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Capabilities and challenges in monitoring the availability of and access to health services in Argentina

Capacidades y retos del monitoreo sobre la disponibilidad y el acceso a los servicios de salud en Argentina

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ABSTRACT Monitoring the utilization, quality and performance of health services through indicators is a growing necessity of decision makers. Given the importance of indicators related to availability of, quality of and access to health services by the population, the objective of this article is to research the capacity of information sources produced officially in Argentina since 2000 to generate such indicators, and to identify the extent that such sources comply with the requirements of frequency, disaggregation and publication. The research results show that the information officially available in the country does not allow for the calculation of all indicators, or allows for their construction at only some moments in time, evidencing the need to incorporate new sources or adapt existing ones.

KEY WORDS Data Sources; Health Services; Public Health; Health Services Accessibility; Argentina.

RESUMEN El monitoreo de la utilización, calidad y rendimiento de los servicios de salud, a través de diversos indicadores, es una exigencia creciente para quienes toman decisiones en el tema. Teniendo en cuenta la importancia de contar con indicadores de disponibilidad, calidad y acceso a los servicios de salud por parte de la población, el objetivo de este artículo es investigar la capacidad de las fuentes de información producidas oficialmente en Argentina, desde el año 2000, de generar estos indicadores, identificando además en qué medida dichas fuentes cumplen con los requisitos de periodicidad, desagregación y publicación. Según las pesquisas realizadas, la información disponible a nivel oficial en el país no permite calcular la totalidad de indicadores o solo pueden ser construidos para un momento en el tiempo, lo que evidencia la necesidad de incorporar nuevas fuentes, o bien adaptar las existentes.

PALABRAS CLAVES Fuentes de Datos; Servicios de Salud; Salud Pública; Accesibilidad a los Servicios de Salud; Argentina.

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INTRODUCTION

Given the important impact that diseases have on the economic growth of societies, investing in health care systems constitutes an essential component of general development strategies.[1] This investment must be effective and sustainable, thus it must be based on accurate real world data.

Therefore, monitoring the utilization, quality and performance of health care services through specific indicators is considered essential for the health care system improvement, and a growing demand for decision-makers. These indicators are also useful for local, provincial and national programming, and, additionally, for studies and special research studies and the calculation of health care cost.

Just like in other health areas, monitoring health care services requires the creation of tools that comply with, at least, the following requirements: periodicity (to detect strengths, weaknesses and improvement over time), disaggregation (to identify the most underprivileged population sectors in terms of access to those services); and publication (with regard to the right of the population to know the actual situation of these services).[2]

Taking into account the importance of indicators for availability, quality and access to health services by the population, the objective of this research study is to research the capacity of the official sources of information in Argentina since the year 2000, to develop such indicators and also identifying the extent to which these sources meet the requirements mentioned above.

METHODOLOGY

The thematic areas on which the indicators for monitoring health care services will be developed are first defined: utilization, availability, coverage, access and quality.

The utilization of health care services refers to how individuals utilize the infrastructure or facilities, goods and health care services. Availability is calculated by human, material and infrastructure resources to care for the health problems of the population in relation to the population that the State is potentially obliged to take care of. These indicators are related to the supply of hospitals, clinics, doctors' offices, beds, medications and health care staff, all of which are destined to provide health care services. Both areas, utilization and availability, correspond to the concepts of supply and demand which are used as study framework of the dynamic and complex process that relates the population to the health care staff, with the purpose of meeting specific health needs.

