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ORIGINAL ARTICLE

Use of e-SUS reports for Primary Health Care in the work routine of Family Health teams

Utilização dos relatórios do e-SUS da Atenção Primária à Saúde na rotina de trabalho de equipes de Saúde da Família

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ABSTRACT The objective was to analyze the use of e-SUS Primary Health Care reports in the work routine of Family Health teams (eSF) in the Federal District (DF). This is a descriptive study of data from the on-site Assessment and Quality Action Plan of the 1st evaluation cycle of the Primary Health Care Qualification Program, between 2021 and 2022. All 607 teams were included. Associations between Health Regions were identified using Chi-square tests, p-value < 0.05. To quantify problems and actions, Data Mining techniques were used. The majority of eSFs in the DF denied using any e-SUS APS report in their work routine (53.23%). The reports that the eSF used most were production reports (54.43%), and management reports the least (31.60%). The regions with the highest proportion of use were Central-South (73.67%), and with the lowest, Southwest (34.56%), p < 0.0001. Some of the main problems described were intrinsic to e-SUS APS (errors, failures, system instability and lack of unification) and others were related to extrinsic issues (lack of knowledge, inconsistency and lack of registration). The teams listed in their Action Plans, as a priority, the training for correct use of the information system.

KEYWORDS Information systems. Electronic health records. eHealth policies. Health planning. Public health systems research.

RESUMO *Objetivou-se analisar a utilização dos relatórios do e-SUS da Atenção Primária à Saúde (APS) na rotina de trabalho das equipes de Saúde da Família (eSF) do Distrito Federal (DF). Estudo descritivo de dados provenientes da Avaliação in loco e Plano de Ação para a Qualidade do 1º ciclo avaliativo do Programa de Qualificação da Atenção Primária à Saúde, entre 2021 e 2022. Incluíram-se todas 607 equipes. Associações entre as Regiões de Saúde foram identificadas mediante testes Qui-quadrado, p-valor < 0,05. Para quantificar problemas e ações, utilizaram-se técnicas de Mineração de Dados. A maioria das eSF do DF negaram o uso de qualquer relatório do e-SUS APS em sua rotina de trabalho (53,23%). Os relatórios que as eSF mais utilizaram foram os de produção (54,43%), e menos, os de gerenciais (31,60%). As regiões com maior proporção de uso foram Centro-Sul (73,67%), e com menor, Sudoeste (34,56%), p < 0,0001. Alguns dos principais problemas descritos foram intrínsecos ao e-SUS APS (erros, falhas, instabilidade do sistema e falta de unificação) e outros foram relativos a questões extrínsecas (desconhecimento, inconsistência e falta de registro). As equipes listaram em seus Planos de Ação, prioritariamente, as capacitações para uso correto do sistema de informação.*

PALAVRAS-CHAVE *Sistemas de informação. Registros eletrônicos de saúde. Políticas de eSaúde. Pesquisa em sistemas de saúde pública. Planejamento em saúde.*

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Introduction

The increase in the world population, together with the growing expectation of effective treatments and better quality of life, are placing increasing pressure on health systems. Thus, health continues to be one of the most important social and economic challenges worldwide, requiring new and more advanced scientific and technological solutions[1,2]. In response to such needs, since the early 1990s, significant investments have been made in Information and Communication Technologies (ICT), aiming to positively impact access, efficiency and quality of virtually any health-related process[3].

The analysis of the health situation by Primary Health Care (PHC) is guaranteed to be important in the health planning and programming cycle, as it allows the identification, description, prioritization and explanation of the population's health problems, with the aim of identifying social needs and determining action priorities[4]. In this sense, Health Information Systems become important resources for carrying out this situational analysis, in order to support the identification of the health condition and the epidemiological situation of the territory for the decision-making by management, as well as establishing priorities in the planning of the actions of health teams.

In 2013, the then Department of Primary Care (DAB) of the Ministry of Health implemented the e-SUS APS Strategy, with the intention of restructuring PHC information at the national level, making electronic medical records available for use by health teams. The e-SUS APS Strategy refers to a computerized and qualified process for achieving an electronic Unified Health System (SUS), which operates the Health Information System for Primary Care (SISAB), established through Ordinance GM/MS No. 1,412, of July 10, 2013. Currently, there are two software systems for data collection: Simplified Data Collection (CDS) and Electronic Citizen Record (PEC)[5-8].

While the CDS is only capable of capturing consolidated data on care, the PEC enables the construction of a database with sociodemographic and clinical information on each patient, which is stored in the system during the patient's care, enabling longitudinal monitoring. In addition to being entered into the national database, SISAB, these care data feed back into the local e-SUS, allowing the generation of various types of reports about the enrolled population. The various types of reports can be used by different actors and are grouped in the PEC into four categories: managerial, consolidated, operational and production[7].

It is essential that healthcare teams plan their actions in relation to local needs, which translates into situational analysis. Reports, which are prepared based on data from care and registration of the enrolled population, are important tools to guide this planning. Improvements in the quality of care provision are the result of this strategic alignment, which involves the efficient use of resources and the optimization of processes[4].

Furthermore, e-SUS APS aims to promote a reduction in dependence on paper and to reduce the workload involved in collecting, inserting, managing and using information in PHC, allowing this data collection to be part of the activities already carried out by professionals, and not a separate activity. Consequently, it must also have information available in an easy and accessible way for PHC professionals, allowing the culture of using information to be expanded, in the most integrated way possible, for planning actions and improving the quality of health care for the population[9].

However, this system is understood as one of the complex readjustments of work processes, as it becomes yet another instrument used daily by health professionals. In addition, there are technical aspects that make the incorporation of this technology difficult, such as internet access and failures of the system itself[10,11].

