

PERSONAL DATA PROTECTION IN PUBLIC HEALTH IN MANAUS: LEGAL CHALLENGES OF LGPD APPLICATION IN THE PROCESSING OF SENSITIVE DATA

PROTEÇÃO DE DADOS PESSOAIS NA SAÚDE PÚBLICA DE MANAUS: DESAFIOS JURÍDICOS DA APLICAÇÃO DA LGPD NO TRATAMENTO DE DADOS SENSÍVEIS

PROTECCIÓN DE DATOS PERSONALES EN LA SALUD PÚBLICA DE MANAUS: DESAFÍOS JURÍDICOS DE LA APLICACIÓN DE LA LGPD EN EL TRATAMIENTO DE DATOS SENSIBLES



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ABSTRACT

The increasing use of digital technologies in public health management has significantly expanded the processing of sensitive personal data, requiring legal mechanisms capable of ensuring the protection of privacy and fundamental rights. In this context, the Brazilian General Data Protection Law establishes regulatory parameters governing the processing of personal information by public and private institutions, including those operating in the healthcare sector. This study aims to analyze the legal challenges related to the application of the General Data Protection Law in the processing of sensitive data within the public health system of Manaus, Amazonas. The research is characterized as a qualitative and descriptive literature review, based on recent scientific articles and academic studies addressing personal data protection, information governance and public sector responsibility in health data processing. The results indicate that the implementation of the legislation faces challenges related to technological infrastructure, the absence of consolidated institutional information security policies and the need for training of public agents responsible for data

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processing. It is observed that the effectiveness of data protection regulations depends on the integration between legal norms, administrative practices and governance mechanisms capable of ensuring transparency, security and accountability in the use of personal information. The study concludes that strengthening institutional strategies aimed at protecting sensitive data represents an essential element for the consolidation of safer public health services aligned with the protection of fundamental rights, particularly within the Amazonian context.

Keywords: Manaus. Personal Data Protection. Public Health. Sensitive Data. General Data Protection Law.

RESUMO

A intensificação do uso de tecnologias digitais na gestão dos serviços públicos de saúde tem ampliado o tratamento de dados pessoais sensíveis, exigindo mecanismos jurídicos capazes de assegurar a proteção da privacidade e dos direitos fundamentais dos cidadãos. Nesse contexto, a Lei Geral de Proteção de Dados Pessoais estabelece parâmetros normativos voltados à regulamentação do tratamento de informações pessoais por instituições públicas e privadas, incluindo aquelas relacionadas à área da saúde. O presente artigo tem como objetivo analisar os desafios jurídicos da aplicação da LGPD no tratamento de dados sensíveis no âmbito da saúde pública do município de Manaus, Amazonas. A pesquisa caracteriza-se como revisão de literatura, de abordagem qualitativa e natureza descritiva, fundamentada em artigos científicos recentes e produções acadêmicas que discutem a proteção de dados pessoais, a governança informacional e a responsabilidade estatal no tratamento de informações em saúde. Os resultados indicam que a implementação da legislação enfrenta entraves relacionados à infraestrutura tecnológica, à ausência de políticas institucionais consolidadas de segurança da informação e à necessidade de capacitação dos agentes públicos responsáveis pelo tratamento de dados. Verifica-se que a efetividade da LGPD depende da integração entre normas jurídicas, práticas administrativas e mecanismos de governança capazes de garantir transparência, segurança e responsabilização no uso das informações pessoais. Conclui-se que o fortalecimento de estratégias institucionais voltadas à proteção de dados sensíveis constitui elemento essencial para a consolidação de serviços públicos de saúde mais seguros e alinhados à tutela dos direitos fundamentais, especialmente no contexto amazônico.

Palavras-chave: Dados Sensíveis. LGPD. Manaus. Proteção de Dados Pessoais. Saúde Pública.