Indicators of health care coverage show to which extent people who need these services effectively receive important health care interventions.[3] Such indicators include health care to women during pregnancy and delivery, immunization to prevent the most common childhood infections, the administration of vitamin A supplements in kids, and the treatment of the most common childhood diseases and infectious diseases in adults.[3,4]

Access to health care services refers to the possibility of receiving health care regardless of characteristics such as income, place of residence, working condition, or belonging to an ethnic or minority group. Access to health care implies the elimination of physical, economic, social or informative barriers or obstacles to use health care services. According to the World Health Organization (WHO), access to health care services can be calculated through their utilization by individuals. This use is, in turn, influenced by the structure of the service system (availability of services, organization and funding) and by the nature of the requirements (resources for potential consumers).[5]

The field of health services quality refers to the fact that health care and infrastructure should be suitable for the needs of patients, which requires, among other aspects, sufficient staff; appropriate and sufficient medications and equipment; adequate health conditions and proper hygiene; and good attitude and treatment from the health staff towards the beneficiaries.[6]

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We proceeded to search and select the indicators related to the monitoring of coverage, availability, utilization, access and quality of health care services validated both in the national and international field. For such purposes, the indicators used by international organisms such as the World Health Organization, the Pan American Health Organization, the World Bank, the United Nations Children's Fund, the International Labor Organization, and the Economic Commission for Latin America, and also the indicators used at a national level and in other countries of the Americas were collected.

The following selection criteria were established: 1) the usefulness of the indicator for the management of health care services, in terms of its importance for the evaluation of the different areas of study; 2) the international recognition of the indicator, that is to say, that its use may be disseminated, allowing to make comparisons with other regions and adapting itself to the reality of the information systems of the region.

Subsequently, an analysis of the questionnaires and results of official data sources was conducted to evaluate the possibility of elaborating the selected indicators. We researched the following official sources produced since 2000 which contain health-related information: Life Conditions (ECV) [*Encuesta de Condiciones de Vida*] 2001; National Survey on Disability (ENDI) [*Encuesta nacional de Discapacidad*] 2002-2003; National Survey on Nutrition and Health (ENNyS) [*Encuesta Nacional de Nutrición y Salud*] 2004-2005; Risk Factors Survey (ENFR) [*Encuesta Sobre Factores de Riesgo*] 2005-2009; Health Services Utilization and Expenditure Survey [*Encuesta de Utilización y Gasto en Servicios de Salud*] 2003, 2005 and 2010; National Survey of Household Expenses (ENGHo) [*Encuesta Nacional de Gastos de Hogares*] 2004-2005 and 2012-2013; National Survey on Older Adults Life Quality (ENCaVIAM) [*Encuesta Nacional sobre Calidad de Vida de Adultos Mayores*] 2012; Sexual and Reproductive Health Survey (ESSyR) [*Encuesta sobre Salud Sexual y Reproductiva*] 2013; as well as the statistical information from the permanent records of the Department of Statistics and Health Information (DEIS) [*Dirección de Estadísticas* e *Información de Salud*] and other institutions belonging to the Statistical System of Health (SES) [*Sistema Estadístico de Salud*] of the National Ministry of Health. Furthermore, the information which was produced within the Department of Statics [*Dirección de Estadísticas*]at a provincial level and data from the National Census of Population and Housing [*Censo Naiconal de Población y Vivienda*] of 2001 and 2010 was also considered.

Finally, we examined the capacity of the institutions to elaborate the selected indicators according to periodicity, disaggregation (geographic, age, socioeconomic level, ethnic and disability conditions) and publication.

RESULTS

Based on the bibliography and national and international information systems, a series of representative indicators of each thematic area of interest in health care services were selected according to the criteria mentioned in the methodological section. In this way, 24 indicators are presented, listed in Table 1 according to subject area, definition and institution where the reference to the indicator was found.

This list of indicators offers a summarized guide that will allow to characterize the health care service system of a territory, in this case, Argentina. That is to say, this list has the minimum number of indicators that Argentina should have to evaluate the performance of its health service system. In this regard, Table 2 shows the possibility of applying these indicators to the entire Argentine territory, the availability of data per year and the source of origin of these data.

