





Data transparency for building a stronger healthcare system: A case study from Argentinean administrative drug utilization data sources


Transparencia de datos para construir un sistema de salud más sólido: estudio de caso de bases de datos administrativas argentinas sobre utilización de medicamentos

Martín Cañas¹, Gustavo H. Marín², Martín A. Urtasun³, Lisiane Freitas Leal⁴, Maribel Salas⁵, Monique Elseviers⁶, Luciane Cruz Lopes⁷


¹Corresponding author.


Physician, Master in Pharmacoepidemiology. Federación Médica de la Provincia de Buenos Aires, La Plata, Argentina. Universidad Nacional Arturo Jauretche, Florencio Varela, Argentina. 


²Doctor in Medicine. Universidad Nacional de La Plata, La Plata, Argentina. Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina. 

³Physician, Master in Epidemiology, Management and Health Policies. Federación Médica de la Provincia de Buenos Aires, La Plata, Argentina. Universidad Nacional Arturo Jauretche, Florencio Varela, Argentina. 

⁴Doctor in Epidemiology. McGill University, Montreal, Canada. 

⁵Doctor of Science. Daiichi Sankyo Inc, New Jersey. CPeRT-CCEB, Perelman School of Medicine, University of Pennsylvania, Philadelphia, USA. 

⁶Doctor in Medical Sciences. Department of Basic and Applied Medical Sciences, Clinical Pharmacology Research Unit, Ghent University, Ghent, Belgium. 

⁷Doctor in Pharmacology and Therapeutics. Universidade de Sorocaba, São Paulo, Brazil. 

ABSTRACT In order to compile an inventory of national data sources for drug utilization research (DUR) in Argentina and to verify publicly available data sources, we performed a cross-sectional study that sought to identify national and provincial databases of drug use. In July 2020, we searched the websites of government institutions, carried out a systematic query of bibliographic databases for “drug utilization research” conducted in Argentina, and conducted a survey with local experts. Data collected included: the institution responsible for the database, population covered, accessibility, source of the data, healthcare setting, geographic information, and whether data were individual or aggregated. Descriptive analyses were then performed. We identified 31 data sources for DUR; only one was publicly and conveniently accessible. Five published aggregated data and provide more detailed access by formal request. Only seven sources (23%) reported national data, and most (n = 29) included only data from the public healthcare sector. Although data sources for DUR have been found in Argentina, limited access by researchers and policymakers is still a significant obstacle. Increasing health data transparency by making data sources publicly available for the purpose of analyzing public health information is crucial for building a stronger health system.

KEY WORDS Drug Utilization Evaluation; Pharmacoepidemiology; Drug Databases; Argentina.

RESUMEN Para realizar un inventario de fuentes de datos nacionales sobre utilización de medicamentos en Argentina y verificar las fuentes de datos disponibles públicamente, llevamos a cabo un estudio transversal que investiga la existencia de bases de datos nacionales y provinciales sobre utilización de medicamentos. En julio de 2020, realizamos una búsqueda en sitios web de instituciones gubernamentales, una búsqueda sistemática en bases de datos bibliográficas sobre “drug utilization research” en Argentina y una encuesta de expertos. Se identificaron 31 fuentes de datos de utilización de medicamentos, solo una era de acceso público y conveniente, cinco publicaban datos agregados y proporcionaban un acceso más detallado mediante solicitud formal, solo siete fuentes (23%) informaban datos nacionales, y la mayoría de ellas (n = 29) incluían solo datos del sector pública de salud. Aunque se han encontrado fuentes de datos de utilización de medicamentos en Argentina, el acceso a investigadores y legisladores sigue siendo una barrera importante. Aumentar la transparencia de los datos de salud a través de fuentes disponibles públicamente para analizar la información de salud pública es crucial para construir un sistema de salud más sólido.

PALABRAS CLAVES Evaluación de Utilización de Medicamentos; Farmacoepidemiología; Bases de Datos Farmacéuticas; Argentina.

BACKGROUND

The need for data-driven decisions and research-based knowledge to plan and implement health policies is essential. Although health data is generated and compiled consistently, its evaluation is limited.

Drug Utilization Research (DUR) has been defined by the World Health Organization (WHO) as “the marketing, distribution, prescription and use of drugs by society to determine the resulting medical, social and economic consequences,”⁽¹⁾ and more recently, as an “eclectic collection of descriptive and analytical methods for the quantification, the understanding and the evaluation of the processes of prescribing, dispensing and consumption of medicines, and for the testing of interventions to enhance the quality of these processes.”⁽²⁾

DUR is important to identify potential problems associated with drug use and to quantify them, as well as to design and evaluate drug policies. It may allow the identification and quantification of the divergence between data from clinical trials in experimental conditions, daily clinical practice, and the health needs of the population, which are consolidated to design and implement best prescribing and dispensing practices. It is also useful to explore differences in drug exposure relative to specific outcomes and to optimize policies for promoting appropriate drug use.

