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Data quality of health information systems in Brazil: An integrative review

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ABSTRACT
This study addresses the quality of data in Health Information Systems (SIS) in Brazil, focusing on the importance of these systems in health management and planning. The complexity of evaluating the quality of information stands out due to the lack of consensus on its definition in the literature. Brazil, over the years, has developed and modernized its SIS, but challenges persist, especially in ensuring data quality. The research uses an integrative literature review, identifying 13 studies that analyze the quality of information in different SIS, such as the Disease and Notification Information System (Sinan) and the Live Birth Information System (Sinasc). The results highlight the need to improve the filling out of records and forms by health professionals, aiming for more complete and consistent data. The research emphasizes the relevance of the quality of information for assertive decisions in the health sector, proposing improvements in the training of professionals and the continuous monitoring of SIS.

Keywords: Health information systems, Quality of information, Context.

1 INTRODUCTION

Health Information Systems (HIS) are systems used to collect, store, manage, analyze, and disseminate information about health and health services. They are designed to assist in health care management and planning decision-making, allowing health professionals to access important information to improve the quality of care, monitor population health, and evaluate the effectiveness of health programs and policies. Therefore, they are fundamental tools to ensure the quality and effectiveness of health services, as well as to improve the health and well-being of the population (MARIN, 2010).

According to Oleto (2006), information is indispensable in any area of knowledge, however, we do not stop to analyze its quality. The other highlights the difficulty in evaluating the quality of information in relation to the quantity currently available in various media, and the fact that there is no concession in the literature that defines "quality of information".

Neri (2016) corroborates when he mentions that several authors in the literature consider the concept of quality difficult because the definitions seem superficial, vague and inadequate, which reflect in the definition of quality of information that also do not present common sense in the literature. Therefore, to ensure the quality of information in SIS, it is important to follow practices such as data validation, the use of reliable sources, error checking, and peer review. In addition, it is important that the information is presented in a clear and objective manner, so that it can be understood by different audiences.

Brazil has fragmented information; before the 1970s it did not have an SIS. It was only in 1975 that the National Health Information System (SNIS) was implemented and, over the years, health systems have evolved and modernized, along with the advancement of technology and its nuances (BRASIL, 2009).

According to Thaines, et al. (2009), in Brazil, currently, specifically in the Unified Health System (SUS), health information is stored in a SIS database, which allows the gathering of data regarding a community or even a health policy. In the SUS there are outpatient and hospital Information Systems, vital statistics, epidemiological and health surveillance, among numerous other systems; Professionals, and users contribute to the success of the information provided in them.

Sousa et. al. (2006); Lima et. al. (2009), consider that the collection, processing and storage of HIS data in Brazil is structured and organized, but as the management of the SUS does not follow a regular, standardized plan for monitoring and evaluating the quality of HIS data, it is not possible to be sure of the quality of the material made available, and as in other developing countries, The reliability of the data produced is questionable.

However Paim, Nehmy, Guimarães, (1996); Neri, (2016) and Lima et. al, (2009) in their studies report that it is possible to confer on the quality of information some dimensions or attributes, which in their multidimensionality are divided into intrinsic (based on the information system itself) and contingent (based on the user) are these validity, reliability, consistency, precision, completeness, novelty, timeliness, timeliness, timeliness, non-duplicity, comprehensiveness, accessibility, objectivity, relevance, effectiveness, perceived value, and specificity.

Taking into account the researcher's experience in hospital epidemiological surveillance, and in conversations with other professionals in the area of epidemiological surveillance, and knowing the collective relevance of the information generated by the data entered into the systems, a common concern is why some data are neglected and the fields of the forms and forms are not filled in by the professionals responsible for this initial action? from where the data is transferred to the SIS, making the quality of the information incomplete and questionable.

Therefore, the present study is justified by the importance of HIS with completeness and consistency of information as an impacting factor to direct assertive, effective and effective decision-

making for the population. For this reason, it is concerned with the quality of the information contained in them.