Table 2 shows that 17 of the 24 indicators can be calculated for the total Argentine territory: ratio of medical consultations, prenatal care rate, ratio of hospital discharges, number of health establishments per one thousand inhabitants, ratio of hospital beds, ratio of

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Table 1. Denomination, definition and institutions of reference to the selected indicators to monitor utilization, availability, access, coverage and quality of medical attention. Argentina, 2016.

Thematic Area	Selected indicators		
	Indicator	Definition	Institution
Utilization	Ratio of medical consultations	Number of outpatient health care per 1,000 inhabitants in a population, for a given year, in a particular country, territory or geographic area.	PAHO
	Prenatal care rate	Number of pregnant women who have attended at least one medical consultation with a professional or trained health care worker, expressed as percentage of the live birth population, for a given year, in a particular country, territory or geographic area.	PAHO
	Ratio of hospital discharges	Ratio of hospital discharges per 1,000 inhabitants in a population, for a given year, in a particular country, territory or geographic area.	PAHO
	Occupancy percentage	The average number of beds that were daily occupied during a period expressed as percentage	SES
	Hospital bed turnover	Expresses the average number of patients treated per bed in a defined period of time.	SES
	Average length of stay	Average number of days of care given to every discharged patient during that period.	SES
	Urgent care per inhabitant	Number of urgent care per 1,000 inhabitants in a population, for a given year, in a particular country, territory or geographic area.	PAHO
Availability	Number of health establishments per one thousand inhabitants	It is the number of health care establishments in a specific geographic area and/or administrative units in a given period, per 1,000 inhabitants of said geographic area.	PAHO
	Ratio of hospital beds	Ratio of physicians available per 10,000 inhabitants in a population, for a given year, in a particular country, territory or geographic area	PAHO
	Ratio of physicians	Número de médicos disponibles por cada 10.000 habitantes en una población, para un año dado, en un determinado país, territorio o área geográfica.	PAHO
	Ratio of nurses	Ratio of nurses available per 10,000 inhabitants in a population, for a given year, in a particular country, territory or geographic area	PAHO
	Ratio of dentists	Ratio of dentists available per 10,000 inhabitants in a population, for a given year, in a particular country, territory or geographic area.	PAHO

Sources: Own elaboration based on official data. PAHO = Pan American Health Organization; WHO = World Health Organization; SES = Statistical Health System [*Sistema Estadístico de Salud*]; CONEVAL= National Council for Evaluation of Social Development Policy (Mexico).

physicians, nurses and dentists, DPT3, BCG and measles immunization coverage, professional delivery care rate, contraceptive use in women, population covered by health insurance, percentage of people presenting with a health problem who did not receive health care, reason why people presenting with a health problem did not receive health care and surgical wound infection rate.

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Table 1. Continued.

Thematic Area	Selected indicators		
	Indicator	Definition	Institution
Accessibility and coverage	DPT3 immunization coverage	Number of one-year-old children who received three doses of diphtheria, tetanus and pertussis vaccine.	PAHO
	BCG immunization coverage	Number of one-year-old children vaccinated against tuberculosis.	PAHO
	Measles immunization coverage	Number of one-year-old children vaccinated against measles.	PAHO
	Professional delivery care rate	Number of births attended by trained stuff during a specific year, regardless of their place of occurrence, expressed as a percentage of the total number of births in that same year, in a particular country, territory or geographic area.	PAHO
	Average time of transfer to the hospital the last time an emergency occurred	Average time of transfer to a welfare establishment the last time there was an emergency.	CONAVE
	Estimated average time of transfer to a hospital in case of an emergency	Average time of transfer to a health care establishment in case of an emergency.	CONAVE
	Contraceptive use in women	Number of women in childbearing age (aged 19 to 49) that use any type of contraceptive at a specific point in time, expressed as a percentage of the relevant mid-year-population for a given year, in a particular country, territory or geographic area.	POHA
	Population with health coverage	Population with health coverage for a given year, in a particular country, territory or geographic area.	POHA
Quality	Percentage of people who did not not receive health care when presenting with a health problem	Percentage of people presenting with a health problem who did not receive health care.	CONAVE
	Reason why people presenting with a health problem did not receive health care	Percentage of population who did not receive medical attention ,depending on reason why medical care was not provided.	CONAVE
	Surgical wound infection rate	Surgical wound infection rate as a percentage of all surgical procedures performed.	WHO
	Hospital mortality rate due to acute myocardial infarction after 30 days	Proportion of hospitalized patients with a primary diagnosis of acute myocardial infarction (AMI) (stroke) who died within 30 days after admission.	WHO