RESUMEN

El creciente uso de tecnologías digitales en la gestión de los servicios públicos de salud ha ampliado significativamente el tratamiento de datos personales sensibles, lo que exige mecanismos jurídicos capaces de garantizar la protección de la privacidad y de los derechos fundamentales de los ciudadanos. En este contexto, la Ley General de Protección de Datos Personales de Brasil establece parámetros normativos destinados a regular el tratamiento de información personal por instituciones públicas y privadas, incluyendo el sector sanitario. El presente estudio tiene como objetivo analizar los desafíos jurídicos de la aplicación de la Ley General de Protección de Datos en el tratamiento de datos sensibles en el ámbito de la salud pública del municipio de Manaus, Amazonas. La investigación se caracteriza como una revisión de literatura de enfoque cualitativo y naturaleza descriptiva, fundamentada en artículos científicos recientes y producciones académicas relacionadas con la protección de datos personales, la gobernanza de la información y la responsabilidad estatal en el tratamiento de datos en salud. Los resultados indican que la implementación de la legislación enfrenta obstáculos relacionados con la infraestructura tecnológica, la ausencia de políticas institucionales consolidadas de seguridad de la información y la necesidad de capacitación

de los agentes públicos responsables del tratamiento de datos. Se concluye que la efectividad de la normativa depende de la integración entre disposiciones jurídicas, prácticas administrativas y mecanismos de gobernanza capaces de garantizar transparencia, seguridad y responsabilidad en el uso de la información personal, especialmente en el contexto amazónico.

Palabras clave: Datos Sensibles. LGPD. Manaus. Protección de Datos Personales. Salud Pública.

1 INTRODUCTION

The digital transformation of public services has promoted significant changes in the way personal information is collected, stored, and shared, especially in the health sector, in which data processing is an essential element for the execution of public policies and for the continuity of care care. In this scenario, the growing circulation of clinical and registration information intensifies the need for legal mechanisms capable of ensuring the protection of the privacy and fundamental rights of citizens, especially in view of the sensitive nature of health-related data.

The enactment of Law No. 13,709/2018 instituted, in the Brazilian legal system, a specific normative regime aimed at the discipline of the processing of personal data, applicable to both the private sector and the Public Administration. As established by Brasil (2018), data processing comprises any operation carried out with personal information, including collection, use, storage, and sharing, imposing legal limits aimed at preserving the intimacy, freedom, and dignity of the natural person. From this regulation, information protection began to be a structuring part of state action, especially in areas that depend on intensive data management, such as public health.

In the health context, the advance in the computerization of services has expanded interoperability between systems and institutions, enabling greater administrative efficiency, but also increasing legal risks related to improper access and inappropriate use of personal information. Balian (2025) observes that the sharing of health data between different platforms requires strict governance and security criteria, since technological integration can amplify vulnerabilities when not accompanied by adequate regulatory controls.

In addition, recent literature shows that the implementation of the LGPD in the health sector requires institutional adaptations that go beyond the technological dimension, involving administrative reorganization and redefinition of responsibilities of public agents. Hawryliszyn (2021) highlights that compliance with legal requirements requires professional training and the establishment of internal protocols capable of ensuring continuous compliance in the processing of sensitive data. In addition, Lima (2023) points out that the application of legislation within the scope of public health services imposes the challenge of balancing the efficiency of health policies with the guarantee of users' informational rights.

In view of this panorama, it is verified that the protection of sensitive personal data is a central theme in the contemporary legal debate, especially when analyzed from the perspective of public health management. The expansion of the use of electronic medical records, integrated systems, and digital platforms highlights the need to understand how the instruments provided for in the LGPD are operationalized in administrative practice, as well

as what legal challenges emerge from this process. Thus, it is relevant to investigate the application of legislation in the context of municipal public health, considering the structural and social specificities that characterize the Amazonian reality.

The application of the General Law for the Protection of Personal Data in the health sector is particularly relevant due to the nature of the data processed by health institutions, legally classified as sensitive personal data. Information related to the health status, clinical history, and biometric conditions of individuals require high levels of protection, since their undue exposure can generate direct impacts on dignity, privacy, and equitable access to public services. Martins (2021) highlights that the information protection of the patient is closely related to the fundamental right to health itself, showing that data security is an integral element of the quality of care.

The expansion of digital health and technology-mediated care has intensified the flow of information between professionals, hospital units, and administrative systems, simultaneously increasing the efficiency of care and the risks related to inadequate data processing. Zaganelli (2023) points out that the expansion of telemedicine and electronic records requires institutional mechanisms capable of ensuring confidentiality, traceability, and access control to clinical information, reinforcing the need for permanent information governance policies in the health environment.

In the context of public management, it is observed that the implementation of the LGPD faces challenges related to the organizational structure of health institutions and the historical absence of consolidated data protection policies. Gonçalves (2024) points out that Brazilian public hospitals still have difficulties in standardizing procedures and clearly defining the responsibilities of the agents involved in the processing of personal information. In a convergent way, Praça Neto (2023) shows that the impact of legislation on the health sector requires a review of administrative flows and the adoption of institutional practices aimed at preventing informational risks.