By virtue of the Cooperation Agreement between the Ministry of Health and the

National Council of Health Secretaries (CONASS), the Federal District (DF) has the role of pilot municipality for the routine execution of certification processes (tests) of the new features and improvements of the new versions of e-SUS, so that they can be updated in the production environment of the PHC health services in the other locations in the country. Thus, the DF has a privileged and challenging space for health managers and workers, as it has the first access in the country to the respective new features and resources of the versions launched by the developer laboratory.

The objectives of the article were to analyze the use of e-SUS APS reports in the work routine of Family Health teams (eSF) in the DF, within the scope of the Primary Health Care Qualification Program (Qualis-APS) according to the DF and the Health Regions (RS) (Central, Central-South, East, North, West, Southwest and South), in addition to evaluating the problems and actions related to the theme described in the Quality Action Plan (PAQ) of the eSF.

Material and methods

Study design and scenario

This is a descriptive study with a mixed approach of data from the first evaluation cycle of the Qualis-APS Program, collected between September 2021 and November 2022. Implemented in 2019 and regulated by Ordinance No. 131, of April 14, 2023[12], Qualis-APS aims to qualify the management and services provided by the PHC of the DF, articulating actions of evaluation, training and certification of health teams.

Health management in the Federal District is decentralized into seven RS Superintendencies that are grouped according to the 35 Administrative Regions (RA). The RS with their respective RA are: Central (Asa Sul, Asa Norte, Cruzeiro, Sudoeste/Octogonal, Lago Norte, Lago Sul, Varjão e Vila Planalto); South-Central (Candangolândia, Cidade Estrutural, Guará, Park Way, Núcleo Bandeirante, Riacho Fundo I, Riacho Fundo II, Setor de Indústria e Abastecimento e Setor Complementar de Indústria e Abastecimento); East (Paranoá, Itapoã, São Sebastião, Jardins Mangueiral e Jardim Botânico); North (Planaltina, Arapoanga, Sobradinho, Sobradinho II e Fercal); Southwest (Águas Claras, Arniqueira, Água Quente, Recanto das Emas, Samambaia, Taguatinga e Vicente Pires); West (Ceilândia, Brazlândia e Sol Nascente/Pôr do Sol); South (Gama and Santa Maria)[13].

Regarding the structure and organization of the actions and services of the PHC of the DF, in the sphere of regional health management, thus, taking into account the improvements, reorganization and planning in the infrastructure, in the work process and in the results, there is the composition of seven Regional Directorates of Primary Health Care (DIRAPS), with the support and articulation of 100 Primary Care Service Managements (GSAP), distributed throughout the territories covered by the PHC, in which the local managers of the health units are located.

To this end, according to the August 2023 figures from the internal control of the Primary Health Care Coordination (COAPS), in the actions and services of primary care in the DF, there is the following structure: 175 Basic Health Units (UBS), with 622 eSF; 355 Oral Health teams (eSB); 12 Prison Primary Care teams (eAPP); 11 Complementary Psychosocial Teams for Prison Primary Care; 5 Street Clinic (eCR) teams; and 52 Multiprofessional teams in Primary Health Care (eMulti).

According to the report on linked records, from July 2023, in the Ministry of Health's SISAB, the DF currently has a total of 2,130,921 citizens monitored in the PHC health actions and services. Furthermore, with regard to the population coverage estimated by the eSF, in line with the last record for the period of April 2023, in the Strategic Planning System

(SESPlan) of the SES-DF network, the percentage of coverage of the indicator is 66.29%.

Participants

All DF eSFs established prior to the start of the first evaluation cycle were included, totaling 607 health teams. Teams established immediately after this time interval were not included in the evaluation process, due to the impossibility of participating since the Self-Assessment – in the first phase of the Qualis-APS evaluation cycle.

Data collection system

The Qualis-APS assessment process is organized into cycles composed of four phases: I – Self-Assessment (AA); II – Preparation and execution of the Quality Action Plan (PAQ); III – On-site assessment; IV – Certification[12].

In the first stage, teams respond to the Self-Assessment within the Qualis-APS Platform, which is a reflective and formative process for teams that aims to verify compliance with the set of quality standards established. Subsequently, among the standards evaluated with the lowest indexes, the teams select those they consider to be most relevant and draw up an action plan stipulating deadlines for compliance in the PAQ phase. This phase should be understood as an opportune moment to continue the reflections already initiated in the AA. Then, interviewers external to SES/DF carry out an in-person visit to each UBS for the on-site Assessment, on dates previously scheduled to apply quantitative questionnaires on aspects related to the quality of the APS. Finally, the teams are certified according to a ranking of best scores.

For this study, initially, a selection of the questions contained in the On-Site Assessment related to the use of the e-SUS report by the eSF was used. Subsequently, the bank of problems and actions related to e-SUS listed in the PAQ was used.

On-site assessment

Interviews were conducted between July and October 2022 using the 'eSF Module' instrument. This module provides analysis of team performance and identification of strengths and weaknesses in the healthcare work process. Although the Qualis-APS assessment is participatory and co-produced, data collection for the third assessment phase – On-site Assessment – is carried out by evaluators external to the DF State Health Department (SES-DF), under the coordination of the research team, on previously defined dates. The interviewers were systematically selected and trained, and a pre-test was applied in the month prior to the start of data collection. The questions raised, mainly related to clarity and appropriateness of language, were modified. Data were collected using REDCap software installed on tablets. The eSF module was answered by a representative of each team.