Sources: Own elaboration based on official data. PAHO = Pan American Health Organization; WHO = World Health Organization; SES = Statistical Health System [*Sistema Estadístico de Salud*]; CONEVAL= National Council for Evaluation of Social Development Policy (Mexico).

It should be highlighted from the indicators mentioned that it is not possible to calculate the evolution over time of only one indicator (ratio of dentists), because data exist only for the year 2004. Similarly, the interruption of the series in the case of two indicators (ratio of nurses and ratio of dentists) to the year 2004 should be outlined. As a counterpart, it is a positive fact that there are at least two indicators available for each thematic area being studied.

Table 2 allows us to infer that, mainly since the year 2010, there has been an interest for improving the amount of data in the public health field, which is reflected in the availability of sources. However, the

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Table 2. Availability of data to calculate the selected indicators to monitor health care services in Argentina (entire country), according to thematic area, availability and source. 2000-2016.

Thematic Area	Indicator	Data		
		Availability	Years available	Sources
Utilization	Ratio of medical consultations	Yes	2000-2008, 2010-2011	SES
	Prenatal care rate	Yes	2001, 2005, 2012	SES
	Ratio of hospital discharges	Yes	2000-2010	SES
	Occupancy percentage	No	-	-
	Hospital bed turnover	No	-	-
	Average length of stay	No	-	-
	Urgent care per inhabitant	No	-	-
Availability	Number of health care establishments per one thousand inhabitants	Yes	2000-2016	SIISA
	Ratio of hospital beds	Yes	2000, 2010-2013, 2016	SIISA
	Ratio of physicians	Yes	2004, 2005, 2010, 2013	SES
	Ratio of nurses	Yes	2001, 2004	SES
	Ratio of dentists	Yes	2004	SES
Accessibility and coverage	DPT3 immunization coverage	Yes	2000-2013	SIISA
	BCG immunization coverage	Yes	2012-2013	SIISA
	Measles immunization coverage	Yes	2000-2013	SIISA
	Professional delivery care rate	Yes	2000-2013	SES
	Average time of transfer to the hospital the last time an emergency occurred	No	-	-
	Estimated average time of transfer to a hospital in case of an emergency	No	-	-
	Contraceptive use in women	Yes	2001, 2004, 2005, 2009	SES
	Population with health coverage	Yes	2001, 2010	National Census of Population
Quality	Percentage of people who did not receive health care when presenting with a health problem	Yes	2005, 2009	ENFR
	Reason why people presenting with a health problem did not receive health care	Yes	2005, 2009	ENFR
	Surgical wound infection rate	Yes	2004-2016	SES
	Hospital mortality rate due to acute myocardial infarction after 30 days	No	-	-

Sources: Own elaboration based on official data: PAHO = Pan American Health Organization; SES = Statistical Health System; ENFR = National Survey on Risk Factors (Argentina)

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indicators created in international systems have the greatest capacity of elaboration, which encourages reflection on whether the international protocols are only being complied with, rather than demonstrating a real interest for monitoring and improving the health care services of the country.