Argentina has 45 million inhabitants and its health system consists of three subsectors: 57% of people have health coverage through the “social security” subsector, which is a system of mandatory insurance linked to employment sector; 5% is covered through voluntary private insurance; and the remaining 38% relies upon the public subsector.⁽³⁾ Due to its size, Argentina ranks fourth in Latin American pharmaceutical markets, with nearly 65% of drugs currently being supplied by locally-manufactured industries.⁽⁴⁾

As Argentina has a federal system of government, each of the 23 provinces and the Autonomous City of Buenos Aires has its own

healthcare system. The national Ministry of Health fulfills regulatory and stewardship functions. National drug regulations cover everything from research to aspects related to the access, quality, and rational use of medicines. The national regulatory agency is known as the *Administración Nacional de Medicamentos, Alimentos y Tecnología Médica* (ANMAT), and it is considered a regional reference regulatory agency by the Pan American Health Organization (PAHO).⁽⁵⁾

Concerning the use and access to medicines, the fragmentation of the healthcare system and the existence of different lists of essential medicines for each subsector implies many challenges to providing equitable access to medicines. The Remediar Program is a program implemented in the public subsector of the health system aimed at providing free access to essential medicines for 15 million people, which has a positive redistributive impact.⁽⁶⁾ Argentina has also taken measures to encourage the rational use of drugs, such as the definition of a list of essential drugs for the public subsector, the promotion of prescription and dispensing of generic drugs, and the development of guidelines for managing diseases covered by the social security subsector. Compliance with these regulations, however, is insufficient in the healthcare sector.

In 1992, during the foundational meeting of the Argentine Group for the Rational Use of Medicines (*Grupo Argentino para el Uso Racional de Medicamentos*, or GAPURMED, for its Spanish acronym), the need to carry out pharmacoepidemiological studies was highlighted.⁽⁷⁾ Since then, the group has produced countless field studies that have been presented at national meetings, many of them aimed at sensitizing involved health professionals, planning interventions to solve problems, and evaluating their impact. Unfortunately, most of these studies were not published nor did they become part of the gray literature, with little access to them. Over the years, only a small percentage of these studies have been published, mainly by universities or national journals. A few studies have been carried out using data sources

from institutions that provide medicines with coverage at the national or provincial level.

Access to standardized and validated information on drug use is essential for evaluating drug use patterns, problem identification, educational interventions, and monitoring the results of access and rational use programs. DUR is important for policy formulation at the national level, as well as for individual patient management. But in Argentina, as in most Latin American countries, the availability of information on drug consumption and spending is scarce.⁽⁸⁾ Furthermore, it is expected that at least the information on drug utilization from public entities be freely available, with the appropriate safeguards, to carry out DUR.

Therefore, this study aimed to identify data sources on drug use from public agencies and to verify their accessibility for DUR in Argentina. This study is part of the ongoing “Data Sources for Drug Utilization Research in Latin American Countries: Cross-National Comparison” (DASDUR-LATAM) Study,⁽⁹⁾ which intends to take an inventory of available national drug utilization data in the Latin American region as potential data sources for DUR.

METHODS

Design

This is a cross-sectional study that investigates the existence of national and provincial data sources on drug utilization.

Search Strategy

We combed through the websites of national and provincial government authorities that implement programs involving the use of medications, as well as those that provide information from the pharmaceutical industry, through July of 2020.

We searched bibliographic databases (Medline/PubMed and LILACS) for studies or documents published from the inception of the database up to and including July 2020,

with no limits regarding publication date, publication type, or status. We also looked for examples of DUR that have been conducted in Argentina or that involve the use of Argentinean data sources.

The search strategy was based on thesaurus terms and free-text keywords to combine the concepts DUR and Argentina. Additionally, we did a free-text search in Google Scholar and Google using the following keywords both in English and in Spanish: drug use, drug utilization, DUR, Argentina, pharmacoepidemiology, and database.

We conducted a brief online survey to complement information about the characterization of data sources, and to investigate the availability of databases at the provincial level (not accessible through their websites or from the bibliographic search). The survey was administered to the members of three drug networks: the aforementioned GAPURMED, the Argentine Network of Drug Information Centers (RACIM), and a national network of experts in health technology assessment. The questionnaire asked them about their knowledge and/or use of publicly accessible databases suitable for conducting DUR. If necessary, affirmative responses were confirmed via e-mail exchange with respondents.

Type of data sources (eligibility criteria)

We defined a data source for DUR as any data source with information about the use of medications including volume and price supported by governmental organizations.

We included public data sources at the national or provincial level, and/or data sources containing a mix of data from the public and private sectors. We excluded data from private organizations, individual hospitals, or individual primary care or specialized clinics, and data sources from health insurance companies or sickness funds. We also excluded data sources from commercial data providers, such as IQVIA.