Among the subtopics that structure the eSF module, for the present study, only the item that corresponded to the use of reports in the eSF work routine, called 'Planning and monitoring of actions and services offered by the team', was used. They were questioned about the use of the four types of reports generated in e-SUS[7]:

- Consolidated reports: these are reports that allow a view of the consolidated registration status, according to the selected date, allowing the user to see the most up-to-date information.

- Production reports: these are reports that allow an aggregated view of information, such as: individual, dental and home care (SAD), collective activity, procedures, among others, as well as production summary reports.

- Operational reports: these are reports that present individualized and identified information on the health situation of citizens in

the territory. These reports are only accessed by UBS workers, as they contain data related to the individual care of the citizen.

• Management reports: presents specific and essential information about the functioning of the Health Unit, such as absenteeism and number of appointments, observing data generated during the process flows present in the daily life of the service.

For each type of report (production, consolidated, operational and management), the following uses were questioned about: planning the provision of services; monitoring individuals and families; territorial division with other teams; mapping comorbidities/health situation in the population; mapping social, cultural, environmental and vulnerability aspects; evaluation of indicators agreed upon in the Local Management Agreement (AGL), which is a form of contracting, within the scope of performance management, adopted by SES-DF. The AGL is part of the SES-DF regional health management program, institutionalized by Decree No. 37,515, of July 26, 2016. The main results of the AGL, which measure the performance of actions within the scope of PHC, are disclosed every four months. In total, ten indicators and their respective targets are monitored.

Quality Action Plan (QAP)

After analyzing the frequency of use of e-SUS reports in the teams' work routine according to the responses from the eSF Module of the On-Site Assessment, we sought to identify the problems faced by the teams for the effective use of e-SUS through the PAQ.

Before the on-site assessment, the teams self-assessed and selected quality standards that were not being fully met to develop an action plan. To develop the PAQ, the planning tool used is an adaptation of the 5W2H matrix published on the Qualis-APS Program website. The teams develop an Action Plan with at least four of the 45 self-assessed quality standards. The quality standards for the health teams are organized into dimensions (actions in the territory, user care, work organization and planning) and their respective sub-dimensions.

The Microsoft Excel® spreadsheet with the PAQ responses from all healthcare teams was extracted from the Qualis-APS platform. Using the search tool, the number of teams that listed problems and actions related to the e-SUS APS reports was identified and, subsequently, the content was analyzed.

Data analysis

The data from the on-site assessment were extracted from REDCap, tabulated in Microsoft Excel® (version 16) and analyzed using the R language software. The results from the eSF Module of the on-site assessment were summarized in absolute and relative frequency (%) of each categorical question according to the Federal District and the seven RS (Central, Central-South, East, North, West, Southwest and South). Appropriate statistical techniques were applied to assess the relationship between the use of production, consolidated, operational and management reports and the RS of the Federal District.

To identify the presence of an association between the RS and the use of production, consolidated, operational and management reports, Chi-square tests of Variable Independence were performed. A significance level (α) of 5% was considered, i.e., establishing a 5% probability of rejecting the null hypothesis (H0) if it is true; the hypothesis of independence between the variables was rejected if the p-value was less than 0.05.

Content Analysis with data mining techniques was used to analyze the problems and actions arising from the Action Plans prepared by the teams. Data mining was performed through a quantitative evaluation of textual elements. Standard extraction and analysis techniques were used in the textual data through a statistical approach of the most frequent terms,

and categories representing classification patterns, i.e. textual aggregates, were created. The cases that were transcribed, as an example of the application of the textual aggregates found, were identified by the acronym 'eSF' followed by the number of participation in the study.

Associations between words or terms were also assessed, i.e. syntagmatic and paradigmatic relations respectively. So-called 'stop words' were eliminated, i.e. words that are not relevant to the content (e.g. and, the). Filters were used to detect and count words frequently used in all texts. The weighting between the main words was presented in the form of a word cloud.

Ethical aspects

All participants signed an informed consent form. This study was approved by the Research Ethics Committee of the Faculty of Health Sciences of the University of Brasília (CAAE no. 29640120.6.0000.0030; opinion No. 5,396,127).

Results

In general, among the 603 participating eSFs in the Federal District, 53.23% denied using the reports in their work routine. *Figure 1* illustrates the spatial distribution of the use of reports by RA. The average distribution of the use of reports by RA was classified by strata: 0.1 to 9.6 (Vicente Pires, São Sebastião, Samambaia, Fercal, Recanto das Emas, Água Quente/Recanto das Emas, Plano Piloto, Sobradinho II, Taguatinga and Arniqueira); 9.7 to 12.3 (Cruzeiro, Planaltina, Arapoanga, Paranoá, Lago Norte, Santa Maria and Sobradinho); 12.4 to 15 (Ceilândia, Jardim Botânico, Itapoã, Brazlândia and Águas Claras); 15.1 to 17.7 (Gama, Varjão, Riacho Fundo II, Sol Nascente and Pôr do Sol); 17.8 to 20.4 (Park Way, SCIA/Estrutural, Guará, Riacho Fundo I, Candangolândia and Núcleo Bandeirante). The blank regions have no record because they do not have UBS in their territory and are served in neighboring RA.

Figure 1. Distribution map of the use of e-SUS APS reports in the routine work of Family Health teams by administrative region (Qualis-APS – On-site Assessment – 1st Cycle), 2022

Source: Prepared by the author.

Note: Administrative regions without records are served by UBS in neighboring regions.

When making the association between the use of reports by RS, it is noted that all the results of the statistical tests presented a p-value lower than the significance level of 5%. This occurred due to the large discrepancy between the percentages for some regions, as presented in the tables and highlighted in the subsequent paragraphs.