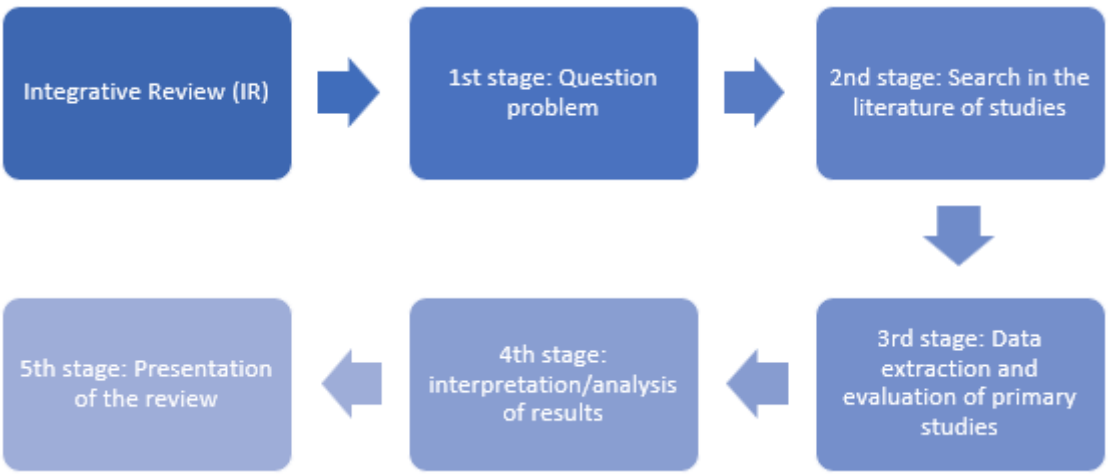
In view of the above, this study aims to identify, in the literature, the quality of HIS information in Brazil. This analysis can stimulate and sensitize managers and health professionals about the importance of filling out all the information requested in the forms/documents (e.g.: Death Certificate (DC), notification forms of diseases and compulsory conditions) with quality.

2 METHODOLOGY

It is an integrative literature review (IR), which consists of the synthesis and integration of research results from different methodologies and data sources to answer a research question. The data from these studies are extracted and synthesized in a thematic analysis that seeks to identify patterns and gaps in the existing literature (MENDES; SCOTT; GALVÃO, 2008; SOUZA; SILVA; CARVALHO, 2010).

This IR was conducted in five stages as described by Whittmore and Knafl, (2005), (1) Identification of the problem question; (2) Search for studies in the literature; (3) data extraction and evaluation of primary studies; (4) interpretation/analysis of results; (5) Presentation of the review (Figure 1).

Figure 1 - Stages of the integrative literature review.



FONTE: Adapted from WHITTMORE; KNAFL, 2005.

The research question defined for the development of the review was: What is the quality of data/information in health information systems in Brazil? The PICO strategy was used to construct the study question, in its PICo variation to delimit the primary studies, being P: population/problem (Health Information Systems), I: intervention/interest (quality of information) and Co: context (Brazil).

The problem-based bibliographic search was conducted online in the following databases: Latin American and Caribbean Health Sciences Literature (LILACS), Medical Literature Analysis and Retrieval System Online (MEDLINE)/PubMed, and Scientific Electronic Library Online (SCIELO).

Usage equations were used as a search strategy, according to each database, and the descriptors were combined by means of boleando operators (OR and AND). The descriptors used were from DesCS/MeSH: "Health Information Systems"; "National System of Notifiable Diseases"; "Health Information System"; "Notifiable Diseases Information System"; "data reliability"; "Data Accuracy"; "Data Accuracy"; "Data Accuracy"; "Data Quality"; Brazil; Brazil". To ensure the authenticity of the search, she also had the help of another master's student/researcher from the master's class in health management, where the different search equations were tested. The search equations used were as follows (Chart 1).

Table 1 - Search equations and respective databases.

DATABASE	SEARCH EQUATIONS
VHL	("Health Information Systems" OR "National Notifiable Diseases System" OR "Health Information System" OR "Notifiable Diseases Information System") AND ("Data Reliability" OR "Data Accuracy" OR "Data Accuracy" OR "Data Accuracy") AND (Brazil OR Brazil)
MEDLINE/PubMed	("Health Information Systems" OR "Data Accuracy" OR "Brazil")
SciELO	("Health Information Systems" OR "National Notifiable Diseases System" OR "Health Information System" OR "Notifiable Diseases Information System") AND ("Data Reliability" OR "Data Accuracy" OR "Data Accuracy" OR "Data Accuracy") AND (Brazil OR Brazil)

SOURCE: Prepared by the authors.

