concepts in digital health focus on service optimisation and economic aspects, efforts like the EHDS aim to broaden these aspects and interpretations [71]. Non-economic trade-offs pose significant challenges to adoption. A primary tension exists between data privacy rights and research data accessibility: enhancing data access supports public health research, but ensuring transparency and respecting individuals’ control over personal information are essential for trust and compliance with privacy regulations [72]. Integration challenges arise as health professionals may face increased workloads and stress, requiring targeted training for digital tools [73]. Opportunities for citizen empowerment exist, but disparities in digital health literacy and technology access can exacerbate health inequities, as underserved groups may lack the means to engage [74]. Addressing these barriers requires a balanced approach that respects multiple dimensions of public value.

The study’s findings highlight this multi-dimensionality, with stakeholders attributing varied importance to values like accessibility, security, and efficiency. This plurality aligns with different digital health phases, each emphasising distinct public value aspects. The service provision phase centers on accessibility and patient-centered ethics to meet patient needs. Continuity of care emphasises interoperability and security for seamless data sharing, while public health management broadens public value to societal outcomes like benefits from health research. These findings suggest tailoring the digital health public value framework to different phases to effectively address stakeholders’ diverse needs.

Findings reveal shared perceptions among stakeholder groups—public clients, health professionals, and the private sector—about the importance of ethical considerations, co-production, ease of use, interoperability needs, and data-related risks. However, distinctive views emerged on understandings of ethics, culture shifts, change management, and health data implications, aligning with the idea of varying perceptions of public value among stakeholders [23].

Ethics were unanimously deemed foundational [58,75]. Stakeholder collaboration, patient-centricity, and autonomy were emphasised [76], aligning with suggestions that co-production is key in creating public value [77], especially in health systems [34]. Pragmatic factors like simplicity, tangible benefits, and ease of use were suggested for seamless adoption, echoing previous studies [78]. Culture shifts were endorsed, confirming earlier recommendations [59,79]. Increasing interoperability was commonly advocated [80], a need already identified [61,81,82]. Data was recognised as a cornerstone of digital health [83,84], and data-related security and privacy risks emerged, echoing national regulatory discussions [85].

Despite shared considerations, distinctive perceptions emerged about understanding moral matters and approaching cultural change, trade-offs, and data. Health professionals found ethics too abstract for practical implications, with educational efforts hindered by deep-rooted cultural habits [86,87]. Only the private sector viewed ethical and security considerations as obstacles: unethical behavior threatened business [88], and security posed financial and governance burdens, with profit-driven priorities influencing views [89]. Regarding health data, perceptions diverged depending on purposes, supporting that data includes different types with different characteristics [90]. The private sector did not particularly support patients’ sovereign right to own their data, unlike other stakeholders, underscoring the importance of safeguarding individual rights.

It is crucial to account for the plurality of public value perceptions in large ecosystems and the tensions among public clients, health professionals, and the private sector [91]. Public clients may prioritise privacy and accessibility, considering situational needs, while the private sector focuses on efficiency and profit, and health professionals value tools that support clinical workflows without added burdens. However, cooperation can emerge when stakeholders find shared goals, such as enhancing patient outcomes and ensuring secure data practices. Such alignment requires deliberate policy measures that respect each group’s priorities and can be achieved through co-creation practices [92,93].

The public value dynamics identified, particularly around public engagement and trust, align with larger structural issues within the

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[5] [Secure Health Messaging].

French healthcare system and globally. Centralisation trends, seen not only in France but also elsewhere, often limit local autonomy and restrict public involvement in health policy decisions [26,94]. Tensions arise not only from technical and ethical challenges but also from systemic issues where central authority may inadvertently reduce public agency, contributing to public discontent movements [28]. These findings underline the need for policy approaches that balance centralised control with mechanisms for genuine public engagement.

4.2. Applying the values-based approach onto other scales and policy examples

To enhance applicability, we propose systematically modelling our process: 1) Identify relevant policy expressions gathering and analysing key policy statements, documents, and other expressions pertinent to the area of interest; 2) Map the policy's environment and stakeholders, highlighting the main public-facing entity and its affiliates. This helps analyse each actor's public value proposition in light of their responsibilities [95]. These steps involve consulting various policy expressions, including strategic documents, funding schemes and service provision, at different levels (subnational, national, supranational, global). 3) Once identified, extract and refine policies' guiding values with stakeholders into a framework; 4) Rework the framework after empirical study to identify missing values, reprioritise them, and explore gaps for refinement.

To expand this research, assessing the different public value perceptions in large ecosystems such as at EU level could be a democratic means to empower digital health policies [96]. This would involve more stakeholders and possibly more divergent public value perceptions with multicultural backgrounds. The model would also be applicable at subnational levels in multi-stakeholder organisations, such as regional healthcare entities or large hospitals. Another avenue is exploring non-health topics indirectly connected such as the EU's AI Act [97], or digital identity regulations (eIDAS2) [98]. Public value can be relevant in such areas considering their associated significant societal implications and ethical considerations [99–101].

We map in Table 5 how a public value-based approach can be scaled and applied coherently across different policy levels, from subnational to global. This mapping indicates potential for universal applicability of digital health values, which can help align strategic formulations, funding schemes, and digital public services across various contexts [15,102]. Furthermore, considering a phased-approach layer could offer valuable insights to expand the mapping and evolve the public value framework into a truly fit-for-purpose tool. Thus, different models can be explored [15,102–105].