Table 1 presents the data by RS. The Center-South region showed the highest proportion of use of reports (73.67%), while the Southwest (34.56%) and Central (38.88%) regions had the lowest proportion. Among the four types of existing reports, the ones most used by the eSF were Production (54.43%); followed by Consolidated (57.19%); and with the lowest proportion, Operational (45.42%) and Management (31.60%) reports (*table 1*).

Table 1. Use of reports from e-SUS APS in the work routine of Family Health teams, according to Health Regions and the Federal District (Qualis-APS – On-site evaluation – 1st Cycle), 2022

		Health Region							Federal District	
		Central	Central-South	East	North	West	Southeast	South		
Report Type		**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**N (%)**	**p-value**
Production Reports	No	142 (57.72)	75 (16.97)	214 (52.71)	294 (50.53)	239 (41.49)	536 (55.95)	146 (36.32)	1646 (45.57)	<0.0001
	Yes	104 (42.28)	367 (83.03)	192 (47.29)	28 (49.48)	337 (58.51)	422 (44.05)	256 (63.68)	1966 (54.43)	
Consolidated Reports	No	135 (54.88)	62 (13.96)	191 (46.93)	271 (46.56)	227 (39.55)	530 (55.27)	131 (32.59)	1547 (42.81)	<0.0001
	Yes	111 (45.12)	382 (86.04)	216 (53.07)	311 (53.44)	347 (60.45)	429 (44.73)	271 (67.41)	2067 (57.19)	
Operational Reports	No	171 (62.41)	98 (20.55)	267 (58.68)	390 (59.82)	298 (47.30)	758 (70.51)	201 (46.00)	2183 (54.58)	<0.0001
	Yes	103 (37.59)	3790 (79.45)	188 (41.32)	262 (40.18)	332 (52.70)	317 (29.49)	236 (54.00)	1817 (45.42)	
Management Reports	No	187 (68.50)	250 (52.19)	300 (73.17)	490 (75.38)	386 (61.27)	836 (77.91)	255 (58.22)	2704 (68.40)	<0.0001
	Yes	86 (31.50)	229 (47.81)	110 (26.83)	160 (24.62)	244 (38.73)	237 (22.09)	183 (41.78)	1249 (31.60)	
All Types	No	635 (61.12)	485 (26.33)	972 (57.93)	1445 (58.60)	1150 (47.72)	2660 (65.44)	733 (43.66)	8080 (53.23)	<0.0001
	Yes	404 (38.88)	1357 (73.67)	706 (42.07)	1021 (41.40)	1260 (52.28)	1405 (34.56)	946 (56.34)	7099 (46.77)	

Source: Prepared by the authors (2023).

The distributions of the use of each type of report by RS had statistically significant differences ($p < 0.0001$). The Central-South region also presented the highest proportion of use of each type of report in the work routine of the eSF, followed by the South region, while the Central region contained a lower proportion of use of Production reports (42.28%), and the Southwest region, a lower proportion in the use of Consolidated (44.73%), Operational (29.49%) and Management (22.09%) reports (*table 1*).

Table 2 shows the results of the use of reports according to each action for planning and organizing the service, stratified by RS of the DF. The action in which the eSFs made the most use of the Production and Consolidated reports was the evaluation of the indicators agreed upon in the AGL (63.35% and 63.18% respectively). The Central-South region had the highest proportion of use of the Production and Consolidated reports for all the actions listed, reaching values close to 100% when it

came to use for evaluating indicators that are part of the AGL.

The Central region used the Production reports the least for planning and offering services (46.34%) and monitoring individuals and families (42.90%), in addition to being the one that used the Consolidated reports the least for monitoring individuals and families. The East region used the Production reports to a lesser extent than the others for mapping social, cultural, environmental and vulnerability aspects (30.88%), and territorial division with other teams (23.53%), this last action mentioned also had a low proportion of use of the Consolidated reports (25%). The Southwest region used the Production and Consolidated reports to a lesser extent for mapping comorbidities/health situation in its population (45.91% and 45.28% respectively) and evaluating the indicators agreed upon in the AGL (48.12% in both) (*table 2*).

In the Federal District, Operational and Management reports were less used in the territorial division of the eSF with other teams (35.99% and 26.53% respectively). Operational reports were used more for monitoring individuals and families (55.72%), and Management reports were used more for evaluating the indicators agreed upon in the AGL (41.79%). The Central-South region also led the ranking of use of Operational and Management reports, compared to the other regions (p < 0.0001) (*table 2*).

Tabela 2. Uso dos relatórios de produção, consolidados, operacionais e gerenciais do e-SUS APS para o planejamento das equipes de Saúde da Família e organização do serviço, segundo Regiões de Saúde e o Distrito Federal (Qualis-APS – Avaliação in loco – 1º Ciclo), 2022

