

Evaluation of drug prescription quality indicators in a primary health care facility with different models of health care

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Abstract

Objective: to describe drug prescription indicators in a primary health care facility with different models of health care. **Methods:** this was a descriptive study using secondary data of prescriptions with regard to quality indicators in a health facility that has three health care models: Outpatient Medical Care (OMC), Primary Health Care Unit (PHU) and Family Health Strategy (FHS) in Vila Nova Jaguaré OMC/PHU in São Paulo-SP, Brazil, from July to October 2011. **Results:** 16,720 prescriptions were studied; the proportion of drugs provided through the Municipal List of Essential Drugs (Remume) was higher for FHS prescriptions (98.9%), compared to PHU (95.6%) and OMC (95.7%); similarly, both the use of the generic name of the drugs and the proportion of drugs provided was higher among ESF prescriptions (98.9% and 96.1%, respectively), compared with PHU (94.4% and 92.9%) and OMC (94.0% and 92.7%). **Conclusion:** all the prescription indicators show better results for FHS.

Key words: Pharmaceutical Services; Primary Health Care; Health Service Indicators; Drug Prescription; National Health System.

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Introduction

Since the implementation of the Brazilian National Health System (*SUS*), the primary health care is considered to be the "doorway" of the patient into the health care system and is responsible for health promotion and recovery of the residents who live in the area covered by the service.¹⁻³ The primary health care is a set of actions of health promotion, protection and recovery, both individually and collectively, which gives priority to the integrality of care. The Family Health Strategy (FHS) has been adopted in Brazil in order to reorganize the health care practice, focusing the care in the family, rather than the individual, and in the integrated care,¹ aiming at the continuous health care for the residents who live in the area covered by the service and at the development of health promotion actions, taking into account the cultural, social and geographic context of the coverage area of each FHS team.

The primary health care is a set of actions of health promotion, protection and recovery, both individually and collectively, which gives priority to the integrality of care.

Although being a priority which is already in advance in small towns, the implementation of the FHS in bigger cities has been slow, given the complexity of the process, due to the demographic concentration and ill-distributed health services offer, mainly.^{2,4} Thus, FHS coverage is not global yet – around 63% of population coverage –,⁵ and many primary health care units (PHU) are still working in the traditional model, i.e., these units offer medical appointments and programmed services, having or not, emergency care. Owing to the progressive insertion of the FHS in the health care units, it is common to find mixed units, where both services coexist.^{1,3,6}

In 2005, the Outpatient Medical Care (OMC) was implemented in the city of São Paulo. The OMC is an emergency care service that concentrates low and medium complexity demands, and, besides that, tries to lighten the burden of municipal and hospital ER services at primary health care facilities.⁷ Recently, São Paulo city has begun the implementation of the Full-time PHU, a new care model that gathers the programming

activities with the scheduled medical care, rescues the role of the health promoter and defines the conditions to coordinate the integration of health care with other health services, whenever necessary.⁸

The use of indicators is a parameter to evaluate the services, including the pharmaceutical care and the quality of drugs prescriptions. It allows the comparison between the condition of the services delivered and the resolution level of the developed actions – e.g., promotion of the rational use of drugs –, consolidating the organization for health management as a strategy. In 1993, the World Health Organization (WHO) published the document 'How to Investigate Drug Use in Health Facilities', proposing indicators to measure key aspects to prescribing drugs, patient care, drugs availability and information.⁹ Still nowadays, these indicators are employed in the evaluation of pharmaceutical care provided in the primary health care facilities in Brazil and all over the world. However, the evaluation of these indicators depends on interviews with patients.

There is no literature available that identifies the number of PHU pharmacies that count with a pharmacist in Brazil. A study conducted in 2009 by the National Health Surveillance Agency (*Anvisa*), to evaluate the influence of the pharmaceutical industry on *SUS*, has identified that for every ten pharmacies of the system, seven lacked pharmacists.¹⁰ According to a study conducted in a municipality of Rio Grande do Sul State, of the 15 FHS evaluated, none had a pharmacist, the stock was usually controlled by a nurse and the medicines were dispensed by the doctors in some of the units.¹¹ There was a robust raise in the number of pharmacists in São Paulo primary health care with the management partnerships in the units that count with FHS teams and/or OMC. In order to have these pharmacists understand the care profile in their units, prioritize their demands and plan their actions with the possibility of comparing the results in different periods among the health units, it is important to order, comprehend and discuss these indicators. However, given the particularity of the health services organization at *SUS*, especially in São Paulo, the adoption of such indicators and the establishment of targets are more difficult.