The screening process

Two researchers (MC and MAU) independently assessed data sources to decide whether they met the eligibility criteria. Possible divergences were resolved by a third researcher (GHM).

Data extraction and analysis

Once eligible data sources were identified, a checklist was used to extract the following information: 1) institution responsible for the database; 2) covered population; 3) accessibility (publicly and convenient; restricted pre-authorized protocol only access; available only to researchers working in the institution; unclear process for obtaining data, lack of general regulation; and other); 4) source of the data (wholesalers, pharmacy, physician, others); 5) healthcare setting (hospital, ambulatory care, both); 6) geographic scale (national, regional, provincial, other); 7) type of data (aggregated or individual level). Data were analyzed descriptively.

RESULTS

A total of 35 publicly available data sources were identified. Seven databases derived from official websites on drug use, 10 data sources found through bibliographic searches, and an additional 18 data sources at the provincial level identified through the online survey that included responses from 30 drug experts.

Once the duplicated data sources were excluded, 31 different sources of information for DUR remained: seven (23%) reported national data and the other 24 provincial-level data (Figure 1).

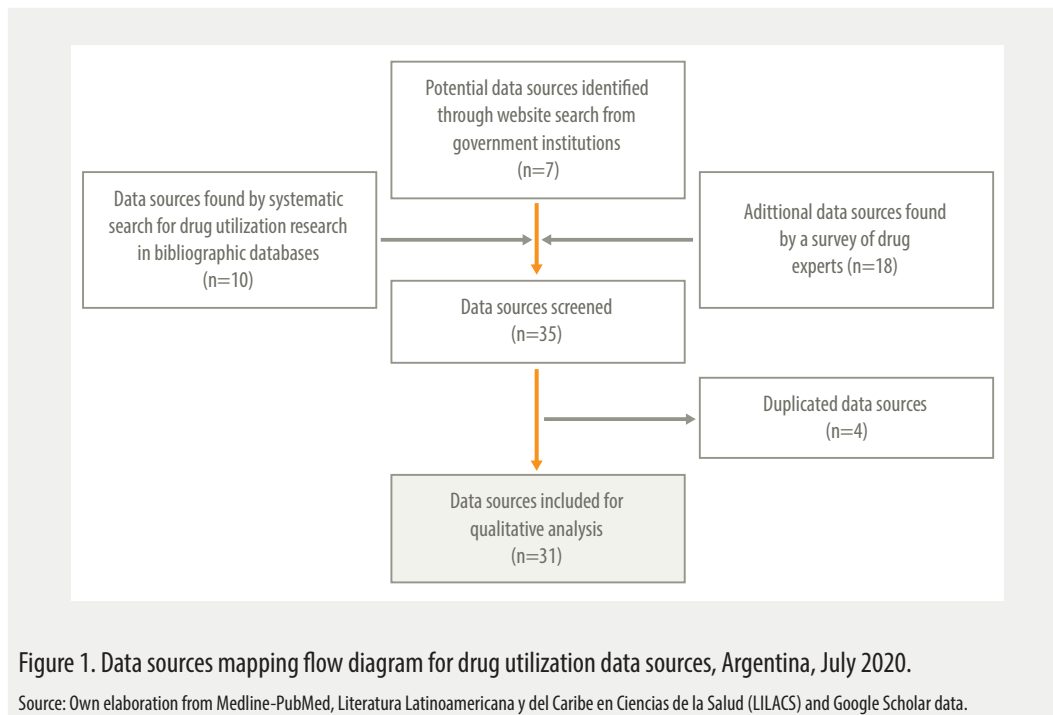
Our query of the Argentine Ministry of Health's website identified the Argentine Integrated Health Information System (SISA, for *Sistema Integrado de Información Sanitaria Argentino*), which was developed to serve as the basis for harmonizing data from different registries and programs with national reach, seeking to articulate pre-existing information

sources in an integrated framework.⁽¹⁰⁾ Some of the national drug data sources identified were already included in SISA (Remediar Program and SUMAR). The other two were INDEC and PAMI (Table 1).

The Remediar Program is a national government program that provides free access to essential medications to the population covered exclusively by the public sector and is implemented through the provincial health services. The program has been used to perform several DUR.^(11,12,13,14,15) Data generated by the program are obtained from the prescription forms that include patient data (name, age, sex, etc.), coded diagnosis, and drug name. The program has a complementary data source called "*transferencias monetarias por medicamentos*" (cash transfers for medications) that offers an overview of transfers (drug, number of packages by province, ATC code in the first level, and year) made by the Remediar Program. Information can be visualized at the national and provincial levels.