The search for the articles began from February to March 2023 and the evaluation and analysis of the results in April to June 2023.

The inclusion criteria were primary studies, which contemplate the proposed objective, timeless to expand the possibilities of results, in the languages Portuguese, English and Spanish, available in full and according to the theme. Duplicate articles, articles that did not address the theme, that were not in full, articles from letters to the editor, dissertations, monographs and theses were excluded.

The articles were initially selected from the databases by the descriptors, and the titles were organized in a Microsoft Excel spreadsheet to be evaluated and included for initial selection. After that, the selection was made by reading the title, where those that did not fit the theme, duplicates and that were not in full were excluded. Subsequently, the abstracts were read, and the articles that met the inclusion criteria were selected for full reading.

Zotero, a free bibliographic management software (available in http://www.zotero.org/), was used to store and organize the bibliographic references obtained from the databases.

The analysis was carried out qualitatively in a descriptive way, since the interpretation was made by reading and filing the selected articles.

The following variables were used to describe the studies in terms of implementation and dissemination of results: authors, journal title and year of publication, objectives, languages, methodological design, HIS, dimension/attribute, context, and main results.

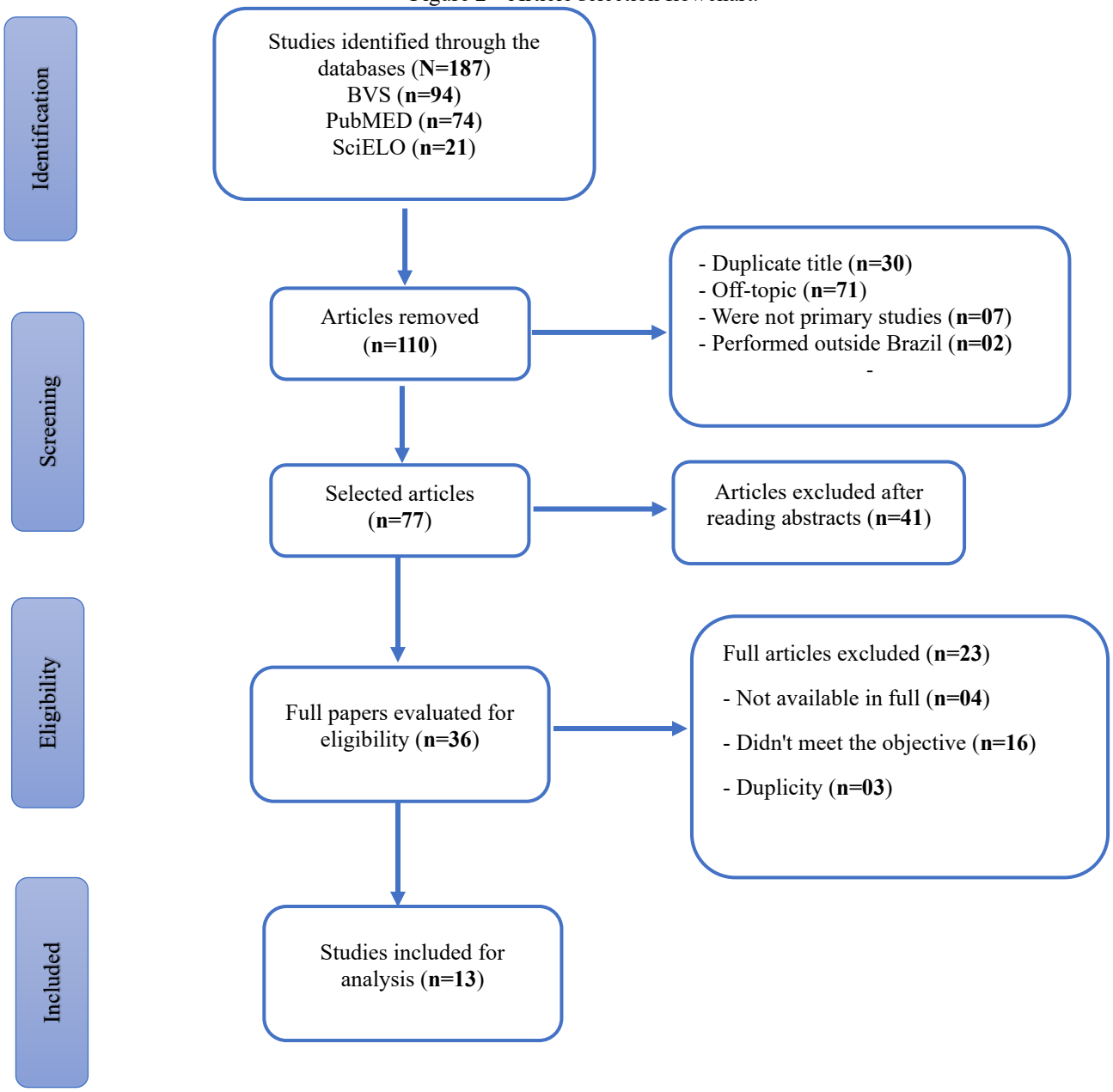
3 RESULTS

Initially, the search resulted in (N=187) articles, distributed in the following databases: VHL (n=94) and MEDLINE/PubMED (n=74) and in Scielo (n=21). Then, the publications found were analyzed, and from these they were excluded (n=174), as they did not fit the inclusion criteria established for this research. The steps of this process were described in the form of a flowchart (Figure 2). In the end, it resulted in (n=13) articles for analysis and elaboration of the characterization table of the studies (Chart 2) and summary table (Chart 3).

The studies were characterized in relation to the identification: authors, title of the journal and year of publication, objectives, languages and methodological design. (Table 2).

Of the included studies, five were published in the journal Epidemiology and Health Services, four in Sciences and Collective Health, and the others in other periods dedicated to the theme. According to the year of publication, it was observed that the articles included were published in the period from 2009 to 2023, with 2022 being the most prevalent year with four articles. Twelve of the objectives mentioned the use of dimensions/attributes to assess the quality of the information in the SIS. Regarding the methodological design, nine were descriptive studies. And when it came to language, only one was available in English. (Table 2).

Figure 2 – Article selection flowchart.



Source: prepared by the authors.

Table 2 – Characterization of the studies included in the review, Fortaleza, CE, Brazil, 2023.

Articles	Authors	Newspaper/year	Objectives	Language	Methodological design