The objective of this study is to describe drug prescription indicators in a primary health care facility with different models of health care.

Methods

This is a descriptive study using secondary data of the prescriptions from the pharmacy of the OMC/PHU Vila Nova Jaguaré, São Paulo-SP, Brazil. This is a health unit that belongs to São Paulo's Municipal Health Department that was under management contract of the West Region Project, of the Medicine School of São Paulo University, during the studied period. In 2011, the OMC/PHU Vila Nova Jaguaré was a reference health care unit for 42,479 São Paulo residents, offering Outpatient Medical Care – AMA –, Primary Health Care Units – PHU – and the Family Health Strategy – FHS –, this last, offers four teams nowadays.

The OMC/PHU Vila Nova Jaguaré pharmacy answers for prescriptions from within the unit or external (other public or private health care facilities), with an average of 336 medicines daily dispensed between January and July 2011. All medicines dispensed are registered in an electronic system for stock management from São Paulo city hall (Systems Health Management [SHM]). This system generates only the reports related to stock, not allowing the search for data on patients' profiles, origin, number and profiles of prescriptions, among others. Among the primary health care users' profile, although the system can file these data for longer periods, only data from the past three months were available to be seen, period selected for this study.

All the prescriptions complied by the pharmacy staff were included, for all days of the week, during all working hours, between July and October 2011 – even when there was no dispensing, to try to comprehend

the demand, not only the medicines consumption. The incomplete registers, those that did not make the calculation possible, or those that presented typos were excluded. Once the population who go to the OMC is the same that goes to the PHU and FHS, and that this last conducts complementary emergency care for the PHU, the prescription data from these three services are considered as the prescription data of the studied primary health care facility.

Data collection was conducted by the dispensary assistant, in an Excel® worksheet, filled in at the dispensing moment, after a training period (February to July 2011). With regard to the user, information on age, based on the year of birth shown in the National Health Card, which is presented with the prescription, was collected. Concerning the prescription itself, the following parameters were analyzed: origin (OMC, PHU or FHS); prescriber (general practitioner, pediatrician, gynecologist, family's doctor, or nurse); number of prescribed drugs; number of medications dispensed; number of unavailable drugs missing; number of drugs from the Municipal List of Essential Drugs (*Remume*); and number of prescriptions by the generic name of the drug. In the Figure 1, the measure indicators and the respective calculations were described.

The data were analyzed separately for patients cared by general practitioners, pediatricians, gynecologists, family's doctors, or nurses. The drugs prescriptions for children (aged up to 12 years old), comparing with adults (aged 18 years old or more) were also analyzed, which enabled the evaluation of differences

Indicators	Calculation
Average number of drugs per prescription	Total of prescribed drugs / total of evaluated prescriptions
Percentage of prescriptions fully met	Number of prescription for which all the prescribed drugs were dispensed / total of prescriptions
Percentage of drugs provided	No. of drugs provided / No. of drugs prescribed x 100
Percentage of drugs prescribed that are in the <i>Remume</i> ^a	Total of drugs prescribed that are in the <i>Remume</i> ^a / total of drugs prescribed x 100
Percentage of drugs essential to the <i>Remume</i> ^a that are unavailable	No. of drugs that are in the <i>Remume</i> ^a not dispensed due to their unavailability / No. of standardized drugs prescribed x 100
Percentage of drugs prescribed by their generic name	Total of generic drugs prescribed / total of drugs prescribed x 100

a) *Remume*: Municipal List of Essential Drugs

Figure 1 – Indicators and calculation used in the study

in the prescription profiles of the FHS staff, who receive patients of varied ages.

For statistical analysis, the program Epi Info®, version 3.5.4 was used. The test T-Student was used for comparison of average numbers.

Chi-square test was also used for comparison among proportion.

For both tests, we considered the significance level to be 5%. The comparison of indicators took into consideration only the data of each prescription presented at the pharmacy; there were no comparisons related to the number of drugs per medical appointment or, the proportion of medical appointments that generated prescriptions.

Once the prescription and administrative data for this research were obtained, the study was exempted of approval by the Research Ethics Committee, according to recommendations of the National Health Council (CNS), Resolution No. 466, dated December 12, 2012.

