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ORIGINAL ARTICLE

Internal audit of SUS: An empirical analysis of its potential influence towards the 2030 Agenda

Auditoria interna do SUS: análise empírica do potencial de influência no alcance da Agenda 2030

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ABSTRACT This study analyzed the potential influence of the internal audit within the Brazilian Unified Health System (SUS) on the implementation of the 2030 Agenda in public health policies, focusing on the incorporation of Sustainable Development Goals (SDGs) in audits that evaluated the Annual Management Reports prepared by Municipal Health Secretariats. Employing an empirical approach, the research examined 26 audit reports issued by the National Department of SUS Audit between September and December 2022, covering municipalities across all Brazilian states. The methodology involved the development of an evaluative instrument grounded in SDGs 3 and 16, comprising 20 analysis items designed to measure both the presence and depth of sustainability-related approaches in the audited reports, resulting in 520 paired assessments. The audits were then classified into five levels of influence in relation to the SDG, using a scoring scale. The findings indicate limited performance of internal audit, highlighting gaps in the approach to sustainable development criteria, while also identifying opportunities for it to positively influence public health governance and management, thereby contributing to the achievement of the SDGs and the development of sustainable territories.

KEYWORDS Unified Health System. Healthcare audit. Public health policies. Sustainable development. 2030 Agenda.

RESUMO *Este estudo analisou o potencial de influência da auditoria interna do Sistema Único de Saúde no alcance da Agenda 2030 no âmbito das políticas públicas de saúde, a partir da observância dos Objetivos de Desenvolvimento Sustentável (ODS) nas auditorias que avaliaram os Relatórios Anuais de Gestão das Secretarias Municipais de Saúde. A partir de uma abordagem empírica, a pesquisa examinou 26 relatórios de auditoria emitidos pelo Departamento Nacional de Auditoria do SUS entre setembro e dezembro de 2022, abrangendo municípios de todos os estados brasileiros. A metodologia envolveu o desenvolvimento de instrumento avaliativo fundamentado nos ODS 3 e 16, contemplando 20 itens de análise que permitiram mensurar tanto a presença quanto a profundidade das abordagens relacionadas à sustentabilidade nas auditorias realizadas, que resultou em 520 avaliações em pares. As auditorias foram, então, classificadas em cinco níveis de influência em prol dos ODS, utilizando uma escala de pontuação. Os resultados apontam atuação limitada da auditoria interna, evidenciando lacunas na abordagem sobre os critérios do desenvolvimento sustentável, assim como indicam oportunidades para que influencie positivamente a governança e gestão pública de saúde, de modo a contribuir para o alcance dos ODS e a construção de territórios sustentáveis.*

PALAVRAS-CHAVE *Sistema Único de Saúde. Auditoria em saúde. Políticas públicas de saúde. Desenvolvimento sustentável. Agenda 2030.*

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Introduction

Growing global concern with sustainability, embodied in the Sustainable Development Goals (SDGs) of the United Nations 2030 Agenda[1] – to which Brazil is a signatory – poses strategic challenges for public policies. In the health sector, this agenda calls for reflection on how management practices can effectively contribute to the social, economic, and environmental dimensions of sustainability[2,3].

Although studies separately address public governance, internal auditing, the management of the Brazilian Unified Health System (SUS), and sustainability in public policies, the intersection between these fields remains limited. This is particularly true regarding the capacity of internal auditing, as a governance support mechanism, to influence the adoption of practices aligned with the SDGs in public health. The scientific literature lacks critical analyses of the role of internal auditing as a catalyst for sustainable practices in the public health sector, and therefore as a driver of greater effectiveness in the implementation of public health policies in Brazil[4,5].

In this context, considering the role of the Annual Management Report (RAG), established by Law No. 8.142/19906 and regulated by Complementary Law No. 141/20127 and other normative frameworks, as the main SUS accountability instrument and its strong potential to identify the degree of alignment between management and SDG commitments, this study addresses the following research question: to what extent does internal auditing act as an influencing mechanism for practices that contribute to overcoming the challenges set by the 2030 Agenda in SUS public policies when evaluating the RAG? To this end, it considers the role of internal auditing in influencing institutional decision-making processes, with a view to fostering greater resilience and responsiveness in achieving public health policy objectives within the SUS[5].

In this sense, the study's main objective is to analyze how internal auditing of Annual Management Reports (RAG) within SUS Health Secretariats influences sustainable practices in public health policies. Specifically, it aims to: (a) map the sustainability dimensions related to the RAG as an auditable object; and (b) assess the extent and depth of the incorporation of sustainability criteria by internal auditing, providing an empirical basis for critical reflections on challenges and opportunities.

Thus, it intends to contribute to ongoing discussions on the role of internal auditing in advancing the Sustainable Development Goals (SDGs) within the SUS, while also broadening understanding of the intersection between public auditing, health system governance, and sustainability. From a management perspective, it provides insights for strengthening internal audit practices and reinforces their potential as governance instruments aligned with the 2030 Agenda.