A1	Costa *et.al.*	Rev. Bras. Epid/ 2022	To evaluate the IQ on mortality due to neoplasms within the scope of SIM, according to national data and by Federative Unit (UF).	Portuguese	Descriptive observational study
A2	Da Fonseca *et. al.*	BMC Public Health/ 2022	OBJECTIVE: To analyze the completeness of self-harm and suicide records in the state of Pernambuco, Brazil, 2014-2016.	English	Evaluative study with descriptive design
A3	Trademarks *et.al.*	Ciên. Public Health/ 2020	OBJECTIVE: To analyze the quality of dengue notification data regarding the completeness of the fields, from residents of	Portuguese	Descriptive study with a quantitative approach

			the municipality of Fundão, Espírito Santo, registered in SINAN, in the period from 2007 to 2015.		
A4	Silva *et. al*	Ciên. Public Health/ 2017	To evaluate the data quality, acceptability, and timeliness of the tuberculosis surveillance system in the microregions of Brazil.	Portuguese	Hybrid study, in 2 stages: qualitative and quantitative cross-sectional ecological
A5	Gabriel *et. al*	Revista Paulista de Pediatria/ 2014	To evaluate the completeness and reliability of data from the Information System on Live Births (SINASC).	Portuguese	Cross-sectional study
A6	Lima *et. al*	Epidemiol. Serv. Health/ 2023	OBJECTIVE: To analyze the profile of violence against the elderly and the degree of completeness of the notification forms of the event in Niterói, Rio de Janeiro State, Brazil.	Portuguese	Descriptive study
A7	Siqueira *et. al.*	Epidemiol. Serv. Health/ 2020	OBJECTIVE: To describe the completeness of data on yellow fever notification forms in municipalities in the state of Espírito Santo, Brazil, in 2017	Portuguese	Descriptive ecological study
A8	Brito *et. al.*	Epidemiol. Serv. Health/ 2023	OBJECTIVE: To describe the completeness of notifications of accidents caused by venomous animals in the Notifiable Diseases Information System, in Brazil and macro-regions, in 2007-2019	Portuguese	Retrospective descriptive study
A9	Canto and Nedel	Epidemiol. Serv. Health/ 2020	OBJECTIVE: To describe the completeness of tuberculosis case records in Santa Catarina, Brazil, from 2007 to 2016	Portuguese	Descriptive study
A10	Mascarenhas and Gomes	Ciênc. Public Health/ 2011	OBJECTIVE: To evaluate the reliability of data from the Information System on Live Births (SINASC) in Teresina, Piauí, Brazil, in 2002	Portuguese	Descriptive study with a quantitative approach
A11	Nogueira *et. al.*	Cad. Public Health/ 2009	OBJECTIVE: To analyze the reliability and validity of the data contained in death certificates due to oral cancer in the city of Teresina.	Portuguese	Cross-sectional study of quantitative analysis
A12	Agrononik e Jung	Ciênc. Public Health/ 2019	To evaluate the degree of SINASC coverage; To evaluate the degree of incompleteness of selected variables from the LBD and DC; Describe the information gain when chaining SIM and SINASC data and Describe the degree of consistency between the information from the two databases.	Portuguese	Descriptive time-series study
A13	Oliveira *et.al*	Epidemiol. Serv. Health/ 2020	OBJECTIVE: To describe the cases of violence against children and adolescents and the completeness of the notification forms registered in the Notifiable Diseases Information System	Portuguese	Descriptive study