Results

Data from 16,720 medical prescriptions were evaluated, comprising 36,792 drugs, received between July and October 2011. 27 prescriptions were excluded. The average proportion of information register in the data collection worksheet was 90%, when comparing the data of the worksheet and the electronic system of drugs stock control. Therefore, the data represented all the pharmacy services. The origin of the prescriptions received by prescriber specialty, as well as the number of drugs prescribed, are presented in the Table 1.

Table 2 presents the results for the indicators according to each service – OMC, PHU and FHS – and prescriber's profile.

The PHU prescriptions had the highest number of prescribed drugs, followed by OMC and FHS, respectively. All these differences were statistically relevant ($p < 0.001$). The data are presented in Table 2, and the comparative statistical analysis of the prescriptions in the different services, in Table 3.

Among the FHS prescriptions, the proportion of drugs from the *Remume* was higher (98.9%), when comparing the PHU (95.6%) and the OMC (95.7%) prescriptions. The FHS also referred a higher proportion of drugs provided ($p < 0.001$), fully attended prescriptions ($p < 0.001$), and prescriptions by the generic name of the drug ($p < 0.001$); and lower proportion of unavailable drugs prescription ($p < 0.001$), when compared to PHU and OMC (Table 3).

By observing the prescriptions from the PHU and FHS for patients younger than 12 years old, a statistically significant difference was noticed between the number of drugs prescribed by the pediatricians of the PHU and by the family doctors ($p < 0.001$) (Table 3). In each service – OMC, PHU and FHS –, the prescriptions for patients aged 12 or less presented a higher average number of prescribed drugs, when comparing to the prescriptions for adult patients ($p < 0.001$), and a higher frequency of drugs that did not appear in the *Remume*: 96.9% of children *versus* 93.8% of adults ($p < 0.001$), considering the prescriptions in all services (Table 4).

Table 1 – Profile of the prescriptions received at the pharmacy of the Outpatient Medical Care/Primary Health Care Unit Vila Nova Jaguaré, according to prescriber origin and specialty, São Paulo-SP, July to October 2011

Place of care, origin and specialty of the prescriber	Prescriptions		Drugs	
	N	%	N	%
Outpatient Medical Care (OMC)	8,875	53.0	18,574	50.5
Pediatrics	3,006	18.0	7,071	19.2
General Medicine	5,869	35.1	11,503	31.3
Primary Health Care Units (PHU)	6,982	41.8	16,563	45.0
Pediatrics	1,835	11.0	5,575	15.2
General Medicine	4,285	25.6	9,659	26.2
Gynecology	862	5.2	1,329	3.6
Family Health Strategy (FHS)	863	5.1	1,655	4.5
Family Doctor	476	2.8	934	2.5
Nursing	387	2.3	721	2.0
Total	16,720	100.0	36,792	100.0

Table 2 – Description of the indicators obtained from drugs prescriptions received by the Outpatient Medical Care/ Primary Health Care Unit pharmacy of Vila Nova Jaguaré, São Paulo-SP, Brazil, July to October 2011

Indicator	Average number of drugs per prescription		Prescriptions fully answered		Drugs provided		Drugs prescribed that were in the Remume ^a		Drugs that were in the Remume ^a not dispensed due to unavailability		Drugs prescribed by their generic name	
	n	%	n	%	n	%	n	%	n	%	n	%
Outpatient Medical Care												
Pediatrics	2.4		2,592	86.2	6,618	93.6	6,682	94.5	65	1.0	6,574	93.0
General Medicine	2.0		5,099	86.9	10,605	92.2	11,092	96.4	213	1.9	10,882	94.6
Total	2.1		7,701	86.8	17,223	92.7	17,774	95.7	278	1.6	17,456	94.0
Primary Health Care Unit												
Pediatrics	3.0		1,475	80.4	5,101	91.5	5,185	93.0	72	1.4	5,082	91.2
General Medicine	2.3		3,881	90.6	9,079	94.0	9,466	98.0	66	0.7	9,398	97.3
Gynecology	1.5		748	86.8	1,215	91.4	1,185	89.2	32	3.7	1,159	87.2
Total	2.4		6,104	87.4	15,395	92.9	15,836	95.6	170	1.1	15,639	94.4
Family Health Strategy												
Family Doctor	2.0		440	92.4	890	95.3	919	98.4	7	0.8	926	99.1
Nursing	1.9		362	93.5	701	97.2	718	99.6	6	0.8	712	98.7
Total	1.9		802	92.9	1,591	96.1	1,637	98.9	13	0.8	1,637	98.9
Primary Health Care Facility												
Total	2.2		14,597	87.3	34,209	93.0	35,247	95.8	461	1.3	34,732	94.4