SUMAR is a national program that provides basic effective coverage for people without other forms of health insurance. Although common ambulatory drugs are provided through the Remediar Program, treatment for specific diseases and high-cost medicines might be supplied by SUMAR. Data from SUMAR contains information about beneficiaries, services, benefits, and medications provided by the program. Access to data is available only to researchers working in the institution.⁽¹⁶⁾

INDEC is the *Instituto Nacional de Estadística y Censos* (National Institute of Statistics and Census). The Institute provides quarterly data on sales revenues of pharmaceutical products for human use, classified by the first level of the Anatomical Therapeutic Classification (ATC) of the World Health Organization, and provides information on production at the national level, resale of imports, country of origin of basic drugs, among other data. Furthermore, INDEC conducts periodic surveys of household consumption and surveys of risk factors for chronic diseases in the general population, in cooperation with



the National Ministry of Health. These surveys have been used to report specific aspects of drug use, such as the family spending on drugs, or the prevalence of drug use for diabetes or hypertension.^(17,18)

PAMI is the National Institute of Social Services for Retirees and Pensioners, providing medical assistance to 76% of people in the country over 65 years of age.⁽¹⁹⁾ The database contains individualized information on outpatient drug dispensations, including generic and brand name, pharmaceutical product, total price, and out-of-pocket expense. This database has been used for studies of psychotropic and hypertension drugs, among others.^(18,20,21,22)

The other three national data sources focused on specific issues. They are: the National Pharmacovigilance System (SNFV, for its Spanish acronym); the National Program for HIV Care; and the National Bank of Special Drugs, dedicated mainly to the provision of cancer drugs.

The National Pharmacovigilance System – operating within the ANMAT – is in charge of

detecting, evaluating, understanding, and preventing adverse effects derived from the use of medications and vaccines. The database of the Pharmacovigilance Department contains the necessary information for monitoring and control actions. In addition to annual reports, some DUR has been published.^(23,24)

The Drug Bank at the National Ministry of Health provides essential cancer drugs to patients who only have public health coverage and receive care in public hospitals.⁽²⁵⁾ Similarly, the National Program for the Prevention and Control of HIV/AIDS provides antiretroviral drugs to the same population. Aggregated reports of the Program are regularly updated.^(26,27)

The coverage of uninsured people by the public sector is provided by 24 provincial healthcare systems; outpatient medications are supplied by the Remediador Program, which is described above. In addition, the provinces have their own social security systems (*Obra Social Provincial*, or OSP) for public employees and their families. Therefore, there are 24 OSPs, each one with its own administrative

Table 1. Characteristics of the administrative databases on drug use, Argentina, 2020.

Data source acronym	Data source full name	Accessibility	Geographic granularity	Type of data	Institution responsible for the database	Website	Sector	Source of the data	Health care setting	Years coverage
APOS	Administración Provincial de Obra Social	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of La Rioja	Website	Public	Pharmacy records	Ambulatory only	Unknown
APROSS	Administración Provincial de Seguros de Salud	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Córdoba	Website	Public	Pharmacy records	Ambulatory only	Unknown
BNDE	Banco Nacional de Drogas Especiales	Restricted access to program managers, (however some limited data could be available). Online data sources no available	National and provincial	Aggregate and individual level data	Ministry of Health of the Nation	Website	Public	Pharmacy records	Ambulatory and hospital (possible to separate)	Unknown
CSS	Caja de Servicios Sociales	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Santa Cruz	Website	Public	Pharmacy records	Ambulatory only	Unknown
DOS	Dirección de Obra Social	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of San Juan	Website	Public	Pharmacy records	Ambulatory only	Unknown
DOSEP	Dirección de Obra Social del Estado Provincial	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of San Luis	Website	Public	Pharmacy records	Ambulatory only	Unknown
IAPOS	Instituto Autárquico Provincial de Obra Social	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Santa Fe	Website	Public	Pharmacy records	Ambulatory only	Unknown
IASEP	Instituto de Asistencia Social de Empleados Públicos	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Formosa	Website	Public	Pharmacy records	Ambulatory only	Unknown
INDEC	Instituto Nacional de Estadística y Censos	Publicly and conveniently accessible on line	National	Aggregate level data	INDEC (Decentralized Organization that depends on the National Ministry of Economy)	Website	Public and private	Wholesalers	Ambulatory and hospital (possible to separate)	Available online since 2010
INSSEP	Instituto de Seguridad Social Seguros y Préstamos	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Chaco	Website	Public	Pharmacy records	Ambulatory only	Unknown
IOMA	Instituto de Obra Médico Asistencial	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Buenos Aires	Website	Public	Pharmacy records	Ambulatory only	Available since 2007
IOSCOR	Instituto de Obra Social de Corrientes	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Corrientes	Website	Public	Pharmacy records	Ambulatory only	Unknown
IOSEP	Instituto de Obra Social del Empleado Provincial	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Santiago del Estero	Website	Public	Pharmacy records	Ambulatory only	Unknown

Table 1. Continued.