Similarly, it is necessary to evaluate the capacity of disaggregation of the available data to calculate these indicators, beginning with the geographic and temporal spheres, as the existence of broad differences among regions, provinces and departments of the Argentine territory has already been evidenced in other research studies over time.[2,7]

It is well known that the data coming from international sources, even when provided by the authorities of each country, do not include disaggregations according to minor areas or other characteristics, at least in the publications offered by these sources. On the contrary, the information that can be obtained from the Provincial Department of Health Statistics [*Direcciones Provinciales de Estadísticas en Salud*] may be sometimes abundant, although less homogeneous in terms of quantity and form, and more erratic in terms of periodicity.

Table 3 shows the sources of information that exhibit data availability to calculate the selected indicators at a provincial level. It is necessary to clarify that those indicators that are not available in all the provinces are considered to be non-calculable.

In addition, Table 4, Table 5, Table 6 and Table 7 show the possibility of calculating the selected indicators according to the province and the data available according to the year. When analyzing the tables above, it is observed that when taking into account the statistics analyzed in the national and provincial health administration offices, only 16 of the 24 selected indicators can be calculated for all the provinces: ratio of medical consultations, prenatal care rate, ratio of hospital discharges, number of health establishments per one thousand inhabitants, ratio of hospital beds, ratio of physicians and nurses, DPT3, BCG and measles immunization coverage, professional delivery care rate, contraceptive use in women, population with health coverage, percentage of people presenting with health problems who did not receive health care, reason why people presenting with problems did not receive health care and rate of surgical wound infection.

Regarding these indicators, in several cases it is not feasible to calculate the evolution overtime. We only have data for a single year, as opposed to what happens with the same indicators for the entire country. Those cases include the rate of prenatal care (which evolution can only be calculated in the provinces of Jujuy and San Luis), the indicators for immunization coverage (available for a single year only, except for the Autonomous City of Buenos Aires, and the provinces of Buenos Aires, Corrientes, Chubut, Jujuy, Neuquén and San Juan) and the ratio of physicians and nurses (which have more than one data point for the provinces of Corrientes, Jujuy, Misiones, Neuquén, Río Negro, Salta, San Juan, San Luis and Tierra del Fuego).

There are four indicators that can be calculated only for certain provinces. However, these indicators cannot be calculated for the entire country, as we need more data to calculate an average. The data required include the amount of urgent care per inhabitant, which can be measured in Jujuy, Misiones, Mendoza and Santa Fe (the evolution over time can also be evaluated in the latter two provinces); and the indicators for the utilization of hospital stay services, such as the percentage of bed occupancy, hospital bed turnover average and length of stay average, which can only be obtained in the Autonomous City of Buenos Aires, Córdoba, Corrientes, Chubut, Jujuy (only for 2012), Mendoza, Misiones, Río Negro, Salta, San Luis, Santa Fe and Tierra del Fuego.

On the other hand, the indicator "ratio of dentists" can be calculated for the entire country but it cannot be calculated for each province. This data is available for Corrientes, Jujuy, Misiones, Neuquén, Río Negro, Salta, San Juan, San Luis and Tierra del Fuego. At the national level only data for the year 2004 is available for this indicator, at provincial level

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Table 3. Availability of data to calculate the selected indicators to monitor health care services in all the provinces. Argentina, 2000-2016.

Thematic Area	Indicator	Data	
		Availability	Sources
Utilization	Ratio of medical consultations	Yes	EUGSS
	Prenatal care rate	Yes	ENNyS
	Ratio of hospital discharges	Yes	SES
	Occupancy percentage	No	-
	Hospital bed turnover	No	-
	Average length of stay	No	-
	Urgent care per inhabitant	No	-
Availability	Number of health care establishments per one thousand inhabitants	Yes	SES
	Ratio of hospital beds	Yes	SES
	Ratio of physicians	Yes	SES
	Ratio of nurses	Yes	SES
	Ratio of dentists	No	-
Accessibility and coverage	DPT3 immunization coverage	Yes	SES
	BCG immunization coverage	Yes	SES
	Measles immunization coverage	Yes	SES
	Professional delivery care rate	Yes	SES
	Average time of transfer to the hospit the last time an emergency occurred	No	-
	Estimated average time of transfer to hospital in case of an emergency	No	-
	Contraceptive use in women	Yes	ENFR
	Population with health coverage	Yes	National Census of Population
Quality	Percentage of people who did not rece health care when presenting with a he problem	Yes	ENFR
	Reason why people presenting with a health problem did not receive health care	Yes	ENFR
	Surgical wound infection rate	Yes	SES
	Hospital mortality rate due to acute myocardial infarction after 30 days	No	-