This article is organized into four sections. The first presents the theoretical framework, focusing on the SUS, its planning instruments, and the role of internal auditing in the context of the 2030 Agenda. The second outlines the methodology, including the selection of audit reports, the evaluation framework, the focus on SDGs 3 and 16, and the mixed-methods approach. The third presents and discusses findings from 26 national audit reports. The final section summarizes the main conclusions and suggests directions for future research and practice.

Internal auditing in the SUS and its role in sustainability

The Brazilian Unified Health System (SUS), established by the 1988 Federal Constitution and regulated by Law No. 8,080/1990[8] and related legislation, is one of Brazil's cornerstone public policies. It is a universal, comprehensive, and equitable health system that serves more than 200 million people[9]. In this context, health policy plays a strategic role

not only in guaranteeing the constitutional right to health but also as a driver of social, environmental, and economic development.

Managing such a complex system—spanning three levels of government and a vast service network—requires robust planning, monitoring, and evaluation arrangements. SUS planning is organized through negotiated processes among federal, state, and municipal (or district) management bodies. This structure is operationalized through key instruments defined by Ordinance GM/MS No. 1 of 28 September 2017[10], namely the Health Plan (PS), Annual Health Programming (PAS), and the Annual Management Report (RAG), which consolidates the Quarterly Management Reports (RDQA).

According to Medeiros[11], SUS planning and management instruments are essential regulatory mechanisms in organizing the state apparatus within the governance of health systems. They operate through a broad framework of laws, norms, agreements, and information systems that structure cooperative arrangements within Brazil's federal system, involving the Union, states, municipalities, and the Federal District. Consequently, the Health Plan (PS) is the foundational planning document. It guides both governmental planning and budgeting in health, establishing the guidelines, objectives, and targets to be implemented over four years. The Annual Health Programming PAS translates the targets defined in the PS into annual implementation, specifying the actions to be carried out with the corresponding budget for each year[10].

As a mechanism for monitoring and tracking PAS implementation, SUS management relies on the Quarterly Management Report (RDQA), which is presented every four months (May, September, and February) to the Legislative Branch in public hearings. At the end of this cycle is the Annual Management Report (RAG), the main accountability and reporting instrument of SUS management, which consolidates the results achieved through PAS implementation and outlines any necessary adjustments identified in the Health Plan[10].

The Ministry of Health provides the DigiSUS Gestor – Planning Module (DGMP), an information system used to submit management reports across all three levels of government for review by Health Councils. These councils are collegiate governance bodies within the SUS, composed of representatives of key health system stakeholders, and are responsible for defining guidelines as well as analyzing and deliberating on SUS planning and accountability instruments[12].

As a governance support mechanism within this complex system, internal auditing in the SUS stands out, operating through independent evaluation and advisory activities in accordance with international internal auditing standards[13]. This function is decentralized across the SUS through the National SUS Audit System, which comprises audit units embedded in federal, state, and municipal structures and is coordinated at the federal level by the National Department of Audit of the SUS (DenaSUS)[14].

The work of internal audit units must not only align with internationally recognized standards, but also be grounded in the legal and regulatory framework that defines governmental internal auditing within the Federal Executive Branch. In Brazil, this framework is established by Decree No. 9,203/2017[15] and Normative Instruction No. 3/2017[16]. These instruments define internal auditing as an independent and objective activity that combines assurance and consulting functions to add value and enhance public policies. In addition to its traditional evaluative role, the consulting services provided by internal audit units take the form of technical advice and managerial guidance based on institutional risk analysis. This approach seeks to safeguard the functional independence of the audit function while reinforcing governance structures and improving the effectiveness of public health policies.

From this perspective, public health policies, programs, actions, and services under the

responsibility of the SUS fall within the scope of audit by the SUS internal audit function. Such auditing may focus on specific operational activities or adopt a broader approach through the analysis of SUS planning and management instruments[14]. These public services are embedded in a wider national and global landscape shaped by sustainability challenges, which have prompted international commitments to the SDGs. These goals integrate environmental, economic, and social dimensions through a transdisciplinary lens. The social dimension, in particular, encompasses targets and indicators directly related to collective health, whose achievement depends on the performance of public policies[17-21].

Accordingly, addressing major global sustainability challenges requires active engagement at the highest levels of government and across organizations. Advancing the SDGs as a shared international agenda depends on cooperation among governance bodies operating at both national and global levels[22-25]. Given that health auditing assumes a strategic role in strengthening risk prevention, mitigation, and in safeguarding organizational value, particularly with respect to population health, Medeiros et al.[26(174)] highlight the importance of the SUS audit function in supporting governance, arguing that:

> One of its core activities is the systematic and disciplined conduct of audits, which serve as a tool for assessment and support to governance, enabling the identification of potential irregularities, waste, or shortcomings in management processes.