Actions for the planning and organization of the service		Health Regions of the Federal District								Test X^2
		Central	Central-South	East	North	West	Southeast	South	DF	(p-value)
Production Reports										
Service offering planning	No	22 (53.66%)	8 (10.81%)	31 (45.59%)	46 (47.42%)	36 (37.50%)	82 (51.57%)	20 (29.85%)	245 (40.70%)	<0.0001
	Yes	19 (46.34%)	66 (89.19%)	37 (54.41%)	51 (52.58%)	60 (62.50%)	77 (48.43%)	47 (70.15%)	357 (59.30%)	
Follow-up of individuals and families	No	23 (56.10%)	4 (5.41%)	31 (45.59%)	40 (41.24%)	35 (36.46%)	79 (49.38%)	21 (31.34%)	233 (38.64%)	<0.0001
	Yes	18 (43.90%)	70 (94.59%)	37 (54.41%)	57 (58.76%)	61 (63.54%)	81 (50.62%)	46 (68.66%)	370 (61.36%)	
Territorial division with other teams	No	30 (73.17%)	26 (35.14%)	52 (76.47%)	63 (64.95%)	60 (62.50%)	109 (6.12%)	39 (58.21%)	379 (62.85%)	<0.0001
	Yes	11 (26.83%)	48 (64.86%)	16 (23.53%)	34 (35.05%)	36 (37.50%)	51 (3.87%)	28 (41.79%)	224 (37.15%)	
Mapping of comorbidities/health status in its population	No	21 (51.22%)	10 (13.51%)	31 (46.97%)	45 (46.39%)	35 (36.46%)	86 (54,09%)	20 (29.85%)	248 (41.33%)	<0.0001
	Yes	20 (48.78%)	64 (86.49%)	35 (53.03%)	52 (53.61%)	61 (63.54%)	73 (45.91%)	47 (70.15%)	352 (58.67%)	
Mapping of social, cultural, environmental and vulnerability aspects	No	26 (63.41%)	23 (31.94%)	47 (69.12%)	52 (53.61%)	47 (48.96%)	97 (60.62%)	28 (41.79%)	320 (53.24%)	<0.0001
	Yes	15 (36.59%)	49 (68.06%)	21 (30.88%)	45 (46.39%)	49 (51.04%)	63 (39.38%)	39 (58.21%)	281 (46.76%)	

Tabela 2. Uso dos relatórios de produção, consolidados, operacionais e gerenciais do e-SUS APS para o planejamento das equipes de Saúde da Família e organização do serviço, segundo Regiões de Saúde e o Distrito Federal (Qualis-APS – Avaliação in loco – 1º Ciclo), 2022

Actions for the planning and organization of the service		Health Regions of the Federal District								Test X^2
		Central	Central-South	East	North	West	Southeast	South	DF	(p-value)
Evaluation of the indicators agreed in the AGL	No	20 (48.78%)	4 (5.41%)	22 (32.35%)	48 (49.48%)	26 (27.08%)	83 (51.88%)	18 (26.87%)	221 (36.65%)	<0.0001
	Yes	21 (51.22%)	70 (94.59%)	46 (67.65%)	49 (50.52%)	70 (72.92%)	77 (48.12%)	49 (73.13%)	382 (63.35%)	
Consolidated Reports										
Service offering planning	No	21 (51.22%)	1 (1.35%)	32 (47.06%)	45 (46.39%)	29 (30.21%)	88 (55.00%)	22 (32.84%)	238 (39.47%)	<0.0001
	Yes	20 (48.78%)	73 (98.65%)	36 (52.94%)	52 (53.61%)	67 (69.79%)	72 (45.00%)	45 (67.16%)	365 (60.53%)	
Follow-up of individuals and families	No	21 (51.22%)	15 (20.27%)	26 (38.24%)	42 (43.30%)	27 (28.42%)	76 (47.50%)	19 (28.36%)	226 (37.54%)	<0.0001
	Yes	20 (48.78%)	59 (79.73%)	42 (61.76%)	55 (56.70%)	68 (71.58%)	84 (52.50%)	48 (71.64%)	376 (62.46%)	
Territorial division with other teams	No	26 (63.41%)	20 (27.03%)	51 (75.00%)	57 (58.76%)	60 (63.16%)	105 (65.62%)	37 (55.22%)	356 (59.14%)	<0.0001
	Yes	15 (36.59%)	54 (72.97%)	17 (25.00%)	40 (41.24%)	35 (36.84%)	55 (34.38%)	30 (44.78%)	246 (40.86%)	
Mapping of comorbidities/health status in its population	No	22 (53.66%)	9 (12.16%)	25 (37.31%)	40 (41.24%)	33 (34.38%)	87 (54.72%)	14 (20.90%)	230 (38.27%)	<0.0001
	Yes	19 (46.34%)	65 (87.84%)	42 (62.69%)	57 (58.76%)	63 (65.62%)	72 (45.28%)	53 (79.10%)	371 (61.73%)	
Mapping of social, cultural, environmental and vulnerability aspects	No	24 (58.54%)	14 (18.92%)	33 (48.53%)	46 (47.42%)	48 (50.00%)	91 (56.88%)	19 (28.36%)	275 (45.61%)	<0.0001
	Yes	17 (41.46%)	60 (81.08%)	35 (51.47%)	51 (52.58%)	48 (50.00%)	69 (43.12%)	48 (71.64%)	328 (54.39%)	
Evaluation of the indicators agreed in the AGL	No	21 (51.22%)	3 (4.05%)	24 (35.29%)	41 (42.27%)	30 (31.25%)	83 (51.88%)	20 (29.85%)	222 (36.82%)	<0.0001
	Yes	20 (48.78%)	71 (95.95%)	44 (64.71%)	56 (57.73%)	66 (68.75%)	77 (48.12%)	47 (70.15%)	381 (63.18%)	
Operational Reports										
Service offering planning	No	25 (60.98%)	3 (4.05%)	34 (50.00%)	52 (53.61%)	35 (36.46%)	104 (65.00%)	26 (38.81%)	279 (46.27%)	<0.0001
	Yes	16 (39.02%)	71 (95.95%)	34 (50.00%)	45 (46.39%)	61 (63.54%)	56 (35.00%)	41 (61.19%)	324 (53.73%)	
Follow-up of individuals and families	No	21 (51.22%)	3 (4.05%)	32 (47.06%)	48 (49.48%)	38 (39.58%)	101 (63.12%)	24 (35.82%)	267 (44.28%)	<0.0001
	Yes	20 (48.78%)	71 (95.95%)	36 (52.94%)	49 (50.52%)	58 (60.42%)	59 (36.88%)	43 (64.18%)	336 (55.72%)	
Territorial division with other teams	No	31 (75.61%)	26 (35.14%)	50 (73.53%)	64 (65.98%)	58 (60.42%)	120 (75.00%)	37 (55.22%)	386 (64.01%)	<0.0001
	Yes	10 (24.39%)	48 (64.86%)	18 (26.47%)	33 (34.02%)	38 (39.58%)	40 (25.00%)	30 (44.78%)	217 (35.99%)	
Mapping of comorbidities/health status in its population	No	21 (51.22%)	7 (9.46%)	31 (46.27%)	50 (51.55%)	36 (37.50%)	103 (64.78%)	23 (34.33%)	271 (45.09%)	<0.0001
	Yes	20 (48.78%)	67 (90.54%)	36 (53.73%)	47 (48.45%)	60 (62.50%)	56 (35.22%)	44 (65.67%)	330 (54.91%)	