			(SINAN), Manaus, Amazonas, Brazil, 2009-2016		

Source: prepared by the authors.

Table 3 – Summary of the studies analyzed, according to dimensions of the quality assessed, Information system, context and main results, Fortaleza, CE, Brazil, 2023.

Articles	Authors	Newspaper/year	Objectives	Language	Methodological design
A1	Costa *et.al.*	Rev. Bras. Epid/ 2022	To evaluate the IQ on mortality due to neoplasms within the scope of SIM, according to national data and by Federative Unit (UF).	Portuguese	Descriptive observational study
A2	Da Fonseca *et. al.*	BMC Public Health/ 2022	OBJECTIVE: To analyze the completeness of self-harm and suicide records in the state of Pernambuco, Brazil, 2014-2016.	English	Evaluative study with descriptive design
A3	Trademarks *et.al.*	Ciên. Public Health/ 2020	OBJECTIVE: To analyze the quality of dengue notification data regarding the completeness of the fields, from residents of the municipality of Fundão, Espírito Santo, registered in SINAN, in the period from 2007 to 2015.	Portuguese	Descriptive study with a quantitative approach
A4	Silva *et. al*	Ciên. Public Health/ 2017	To evaluate the data quality, acceptability, and timeliness of the tuberculosis surveillance system in the microregions of Brazil.	Portuguese	Hybrid study, in 2 stages: qualitative and quantitative cross-sectional ecological
A5	Gabriel *et. al*	Revista Paulista de Pediatria/ 2014	To evaluate the completeness and reliability of data from the Information System on Live Births (SINASC).	Portuguese	Cross-sectional study
A6	Lima *et. al*	Epidemiol. Serv. Health/ 2023	OBJECTIVE: To analyze the profile of violence against the elderly and the degree of completeness of the notification forms of the event in Niterói, Rio de Janeiro State, Brazil.	Portuguese	Descriptive study
A7	Siqueira *et. al.*	Epidemiol. Serv. Health/ 2020	OBJECTIVE: To describe the completeness of data on yellow fever notification forms in municipalities in the state of Espírito Santo, Brazil, in 2017	Portuguese	Descriptive ecological study
A8	Brito *et. al.*	Epidemiol. Serv. Health/ 2023	OBJECTIVE: To describe the completeness of notifications of accidents caused by venomous animals in the Notifiable Diseases Information System, in Brazil and macro-regions, in 2007-2019	Portuguese	Retrospective descriptive study
A9	Canto and Nedel	Epidemiol. Serv. Health/ 2020	OBJECTIVE: To describe the completeness of tuberculosis case records in Santa Catarina, Brazil, from 2007 to 2016	Portuguese	Descriptive study
A10	Mascarenhas and Gomes	Ciênc. Public Health/ 2011	OBJECTIVE: To evaluate the reliability of data from the Information System on Live Births (SINASC) in Teresina, Piauí, Brazil, in 2002	Portuguese	Descriptive study with a quantitative approach

A11	Nogueira *et. al.*	Cad. Public Health/ 2009	OBJECTIVE: To analyze the reliability and validity of the data contained in death certificates due to oral cancer in the city of Teresina.	Portuguese	Cross-sectional study of quantitative analysis
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A13	Oliveira *et.al*	Epidemiol. Serv. Health/ 2020	OBJECTIVE: To describe the cases of violence against children and adolescents and the completeness of the notification forms registered in the Notifiable Diseases Information System (SINAN), Manaus, Amazonas, Brazil, 2009-2016	Portuguese	Descriptive study

Source: prepared by the authors.