This context underscores the relevance of the internal audit function and its strategic capacity to positively influence governance bodies and their decision-making processes. Owing to their unrestricted and cross-cutting access, as well as their authority to issue independent assessments and opinions on organizational matters to senior stakeholders, internal auditors are uniquely positioned to influence governance based on the application of the most appropriate criteria to the objects selected for audit[27-29]. Nonetheless, within the SUS, internal auditing continues to face important constraints, including structural gaps and limited strategic engagement, which may be reducing its capacity to contribute to the achievement of SDG-related objectives within its auditable domains[5,30,31].

Material and methods

This study is an applied, exploratory, and descriptive investigation that adopts a mixed-methods (qualitative–quantitative) approach to examine the role of the SUS internal audit function as an influencing body for sustainable practices. This methodological choice is justified by the need to both measure the presence and depth of sustainability-related content and to interpret the substance of audit reports qualitatively. The exploratory nature of the study reflects the limited body of research at the intersection of governmental internal auditing and the Sustainable Development Goals in public health, while its descriptive component lies in the systematic characterization of sustainability elements identified in the reports[32].

Research population

The population of interest comprises internal audits conducted by DenaSUS on the RAG of municipal Health Secretariats. As the study universe, the latest nationwide audit carried out by DenaSUS on this subject was selected. This initiative included 26 audits conducted from September to December 2022, all of which were fully incorporated into this analysis. It covered municipalities from all Brazilian states, except the Federal District, which did not have an approved RAG at the time, thereby eliminating concerns regarding sample representativeness.

DenaSUS prioritized municipalities requiring closer analytical scrutiny, based on the

following criteria: a) a population exceeding 200,000 inhabitants, excluding state capitals whenever possible; b) RAG indicators showing marked inconsistencies; and c) per capita COVID-19 mortality rates. Accordingly, audits were conducted in the following municipalities and states, together with the corresponding audit report identification numbers: Cruzeiro do Sul/AC (19328); Porto Calvo/AL (19321); Manicoré/AM (19332); Mazagão/AP (19286); Dias D'Ávila/BA (19343); Maranguape/CE (19354); Viana/ES (19224); Rio Verde/GO (19318); Buriticupu/MA (19319); Itaúna/MG (19320); Aparecida do Taboado/MS (19329); Nova Mutum/MT (19360); Mocajuba/PA (19322); Monteiro/PB (19333); Goiana/PE (19330); Piripiri/PI (19338); Campo Largo/PR (19339); Bom Jesus do Itabapoana/RJ (19340); Lagoa D'Anta/RN (19346); Ariquemes/RO (19324); Boa Vista/RR (19254); Lajeado/RS (19337); Curitibanos/SC (19325); Capela/SE (19334); São Bernardo do Campo/SP (19326); and Formoso do Araguaia/TO (19331).

Data sources and data collection

Data sources were exclusively the internal audit reports issued by DenaSUS and made publicly available, which compile audit findings, conclusions, and recommendations. Data collection consisted of a documentary review of these reports.

Design of the evaluation instrument

The development of this assessment instrument arose from the need to systematize and render visible the contribution of the SUS internal audit function to the achievement of the SDGs, considering the complexity of public health policies and the cross-cutting nature of the 2030 Agenda. Accordingly, the instrument was designed to operationalize the analysis of linkages between the SDGs, SUS policies, and audit reports, through the selection of the goals most closely aligned with the health sector, the mapping of their targets and indicators against health management and policy outcomes, and the establishment of observable criteria alongside standardized descriptors of analytical presence and depth.

The scoring and classification model adopted enables not only the identification of whether SDG references are present, but also the assessment of the level of analytical depth and the audit's capacity to generate actionable propositions. In this way, it allows for an examination of the potential influence of internal audit in fostering practices aligned with sustainability and with the effectiveness of public health policies. The instrument was structured in five sequential and interdependent stages, as follows:

a. Identification of applicable SDGs

All 17 SDGs of the 2030 Agenda were considered, with SDG 3 (Good Health and Well-being) and SDG 16 (Peace, Justice and Strong Institutions) being selected due to their alignment with SUS policies (Law No. 8,080/1990) and with the governance of public health institutions.

b. Analysis of targets and indicators of the selected SDGs

For each selected SDG, targets and indicators were examined and related to SUS policies. This relationship was categorized using three standardized descriptors:

- Yes: directly related to health management or policy outcomes.
- Partial: reflects intersectoral contributions.
- No: unrelated or outside the usual scope of SUS, and therefore excluded from subsequent analyses (highlighted rows).

After a paired discussion among researchers, the analysis was finalized as shown in *box 1*.