Tabela 2. Uso dos relatórios de produção, consolidados, operacionais e gerenciais do e-SUS APS para o planejamento das equipes de Saúde da Família e organização do serviço, segundo Regiões de Saúde e o Distrito Federal (Qualis-APS – Avaliação in loco – 1º Ciclo), 2022

Actions for the planning and organization of the service		Health Regions of the Federal District								Test X^2
		Central	Central-South	East	North	West	Southeast	South	DF	(p-value)
Mapping of social, cultural, environmental and vulnerability aspects	No	25 (60.98%)	22 (29.73%)	41 (60.29%)	55 (56.70%)	50 (52.08%)	110 (68.75%)	28 (41.79%)	331 (54.89%)	<0.0001
	Yes	16 (39.02%)	52 (70.27%)	27 (39.71%)	42 (43.30%)	46 (47.92%)	50 (31.25%)	39 (58.21%)	272 (45.11%)	
Evaluation of the indicators agreed in the AGL	No	20 (48.78%)	4 (5.41%)	31 (45.59%)	51 (52.58%)	27 (28.12%)	103 (64.78%)	28 (41.79%)	264 (43.85%)	<0.0001
	Yes	21 (51.22%)	70 (94.59%)	37 (54.41%)	46 (47.42%)	69 (71.88%)	56 (35.22%)	39 (58.21%)	338 (56.15%)	
Management Reports										
Service offering planning	No	28 (68.29%)	33 (44.59%)	48 (71.64%)	70 (72.16%)	54 (56.25%)	117 (73.12%)	35 (52.24%)	385 (63.95%)	<0.0001
	Yes	13 (31.71%)	41 (55.41%)	19 (28.36%)	27 (27.84%)	42 (43.75%)	43 (26.88%)	32 (47.76%)	217 (36.05%)	
Follow-up of individuals and families	No	27 (65.85%)	35 (47.30%)	49 (72.06%)	68 (70.10%)	54 (56.25%)	114 (71.25%)	36 (53.73%)	383 (63.52%)	<0.0001
	Yes	14 (34.15%)	39 (52.70%)	19 (27.94%)	29 (29.90%)	42 (43.75%)	46 (28.75%)	31 (46.27%)	220 (36.48%)	
Territorial division with other teams	No	29 (70.73%)	41 (55.41%)	57 (83.82%)	77 (79.38%)	66 (68.75%)	129 (80.62%)	44 (65.67%)	443 (73.47%)	<0.0001
	Yes	12 (29.27%)	33 (44.59%)	11 (16.18%)	20 (20.62%)	30 (31.25%)	31 (19.38%)	23 (34.33%)	160 (26.53%)	
Mapping of comorbidities/health status in its population	No	26 (63.41%)	36 (48.65%)	50 (74.63%)	70 (72.16%)	51 (53.12%)	120 (75.47%)	34 (50.75%)	387 (64.39%)	<0.0001
	Yes	15 (36.59%)	38 (51.35%)	17 (25.37%)	27 (27.84%)	45 (46.88%)	39 (24.53%)	33 (49.25%)	214 (35.61%)	
Mapping of social, cultural, environmental and vulnerability aspects	No	28 (68.29%)	41 (55.41%)	52 (76.47%)	71 (73.20%)	62 (64.58%)	125 (78.12%)	38 (56.72%)	417 (69.15%)	<0.0001
	Yes	13 (31.71%)	33 (44.59%)	16 (23.53%)	26 (26.80%)	34 (35.42%)	35 (21.88%)	29 (43.28%)	186 (30.85%)	
Evaluation of the indicators agreed in the AGL	No	22 (53.66%)	29 (39.19%)	40 (58.82%)	66 (68.04%)	45 (46.88%)	117 (73.12%)	32 (47.76%)	351 (58.21%)	<0.0001
	Yes	19 (46.34%)	45 (60.81%)	28 (41.18%)	31 (31.96%)	51 (53.12%)	43 (26.88%)	35 (52.24%)	252 (41.79%)	

Source: Prepared by the authors (2023).

Table 3 shows the description of the number of mentions of e-SUS APS reports in the PAQs of health teams by region. There was a greater number of actions than problems, with a ratio of 2.7 actions/problems listed by the teams, but they were not necessarily interrelated.