From the perspective of social control and administrative transparency, Silva (2023) states that the digitalization of public health policies expands the state's capacity for health planning and monitoring, but also imposes the need for legal safeguards that prevent uses that are incompatible with the public purpose. In this sense, Soares (2021) emphasizes that the duty of confidentiality, traditionally associated with professional secrecy, has taken on an expanded institutional dimension, requiring shared responsibility between professionals and public managers.

In view of these considerations, the analysis of the legal challenges related to the application of the LGPD in the processing of sensitive data in the scope of municipal public

health is established as a research problem. Thus, this article aims to examine the protection of personal data in public health in Manaus, Amazonas, identifying normative and institutional obstacles arising from the implementation of the legislation, as well as its repercussions for the guarantee of the fundamental rights of users of the public health system. The investigation is justified by the need for scientific production focused on the Amazonian reality, contributing to the strengthening of safe and legally adequate administrative practices in the treatment of sensitive personal information.

2 THEORETICAL FRAMEWORK

The protection of personal data has consolidated itself as one of the main contemporary legal challenges in the face of the intensification of the digitalization of public services, especially in the field of health. The enactment of Law No. 13,709/2018, called the General Law for the Protection of Personal Data, represented a fundamental normative milestone by recognizing the need for specific protection of information related to natural persons, especially those classified as sensitive data, including health data. In this context, it is observed that the informational management carried out by the government began to demand new mechanisms of governance, transparency and institutional accountability, especially within the scope of the Unified Health System.

According to Lima and Gonçalves (2023), the application of the LGPD in public health services imposes a significant administrative restructuring, since the processing of personal data is no longer understood only as an operational activity and becomes a legal obligation linked to the guarantee of fundamental rights. The authors point out that the collection and sharing of clinical information requires strict observance of the principles of purpose, necessity and security, under penalty of violation of the citizen's privacy and state liability.

The expansion of the use of hospital computerized systems and digital platforms has intensified the flow of medical data, making evident the need for compatibility between administrative efficiency and protection of the patient's privacy. In this sense, Gonçalves et. al (2024) point out that public hospitals face structural difficulties for the full implementation of the LGPD, especially due to the absence of an institutional culture focused on data protection and the technological limitation present in several public health units. Such a scenario reveals that normative effectiveness depends not only on the existence of the law, but also on the administrative capacity of public entities to internalize compliance practices.

The discussion about information protection in public health is also directly related to the social control of health policies. Silva et. al (2023) argue that the digital transformation of the SUS has expanded the capacity for epidemiological monitoring and state planning,

however, simultaneously, it has increased the risks related to the misuse of personal information. For the authors, health data governance must balance the collective interest in the formulation of public policies with the preservation of individual rights, avoiding practices that may generate undue exposure of vulnerable populations.

From the perspective of medical practice, the protection of sensitive data assumes an ethical and legal dimension that is inseparable from the duty of professional secrecy. According to Soares (2021), the processing of patient data requires extra caution, as clinical information has high discriminatory potential, which can impact the individual's social, work, and security relationships. The author points out that the LGPD reinforces existing obligations in the field of bioethics, expanding the responsibility of professionals and institutions regarding the safekeeping and sharing of this information.

The growing adoption of telemedicine and digital health technologies has further intensified the debate about the confidentiality of medical information. In this scenario, Zaganelli (2023) observes that the digital environment has expanded the exposure of clinical data, requiring technical and legal mechanisms capable of ensuring traceability, security, and access control to information. The author points out that medical confidentiality depends not only on professional conduct, but also on the technological infrastructure used by health institutions.

It is verified that the protection of personal data in the health sector goes beyond the merely normative dimension, inserting itself in a broader context of reorganization of the digital public administration. The implementation of the LGPD, especially in complex regional realities such as that of Brazilian public health systems, highlights the need for integration between law, technology, and public policies, an aspect that will be deepened in the following sections.

The implementation of the General Data Protection Law in the health sector requires the redefinition of institutional responsibilities related to the processing of personal information of users of the public and private system. In this context, Hawryliszyn (2021) highlights that the regulatory adequacy of health institutions is not restricted to the adoption of technological tools, but also involves organizational changes capable of ensuring information security and adequate control of access to clinical data. Such a perspective shows that compliance with the LGPD depends on the integration between administrative management, professional training, and efficient technological structure.