Sources: Own elaboration based on official data. EUGSS = Health Services Utilization and Expenditure Survey (Argentina); ENNyS = National Survey on Nutrition and Health (Argentina) ; SES= Statistical System of Health (Argentina); ENFR= National Survey on Risk Factors (Argentina).

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Table 4. Availability of data to calculate the selected indicators of utilization to monitor health care services, by jurisdiction and years. Argentina, 2000-2015.

JURISDICTIONS	UTILIZATION INDICATORS						
	Ratio of medical consultation	Prenatal care rate	Ratio of hospital discharges	Occupancy percentage	Hospital bed turnover	Average length of stay	Urgent care per inhabitant
Autonomous City of Buenos Aires	2000-2013	2004-2005	2000-2013	2000-2013	2000-2013	2000-2013	-
Buenos Aires	2000-2004, 2008-2012	2004-2005	2000-2013	2008-2012	2008-2012	2008-2012	-
Catamarca	2000-2004	2004-2005	2000-2010	-	-	-	-
Córdoba	2000-2004 2007-2013	2004-2005	2000-2010 2007-2013	2007-2013	2007-2013	2007-2013	-
Corrientes	2000-2012 2000-2012	2004-2005	2000-2012 2000-2012	2000-2012 2000-2012	2000-2012 2000-2012	2000-2012 2000-2012	-
Chaco	2000-2004	2004-2005	2000-2010	-	-	-	-
Chubut	2000-2008	2004-2005	2000-2010 2000-2008	2005-2013	2005-2013	2005-2013	-
Entre Ríos	2000-2004	2004-2005	2000-2010	-	-	-	-
Formosa	2000-2004	2004-2005	2000-2010	-	-	-	-
Jujuy	2000-2004 2012	2004-2005 2012	2000-2010 2012	2012	2012	2012	2012
La Pampa	2000-2004	2004-2005	2000-2010	-	-	-	-
La Rioja	2000-2004	2004-2005	2000-2010	-	-	-	-
Mendoza	2000-2013	2004-2005	2000-2013	2000-2013	2000-2013	2000-2013	2000-2013
Misiones	2000-2004	2004-2005	2000-2010	2009-2012	2009-2012	2009-2012	2012
Neuquén	2000-2012	2004-2005	2000-2010	-	-	-	-
Río Negro	2000-2004	2004-2005	2000-2010 2003-2013	2003-2013	2003-2013	2003-2013	-
Salta	2000-2011	2004-2005	2000-2011	2000-2011	2000-2011	2000-2011	-
San Juan	2000-2007	2004-2005	2000-2010	-	-	-	-
San Luis	2000-2004 2012-2014	2004-2005 2012-2014	2000-2010 2012-2014	2012-2014	2012-2014	2012-2014	-
Santa Cruz	2000-2004	2004-2005	2000-2010	-	-	-	-
Santa Fe	2000-2009	2004-2005	2000-2010 2000-2009	2005-2009	2005-2009	2005-2009	2005-2009
Santiago del Estero	2000-2004	2004-2005	2000-2010	-	-	-	-
Tucumán	2000-2004	2004-2005	2000-2010 2004-2011	-	-	-	-
Tierra del Fuego	2000-2004, 2012	2004-2005	2000-2010 2010-2012	2010-2012	2010-2012	2010-2012	-

By jurisdiction | By department | By public health district | By program area | By hospital

Sources: Own elaboration based on data from the Department of Statistics and Health Information (DEIS), Statistical System of Health (SES) National Ministry of Health.