Table 3. Mention of e-SUS APS reports in the Quality Action Plans of health teams, according to Health Regions and the Federal District (PAQ – 1st Cycle), 2022

Dimension and Sub-Dimension	Health Region															
	CENTRAL		CENTER-SOUTH		EAST		NORTH		WEST		SOUTHEAST		SOUTH		DF	
QUALITY STANDARD	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
Actions in the territory																
Care in territory	02	08	02	09	00	06	00	09	01	14	03	09	00	08	08	63
Territorialization	00	01	01	13	12	15	04	27	07	16	06	09	02	09	32	90
User's care																
Comprehensive care	06	10	09	11	03	13	10	41	00	22	22	27	08	28	64	152
Education and communication in healthcare	00	01	00	00	00	01	00	00	00	00	00	01	00	00	00	03
Work Organization																
Access	00	00	01	00	00	01	00	00	01	03	00	00	00	00	02	04
Coordination of work	02	00	01	02	00	04	02	03	04	05	04	06	03	06	16	26
Permanent Education	00	00	00	02	00	00	00	00	00	00	00	02	01	01	01	05
Planning																
Monitoring and Assessment	00	01	09	14	05	08	05	25	02	09	09	13	02	05	32	75
Programing	00	01	01	06	00	01	00	01	00	01	01	01	01	00	03	11
Total	**10**	**22**	**24**	**57**	**20**	**49**	**21**	**106**	**21**	**70**	**45**	**68**	**17**	**57**	**158**	**429**
[A/P] Ratio		**2.2**		**2.4**		**2.5**		**5.1**		**2.6**		**1.5**		**3.4**		**2.7**

Source: Prepared by the authors (2023).
A= Action; P = Problem.

In *figure 2*, we can see the representation of word clouds with the 100 words and a bar graph with the 20 bigrams mentioned the most in the list of problems and actions, related to the e-SUS APS reports. We can see that, after the term e-SUS APS, the most mentioned words in the list of problems are, in order: record; registration; report; lack; indicator; system; territory; monitoring; difficulty; update; inconsistency; errors; team; patient; data; population; failures; mistakes; pregnant woman; hypertensive. When analyzing the bigrams, we can see that some problems are directly related to some problem intrinsic to the e-SUS APS (errors, failures, system instability and lack of unification). Below are some examples:

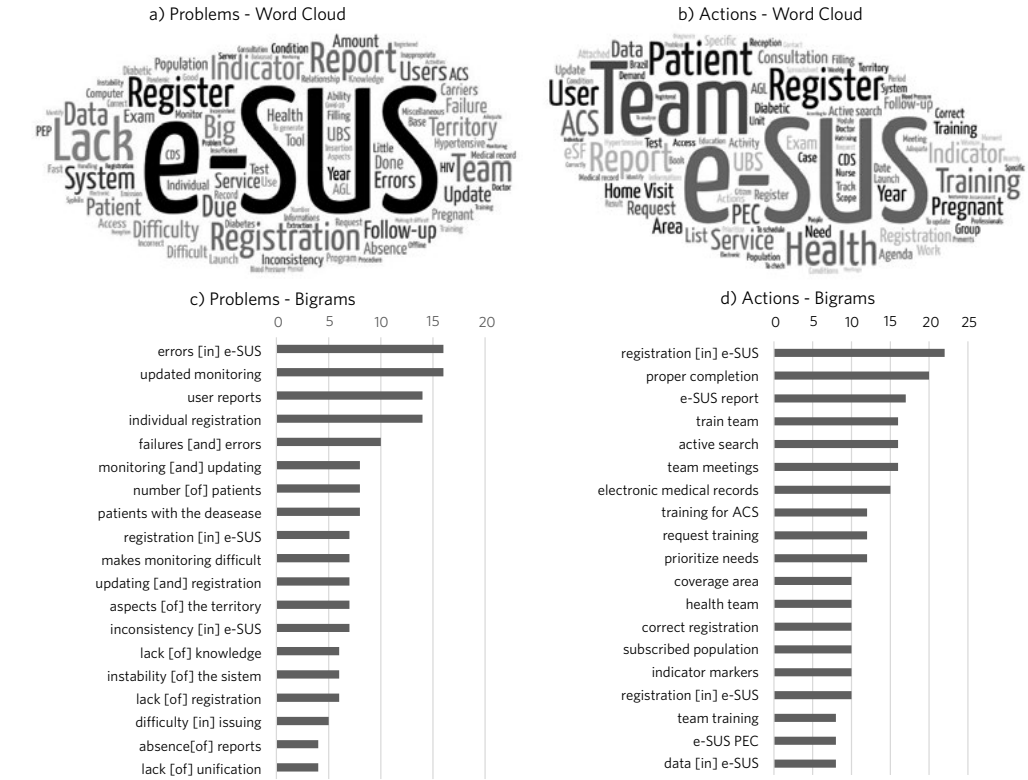
Failures and errors in the e-SUS APS program that make it difficult to monitor, update and record various aspects of the territory and its population, such as health conditions. (eSF – ID 128).

Errors and bugs in the e-SUS APS that make patient data disappear from reports. (eSF – ID 78).

Instability in the e-SUS APS that discourages the server from filling out all fields. There is no interconnection between the online and offline e-SUS APS systems. (eSF – ID 147).

Instability in the e-SUS APS system when providing us with reports quickly, difficulty in saving data and lack of unification of the e-SUS APS nationwide. Even here in the Federal District, prenatal users are cared fir at the SES through different electronic medical records that do not communicate with the e-SUS APS. (eSF – 118).

Figure 2. Word cloud and bigrams of the lists of problems and actions listed in the Quality Action Plan of the health teams of the Federal District (Qualis-APS – PAQ – 1st Cycle), 2022



Source: Prepared by the author (2023).