Regarding the synthesis (Chart 3), from the reading and organization of the information from the selected studies, it was possible to identify: SIS, dimensions/attributes, context and outcome.

It was found that the SIS most evaluated in the articles included to identify the quality of the information was the Disease and Notification Information System (Sinan), cited in eight articles. In relation to dimensions and attributes, completeness was the most evaluated dimension in the quality of information in the HIS, being mentioned in eleven of the twelve articles. Regarding the context as a criterion, studies carried out in Brazil were included, thus, we had from all regions, three articles referred only to Brazil and its Federated Units (UF), and the remaining studies were, three from the northeast region (Piauí and Pernambuco), four from the southeast region (Rio de Janeiro, São Paulo, Espirito Santo), two from the south region (Rio Grande do Sul and Santa Catarina) and one article from the north region (Amazonas). Regarding the outcome, however, the articles reported that the quality of the information in the SIS is good to regular, using among the points of improvement.

4 DISCUSSION

Interest in assessing the quality of health information has been gaining more and more evidence in Brazil. Quality data are essential for resource planning and management, for the basis of decisions on disease control actions, as well as for the promotion and protection of the population's health (MARQUES, 2020).

In order to understand the dimension of the problem and propose effective actions to control the disease and mortality, it is necessary, initially, that health authorities have adequate information

regarding the number of cases incident to a given fact/problem and deaths, and the availability of quality information in the different official databases is essential (COSTA, et al. 2022).

The adequate provision of information to the SIS is so important that failures in filling in the information and consequently in the analysis and processing of data of any nature, in addition to implying an erroneous estimate of the magnitude of outbreaks or epidemics, lead to the difficulty of actions and resources to cope with them, as impediments to timely decision-making in order to reduce the advance of dissemination and infection of diseases (MARQUES, 2020).

The use of HIS in Brazil has been improving significantly, however, its improvement is a continuous process of evaluations and adjustments (MARQUES, 2020). Such improvement and advancement, especially in an unfavorable economic scenario, requires strategic planning to make the programs more effective, with less use of resources, elaborating action plans that allow them to be evaluated in Completeness and Consistency, Acceptability, Opportunity and other dimensions/attributes. Regarding the above, a study carried out in 558 Brazilian micro-regions evaluating the quality of SINAN information related to the quality of reported tuberculosis data between 2012 and 2014, showed excellent consistency in almost all micro-regions of Brazil, similar to the percentage of inconsistency of new tuberculosis (TB) cases in Rio de Janeiro from 2001 to 2006 was equal to or less than 3%. In addition, they conducted a historical analysis of the later period in urban centers with the highest TB burden in the country, and identified that, from 2001 to 2006, sputum smear microscopy in the 2nd, 4th, and 6th months was among the variables with the lowest proportion of completion of the disease information system. Findings from 2008 from places such as Acre, Roraima, São Paulo and Mato Grosso do Sul had good results in terms of linking records and analyzing duplicates. These findings, although obtained for other indicators and different dates, corroborate the good quality of the information system found in Acre and Roraima. Furthermore, it is worth mentioning the low quality of the information system that limits the epidemiological analysis of TB in some parts of the country. In part, this phenomenon of the micro-regions of Brazil according to indicators of timeliness and acceptability of the tuberculosis surveillance system, 2012-2014, may be related to the lack of understanding and appreciation of health professionals regarding the importance of the forms that feed the system (SILVA et al, 2017).

Failure to fill in certain fields of the TB notification form was also detected in a study conducted in Santa Catarina, where, despite the good quality of completeness of the diagnostic sputum smear microscopy field, when analyzing the completeness of the follow-up sputum smear microscopies of the bulletin, the percentage of completion decreased, as well as the sociodemographic data and analysis of valid information (where in addition to the blank and ignored fields, the fields filled in as 'In progress' for the completeness analysis), which may suggest the non-investigation of these issues or the lack of updating of the information in the case follow-up bulletin and may confirm the

aforementioned perception that, for some health professionals, the notification forms represent a merely bureaucratic issue, disregarding the production of data and information as necessary actions for the management of actions and services. In addition, a study conducted in five municipalities in the country in 2011 found deficiencies in the training of TB surveillance professionals (CANTO; NEDEL; 2020).