a) Remume: Relação Municipal de Medicamentos Essenciais

Discussion

The average number of drugs prescribed, regardless of the patient's age and if it was prescribed by doctors or nurses, was lower among the FHS prescriptions, when comparing to the PHU. The use of the generic name of the drugs and the frequency of prescribing drugs that were in the *Remume* was higher among the prescribers from the FHS, comparing to the other services analyzed. For patients aged less than 12 years old, the average number of drugs per prescription was higher in the PHU than in the OMC or FHS. For these children, it was also observed that, in any of the services, the prescription of drugs that were not included in the *Remume* was more frequent.

So far, we could not find studies on the importance and challenge of collecting and analyzing *SUS* pharmacies' indicators that considered their peculiarities. Although the average number of drugs has been described in many Brazilian studies,¹²⁻¹⁶ conducted between 2002 and 2006, most of these studies have not analyzed the prescriptions of the general medicine and pediatrics separately, which was recommended by WHO.⁹ For the PHU prescriptions analyzed in this present study, the average number of 2.3 drugs per prescription is similar to the one described in other researches with data of prescriptions from primary health care units located in Campo Grande-MS (2002), in the Federal District (2004) and in Esperança-PB (2007), and higher than the ones observed in Ribeirão Preto-SP (2004) and Ibitiporã-PR (2006).¹²⁻¹⁶

The average number of drugs prescribed for FHS patients (2.0) was lower than the corresponding average for PHU patients, for both doctors and nurses. However, it was higher than the one described in other studies that evaluated the medication use in FHS units from Santa Cruz do Sul-RS, Blumenau-SC and Campina Grande-PB.¹⁷⁻¹⁹ We could not find studies that allowed a comparison with data obtained from OMC prescriptions.

The lower average number of drugs prescribed at FHS for patients aged less than 12 years old and for adults may be explained by the longitudinality of care, the easier access to prescribers (doctors and nurses) due to the proximity of the team with the patients, and the role played by the community health agent, turning the prescription of drugs for storing in the household less common.

The number of drugs prescribed for patients younger than 12 years old was significantly higher in the PHU prescriptions when comparing to children who go to OMC and FHS pediatrics. A possible reason may be the fact that the medicines dispensed in the facility's pharmacy are exclusively conducted under medical prescription. For instance, it is common that the pediatrics of a PHU prescribes painkillers – such as dipyron and paracetamol, antiemetic (dimenhydrinate) – with the use recommendation 'if necessary'. Some pediatricians even use stamps with these drugs, with a blank space only to describe the dose to be administered in the child, and use to prescribing these drugs in almost all the situations, many times by the mothers' request. A study by Fegadolli et al., conducted in Tabatinga-SP, reported an average number of 2.6 drugs in pediatrics prescriptions from PHU.²⁰

In the face of the population's access to drugs that are exempted of prescriptions, of the raising demand for medical appointments, of the risks related to self-medication and of storing drugs in the household, it is necessary to discuss alternatives to a responsible self-medication, i.e., that one guided by a health professional, as it is already conducted by the nursing team at the FHS and recommended by WHO.²¹ With the inclusion of pharmacists in the primary health care team, their contribution in this scenario should be taken into account. A recent Municipal Ordinance on dispensing of medicines in the public health system of São Paulo already recognizes the pharmacist as a prescriber, according to the Resolution of the Federal Council of Pharmacy (CFF) No. 586, dated 29 August 2013. Notwithstanding, there are no protocols for this activity yet, as there is for nursing.^{22,23}

For the population younger than 12 years old, it is more frequent to prescribe drugs that are not in the *Remume*, when compared to the frequency of such prescriptions to adults (older than 18 years old) in all the services – OMC, PHU and FHS. This result was already expected. The drugs selection, in general, favors the adult-patients, since they correspond the biggest population, proportionally, besides the difficulties in selecting drugs for pediatric use due to the lack of adequate pharmaceutical forms in the market and the shortage of clinical evidences on its safety, which is the reason why children are considered to be "therapeutic orphans".²⁴