Box 1. Correlation between the SDGs and SUS internal audits on the management and outcomes of public health policies

SDG	Target	Core focus of the SDG target	UN 2030 Agenda indicator	Correlation	Rationale for the correlation
3	3.1	Maternal mortality and strengthening of childbirth care / maternal health services	3.1.1 – Maternal mortality ratio / 3.1.2 – Proportion of births attended by skilled health personnel	Yes	Maternal mortality and care for pregnant women are priority themes within SUS policies.
3	3.2	Infant and neonatal mortality	3.2.1 – Under-five mortality rate / 3.2.2 – Neonatal mortality rate	Yes	Infant and neonatal mortality are addressed in SUS maternal and child health policies.
3	3.3	Epidemics of HIV, tuberculosis, malaria, hepatitis, and other communicable diseases	3.3.1 – HIV incidence / 3.3.2 – Tuberculosis incidence / 3.3.3 – Malaria incidence / 3.3.4 – Hepatitis B incidence / 3.3.5 – Demand for services for neglected tropical diseases	Yes	The control of epidemics and communicable diseases (HIV, malaria, tuberculosis) is a priority area within SUS.
3	3.4	Noncommunicable diseases and mental health	3.4.1 – Mortality rate from cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases / 3.4.2 – Suicide mortality rate	Yes	Noncommunicable diseases and mental health are priority areas within SUS.
3	3.5	Harmful use of alcohol and other drugs	3.5.1 – Coverage of treatment interventions for substance use disorders / 3.5.2 – Per capita alcohol consumption	Yes	The prevention and treatment of harmful use of alcohol and other drugs are included in SUS actions.
3	3.6	Mortality due to road traffic injuries	3.6.1 – Mortality rate due to road traffic injuries	Partial	Road safety is an intersectoral issue; SUS contributes through rehabilitation and surveillance and may support preventive actions.
3	3.7	Sexual and reproductive health	3.7.1 – Proportion of women with access to modern family planning methods / 3.7.2 – Adolescent birth rate	Yes	Family planning, reproductive health, and fertility are addressed within SUS policy frameworks.
3	3.8	Universal health coverage	3.8.1 – Coverage of essential health services / 3.8.2 – Proportion of the population with large household expenditures on health	Yes	Universal access is a constitutional pillar underlying the establishment of SUS
3	3.9	Environmental health	3.9.1 – Mortality rate attributable to air pollution / 3.9.2 – Mortality rate attributable to unsafe water, sanitation, and hygiene / 3.9.3 – Mortality rate due to unintentional poisoning	Yes	Environmental health (water, air, and waste) involves environmental surveillance, which is part of SUS actions.
3	3.a	Tobacco use	3.a.1 – Prevalence of tobacco use	Yes	Tobacco control is part of SUS actions and health policy regulations.
3	3.b	Vaccines and medicines	3.b.1 – Vaccination coverage / 3.b.2 – Health research and development expenditure / 3.b.3 – Access to essential medicines and health products	Yes	Research, vaccination, and access to medicines are directly linked to the SUS.

Box 1. Correlation between the SDGs and SUS internal audits on the management and outcomes of public health policies

SDG	Target	Core focus of the SDG target	UN 2030 Agenda indicator	Correlation	Rationale for the correlation
3	3.c	Health professionals	3.c.1 – Health workforce density and distribution	Yes	Health workforce availability, distribution, and qualification are foundational aspects of the functioning of the SUS.
3	3.d	Emergencies and public health risks	3.d.1 – Capacity for health emergency preparedness and response / 3.d.2 – Percentage of antimicrobial-resistant infections	Yes	Emergency response capacity is part of SUS management systems, plans, and protocols.
16	16.1	Violence and mortality	16.1.1 – Homicide mortality rate / 16.1.2 – Conflict-related mortality rate / 16.1.3 – Proportion of population subjected to physical, psychological, or sexual violence / 16.1.4 – Proportion of population feeling safe walking alone at night	No	Violence and mortality are intersectoral issues. Topics related to SUS involvement have already been addressed under SDG 3 targets.
16	16.2	Violence and torture against children	16.2.1 – Proportion of children subjected to physical and psychological punishment by caregivers / 16.2.2 – Proportion of victims of human trafficking / 16.2.3 – Proportion of young people subjected to sexual violence	No	Violence and torture against children are intersectoral issues. Child health-related aspects have already been addressed under SDG 3 targets.
16	16.3	Rule of law and access to justice	16.3.1 – Proportion of victims of violence who reported their victimization / 16.3.2 – Proportion of unsentenced detainees in the prison population / 16.3.3 – Proportion of population with access to dispute resolution mechanisms	Partial	Access to justice and the rule of law are intersectoral issues. The SUS contributes to the care of violence-related health consequences and may support prevention actions.
16	16.4	Illicit financial and arms flows	16.4.1 – Total value of illicit financial flows / 16.4.2 – Proportion of seized, found, or surrendered arms with illicit origin	No	Money laundering and arms trafficking are not a focus of SUS public policies.
16	16.5	Corruption and bribery	16.5.1 and 16.5.2 – Proportion of persons/enterprises that paid or were asked to pay bribes to public officials	Yes	Reducing corruption is relevant to good governance of the health system and is a premise of public administration principles.
16	16.6	Effective, accountable, and transparent institutions	16.6.1 – Primary government expenditures as a proportion of approved budget / 16.6.2 – Proportion of population satisfied with public services	Yes	Transparency, efficiency, and accountability are central constitutional principles of health policy management.
16	16.7	Responsive, inclusive, participatory, and representative decision-making	16.7.1 – Proportions of positions in public institutions reflecting population distribution / 16.7.2 – Proportion of population who believe decision-making is inclusive and responsive	Yes	Participatory decision-making within the SUS and Health Councils is established by law.