The processing of sensitive personal data, especially those linked to the medical history of patients, requires additional care in view of the harmful potential resulting from their undue exposure. Praça Neto (2023) observes that the health sector operates with a high

volume of information shared between different institutional agents, a circumstance that increases the risks related to leaks and uses incompatible with the originally established purpose. Thus, data governance starts to assume a central role in preserving the fundamental rights of data subjects.

Information protection is also presented as an extension of the fundamental right to health itself, since safe access to health services presupposes trust between patient and institution. Martins (2021) argues that the preservation of the confidentiality of medical data is an indispensable element for the realization of the dignity of the human person, considering that the unauthorized disclosure of clinical information can generate relevant social, economic, and psychological impacts on the individual.

From the perspective of institutional legal compliance, there is the strengthening of adaptation programs specifically aimed at the hospital environment. Dias Carneiro (2021) states that the LGPD introduced the need to implement permanent mechanisms for controlling and monitoring data processing operations, including internal security policies, risk assessment, and clear definition of the responsibilities of the agents involved. The author emphasizes that the health sector has a high degree of informational vulnerability due to the complexity of care routines.

The increasing technological integration of public health systems has intensified the debate about the interoperability of government databases. Balian (2025) points out that the structured sharing of health information contributes to the planning of more efficient public policies, however it requires strict compliance with the principles of necessity and purpose provided for in the LGPD. According to the author, the absence of clear limits on automated data processing can compromise the protection of citizens' privacy.

Thus, it is perceived that the application of data protection legislation in the field of health represents a continuous process of institutional adaptation, in which information security becomes part of the very concept of quality of the public service provided. The consolidation of this model highlights the need for a balance between technological innovation and safeguarding fundamental rights, preparing the debate for the analysis of the concrete legal challenges faced in the reality of public health administration.

The consolidation of personal data protection in public health is part of a broader scenario of digital transformation of state administration, in which the intensive use of information technologies has come to guide the formulation and execution of health policies. In this context, Lima (2023) highlights that the application of the LGPD within the scope of the Unified Health System imposes on the public authorities the duty to structure mechanisms capable of ensuring not only administrative efficiency, but also the preservation of the privacy

of the citizens served. The author shows that the processing of sensitive data requires compatibility between collective interest and individual protection, especially in public systems characterized by high information flow.

The digitalization of health services has significantly expanded the state's capacity for epidemiological monitoring and care management, but it has also intensified the risks related to the inappropriate use of personal information. Gonçalves (2024) observes that the practical implementation of the LGPD in public hospitals faces structural obstacles, including technological limitations, absence of standardized protocols, and insufficient technical training of the agents responsible for data processing. This reality demonstrates that normative effectiveness depends directly on the administrative capacity of public entities to internalize information governance practices.

The collective dimension of data protection in health becomes evident when analyzed from the perspective of social control of public policies. Silva (2023) argues that the expansion of the SUS digital bases strengthened the production of health indicators and government planning, but simultaneously increased the informational exposure of socially vulnerable groups. In this sense, the author emphasizes that the protection of personal data must be understood as an instrument of democratic guarantee, preventing the massive use of information from resulting in discriminatory practices or indirect violations of fundamental rights.

In the field of care practice, the protection of sensitive data is closely related to the ethical duty of professional secrecy. Soares (2021) states that the LGPD legally reinforced obligations historically associated with medical ethics, expanding the responsibility of health institutions regarding the storage and sharing of clinical information. The author highlights that the confidentiality of data is an essential element for maintaining trust between the patient and the health system, an indispensable factor for the effectiveness of public health policies.

The expansion of telemedicine and care mediated by digital technologies has also redefined the traditional parameters of information protection. Zaganelli (2023) points out that the digital environment requires additional security mechanisms, considering that the remote treatment of clinical data increases the points of informational vulnerability. According to the author, the protection of health data depends simultaneously on legal guarantees, secure technological infrastructure, and appropriate institutional protocols.

Given this scenario, it is verified that the application of the LGPD in the public health sector represents a continuous legal challenge, especially in regional contexts marked by structural inequalities and technological limitations. The reality of municipal health systems highlights the need for regulatory adaptation to local specificities, making it essential to

develop public policies capable of reconciling digital innovation, administrative efficiency, and protection of citizens' fundamental rights. Thus, the protection of sensitive personal data is an indispensable element for the strengthening of public health management and for the consolidation of a legally safe and socially responsible care model.

3 METHODOLOGY

The present study is characterized as a qualitative research, developed through a literature review, with a legal-dogmatic approach, focused on the analysis of legal challenges related to the application of the General Law for the Protection of Personal Data in the treatment of sensitive data in the context of public health, focusing on the administrative reality of the municipality of Manaus, Amazonas.