Data source acronym	Data source full name	Accessibility	Geographic granularity	Type of data	Institution responsible for the database	Website	Sector	Source of the data	Health care setting	Years coverage
IOSPER	Instituto de Obra Social de la provincia de Entre Ríos	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Entre Ríos	Website	Public	Pharmacy records	Ambulatory only	Unknown
IPROSS	Instituto Provincial de Seguro de Salud	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Rio Negro	Website	Public	Pharmacy records	Ambulatory only	Unknown
IPS	Instituto de Previsión Social Misiones	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Misiones	Website	Public	Pharmacy records	Ambulatory only	Unknown
IPS	Instituto Provincial de Salud de Salta	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Salta	Website	Public	Pharmacy records	Ambulatory only	Unknown
IPSST	Instituto de Previsión y Seguridad Social de Tucumán	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Tucumán	Website	Public	Pharmacy records	Ambulatory only	Unknown
ISJ	Instituto de Seguros de Jujuy	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Jujuy	Website	Public	Pharmacy records	Ambulatory only	Unknown
ISSN	Instituto de Seguridad Social de Neuquén	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Neuquén	Website	Public	Pharmacy records	Ambulatory only	Unknown
OsBA	Obra Social de la Ciudad de Buenos Aires	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Autonomous City of Buenos Aires	Website	Public	Pharmacy records	Ambulatory only	Unknown
OSEF	Obra Social de la Provincia de Tierra del Fuego, Antártida e Islas del Atlántico Sur	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Tierra del Fuego	Website	Public	Pharmacy records	Ambulatory only	Unknown
OSEP	Obra Social de Empleados Públicos	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Mendoza	Website	Public	Pharmacy records	Ambulatory only	Unknown
OSEP	Obra Social de los Empleados Públicos	Restricted access to program managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Catamarca	Website	Public	Pharmacy records	Ambulatory only	Unknown
PAMI	Programa de Atención Médica Integral	Publicly and conveniently accessible online. Detailed data available to institution researchers or by special request. PAMI also has a data request form available on its website	National and provincial	Individual level data	Decentralized autonomous organization that depends directly on the national government. However formally depends on the Ministry of Health	Website	Public	Pharmacy records	Ambulatory only	Available since 2000

Table 1. Continued.

Data source acronym	Data source full name	Accessibility	Geographic granularity	Type of data	Institution responsible for the database	Website	Sector	Source of the data	Health care setting	Years coverage
Remediar	Programa Remediar	Publicly and conveniently accessible on line	National and provincial	Aggregate level data	Ministry of Modernization and National Secretary of Health	Website	Public	Wholesalers	Ambulatory only	Available since 2003
SEMPRE	Servicios Médicos Previsional	Restricted Access to Program Managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of La Pampa	Website	Public	Pharmacy records	Ambulatory only	Unknown
SEROS	Instituto de Seguridad Social y Seguros-Servicio de Obra Social	Restricted Access to Program Managers, (however some limited data could be available). Online data sources no available	Provincial	Individual level data	Ministry of Health, Province of Chubut	Website	Public	Pharmacy records	Ambulatory only	Unknown
SNFV	Sistema Nacional de Farmacovigilancia	Publicly and conveniently accessible on line. Detailed data available to institution researchers or by special request	National and provincial	Aggregate and individual level data	ANMAT (Administración Nacional de Medicamentos, Alimentos y Tecnología Médica)	Website	Public and private	Patient records	Ambulatory and hospital (possible to separate)	Available online since 2007
SUMAR	Programa SUMAR	Restricted Access to Program Managers, (however some limited data could be available). Online data sources no available	National and provincial	Aggregate level data	National Secretary of Health. Sub-Secretariat of Public Health Coverage	Website	Public	Patient records	Ambulatory only	Available online since 2006
SVIH	Sistema de Administración de Pacientes VIH	Publicly and conveniently accessible on line. Detailed data available to institution researchers or by special request	National and provincial	Aggregate and individual level data	Ministry of Health of the Nation	Website	Public	Pharmacy records	Ambulatory only	Unknown

Source: Own elaboration.

data, which would be a potential data source for DUR. The IOMA, the Province of Buenos Aires’ OSP – which covers about 2,000,000 people – is presented as case in point. It has an administrative database that contains information about dispensed medications, but access is limited to internal users. A small number of studies using this data have been published.^(28,29)

Only INDEC and National Pharmacovigilance System data include information about both the public and private sectors; all other sources cover public institutions.

In terms of the accessibility of data sources, INDEC data are publicly and conveniently accessible online. SUMAR, the Remediar Program, PAMI, the National Pharmacovigilance

System, and the HIV/AIDS Program regularly publish aggregated data on their websites. Studies that go into greater detail are available only to researchers working in the institution, or via formal requests for research purposes. This is also the case of the 24 OSPs. PAMI and the National Pharmacovigilance System have data request forms on their websites. The other data sources lack a clear process for obtaining data.