Considering another extremely important source of data on the maternal and child population, the Information System on Live Births (SINASC), several studies have been carried out in Brazil and abroad seeking to evaluate the reliability and completeness of the information contained in the certificates of live births (DNV). This SIS, in addition to excellent completeness, presents agreement for several variables perfect (mother's age and birth weight), almost perfect (number of live children, type of pregnancy and delivery, sex of the newborn and Apgar) or excellent (mother's occupation and length of gestation), showing that there is a possibility of performing high-reliability analyses based on this information. such as the elaboration of health diagnoses, surveillance and monitoring of newborns (NB), the evaluation of health actions in the maternal and child area, knowledge of the offer of services that perform deliveries, among others. In relation to the mother's marital status, there was moderate agreement, as in other studies, which showed low agreement for this variable. It is possible to assume that this distortion stems from the filling options, which do not include the item "stable union", but only the marital status that has a legal connotation. The current version of the DNV has already included this option, which should contribute to the reliable completion of this variable, thus being able to reflect the real situation of family support. This is important, since the absence of a partner is related to unfavorable outcomes, such as lower adherence to prenatal care in pregnant adolescents and adults and those with low birth weight (GABRIEL, et al, 2014).

In a study carried out on the notification system for suspected cases of yellow fever, the results show the duplication of case reporting. It was also observed the presence of inconclusive cases, where it was not possible to rule out or confirm illness due to yellow fever disease due to insufficient data, fields left blank or filled in inadequately, or even due to the non-collection of samples for diagnostic tests. Among the variables classified as poor to excellent completeness are occupation, signs and symptoms, and nonspecific tests, which are considered essential, although not mandatory for data entry into the system. It is noteworthy that the data cited are important variables for epidemiological analyses, identification of specific characteristics of yellow fever and location of viral circulation, in addition to serving for the calculation of indicators. It was also evidenced that the proportion of information ignored and left blank was high, implying classification of completeness between poor and regular. Since these data are not collected at the first moment of the investigation, it is necessary to follow up for later completion of these variables. This passive method of data collection can lead to underreporting, delays in notifications and typing, problems in the processing and transfer of updated

information, lack of adequate feedback to the reporting source, and, consequently, discouragement and discontinuity in the surveillance process (SIQUEIRA et al., 2020).

Lima et al. (2023), in her research on the completeness and characterization of the notification forms of violence against the elderly in Niterói-RJ, it was observed in some regions fields of the notification form with a higher degree of incompleteness, namely: repeated violence, suspicion of alcohol use by the aggressor, education of the victim and referral to another health sector. Regarding the completion of the variables identified as essential, the classification of very low completeness for the field related to schooling is highlighted, whose frequency of "unknown" was found to be 81.9%, high in comparison with the finding in studies carried out in the South region of Brazil 12 and in Recife 18, which presented frequencies of 30.5% and 52.4%, respectively. It is noteworthy that important aspects for understanding the profile of the victim and the episode of violence presented regular to very low completeness, namely: schooling, marital status, presence of disorder/disability, and repeated violence. The lack of this information makes it impossible to better understand the profile of violence and its victims.

Brito et al. (2023) evaluated the standard for classifying the completeness of reported cases of accidents caused by venomous animals, based on the score adapted from Romero and Cunha, which varied little in cases of snakebite, araneism, and scorpionism. An improvement in the completeness of almost all fields is highlighted, with exceptions for "schooling", "case evolution" and "area of occurrence". The analysis of notifications of accidents with venomous animals, registered in Sinan, in the period from 2007 to 2019, showed variations in the degree of completeness of the fields evaluated for cases of snakebite, araneism and scorpionism, with greater completeness of the fields related to the accident and attendance, although the proportional variations in the completeness of the fields related to the accident showed a worsening in their completeness, in some regions. The poor and very poor completeness of the fields related to socioeconomic characteristics is highlighted, especially those related to work (occupation) and schooling, with low completeness in all Brazilian regions.