As for the objectives, the research is classified as exploratory and descriptive, as it seeks to identify, systematize and critically analyze the recent scientific production on the protection of personal data in the health area, allowing to understand the legal impacts arising from the implementation of the LGPD in public health services. According to the methodological guidelines provided for in the structural model of the scientific article, the methodological section must qualify the type of research, the methods used, and the investigative path adopted, ensuring clarity and scientific reproducibility.

The methodological procedures consisted of conducting a narrative literature review, based exclusively on scientific articles published between the years 2021 and 2025, available entirely in digital format. The selection of productions took place according to previously defined inclusion criteria, comprising: publications in scientific journals classified in the Qualis A and B strata, thematic relevance to the General Data Protection Law applied to health and a specific approach to the processing of sensitive personal data, information governance and institutional responsibility in the health sector.

The research universe corresponds to the national scientific literature focused on the interface between digital law and public health, while the sample was composed of ten scientific studies selected for their adherence to the problem investigated. The time limit was established with the objective of ensuring theoretical updating and alignment with contemporary discussions on the digital transformation of public administration and personal data protection.

The analysis of the bibliographic material was carried out through the technique of qualitative content analysis, involving exploratory reading, analytical reading and thematic categorization of the information extracted from the selected studies. The following categories of analysis were defined: protection of sensitive health data, responsibility of the public

authorities in the processing of personal information, informational security in hospital environments, and legal challenges of implementing the LGPD in public health management. The development of the research occurred in successive stages, starting with the survey of scientific productions in academic digital databases, followed by screening according to inclusion and exclusion criteria, organization of theoretical contributions and subsequent critical interpretation of the results in the light of the Brazilian legal system. This procedure allowed the establishment of a relationship between the theoretical framework analyzed and the concrete challenges faced by the public health administration in specific regional contexts.

As a methodological limitation, the absence of direct empirical investigation with public health institutions is recognized, an inherent characteristic of literature review studies. However, this delimitation is adequate to the proposed objective, which consists of the critical systematization of existing scientific knowledge, enabling the construction of a consistent theoretical basis for legal analysis of the investigated phenomenon.

Thus, the methodology adopted allows us to understand, in a structured and systematic way, the main legal challenges related to the protection of sensitive personal data in public health, offering analytical support for discussion of the results and their implications in the context of municipal health management in Manaus, Amazonas.

In order to systematize the scientific references used in the construction of this study, the following is a summary table containing the selected authors, the respective titles of the academic productions and the year of publication. The organization of this information allows us to visualize in a structured way the theoretical basis that supports the discussion about the protection of sensitive personal data in public health, evidencing the relevance of the sources used and their adherence to the proposed research problem.

Table 1

Authors used in the research

Author	Title	Year
BALIAN, R. A.	A Legal Analysis of Healthcare Data Interoperability Under the LGPD	2025
DIAS CARNEIRO	LGPD in health	2021
GONÇALVES, R. M.	LGPD and public health services: challenges of implementation in public hospitals	2024
HAWRYLISZYN, M.	Applicability of the LGPD in health services	2021
LIMA, I. S.	General Law for the Protection of Personal Data in Public Health Services	2023
MARTINS, F. R.	The application of the LGPD in private hospitals and the fundamental right to health	2021
PRAÇA NETO, A. A.	General Law for the Protection of Personal Data: impacts on the health sector	2023

SILVA, L. B. da	General Data Protection Law and the social control of health	2023
SOARES, M. A. S.	LGPD in healthcare: questions and answers for medical practice	2021
ZAGANELLI, M. V.	Medical confidentiality and sensitive data in telemedicine in light of the LGPD	2023

Source: The authors.

From the information presented in Table I, it is observed that the selected scientific production focuses on recent analyses on the application of the General Law for the Protection of Personal Data in the health sector, evidencing the growing academic and legal concern with the processing of sensitive data within the scope of public health policies. It is noted that the studies contemplate different complementary perspectives, involving information governance, institutional responsibility, clinical data security, and the impacts of digital transformation on health services.

Such theoretical diversity enables the construction of a consistent analytical base, allowing us to understand the legal challenges arising from the implementation of the LGPD, especially when considering the reality of municipal public administration and the structural specificities of the health system in the Amazonian context.