Table 3 – Comparison between indicators from prescriptions received at the Outpatient Medical Care/ Primary Health Care Unit pharmacy of Vila Nova Jaguaré, São Paulo-SP, July to October 2011

Indicator	Type of health service		p-value
	Outpatient Medical Care	Primary Health Care Unit	
Number of drugs prescribed (all the prescriptions) average \pm standard deviation	Outpatient Medical Care	Primary Health Care Unit	<0.001 ^b
	2.1 \pm 1.4	2.4 \pm 1.5	
	Outpatient Medical Care	Family Health Strategy	<0.001 ^b
	2.1 \pm 1.4	1.9 \pm 1.0	
Number of drugs prescribed by pediatricians average \pm standard deviation	Outpatient Medical Care	Primary Health Care Unit	<0.001 ^b
	2.4 \pm 1.4	3.0 \pm 1.7	
Number of drugs prescribed by general practitioner average \pm standard deviation	Outpatient Medical Care	Primary Health Care Unit	<0.001 ^b
	2.4 \pm 1.4	3.0 \pm 1.7	
Number of drugs prescribed for patients \leq 12 years old average \pm standard deviation	Primary Health Care Unit	Family Health Strategy	<0.001 ^b
	3.6 \pm 1.8	2.3 \pm 1.5	
Proportion of drugs (%) prescribed that are in the Remume ^a (among all the prescriptions)	Outpatient Medical Care	Family Health Strategy	<0.001 ^c
	95.7	98.9	
	Primary Health Care Unit	Family Health Strategy	<0.001 ^c
	95.6	98.9	
Proportion (%) of drugs provided (among all the prescriptions)	Outpatient Medical Care	Family Health Strategy	<0.001 ^c
	92.7	96.1	
	Primary Health Care Unit	Family Health Strategy	<0.001 ^c
	92.9	96.1	
Proportion (%) of drugs prescribed using their generic name (among all the prescriptions)	Outpatient Medical Care	Family Health Strategy	<0.001 ^c
	94.0	98.9	
	Primary Health Care Unit	Family Health Strategy	<0.001 ^c
	94.4	98.9	
Proportion (%) of prescription fully answered (among all the prescriptions)	Outpatient Medical Care	Family Health Strategy	<0.001 ^c
	86.8	92.9	
	Primary Health Care Unit	Family Health Strategy	<0.001 ^c
	87.4	92.9	
Proportion (%) of drugs in the Remume ^a not dispensed due to unavailability (among all the prescriptions)	Outpatient Medical Care	Family Health Strategy	<0.001 ^c
	1.6	0.8	
	Primary Health Care Unit	Family Health Strategy	<0.001 ^c
	1.1	0.8	

a) Remume: Municipal List of Essential Drugs

b) T-student test

c) Chi-square test

Table 4 – Comparison between indicators from prescriptions considering all the prescribers, for adults (≥ 18 years old) and children (≤ 12 years old), received at the Outpatient Medical Care/ Primary Health Care Unit pharmacy of Vila Nova Jaguaré, São Paulo-SP, July to October 2011

Indicator	Adults	Children	p-value
Number of drugs prescribed in the Outpatient Medical Care (OMC) average \pm standard deviation	2.0 \pm 1.7	2.5 \pm 1.4	<0.001 ^b
Number of drugs prescribed in the Primary Health Care Unit (PHU) average \pm standard deviation	2.3 \pm 1.6	3.6 \pm 1.8	<0.001 ^b
Number of drugs prescribed in the Family Health Strategy (FHS) average \pm standard deviation	1.8 \pm 1.6	2.3 \pm 1.5	<0.001 ^b
Proportion of drugs (%) prescribed that are not in the <i>Remume</i> ^a	93.8	96.9	<0.001 ^c

a) *Remume*: Municipal List of Essential Drugs

b) T-student test

c) Chi-square test

The use of the generic name of the drug and the prescription frequency of the drugs that are in the *Remume* were higher among the FHS prescribers, both doctors and nurses, when comparing these prescriptions frequency with OMC and PHU. At the OMC the team changes are more common and the doctors work on shifts, and this brings the need to pass and reinforce the recommendations and interventions on prescriptions periodically. Nevertheless, at the PHU, there is a resistance in working with a multidisciplinary team, with the patient care being the center of the doctor's role. The FHS professionals are used to working in teams, accepting more naturally the observations and requests proposed by other health professionals, such as the pharmacist. Besides, the FHS prescribers usually work full time for *SUS*, in a total of 40 hours/week, which is not common among the doctors from other services.²⁵