Box 1. Correlation between the SDGs and SUS internal audits on the management and outcomes of public health policies

SDG	Target	Core focus of the SDG target	UN 2030 Agenda indicator	Correlation	Rationale for the correlation
16	16.8	Developing countries in global governance institutions	16.8.1 – Proportion of developing countries' membership in international organizations	No	Participation of countries in global institutions is not a focus of SUS public policies.
16	16.9	Legal identity for all	16.9.1 – Proportion of children under 5 whose births are registered with a civil authority	No	Civil registration, although supported by SUS processes during birth, is not a core focus of SUS public policies.
16	16.10	Access to information and fundamental freedoms	16.10.1 – Number of verified cases of killing of journalists, human rights defenders, and trade unionists / 16.10.2 – Number of countries with access to information legislation	Yes	Access to information is a guaranteed right and constitutional principle, and also part of users' rights within the SUS.
16	16.a	Strengthening national institutions for violence prevention and crime/terrorism control	16.a.1 – Existence of independent national human rights institutions in compliance with the Paris Principles	No	Human rights institutional frameworks are not a focus of SUS public policies.
16	16.b	Promotion and enforcement of non-discriminatory laws and policies for sustainable development	16.b.1 – Proportion of population reporting discrimination or harassment	No	Measures against discrimination are not a focus of SUS public policies.

Source: Authors' elaboration.

c. Establishment of observable criteria

For SDG targets classified as 'Yes' or 'Partial', 18 observable criteria/items were defined across the audit reports. These criteria, which establish links between SDG indicators and SUS policies, objectively guided the analysis to identify both the presence and the depth of the approaches (*box 2*).

Box 2. Possible evaluation criteria or observable items identified in the analyzed audit reports

SDG	Target	Possible evaluation criteria or observable items in the audit reports analyzed
3	3.1	Existence, quality, and outcomes of programs/actions aimed at reducing maternal mortality
3	3.2	Existence, quality, and outcomes of programs/actions aimed at reducing infant and neonatal mortality
3	3.3	Existence, quality, and outcomes of programs/actions to combat and eliminate epidemics and other communicable diseases
3	3.4	Existence, quality, and outcomes of programs/actions to prevent and treat noncommunicable diseases and promote mental health
3	3.5	Existence, quality, and outcomes of programs/actions for the prevention and treatment of harmful use of alcohol and other drugs
3	3.6	Existence and quality of intersectoral actions in support of road safety
3	3.7	Existence, quality, and outcomes of programs/actions addressing sexual and reproductive health
3	3.8	Existence and outcomes of measures ensuring timely and universal access to SUS health services, including access regulation management, waiting list reduction, and support for medicines access programs
3	3.9	Existence, quality, and outcomes of programs/actions to prevent and manage health conditions related to pollution or environmental risks, including guidance on hygiene and safe water and food consumption

Box 2. Possible evaluation criteria or observable items identified in the analyzed audit reports

SDG	Target	Possible evaluation criteria or observable items in the audit reports analyzed
3	3.a	Existence, quality, and outcomes of programs/actions to prevent, control, and treat tobacco use
3	3.b	Existence, quality, and outcomes of programs/actions related to research, innovation, and access to medicines and vaccines, including national vaccination campaigns, supplementary vaccination efforts, treatment campaigns, provision of high-cost medicines, and support for the Farmácia Popular Program
3	3.c	Existence, quality, and outcomes of policies/actions for recruitment, training, valorization, distribution, and retention of health professionals
3	3.d	Existence, quality, and outcomes of preparedness structures and plans for public health emergencies, as well as research and treatment related to antimicrobial resistance
16	16.3	Existence, quality, and outcomes of mechanisms for monitoring and responding to legal disputes related to SUS health actions and programs
16	16.5	Existence, quality, and outcomes of anti-corruption mechanisms within SUS, including effective internal control and integrity management structures
16	16.6	Existence and management of transparency and accountability tools in health governance, including user satisfaction assessment and evidence of internal auditing within SUS
16	16.7	Existence of measures promoting diversity in health workforce composition and management structures within SUS bodies; compliance with participatory governance processes in Health Councils and social control arrangements
16	16.10	Existence of public access to information within SUS institutions; quality of transparency portals related to health policies and services; existence and quality of SUS user service charters; existence and quality of complaint, information, and request tracking channels within SUS

Source: Authors' elaboration.

d. Definition of analytical descriptors

For each observable criterion, standardized descriptors were established in two dimensions, calculated using a weighted scoring approach, resulting in values ranging from 0 to 6 points per assessed item, as follows:

- Presence: assessment of whether the observable criterion/item, in light of the SDGs, is mentioned or addressed in the report. Binary classification: 'Yes' (score 1 for partial correlation, score 2 for positive correlation) or 'No' (score 0).