In an article on neoplasms, it is reported that studies evaluating the reliability and validity of death certificates due to neoplasms are rare in Brazil, and in the case of evaluating a specific neoplasm such as oral cancer. In the Death Certificates (DC) in which the epidemiological profile of the patients was investigated, there was a greater absence of completion in the schooling variable. Regarding the report of other significant conditions that contributed to death, it was found that they did not enter the chain of causes of death. Regarding occupation, it was observed that all women worked as domestic or housewives. In the male gender, in many DCs, there was little specificity in relation to the true occupation of the deceased, and professions such as retired and self-employed were recorded. This denotes imprecision in the information on this variable, which can be attributed to the lack of importance attributed by the attesting physician to this variable, despite the fact that it is essential for

the epidemiology of the disease at the local level. Mortality data must be reliable in order for the statistics based on them to be valid and reliable. When analyzing a death certificate, it can be seen that its complete and correct completion is a basic factor for accuracy in the observation of epidemiological data on mortality (NOGUEIRA et al. 2009).

In general, both in the analysis of the completeness of the fields individually and of the notification forms, the results showed that more than 80.0% of the situations were classified as good completeness. However, among the fields that are not mandatory, such as race/skin color, disability/disorder, recidivism, suspected alcohol use, place and time of occurrence, the classification of completeness fluctuated over most of the years analyzed. Contrary to the national scenario, sexual violence was the most reported in regions such as Manaus, indicating the need for training to detect other types of violence (physical, psychological, negligence, child labor, etc.) in the municipality. Improving the quality of the data analyzed requires the monitoring of notifications, as well as the continuous preparation of the health professionals involved. Progress in this area depends on the correct identification of suspected cases and the diligent completion of the notification form, the result of awareness-raising actions aimed at health professionals with the purpose of increasing the coverage and quality of completion, since the notification of violence against children and adolescents is a first step on the path of actions to control the disease (OLIVEIRA, et al., 2020).

The development and operation of SIS brings with it the need to ensure the quality of their information. The importance of complete and reliable records and the overall quality of data arises from the conception that, without the accurate identification of the problems, deficiencies and shortcomings of a community and in the absence of an assessment of the impacts of interventions, public policies become potentially innocuous. Thus, reliable data allow us to monitor the evolution of outcomes of interest. In addition, they provide subsidies to outline health policies and support decision-making by their managers (AGRONONIK; JUNG, 2019).

Obtaining information that supports decision-making to improve the health level of a population is of fundamental importance for health managers, as this knowledge is applied to the planning, organization and evaluation of health actions and services. To support the diagnosis of the health situation, it is necessary for decision-makers to obtain reliable information on aspects such as the profile of morbidity and mortality, risk factors and their determinants, demographic characteristics, and medical-sanitary care services. Having good statistics on vital events contributes to the development of improvements in the health of the population and disseminating them favors the social control of the actions implemented. However, health information is not always of good quality, which depends directly on the coverage of the recorded events and the reliability of the data collected (MASCARENHAS; GOMES, 2011).

5 FINAL THOUGHTS

Data quality is essential to the production of reliable information. The way data are recorded interferes in the entire chain of informational processes, from recording to storage and analysis of the course, dissemination of information and even the spread of diseases.

The studies showed weaknesses in relation to Completeness, Consistency, Acceptability, Timeliness, Inconsistency when evaluating the information from the notification forms and DC and DNV forms in their respective information systems, since there was no heterogeneity in the analysis of the material evaluated in the study and no standardization in the forms and notifications, as well as epidemiological investigations.

The study also identified that there is still room for improvement in the quality of SIS information, for this, it is necessary that professionals understand the forms as strategic tools to cope with diseases and not just bureaucratic requirements. This paradigm shift will also allow programs to more routinely carry out the practices recommended by epidemiological surveillance.

The research shows the importance of training and qualification of health professionals involved in the process of reporting suspected cases of any disease. It is necessary to train and raise awareness among professionals to fill out the notification forms of diseases and other forms correctly, avoiding leaving fields blank or filling them in as 'Ignored', and to promote among them the understanding of the importance of this service that is not only bureaucratic, since, based on the epidemiological profile drawn by the health information systems, Prevention measures, distribution of resources and implementation of public policies in the area are adopted.

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