4 RESULTS AND DISCUSSIONS

The analysis of the selected scientific productions allowed us to identify that the implementation of the General Law for the Protection of Personal Data in the Brazilian public health sector represents a process still in consolidation, marked by normative advances and relevant operational challenges. The studies examined demonstrate that the expansion of the use of digital technologies in health services has significantly modified the dynamics of collection, storage and sharing of users' clinical information, increasing the need for legal mechanisms aimed at the protection of sensitive data.

In this context, Lima (2023) observes that the computerization of public health policies has contributed to greater integration between care units and administrative systems, favoring state planning and the continuity of health care. However, the author emphasizes that the increase in the flow of information requires strict observance of the principles of purpose and necessity, considering that medical data have a high potential for exposing the individual's intimacy.

The results also indicate that institutional governance is a determining factor for the effectiveness of the LGPD in the public hospital environment. Gonçalves (2024) highlights that the implementation of the legislation faces obstacles related to the absence of standardized information security protocols and the limited technical training of the agents

responsible for processing personal data. Such a scenario shows that normative adequacy depends on the internalization of permanent administrative practices aimed at information protection.

From the perspective of public policies, Silva (2023) argues that the expansion of the digital bases of the Unified Health System strengthened the production of epidemiological indicators and expanded the state's capacity for health monitoring. However, the author warns that the massive processing of population data can generate risks of undue exposure, especially in social contexts marked by economic and territorial vulnerability, a situation often observed in peripheral urban regions.

In the context of care practice, it was found that the protection of personal data assumes an ethical dimension directly linked to the duty of professional secrecy. Soares (2021) states that the LGPD legally reinforced obligations traditionally associated with medical ethics, expanding the responsibility of health institutions regarding the storage and sharing of clinical information. Thus, confidentiality becomes an essential element for maintaining trust between the patient and the health system.

Thus, the results show that the protection of sensitive data is no longer an exclusively technological issue, but is now part of the structure of public health service provision. The literature analyzed demonstrates that the implementation of the LGPD implies progressive institutional transformation, requiring articulation between public management, digital infrastructure, and effective guarantee of the fundamental rights of citizens.

In the set of studies analyzed, it is observed that the main contribution to understanding the challenges in the processing of sensitive health data stems from the normative structure of the General Law for the Protection of Personal Data, by defining processing as any operation carried out with personal data and by establishing foundations and principles that bind the performance of the public sector, including in the execution of public health policies, such as purpose, necessity, transparency, safety, prevention and accountability. Brasil (2018) reinforces that the protection of personal data is guided by the protection of fundamental rights, which shifts the discussion beyond administrative efficiency and imposes a legal standard of information governance.

The reviewed literature points out that, in the public health environment, complexity increases because the State often acts as a controller, with multiple operators and care routines that demand constant circulation of information, a scenario in which compliance with principles such as necessity and safety tends to be strained by structural and technological limitations (Lima, 2023). This finding is relevant to the municipal reality, as it shows that compliance is not limited to internal documents, requiring operational capacity and

institutional culture to implement protection routines.

By relating the legal hypotheses of treatment, the results indicate that the health field operates recurrently on bases that may dispense with consent, especially when there is compliance with legal obligations, execution of public policies and health protection in procedures performed by professionals and health entities. Brasil (2018) delimits these hypotheses and, at the same time, requires that the treatment remains adherent to the public purpose and the public interest, with clear information on procedures and practices, which suggests that institutional transparency becomes a material requirement to legitimize administrative activity in health.

At the organizational level, the review shows that the effective implementation of these normative commands in public hospitals comes up against gaps in protocols, standardization, and training, producing a risk of non-compliance, even if the public purpose is legitimate (Gonçalves, 2024). In terms of governance, this implies that the legal challenge is not only to choose the correct legal basis, but to sustain, through evidence and internal controls, the accountability and security expected by the holder.

Another recurring finding refers to the role of good practices and governance as risk mitigation mechanisms, especially because the LGPD provides for technical and administrative measures to prevent unauthorized access, in addition to administrative sanctions applicable by the competent authority and civil liability for damages resulting from irregular treatment. Brasil (2018) guides this axis by demanding demonstration of effective measures, which, in the public health sector, requires integration between management, technology, and care routines, including in sharing processes necessary for public policies.

The studies highlight that interoperability and the shared use of data, when they increase sanitary efficiency, also increase the risk surface and require proportional controls, especially in databases that concentrate sensitive data. Balian's (2025) analysis converges with this result by indicating that the integration between systems needs to be compatible with purpose limits and security mechanisms, at the risk of amplifying vulnerabilities and compromising the citizen's informational privacy, a central aspect for the legitimacy of public health actions.