- Depth: measures the level of analytical elaboration and contribution, through three categories:

  » Descriptive (score 1): only mentions or reports primary data or information related to the object addressed in the SDG target;

  » Analytical (score 2): provides critical or in-depth analysis by the audit regarding the situation of the object addressed in the SDG target;

  » Propositive (score 3): includes in-depth critical analysis accompanied by concrete recommendations for improvement related to the object addressed in the SDG target, or recognition of corresponding best practices.

Additionally, two cross-cutting questions were included regarding the direct relationship between audit activities and the SDGs. Their presence was scored as 0 ('No') or 1 ('Yes'), with depth weighting applied only in cases where the response was 'Yes', using the same depth scale described above. This resulted in a score ranging from 0 to 3 points for each question, namely:

- Do the audit questions explicitly assess the commitments and measures adopted by the audited entity in favor of the SDGs or their targets?

- Do the audit recommendations or conclusions explicitly indicate perspectives or warnings related to SDG commitments or challenges?

e. Scoring and classification model

The final instrument, based on 20 evaluative items, allows for a maximum score of 114 points. This total results from the sum of weighted scores derived from the analytical descriptors, considering the 18 observable criteria and the 2 transversal questions, whose subtotals may reach 108 and 6 points, respectively. For the overall analysis, after calculating the total score for each audit, a five-level classification system was established to define the degree of audit influence on the achievement of the SDGs:

- 0–22: Very weak
- 23–45: Weak
- 46–68: Moderate
- 69–91: Strong
- 92–114: Very strong.

Data analysis procedures

Data analysis was carried out through the systematic application of the assessment instrument, using a paired analysis approach to ensure reliability. Each audit was independently reviewed by two researchers, followed by a discussion to reach consensus. The mixed-methods (qualitative-quantitative) approach enabled:

a. Quantitative analysis: calculation of individual scores, descriptive statistics, distribution across score ranges, frequency of criteria, and identification of predominant depth levels; and

b. Qualitative analysis: content analysis of the approaches, contextual interpretation of the quantitative findings, and identification of gaps and opportunities.

On this basis, methodological triangulation provided a comprehensive understanding of both the extent and the depth of how audits addressed the SDGs.

Ethical considerations

In accordance with ethical guidelines for research using secondary data in the public domain, this study did not require submission to a Research Ethics Committee, as it was based exclusively on the analysis of audit reports made publicly available by DenaSUS. These reports contained no identifiable personal information and constitute official records of the Brazilian public administration with open access. The analysis was restricted solely to publicly disclosed elements, such as the audit number, the name of the audited municipality, and the description of the audit activity.

Results and discussion

Based on the analysis of the data collected on the activities of internal audits within the SUS, this section presents the quantitative results, which measure the presence and depth of criteria related to the SDGs, as well as the qualitative findings, which interpret the content of the approaches, contextualize the results, and outline gaps and opportunities for improvement.

Quantitative analysis

The application of the assessment instrument assigned individual scores to each of the 26 audit reports, classifying them according to

their level of potential influence in relation to the SDGs. Initially, it is noteworthy that no audit (0%) received a score in the two transversal questions, indicating that SDG commitments or challenges were not explicitly mentioned as criteria, references, discussion points, recommendations, or conclusions.

In an indirect assessment, based on the remaining observable items related to SDG targets, scores varied substantially across the reports. This variation highlights different levels of incorporation of SDG-related themes into audit activities, as shown in *box 3*.

Box 3. Distribution of scores and degree of influence of the analyzed audit reports

Number of the analyzed audit report	Total Score	Degree of influence
19333	18	Very weak
19332	20	
19328	22	
19318; 19319; 19329; 19340; 19354	24	Weak
19254; 19286; 19338; 19346	26	
19320; 19321; 19325	28	
19324; 19334; 19339	30	
19322; 19337; 19343	32	
19330; 19331; 19360	34	
19326	38	
19224	54	Moderate

Source: Authors' elaboration.

Among the assessment items, the minimum score observed was 0 (indicating a complete absence of any related approach), while the maximum was 3 (corresponding to a proactive approach). Regarding total scores per audit, results ranged from 18 to 54 points (*box 3*), out of a possible maximum of 114. These figures reveal substantial disparities both within the same audit processes and across different audits, pointing to a broad scope for improvement in the incorporation of SDG-related considerations into the planning of future audit activities. The distribution of audits across the five levels of influence showed:

- Very weak: 3 audits (11.5% of the total)
- Weak: 22 audits (84.6% of the total)
- Moderate: 1 audit (3.9% of the total)
- Strong: 0 audits (0%)
- Very strong: 0 audits (0%)

These results indicate that 96.1% of the audits fall within the 'Very weak' or 'Weak' categories, reinforcing the limited role of SUS internal auditing in influencing management and governance structures with regard to advancing SDG-related commitments within public health policy.