The INDEC database provides wholesaler information while the Remediar Program offers information on wholesale transfers from the program to the Provinces, patient record data, and individual dispensation data. The SUMAR database contains patient records and drug dispensation data. All other data sources

provide individual dispensation information through pharmacy records, except for the National Pharmacovigilance System, which registers individual adverse effects reports. The data from SUMAR, the Remediar Program, PAMI, the HIV/AIDS Program, and the 24 OSPs refer to outpatient settings. INDEC, the Drug Bank for cancer medicines and the National Pharmacovigilance System contain both outpatient and inpatient data, although only the last allows us to separate them.

Regarding geographic information, national data from SUMAR, the Remediar Program, PAMI, National Pharmacovigilance System, and the HIV/AIDS Program are disaggregated at the Province level.

DISCUSSION

There are multiple data sources for DUR in Argentina, at both the national and provincial levels. However, the lack of public availability and accessibility for DUR are important barriers for researchers and policymakers.

Few data sources offered access to data through the website (Table 1). The authors of most published studies that we reviewed belonged to the institution in which the study was carried out.^(11,29)

Our study only considered data sources from the public sector, but excluded those that provide healthcare coverage for employees of national universities, the Armed Forces, and the Judiciary and Legislative systems, due to their restricted scope. Nonetheless, the set of national and provincial data sources identified are responsible for covering more than 60% of the country's population. The rest of the population is covered by autonomous health insurance institutions in the social security subsector – which are regulated by the Superintendence of Health Services – and private insurance providers.⁽³⁰⁾

A recent study that evaluated data sources for conducting “real-world evidence” research identified 44 data sources in Argentina. This study was driven by the possibility of carrying out health technology assessment studies

in the broadest sense, which far exceeds the objective of our study, which was limited to DUR. However, the details of all analyzed databases were not provided, so it is not possible to establish direct comparisons.⁽³¹⁾

The value of clinical information stored in electronic medical records and administrative databases has been well established for a long time. As early as the late 1980s, the first primary care research databases were created in the United Kingdom; today there are numerous examples in many countries.⁽³²⁾ More recently, the metaphor of a “health ecosystem” has gained traction, to emphasize the multiplicity of actors in the healthcare sector and the dynamic nature of their interactions.⁽³³⁾ Data transparency, defined as the open access to information generated by public institutions, would make a significant contribution to better understanding their operation.⁽³⁴⁾

Obstacles to DUR in Latin American countries have recently been pointed out, and include factors such as the fragmentation of health systems, the inexistence of databases at the national level, and the lack of knowledge on the part of decision-makers regarding this type of study.⁽³⁵⁾

Comparisons between Latin American countries have been poorly documented. Also, the validity of comparisons is hampered by the potential risk of extrapolation bias, considering the availability of data on the use of medications in the public health sector.⁽⁸⁾

Health systems, funders, and providers must permanently record data to correct, adapt, or control healthcare claims. In pharmacoepidemiology, drug databases are necessary to monitor the prescription, dispensing, or consumption of drugs in a given population. However, the information generated by different actors in the healthcare system is reserved mainly for internal use in many countries and rarely shared with other institutions in the network.

As a result, even when drug databases are becoming more and more numerous, very few of them are freely and transparently accessible. Furthermore, many drug utilization data sources were identified through a

survey because they were not openly published. Obtaining data from public entities is discretionary as explicit requirements for accessing data are not stated.

Another source of drug use data is private companies, such as IQVIA, which collect retail sales information. However, these data correspond to the consumption of drugs in the private sector, and should not be extrapolated to the total national population.

Thus, there is a growing need for researchers and policymakers to work together to establish nationally validated data collection systems to accurately describe drug use in the country. Priority should be given to data from the public sector.

This study has shown that access to data sources for DUR from public entities in Argentina is limited. Although there is legislation in effect that guarantees access to public information (Law 27275)⁽³⁶⁾ and requires public agencies to provide essential data to the public regarding their activities, not all institutions have complied with these regulations. This situation is similar to other countries in the region.⁽³⁷⁾

Increasing health data transparency by making data sources publicly available for the purpose of analyzing public health information is crucial for structuring a stronger healthcare system and making data-driven decisions.