Anyhow, the values verified for both indicators were bigger than the results found in all the other Brazilian studies that could be compared.^{13-18,20,26,27} At the FHS, it is noted that around half of the prescriptions were made by nurses, especially in terms of procedures related to women's and children's health, expanding the reception care, essential characteristic of these professionals.⁴

With regard to women's and mothers' health, two studies on prescription indicators described the inclusion of prescriptions in the gynecology analysis; however, they did not present the data.^{16,28}

Cunha et al. reported that 80.7% of the prescribed drugs were provided during general practitioners and pediatricians care in 12 primary health care

facilities in the urban area of Campo Grande-MS, between July 1998 and June 1999.¹³ When observing general practitioners and pediatricians care in ten primary health care facilities in Ribeirão Preto-SP in May 1998, Santos and Nitrini found that 60.3% of the prescribed drugs were provided.¹⁴ Naves and Silver described that 61.2% of the drugs prescribed were effectively dispensed in 15 health units in the Federal District, in 2001.¹⁵ The authors of this study revealed some difficulties to calculate this indicator, due to the lack of notes on providing, not standardized notes among the pharmacy team, dispensing of medicines not standardized (free samples or donations) or, still, not getting the duplicate of the prescription, compromising the data collection.^{13,14,19} Once the data collection of this present study was conducted during the dispensing of medicines, not depending on the retention of the duplicate or the notes, these problems were avoided. Another important point: in the health unit, donations or free samples were not accepted, because the origin or quality of the products could not be assured.

When it comes to the lack of drugs in the *Remume*, there are two points to be considered. The first is about the adequate management of drugs stock, resulting in a reduction of waste and adjustment in the distribution form of the drug, from the warehouse to the unit.²⁹ The second point refers to the possible occurrence of replacement of the pharmaceutical form or the drug itself, after publishing the unavailable drugs, a routine in the studied health unit. It is important to highlight that there were some advances in drugs management by the

Municipal Health Department, with the implementation of an electronic system in all health units and the full time presence of a pharmacist, for example. With regard to drugs availability during the studied period, the observed lack is explained by the recall of injectable contraceptives from the Brazilian market. Moreover, this study shows that a team of well trained technicians by the pharmacist may collect reliable data, contributing with a systematic evaluation of indicators. This finding is more positive when it is known that the system does not offer reports that are able to contribute with the indicators calculation, even with an electronic system to manage the stock and register the outputs of the dispensed medicines.

The main limitation of this study was the fact that it was conducted in only one health unit. There is also a variation in the methods used in the studies available on this subject, which impairs the comparison of the results, and the challenge of the manual data collection, due to the absence of a report of the electronic system with these information. This is the first study that discusses the difference in drugs prescription in the PHU (traditional model) and in the FHS, and evaluates the prescription profile in an OMC.

It is important to note a consistent analysis for some of the indicators, because some of the prescriptions in the unit were direct influenced by the work done by the pharmacy team. The requisition for prescribing drugs by their generic name was based on education interventions that started on May 2007.³⁰ Besides, from time to time, the pharmacy provides a list with the essential drugs from *Remume* to the prescribers, in alphabetical order and their pharmacotherapeutic classification, besides informing the list of unavailable drugs, so alternative medicines

can be prescribed. The team also performs direct interventions with the prescriber, asking them to adapt the prescription, when the commercial name is written or the presentation is different from the recommended one.

In this sense, in mixed units, the analysis of the prescription indicators' results may be more difficult due to the difference in the prescription profile, depending on the service provided by the unit. Furthermore, the analyzed indicators can be used to evaluate interventions, although the comparison with other health care units, especially those with highest coverage of the FHS, or those that do not offer emergency care services, should be interpreted with caution.

Finally, since the fulltime PHU model – health care units with programmed care (PHU and FHS) and simple emergency care (OMC) in the same place – has been adopted in São Paulo and can be expanded to other cities, it is relevant to discuss how to calculate and interpret the indicators to evaluate the pharmacy services that are being implemented in these units.