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Table 5. Availability of data to calculate the selected indicators of availability to monitor health care services, by jurisdiction and years. Argentina, 2000-2015.

JURISDICTIONS	AVAILABILITY INDICATORS				
	Number of health establishments	Ratio of hospital beds	Ratio of physicians	Ratio of sick people	Ratio of dentists
Autonomous City of Buenos Aires	2000, 2008-2012 2015	2000, 2003-2013, 2015	2001	2001	-
Buenos Aires	2000 2015	2000, 2008-2012, 2015	2001	2001	-
Catamarca	2000, 2007-2013 2015	2000, 2015	2001	2001	-
Córdoba	2000, 2003-2012 2015	2000, 2015 2007-2013	2001	2001	-
Corrientes	2000 2015	2000-2012 2000-2012 2001-2010	2001, 2006-2009	2001, 2006-2009	2006-2009
Chaco	2000 2005-2013 2015	2000, 2015	2001	2001	-
Chubut	2000 2010 2015	2000-2013 2015	2001	2001	-
Entre Ríos	2000 2015	2000, 2015 2010	2001	2001	-
Formosa	2000, 2012 2015	2000, 2015	2001	2001	-
Jujuy	2000 2013 2015	2000, 2015 2012	2001 2012	2001 2012	- 2012
La Pampa	2000 2015	2000, 2015 2013 2013	2001	2001	-
La Rioja	2000 2015	2000, 2015	2001	2001	-

By jurisdiction | By department | By public health district | By locality | By hospital

Sources: Own elaboration based on data from the Department of Statistics and Health Information (DEIS), Statistical System of Health (SES) National Ministry of Health.

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Table 5. Continued.

JURISDICTIONS	AVAILABILITY INDICATORS				
	Number of health establishments	Ratio of hospital beds	Ratio of physicians	Ratio of sick people	Ratio of dentists
Mendoza	2000, 2011 2015	2015 2001-2013	2001	2001	-
Misiones	1995-2012 2015	2000, 2015 2009-2012	2001, 2011	2001, 2011	2001
Neuquén	2000 2003-2013 2015	2015 2002-2012	2000-2010	2000-2010	2000-2010
Río Negro	2000, 2011 2015	2000, 2015 2003-2013	2001 2003-2013	2001 2003-2013	2003-2013
Salta	2000, 2013 2015	2000 a 2011, 2015	2000 a 2010	2000 a 2010	2000 a 2010
San Juan	2000 2012-2014 2015	2000, 2013, 2015	2001 y 2013	2001 y 2013	2013
San Luis	2000 2015	2000, 2015 2012-2014	2001 2012-2014	2001 2012-2014	- 2012-2014
Santa Cruz	2000 2005-2009 2015	2000, 2015	2001	2001	-
Santa Fe	2000 2015	2000, 2015 2005-2009	2001	2001	-
Santiago del Estero	2000 2015	2000, 2015	2001	2001	-
Tucumán	2000 2015	2000, 2015	2001	2001	-
Tierra del Fuego	2000 2015	2000, 2015 2010-2012	2000, 2001	2000, 2001	2000

By jurisdiction | By department | By public health district | By locality | By hospital

Sources: Own elaboration based on data from the Department of Statistics and Health Information (DEIS), Statistical System of Health (SES) National Ministry of Health.

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Table 6. Availability of data to calculate the selected access and coverage indicators to monitor health services, by jurisdiction and years. Argentina, 2000-2015.