Others are related to extrinsic issues (ignorance, inconsistency and lack of records). Below are some examples:

> *Lack of knowledge on how to generate the report with the indicator data.* (eSF – ID 20).

> *Insufficient knowledge regarding household and individual registration in e-SUS APS, generating inconsistencies.* (eSF – ID 148).

> *Lack of insertion/updating of records in e-SUS APS.* (eSF – ID 37).

> *Inconsistent records, making it difficult to issue reports and perform due monitoring.* (eSF – ID 07).

In the list of actions, after the term e-SUS APS, the most mentioned words were, in order: team; registration; report; patient; health; training; indicator; service; record; home visit, pregnant woman, user, consultation; Community Health Agent (ACS); request; consultation; training; data; area; active search. Regarding the bigrams of the actions, the large number of mentions of qualification and team training stands out, while others mentioned training specifically for ACSs (*figure 2*). It is worth noting that the teams needed to list actions that were under their governance.

Discussion

The issuance and use of information from information system reports for planning actions within the scope of primary care and service organization was a weakness found in

most of the DF's RS. The reports generated in e-SUS allow workers to view, in a summarized and systematized manner, the health actions carried out in the territory. However, less than half of the DF's eSFs reported the use of e-SUS APS reports in the different actions of health planning and programming.

Among the types of existing reports, production reports were used the most by the Federal District's eSFs. Some studies on the computerization of PHC have also prioritized production reports. In general, these studies admit that the teams' productions can be forwarded to Sisab, through e-SUS or third-party systems, as a criterion for considering a UBS computerized[14-16].

Regarding the purpose, most regions use the reports to evaluate the indicators agreed upon in the AGL, while they showed an underuse of the reports, mainly for territorial division with other teams; mapping social, cultural, environmental and vulnerability aspects; and planning and offering services.

In this sense, it is worth noting that the AGL is an agreement that aims to strengthen the management model based on production results. There is an incentive for the more expressive use of reports in the analysis of AGL indicators, since, in 2020, this Agreement used four district agreement indicators and seven concerning the 'performance' component of the Previne Brasil Program[13]. Since 2019, Previne Brasil has established the financing model for PHC costs within the scope of the SUS[17]. Nevertheless, the applicability of the reports issued in e-SUS APS can transcend the idea of a major focus on monitoring for financial transfer. The reports issued have great potential to ultimately become a tool for the management, monitoring, and evaluation of primary care actions and services, in addition to guiding health planning for the decision-making process[16,18,19].

Among the factors related to the non-use of e-SUS reports, some studies corroborate the problems listed in the teams' action plans. A scenario of difficulties ranging from the lack of internet access to the lack of computers for data entry, in addition to the loss of information due to the lack of integration between the outsourced system and the e-SUS APS system, has been observed[14-16]. The quality of the information has also been reported as one of the determinants that encourage or hinder the acceptance of the use of the system among its users, in addition to the possible underreporting in the system[20-23], problems also mentioned in the teams' PAQ.

In the analysis of the PAQ, many professionals mentioned as a problem the fact that they did not know how to generate the indicators, nor was it part of their routine and work processes to have access to the data to perform analysis/planning of actions based on them. Regarding this aspect, a study that described the evolution of the SIS for primary care, from 2007 to 2017, showed that, even with training on the systems and their significant importance, the professionals of the eSF were not in tune with the use of the data collected and their use at the local level. It was also possible to identify the weakness and lack of knowledge in diagnosing diseases in the assigned areas, as well as planning health promotion and prevention actions based on the reports issued[11].

Following the line of actions listed by the teams, there is recognition of the need for investment in training users of the systems that make up the e-SUS APS strategy, with a priority focus on ACS. According to other Brazilian studies, there is still great difficulty in both adequately collecting data and using the information to build health indicators. This fact can be attributed to a series of factors, among which one of the main factors is the lack of adequate training of professionals[9,22,24-27].

Furthermore, the results suggest that development efforts should focus on improving the system and reports, especially on promoting integration and interoperability with other health information systems; and restructuring the ways in which information is collected, processed, validated and used. Thus, it is expected that, with the evolution of the system,

a greater number of teams will consider using the information from their territory generated in the e-SUS reports for planning and programming their actions[14-16,20-23].

It is worth noting that this study has limitations inherent to its cross-sectional and descriptive nature. However, given the recognized scarcity of studies on the subject in the Federal District, as well as the sample of all teams, the use of evaluation techniques in dimensions of self-assessment, preparation of an action plan and external evaluation allowed us to draw a baseline of the situation of use of the reports and the problems related to their non-use by the health teams of the PHC of the Federal District.

Conclusions

It was possible to identify that there are still aspects that hinder the incorporation of the use of e-SUS APS reports into the routine of the eSF. It is considered important that managers pay attention to the problems identified by team professionals, in order to determine the needs and advances to be made to ensure the effectiveness of the e-SUS APS system.

Also, professionals are often concerned about the reliability of the data collected and the information being produced. It is understood that improving the system and training professionals can be important strategies to ensure the quality of information and the planning of actions to support health interventions and decision-making.

Furthermore, it is worth noting that in the Central Administration (AdmC) of SES-DF, the organic units related to the PEC e-SUS APS theme, and by virtue of the Cooperation Agreement of the Ministry of Health and Conass, the DF has the role of pilot municipality for the routine execution of certification processes (tests) of the novelties and improvements of the new versions, so that they can be updated in the production environment of the PHChealth services. Thus, the DF has a privileged and challenging space for health managers and workers, having the first access in the country to the respective novelties and resources of the versions launched by the developer laboratory.

Collaborators

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