The synthesis of the analyzed studies shows that, although the LGPD provides a robust regulatory framework, the effectiveness of the protection of sensitive data in public health depends on institutional conditions that vary according to the local administrative reality, which makes the debate especially relevant when considering municipal health management. The literature points out that the operationalization of principles such as security, prevention, and accountability requires minimum standards of infrastructure,

governance, and control, at the risk of data processing occurring in a formally justified manner, but materially vulnerable to failures and incidents, an aspect that weakens the user's trust in the public service and increases the possibility of informational damage.

In this sense, Hawryliszyn (2021) argues that adapting to the LGPD in health services requires continuous organizational changes, including training of professionals, definition of internal routines, and establishment of information security protocols, as the care environment involves multiple points of contact with personal data throughout the service. This result reinforces that compliance cannot be treated as a one-off action, but as a permanent institutional policy, capable of absorbing the complexity of the information flow in hospitals and public units.

By analyzing the field of supplementary health and the debate on confidentiality, the reviewed production indicates that the inadequate treatment of medical data can have repercussions beyond the individual, generating collective and institutional effects, including stigmatization and discrimination. Martins (2021) discusses this impact by relating information protection to the fundamental right to health and the dignity of the human person, showing that the violation of sensitive data compromises the very quality of access to services, as it produces insecurity and reduces the user's willingness to share information essential to care.

From the perspective of medical practice, the results suggest that the LGPD legally reinforces the duty of confidentiality, expanding the institutional responsibility for the storage and sharing of clinical information. Soares (2021) highlights that care with sensitive data should be understood as an ethical and legal requirement of the care activity, as undue exposure can generate social and professional consequences for the patient. This discussion gains greater density when connected to the daily life of public services, in which there is greater circulation of medical records, referrals and records on digital platforms.

The expansion of telemedicine and care mediated by digital technologies appears, in the review, as a factor of intensification of informational risk, as it expands points of vulnerability and requires greater access control, traceability, and technical safeguards. Zaganelli (2023) points out that, in the digital environment, medical confidentiality also depends on the level of security of the platforms used and the adequacy of internal procedures, which reinforces the need for clear data governance policies and preventive measures capable of avoiding incidents in processing operations.

In terms of compliance and risk management, there is theoretical convergence regarding the need for structured compliance programs specific to the health sector, with continuous monitoring, risk assessment, and internal safety standards. Dias Carneiro (2021) argues that the complexity of the hospital environment makes it essential to institutionalize

permanent data protection mechanisms, considering the volume and sensitivity of the information handled daily. This result dialogues with the reality of municipal systems, in which the adoption of standardized practices can reduce operational asymmetries and strengthen accountability.

The review indicates that the legal challenges of the LGPD in public health intensify when there is interoperability and data sharing between systems, as the search for administrative efficiency can increase the risk of leakage and improper access if there is no limitation by purpose and proportional controls. Silva (2023) points out that the digital transformation of the SUS expands the state's monitoring capacity, but can expose vulnerable populations if adequate governance is lacking, while Praça Neto (2023) points out that the flow of information in health increases the need for clear governance policies to prevent violations.

In addition, Lima (2023) and Gonçalves (2024) indicate that normative effectiveness depends on the internalization of institutional security and standardization practices, reinforcing that the protection of sensitive data must be treated as a structural component of the quality of the public health service.

Thus, the results and discussions demonstrate that the application of the LGPD in public health requires a balance between public interest and fundamental rights, requiring informational governance, training, security protocols, and permanent compliance policies. These elements provide sufficient theoretical basis to, in the concluding stage of the article, consolidate propositions aimed at municipal management, with the potential to guide strategies of institutional adequacy in the Amazonian context, without losing adherence to the national normative framework.