It is important to note that the incorporation of sustainability-oriented policies within oversight bodies is a relatively recent development in Brazilian public administration, which may help contextualize the findings observed in SUS internal auditing. An example is Normative Ordinance SE/CGU No. 204/2025[33], which established the Sustainability Policy of the Brazilian Office of the Comptroller General, setting

out guidelines and actions addressing social, environmental, and governance dimensions to be integrated into institutional activities, including internal auditing.

In this sense, the integration of this agenda into internal audit practices still appears to be at an early stage of consolidation, as reflected by its absence or only indirect approach in the structure of the audit reports analyzed. However, the gradual dissemination of this approach is likely to foster a cultural shift in decision-making and management processes, encouraging public administrators to more systematically and consciously incorporate the principles and commitments of the 2030 Agenda for Sustainable Development into their institutional practices.

From another perspective, the frequency analysis of each SDG target revealed important patterns (*table 1*). The most frequently observed criteria were notably those related to transparency, participation, and governance, aligned with SDG 16, as well as child and neonatal mortality and preparedness for health emergencies, as in SDG 3. Other topics, such as traffic-related mortality, tobacco use, rule of law, corruption, and bribery, were not identified in any audit.

Table 1. Quantitative assessment of the presence and depth of analysis of SDG targets

			Yes			
Target	**Core focus of the SDG target**	**Total 'No'**	**Descriptive**	**Analytical**	**Prescriptive**	**Total 'Yes'**
3.1	Maternal mortality and strengthening of childbirth care / maternal health services	61.54%	30.77%	7.69%	0%	38.46%
3.2	Infant and neonatal mortality	19.23%	80.77%	0%	0.00%	80.77%
3.3	HIV, tuberculosis, malaria, hepatitis epidemics, and other communicable diseases	26.92%	53.85%	11.54%	7.69%	73.08%
3.4	Noncommunicable diseases and mental health	53.85%	42.31%	3.85%	0%	46.15%
3.5	Harmful use of alcohol and other drugs	80.77%	19.23%	0%	0%	19.23%
3.6	Mortality due to road traffic injuries	100%	0%	0%	0%	0%
3.7	Sexual and reproductive health	46.15%	42.31%	11.54%	0%	53.85%
3.8	Universal health coverage	65.38%	26.92%	3.85%	3.85%	34.62%
3.9	Environmental health	73.08%	26.92%	0%	0%	26.92%
3.a	Tobacco use	100%	0%	0%	0%	0%
3.b	Vaccines and medicines	50%	42.31%	0%	7.69%	50%
3.c	Health workforce	76.92%	19.23%	3.85%	0%	23.08%
3.d	Emergencies and public health risks	3.85%	0%	76.92%	19.23%	96.15%
16.3	Rule of law and access to justice	100%	0%	0%	0%	0%
16.5	Corruption and bribery	100%	0%	0%	0%	0%
16.6	Effective, accountable, and transparent institutions	0%	0%	92.31%	7.69%	100%
16.7	Responsive, inclusive, participatory, and representative decision-making	0%	0%	7.69%	92.31%	100%
16.10	Access to information and fundamental freedoms	0%	3.85%	92.31%	3.85%	100%
Total		**57.88%**	**19.42%**	**15.58%**	**7.12%**	**42.12%**

Source: Authors' elaboration.

Regarding depth, descriptive approaches predominated, accounting for 101 occurrences (46.1% of all identified items), followed by analytical approaches with 81 occurrences, while only 37 instances reflected an action-oriented approach. This pattern suggests that the reports largely confine themselves to reporting data or noting primary information—an approach typical of compliance audits—without advancing into critical analysis or offering substantive recommendations to improve management aligned with the 2030 Agenda. Taken together, these findings indicate that audit activities have limited capacity to assess the effectiveness of public health policies in relation to the SDGs. A predominantly compliance-based approach focuses on verifying adherence to rules, targets, or resource allocation, which is not sufficient to determine whether policies are actually producing their intended effects. Efficiency and effectiveness in the physical and financial execution of a program or project within the SUS do not, by themselves, ensure policy effectiveness. For example, substantial public spending on rapid syphilis testing in Brazil has not been directly associated with a reduction in vertical transmission[34-37]. This does not imply that the purchase of tests should be reduced; rather, it points to the need for a comprehensive review of how the policy is being implemented. Such a review could represent an opportunity for internal auditing to move beyond compliance and contribute more substantively to policy improvement.

Qualitative analysis

The content analysis complements the quantitative findings. For SDG 3 (Good Health and Well-Being), most approaches (70.9%) were descriptive in nature, limited to verifying data or compliance, without deeper examination of the quality of actions or their impacts. Even when programs were mentioned, the analysis focused on their mere existence rather than on their effectiveness.