Internationally, digital health strategies vary in governance and regulation, underscoring the need for adaptable frameworks that capture shared public values while accommodating diverse local priorities [4,106,107]. Centralised models (e.g., France) streamline goals but must foster innovation and user-centred flexibility [94]. Decentralised systems (e.g., Canada) enable regional adaptability yet risk fragmented national interoperability and lack federated leadership [108–110]. Highly privatised contexts (e.g., the United States) must reconcile commercial imperatives with broad societal aims like equity, while mixed public–private systems (e.g., the UK) grapple with balancing universality and innovation [111–114].

In low- and middle-income countries, limited resources can inspire resourceful, community-led interventions, such as mHealth programmes in sub-Saharan Africa [115]. Meanwhile, countries like South Korea highlight how advanced technology infrastructures can integrate public values—such as transparency and equity—on a national scale [116]. Examining such varied environments can reveal the framework's potential to be versatile and globally relevant whilst offering a novel approach for assessing national digital health strategy [117–119].

Future research should focus on applying and testing this framework across heterogeneous settings, from large-scale national policies to smaller local initiatives. Doing so would refine the guiding values, help tailor the framework for distinct governance structures, and encourage knowledge-sharing. By incorporating lessons from differing systems and resource contexts, this framework could evolve into a robust, repeatable method for embedding public values in digital health governance worldwide.

Table 5
Scaled policy mapping per formulation kind.

Policy form Scale	Strategic formulations		Digital Public Services
Subnational	Regional health strategies[1] *Hospital digital transformation plans*	Banque des territoires *Other incubators*	Groupement Régional d'Appui au Développement de la e-Santé (GRADeS) Agences Régionales de Santé (ARS)
National	Feuille de Route du Numérique en Santé 2023–2027 Doctrine du Numérique en Santé 2023 Politique Générale de Sécurité des Systèmes d'Information de Santé (PGSSI-S)	Ségur du numérique en santé HOP'EN 2 Guichet National Innovation et Usage e-Santé (G_NIUS) Cybersécurité accélération et Résilience des Etablissements (CaRE)	Mon Espace Santé Messagerie sécurisée de santé (MSSanté) Health Data Hub (HDH)
Supranational	European Health Data Space Regional digital health action plan for the WHO European Region 2023–2030 (RC72)	Horizon Europe EU4Health	MyHealth@EU HealthData@EU EU Digital COVID Certificate
Global	World Health Organization Global strategy on digital health 2020–2025 Global Initiative on Digital Health (GIDH)	United Nations Development Programme and partners (e.g. The Global Fund; Digital Square)	WHO Global Digital Health Certification Network (GDHCN)

[1] Such as the *Schéma Régional de Santé 2023–2028* of the Grand Est region wherein an objective is developing e-Health [121].

5. Conclusion

This study has discussed public value and digital health, with French National Digital Health Strategy serving as a case example. The values discussed included democratic values of ethics, coproduction, patient centricity, sovereignty, and security, and managerial values: governance values including practicality and sustainability, and technical values including interoperability.

Findings from focus groups confirm the plurality of perceptions of public values among different stakeholders. This should entice policymakers to map their ecosystem, identify and engage the relevant actors, and prioritise co-production with public value beneficiaries to tailor policies accordingly.

Our study suggests that the public value lens, when accounting for a plurality of perceptions, can be highly relevant to advance digital health policy, responsibly, transparently and ethically. In times where such efforts are being multiplied, finding a common theoretical approach can catalyse wider digital health uptake. To further evolve our theoretical approach specifically systematised for this purpose, it is important to include considerations for large ecosystems comprising numerous stakeholders with divergent perceptions of public value. Such ecosystems can be found both at supranational and subnational levels. It can also be insightful to test the same onto different topics that are not directly health-related but can have some impact (AI, cybersecurity, or digital identity regulations).

Ethical statement

The study obtained ethical approval from the Universidade Católica Portuguesa's (UCP) Ethics Committee in Technology, Social Sciences and Humanities (CETCH), under number CETCH2023-60.

7. Summary table

- ▪ What Was Already Known on the Topic
- National Digital Health Strategies (NDHS) across Europe are prevalent, with 44 of 53 countries in the WHO European Region having established such policies, but their formulation and implementation remain heterogeneous.
- Scholars have highlighted the importance of aligning public sector initiatives with democratic and managerial values, to address the diverse needs of stakeholders.
- ▪ What This Study Added to Our Knowledge
- The research identified substantial differences in how various stakeholder groups (i.e., public clients, health professionals and private sector representatives) perceive and prioritise public values, with specific challenges in ethical alignment and cultural adaptation.
- It exhibited the pertinence of a values-based framework for digital health strategy across a national setting and highlighted its potential in other contexts from local to global scales to ultimately enhance trust, performance, and stakeholder engagement in digital health policy and implementation.

CRediT authorship contribution statement

Simon Lewerenz: Conceptualization, Methodology, Investigation, Data curation, Formal analysis, Visualization, Writing – original draft, Writing – review & editing. **Anne Moen:** Writing – review & editing, Conceptualization. **Henrique Martins:** Writing – review & editing, Supervision, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijmedinf.2025.105794.

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