REFERENCES

1. WHO International Working Group for Drug Statistics, WHO Collaborating Centre for Drug Statistics Methodology, WHO Collaborating Centre for Drug Utilization Research and Clinical Pharmacological Services. Introduction to drug utilization research [Internet]. Oslo: WHO; 2003 [cited 9 Aug 2020]. Available from: <https://tinyurl.com/p7nfp7xb>.
2. Wettermark B, Elseviers M, Almarsdóttir AB, et al. Introduction to drug utilization research. In: Elseviers M, Wettermark B, Almarsdóttir AB, eds. Drug utilization research. Chichester: John Wiley & Sons Ltd; 2016. p. 3-12. doi: 10.1002/9781118949740.ch1.
3. Ministerio de Salud de la Nación. Análisis de Situación de Salud República Argentina: Edición 2018. Buenos Aires: Ministerio de Salud de la Nación; 2018.
4. Cámara Industrial de Laboratorios Farmacéuticos Argentinos. La industria farmacéutica argentina: su carácter estratégico y perspectivas. Buenos Aires: CILFA; 2020.
5. Pan American Health Organization. System for Evaluation of the National Regulatory Authorities of Medicines [Internet]. 2020 [cited 10 Oct 2020]. Available from: <https://tinyurl.com/2a2uthb7>.
6. Tobar F. Lecciones aprendidas en la provisión de medicamentos para la atención primaria de la salud. Salud Pública de México. 2008;50(Suppl 4):S463-S469.
7. Buschiazzo HO. Creación del Grupo Argentino por un Uso Racional del Medicamento: GAPURMED [Internet]. Vaquerías: Movimiento por un Sistema Integral de Salud; 1992 [cited 20 Jun 2020]. Available from: <https://tinyurl.com/32aw3vkc>.

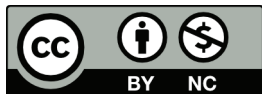
8. Durán CE, Christiaens T, Acosta Á, Vander Stichele R. Systematic review of cross-national drug utilization studies in Latin America: methods and comparability. *Pharmacoepidemiology and Drug Safety*. 2016;25(1):16-25. doi: 10.1002/pds.3896.
9. Lopes LC, Salas M, Osorio-de-Castro CGS, Acosta A, Crisante M, Baldoni AO, Marin G, Cañas M, et al. Data sources for drug utilization research in Latin American (LatAm) countries. *Pharmacoepidemiology and Drug Safety*. 2019;28(2):110-111.
10. Ministerio de Salud de la Nación. Sistema Integrado de Información Sanitaria Argentino [Internet]. 2020 [cited 11 Aug 2020]. Available from: <https://tinyurl.com/75z4d2sa>.
11. Marín GH, Cañas M, Homar C, Perrotta M. Utilización de medicamentos del Programa REMEDIAR en la provincia de Buenos Aires, Argentina. *Latin American Journal of Pharmacy*. 2008;27(4):535-542.
12. Bernztein RG, Drake I. Uso de aspirina en el primer nivel de atención pública: Experiencia del Programa RemediAR, Argentina. *Revista Argentina de Cardiología*. 2010;78(4):330-338.
13. Bernztein RG, Drake I. Uso de medicamentos en hipertensión arterial en el primer nivel de atención pública argentina: La experiencia del Programa RemediAR. *Revista Argentina de Cardiología*. 2009;77(3):187-195.
14. Pozo L, Luque P, La Cava G. La hipertensión arterial: una mirada desde el Programa RemediAR + Redes. *Salud(i)Ciencia*. 2015;368-374.
15. Monsalvo MA. Utilización de medicamentos antihipertensivos en el primer nivel de atención: condicionantes estructurales y desigualdades espaciales en Argentina [Dissertação]. Rio de Janeiro: Fundação Oswaldo Cruz; 2010.
16. Cortez R, Romero D. Argentina - El aumento de la utilización de los servicios de salud materno-infantil en la población sin seguro médico: el Plan Nacer [Internet]. Washington: Banco Mundial; 2013 [cited 12 Aug 2020]. Available from: <https://tinyurl.com/3vv8brc8>.
17. Alonso V. Drug consumption and health equity in the Metropolitan Area of Buenos Aires, Argentina. *Revista Panamericana de Salud Pública*. 2003;13(6):400-406.
18. Urtasun MA, Regueiro AJ, Cañas M, Gaido Stulle EJ, Estigarribia NA, Bustin J, Triskier F. Estimación de prevalencia de uso de medicamentos antihipertensivos en el programa de atención médico integral para adultos mayores de Argentina. *Revista Argentina de Salud Pública*. 2020;11(42):32-39.
19. PAMI-INSSJP. El modelo prestacional y los desafíos del PAMI [Internet]. 2017 [cited 20 Jun 2020]. Available from: <https://tinyurl.com/4nkn53b>.
20. Rojas G, Demey I, Arizaga RL. Medicamentos utilizados para trastornos cognitivos: Análisis de un millón y medio de prescripciones en la Argentina. *Medina (Buenos Aires)*. 2013;73(3):213-223.
21. Bustin J, Triskier F, Arakaki J, Pérez Blanco J, Urtasun M, Cañas M, et al. Prescripción de psicofármacos a personas mayores en el Instituto Nacional de Servicios Sociales para Jubilados y Pensionados de Argentina (PAMI). *Vertex*. 2019;30(143):70-78.
22. Bustin J, Rojas G, O'Neill S, Sarasola D, Triskier F, Urtasun M, Cañas M, Mastai R, Demey I. What is happening with not recommended drugs for dementia in Argentina? Prescription patterns and direct costs analysis. *International Journal of Geriatric Psychiatry*. 2020;35(3):270-275. doi: 10.1002/gps.5242.
23. Schiaffino S, Bologna V, Bissio A, Bignone I. Uso de oseltamivir durante la pandemia de gripe A (H1N1): análisis de las reacciones adversas reportadas al Sistema Nacional de Farmacovigilancia de ANMAT. *Revista Argentina de Salud Pública*. 2010;1(4):20-25.
24. Administración Nacional de Medicamentos, Alimentos y Tecnología Médica; Sistema Nacional de Farmacovigilancia. Informes de gestión anuales del Sistema Nacional de Farmacovigilancia [Internet]. 2018 [cited 25 Aug 2020]. Available from: <https://tinyurl.com/2radv3s>.
25. Argentina, Ministerio de Salud. Banco de Drogas [Internet]. 2020 [cited 25 Aug 2020]. Available from: <https://tinyurl.com/uu68marv>.
26. Secretaría de Vigilancia en Salud. Boletín Epidemiológico de la Comisión Intergubernamental de VIH/Sida de la Reunión de Ministros de Salud del Mercosur [Internet]. Brasilia: Ministerio de Salud; 2012. Available from: <https://tinyurl.com/z5kr22ww>.
27. Colautti MA. Las personas que viven con VIH/SIDA y su vínculo con los antirretrovirales provistos por el Programa Nacional en Argentina. *Ciência & Saúde Coletiva*. 2012;17(5):1203-1213. doi: 10.1590/S1413-81232012000500014.
28. Marin GH, Marin L, Agüero D, Pagnotta M, Marin G, Blanco L. Budgetary impact of covering "Me-Too" drugs from social security: Buenos Aires state case report. *Journal of Drug Delivery and Therapeutics*. 2020;10(Supl 3):234-238.
29. Gagliardino JJ, Olivera E, Etchegoyen GS, Guidi ML, Caporale JE, Martella A, De La Hera M, Siri F, Bonelli P. PROPAT: a study to improve the quality and reduce the cost of diabetes care. *Diabetes Research and Clinical Practice*. 2006;72(3):284-291. doi: 10.1016/j.diabres.2006.02.004.
30. Cetrángolo O, Goldschmit A. Obras sociales en Argentina: origen y situación actual de un sistema altamente desigual. Buenos Aires: CECE; 2018.
31. Justo N, Espinoza MA, Ratto B, Nicholson M, Rosselli D, Ovcinnikova O, García Martí S, Ferraz MB, Langsam M, Drummond MF. Real-World evidence in healthcare decision making: Global Trends and case studies from Latin America. *Value Health*. 2019;22(6):739-749. doi: 10.1016/j.jval.2019.01.014.
32. Laihonon H. Knowledge structures of a health ecosystem. *Journal of Health Organization and Management*. 2012;26(4):542-558. doi: 10.1108/14777261211251571.