By contrast, SDG 16 (Peace, Justice and Strong Institutions) displayed a higher share of analytical approaches (64.10% of the identified items) and recommendatory ones (34.62%), supported by more robust evidence. At the descriptive level, audits focused on assessing the adequacy of the RAG structure, the management of transparency instruments, and arrangements for social participation. More action-oriented analyses were particularly evident in matters related to participatory decision-making and access to information, such as the verification of community involvement in the preparation of the PAS. When conclusions were negative, these assessments assumed a recommendatory character by clearly identifying gaps requiring corrective action. Where recommendations were issued, they were primarily aimed at strengthening transparency and social participation.

A key qualitative finding is the complete absence of direct references to the SDGs in the transversal questions. This indicates that, even when audit themes are implicitly related—such as health or governance—the SDG conceptual framework is not explicitly integrated into audit planning, implementation, or the reporting of results. The audit scope remains centered on legal and regulatory compliance, without fully exploiting its potential to promote alignment with the 2030 Agenda. Consequently, while some actions may be implicitly consistent with the SDGs, auditing has not yet assumed an active role as a driver of influence or as a catalyst for addressing nationally relevant sustainable development challenges within its audit domains.

Final considerations

This study examined the extent to which internal auditing within the SUS—using a national audit of the RAG as a case—shapes sustainability-related practices, with particular attention to SDGs 3 and 16. Although the findings point to a still incipient integration

of the 2030 Agenda and reveal gaps in the audit function's current capacity to influence this agenda, they also highlight a strategic opportunity for strengthening the role of internal auditing.

The quantitative findings, marked by a predominance of classifications in the 'Very weak' and 'Weak' influence categories with respect to SDG-oriented practices, should not be interpreted as an inherent limitation of the audit function. Rather, they constitute a clear diagnostic and a starting point for reorientation and role enhancement. The qualitative analysis further shows that, while SDG 3–related items were addressed largely at a descriptive level and the SDGs were not explicitly referenced in audit planning, the analytical and recommendatory approaches associated with SDG 16 demonstrate existing expertise in more comprehensive forms of analysis that could be extended to other contexts.

It is important to note that, under the Global Internal Audit Standards of the Brazilian Institute of Internal Auditors[38], auditors are empowered to exercise professional judgment grounded in independence and objectivity, allowing them to select the approach best aligned with the audit's objectives. This prerogative enables internal auditing within the SUS to move beyond a narrowly descriptive, compliance-oriented focus toward deeper, more action-oriented engagement. In the context of the RAG, this implies extending audit work beyond the verification of formal requirements to a broader analytical assessment. At the same time, audits can encourage managers to strengthen SDG-related dimensions that, while not always central to mandatory reporting, are critical for evaluating management effectiveness in light of the sustainability challenges inherent to public policies. Such a shift not only improves the quality of audit work but also expands its recommendatory capacity and strengthens its institutional influence.

Against this backdrop, recognizing the gaps identified by this research can serve as a starting point for positioning internal auditing as a strategic actor in support of sustainable territories and in addressing global challenges. In this regard, several opportunities for improvement emerge:

Strategic capacity-building within audit units: investing in internal alignment and continuous technical and scientific research on sustainable development issues relevant to public health. This foundation is critical for enabling auditors to integrate SDG considerations throughout the audit cycle, from planning to execution.

a. Fostering an impact-oriented culture: adopting tools and knowledge specific to the SDGs to operate in a more systematic and targeted manner, aligned with national commitments and with greater potential influence—moving beyond the identification of deviations to also inspiring and guiding governance and management actors within the SUS toward more appropriate and innovative practices.

b. Strengthening capacity for proactive analysis: enhancing auditor training to move beyond verification, fostering critical assessment of the impacts of health policies in relation to the SDGs, and developing recommendations that promote innovation and continuous improvement in sustainability-related domains.

In sum, internal auditing within the SUS holds considerable potential to become an influential force in advancing the 2030 Agenda in the public health sector. Given its access to and engagement with many of the elements addressed by SDGs 3 and 16, this potential is clear, even though current practice remains limited. The findings of this study suggest that recognizing and understanding existing gaps is the first step toward developing a more strategic, proactive, and mobilizing internal audit function—one capable of adding greater value to the SUS and actively contributing to complex global challenges, thereby

consolidating its essential role in effective and sustainable governance.

Finally, this study has limitations. Its temporal scope (September to December 2022) is restricted to a specific cycle of RAG audits, which limits the generalizability of the findings to other periods or types of audit activities within the SUS. In addition, while the assessment instrument was grounded in objective criteria derived from the SDGs, it incorporated elements of qualitative interpretation that may introduce subjectivity into the analysis. This risk was mitigated through paired analysis procedures and the use of standardized descriptors to guide classification. Further research and the development of models enabling internal auditing to operate more systematically—and with greater influence over governance challenges related to achieving the SDGs—remain important directions for future research.

Authorship contributions

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