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Authors' contributions

All the authors contributed to the study conception and design, data analysis and interpretation, drafting and critical revision of the manuscript's intellectual content. They approved the final version and declared to be responsible for all aspects of the work, ensuring its accuracy and integrity.

References

1. Giovanella L, Mendonça MHM, Almeida PF, Escorel S, Senna MCM, Fausto MCR, *et al.* Saúde da família: limites e possibilidades para uma abordagem integral de atenção primária à saúde no Brasil. *Cien Saude Coletiva*. 2009 maio-jun;14(3):783–94.
2. Silva LA, Casotti CA, Chaves SCL. A produção científica brasileira sobre a Estratégia Saúde da Família e a mudança no modelo de atenção. *Cien Saude Coletiva*. 2013 jan;18(1):221-32.
3. Sousa ME, Hamann EM. Programa Saúde da Família no Brasil: uma agenda incompleta? *Cien Saude Coletiva*. 2009 set-out;14 supl 1:1325-35.
4. Escorel S, Giovanella L, Mendonça MHM, Senna MCM. O Programa de Saúde da Família e a construção de um novo modelo para a atenção básica no Brasil. *Rev Panam Salud Publica*. 2007 fev-mar;21(2-3):164–76.
5. Ministério da Saúde (BR). Departamento de Atenção Básica. Sistema de Informação da Atenção Básica [Internet]. Brasília: Ministério da Saúde; 2015

- [citado 2016 fev 12]. Disponível em: http://dab.saude.gov.br/portaldab/historico_cobertura_sf.php
6. Viana ALD, Dal Poz MR. A reforma do sistema de saúde no Brasil e o Programa de Saúde da Família. *Physis*. 2005;15 supl:225–64.
 7. Secretaria Municipal de Saúde (SP). AMA - Assistência Médica Ambulatorial [Internet]. São Paulo: Secretaria Municipal de Saúde; 2013 [citado 2014 mar 20]. Disponível em: http://www.prefeitura.sp.gov.br/cidade/secretarias/saude/atencao_basica/ama/index.php?p=1911
 8. Secretaria Municipal de Saúde (SP). Diretrizes gerais: Unidade Básica de Saúde (UBS). [Internet]. São Paulo: Secretaria Municipal de Saúde; 2015 [citado 2015 maio 6]. Disponível em: [http://www.prefeitura.sp.gov.br/cidade/secretarias/upload/saude/Diretrizes_Geraiz_UBS_final_baixa\(1\).pdf](http://www.prefeitura.sp.gov.br/cidade/secretarias/upload/saude/Diretrizes_Geraiz_UBS_final_baixa(1).pdf)
 9. World Health Organization. How to investigate drug use in health facilities: selected drug use indicators [Internet]. Geneva: World Health Organization; 1993 [cited 2014 Apr 12]. (Action programme on essential drugs). Available from: <http://apps.who.int/medicinedocs/en/d/Js2289e/>
 10. Agência Nacional de Vigilância Sanitária. Diagnóstico situacional da promoção de medicamentos em unidades de saúde do Sistema Único de Saúde (SUS) [Internet]. Brasília: Anvisa; 2010 [citado 2014 abr 12]. Disponível em: http://portal.anvisa.gov.br/wps/wcm/connect/6567a80047457a738711d73fbc4c6735/Relatorio_UBS_final_jan2011.pdf?MOD=AJPERES
 11. Canabarro IM, Hahn S. Panorama da assistência farmacêutica na saúde da família em município do interior do estado do Rio Grande do Sul. *Epidemiol Serv Saude*. 2009 dez;18(4):345-55.
 12. Portela AS, Silva PCD, Simões MOS, Medeiros ACD, Montenegro Neto AN. Indicadores de prescrição e de cuidado ao paciente na atenção básica do município de Esperança, Paraíba, 2007. *Epidemiol Serv Saude*. 2012 jun;21(2):341-50.
 13. Cunha MCN, Zorzatto JR, Castro LLC. Avaliação do uso de medicamentos na rede pública municipal de saúde de Campo Grande/MS. *RBCF, Rev Bras Cienc Farm*. 2002 abr-jun;38(2):215–27.
 14. Santos V, Nitrini SMOO. Indicadores do uso de medicamentos prescritos e de assistência ao paciente de serviços de saúde. *Rev Saude Publica*. 2004 dez;38(6):819-34.
 15. Naves JOS, Silver LD. Avaliação da assistência farmacêutica na atenção primária no Distrito Federal. *Rev Saude Publica*. 2005 abr;39(2):223-30.
 16. Giroto E, Silva PV. A prescrição de medicamentos em um município do Norte do Paraná. *Rev Bras Epidemiol*. 2006 jun;9(2):226-34.
 17. Colombo D, Santa Helena ET, Agostinho ACMG, Didjurgeit JSMA. Padrão de prescrição de medicamentos nas unidades de programa de saúde da família de Blumenau. *Rev Bras Cienc Farm*. 2004 out-dez;40(4):549-58.
 18. Farias AD, Cardoso MAA, Medeiros ACD, Belém LE, Simões MOS. Indicadores de prescrição médica nas unidades básicas de Saúde da Família no município de Campina Grande, PB. *Rev Bras Epidemiol*. 2007 jun;10(2):149-56.
 19. Fröhlich SE, Mengue SS. Os indicadores de qualidade da prescrição de medicamentos da Organização Mundial da Saúde ainda são válidos? *Cien Saude Colet*. 2011 abr;16(4):2289-96.
 20. Fegadolli C, Mendes IJM, Simões MJS. Avaliação da prescrição médica em pediatria, baseada nos indicadores do uso de medicamentos selecionados pela OMS em município do interior do estado de São Paulo. *Rev Bras Cienc Farm*. 2002;23(2):239-54.
 21. World Health Organization. The role of the pharmacist in self-care and self-medication [Internet]. Geneva: World Health Organization; 1998 [cited 2015 Apr 27]. 17 p. Available from: <http://apps.who.int/medicinedocs/en/p/printable.html>
 22. Conselho Federal de Farmácia. Resolução nº 586, de 29 de agosto de 2013. Regula a prescrição farmacêutica e dá outras providências [Internet]. Brasília: Conselho Federal de Farmácia; 2013. Disponível em: <http://www.cff.org.br/userfiles/file/resolucoes/586.pdf>
 23. São Paulo. Portaria nº 338/2014-SMS.G, de 06 de fevereiro de 2014. Normatiza a prescrição e a dispensação de medicamentos no âmbito das unidades pertencentes ao Sistema Único de Saúde (SUS) sob gestão municipal. *Diário Oficial da Cidade de São Paulo* [Internet], São Paulo (SP), 2014 fev 06 [citado 2015 abr 27]; 25:19. Disponível em: [http://www.cff.org.br/userfiles/file/noticias/SMS de S%C3%A3o Paulo - Portaria n%C2%BA 338-2014%28prescri%C3%A7%C3%A3o de medicamentos%29.pdf](http://www.cff.org.br/userfiles/file/noticias/SMS%20de%20S%C3%A3o%20Paulo%20-%20Portaria%20n%C2%BA%20338-2014%28prescri%C3%A7%C3%A3o%20de%20medicamentos%29.pdf)