33. Eriksson I, Ibáñez L. Secondary data sources for drug utilization research. In: Elseviers M, Wettermark B, Almarsdóttir AB, eds. Drug utilization research. Chichester: John Wiley & Sons Ltd; 2016. p. 39-48.
34. Tailor K. The patient revolution: How Big Data and analytics are transforming the health care experience. North Carolina: Wiley; 2015.
35. Salas M, Lopes LC, Godman B, Truter I, Hartzema AG, Wettermark B, et al. Challenges facing drug utilization research in the Latin American region. *Pharmacoeconomics and Drug Safety*. 2020;29(11):1353-1363. doi: 10.1002/pds.4989.
36. Argentina. Ley 27275, Derecho de acceso a la información pública [Internet]. 2016 [cited 13 Aug 2020]. Available from: <https://tinyurl.com/26rwtthc>.
37. Cook A. América Latina y el Caribe: Países que cuentan con Ley de Acceso a la Información Pública y año de promulgación [Internet]. 2018 [cited 13 Aug 2020]. Available from: <https://tinyurl.com/3zv6u4fd>.

CITATION

Cañas M, Marín GH, Urtasun MA, Leal LF, Salas M, Elseviers M, Lopes LC. Data transparency for building a stronger healthcare system: A case study from Argentinean administrative drug utilization data sources. *Salud Colectiva*. 2021;17:e3339. doi: 10.18294/sc.2021.3339.

Received: 9 Dec 2020 | Modified: 1 Feb 2021 | Accepted: 5 Feb 2021 | Publication online: 27 May 2021



Content is licensed under a Creative Commons.

Attribution — you must attribute the work in the manner specified by the author or licensor (but not in any way that suggests that they endorse you or your use of the work).

Noncommercial — You may not use this work for commercial purposes.

<https://doi.org/10.18294/sc.2021.3339>