In order to synthesize the theoretical contributions that underlie the present research, the following table is presented, in which the authors used throughout the study are organized, their respective theoretical positions and the year of publication of the analyzed works. The systematization allows us to visualize the scientific contributions used in the construction of the legal analysis about the protection of sensitive personal data in the field of public health, evidencing the convergence between the adopted references and the problem investigated

Table 2

Authors and sources used in the research, positioning and year

Author	Positioning	Year
BALIAN, R. A.	It discusses the legal risks of interoperability and sharing of health data, highlighting the need for proportional limits in informational treatment	2025

BRAZIL	Establishes the normative foundations for the protection of personal data, principles, legal bases and responsibilities in the processing of sensitive data	2018
DIAS CARNEIRO	Advocates the implementation of compliance and governance programs to mitigate risks in data processing in healthcare institutions	2021
GONÇALVES, R. M.	It points out structural and institutional difficulties in the implementation of the LGPD in public hospitals	2024
HAWRYLISZYN, M.	It highlights the need for organizational adequacy and institutional training for compliance with the LGPD in health services	2021
LIMA, I. S.	It analyzes the application of the LGPD in the SUS and the expansion of the responsibilities of the public authorities in the processing of data personal	2023
MARTINS, F. R.	Relates data protection to the dignity of the human person and the fundamental right to health	2021
PRAÇA NETO, A. A.	Examines legal impacts of the LGPD on the flow of information between health institutions	2023
SILVA, L. B.	Discusses data governance and social control in the face of the digitalization of public health policies	2023
SOARES, M. A. S.	Addresses data protection as an extension of professional secrecy and medical ethics	2021
ZAGANELLI, M. V.	It analyses the challenges of protecting sensitive data in the context of telemedicine and digital health	2023

Source: The authors.

The analysis of the positions presented in Table II demonstrates that the scientific literature converges to the recognition of the protection of sensitive personal data as a structuring element of contemporary management in public health. It is observed that the authors approach the topic from complementary perspectives, involving normative foundations, informational governance, institutional responsibility, and the impacts of digital transformation on health services.

Such theoretical diversity makes it possible to understand that the application of the LGPD goes beyond the merely legal dimension, requiring administrative, technological and ethical adequacy of the institutions responsible for data processing. Thus, the references analyzed contribute to sustain the discussion proposed in this study, allowing us to relate the legal challenges identified to the reality of public health administration, especially in the Amazonian municipal context.

5 CONCLUSION

The present research aimed to analyze the legal challenges related to the application of the General Law for the Protection of Personal Data in the processing of sensitive data in the context of public health, especially considering the administrative reality of the municipality of Manaus, Amazonas.

The results obtained demonstrate that the implementation of the LGPD in the health

sector is not limited to the formal compliance with legal requirements, but is a continuous process of institutional transformation. The protection of sensitive data requires structural adaptation of public organizations, involving technological adequacy, definition of secure information flows, professional training, and establishment of permanent governance and control mechanisms. In this sense, it is verified that the normative effectiveness depends directly on the administrative capacity of public entities to incorporate information security practices compatible with the complexity of the treatment of clinical data.

It was also observed that the processing of personal data in public health has particularities resulting from the care purpose of the service itself, in which the sharing of information is an indispensable element for the continuity of care and the formulation of public policies. This characteristic imposes the need for a balance between the public interest in health management and the preservation of the fundamental rights of citizens, especially those related to privacy, intimacy, and informational self-determination.

In the context analyzed, it is evident that municipal health systems located in regions with structural limitations face additional challenges for the full implementation of legal requirements, making it essential to develop specific institutional policies aimed at data protection. The Amazonian reality demonstrates that technological inequalities, infrastructure limitations, and the historical absence of an organizational culture focused on information security can compromise the effectiveness of the protection measures provided for in the legislation.

The consolidation of personal data protection in public health depends on the integration between law, technology, and public management, requiring strategic planning, institutional investment, and strengthening of administrative practices guided by the prevention of informational risks. The research shows that the LGPD represents not only a regulatory instrument, but a mechanism for strengthening social trust in public health services, contributing to the construction of safer, more transparent and legally responsible care models.

Thus, it is highlighted that the study achieved the proposed objectives by systematizing the main legal challenges related to the processing of sensitive data in public health, indicating the need for further empirical investigations. Such advances may contribute to the improvement of local public policies and to the development of institutional adequacy strategies compatible with the regional specificities of Amazonas, strengthening the protection of fundamental rights within the scope of public health administration.

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Along this path, we understood that research is also taking responsibility for the reality that surrounds us, especially with the challenges experienced in public health and in the protection of fundamental rights in our region.

We speak here as Amazonian researchers, aware that producing knowledge from Amazonas is to reaffirm the intellectual strength of our land and demonstrate that the science built in the North region has national relevance. This work symbolizes our respect for the Amazonian population and our desire to contribute to a fairer, safer and more humane society.

We dedicate this research to Amazonas, in the hope that each page written represents not only an academic requirement fulfilled, but a gesture of recognition, belonging and honor to our history, our people and the future we seek to build through knowledge.

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