24. Costa PQ, Rey LC, Coelho HLL. Carência de preparações medicamentosas para uso em crianças no Brasil. *J Pediatr*. 2009 maio-jun;85(3):229-35.
25. Lima-Costa ME, Turci MA, Macinko J. Estratégia Saúde da Família em comparação a outras fontes de atenção: indicadores de uso e qualidade dos serviços de saúde em Belo Horizonte, Minas Gerais, Brasil. *Cad Saude Publica*. 2013 jul;29(7):1370-80.
26. Simões MJS, Falvo IF. Estudo da prescrição de medicamentos para idosos atendidos em serviço público de saúde, em município da região sudeste, Brasil 1999. *Rev Bras Cienc Farm*. 2000;21(2):217-27.
27. Oliveira CAP, Marin MJS, Marchioli M, Pizoletto BHM, Santos RV. Caracterização dos medicamentos prescritos aos idosos na Estratégia Saúde da Família. *Cad Saude Publica*. 2009 maio;25(5):1007-16.
28. Souza JM, Vinholes ER, Trauthman SC, Galato D. Avaliação dos indicadores de prescrição e da demanda atendida de medicamentos no Sistema Único de Saúde de um município do Sul do Estado de Santa Catarina. *Rev Cienc Farm Basica Apl*. 2012;33(1):107-13.
29. Melo DO, Castro LLC. O farmacêutico promovendo o acesso e uso racional de medicamentos essenciais no SUS. *Cien Saude Colet*. No prelo 2016.

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