JURISDICTIONS	AVAILABILITY INDICATORS					
	DPT3 immunization coverage	BCG immunization coverage	Measles immunization coverage	Professional delivery care rate	Contraceptive use in women	Population with health coverage
Autonomous City of Buenos Aires	2005-2013	2005-2013	2005-2013	2000-2004	2005-2009	2001, 2010
Buenos Aires	2008-2013	2008-2013	2008-2013	2000-2004	2005-2009	2001, 2010
Catamarca	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Córdoba	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Corrientes	2013	2013	2013	2000-2004 2003-2012	2005-2009	2001, 2010
	2003	2003	2003	2003-2012		
Chaco	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Chubut	2005-2013	2005-2013	2005-2013	2000-2008	2005-2009	2001, 2010
Entre Ríos	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Formosa	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Jujuy	2013	2013	2013	2000-2004	2005-2009	2001, 2010
	2012	2012	2012	2012		
La Pampa	2013	2013	2013	2000-2004	2005-2009	2001, 2010
La Rioja	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Mendoza	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Misiones	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Neuquén	1992-2013	1992-2013	1992-2013	2000-2012	2005-2009	2001, 2010
Río Negro	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Salta	2013	2013	2013	2000-2004	2005-2009	2001, 2010
San Juan	2009-2013	2009-2013	2009-2013	2000-2004	2005-2009	2001, 2010
San Luis	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Santa Cruz	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Santa Fe	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Santiago del Estero	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Tucumán	2013	2013	2013	2000-2004	2005-2009	2001, 2010
Tierra del Fuego	2013	2013	2013	2000-2004	2005-2009	2001, 2010

By jurisdiction | By department | By public health district | By hospital

Sources: Own elaboration based on data from the Department of Statistics and Health Information (DEIS), Statistical System of Health (SES), National Ministry of Health.

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Table 7. Availability of data to calculate the selected quality indicators to monitor health services, by jurisdiction and years. Argentina, 2000-2015.

JURISDICTIONS	QUALITY INDICATORS	
	Percentage of people presenting with a health problem who did not receive health care	Reason why people with a health problem did not receive health care
Autonomous City of Buenos Aires	2005, 2009	2005, 2009
Buenos Aires	2005, 2009	2005, 2009
Catamarca	2005, 2009	2005, 2009
Córdoba	2005, 2009	2005, 2009
Corrientes	2005, 2009	2005, 2009
Chaco	2005, 2009	2005, 2009
Chubut	2005, 2009	2005, 2009
Entre Ríos	2005, 2009	2005, 2009
Formosa	2005, 2009	2005, 2009
Jujuy	2005, 2009	2005, 2009
La Pampa	2005, 2009	2005, 2009
La Rioja	2005, 2009	2005, 2009
Mendoza	2005, 2009	2005, 2009
Misiones	2005, 2009	2005, 2009
Neuquén	2005, 2009	2005, 2009
Río Negro	2005, 2009	2005, 2009
Salta	2005, 2009	2005, 2009
San Juan	2005, 2009	2005, 2009
San Luis	2005, 2009	2005, 2009
Santa Cruz	2005, 2009	2005, 2009
Santa Fe	2005, 2009	2005, 2009
Santiago del Estero	2005, 2009	2005, 2009
Tucumán	2005, 2009	2005, 2009
Tierra del Fuego	2005, 2009	2005, 2009

By jurisdiction

Sources: Own elaboration based on data from the Department of Statistics and Health Information (DEIS), Statistical System of Health (SES), National Ministry of Health.

we observe a trend in Corrientes, Neuquén, Río Negro, Salta and San Luis.

In the case of the surgical wound infection rate, it should be noted that although this indicator can be calculated for all provinces and over time, this information has neither been published nor is accessible to the population in general, as its access is restricted to health professionals, hospitals enrolled in the National Program of Epidemiology and Hospital-acquired Infections Control of Argentina (VIHDA) [*Programa Nacional*

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Table 8. Features of data sources used to calculate the indicators selected to monitor health care services. Argentina, 2000-2015.

FEATURES OF THE SOURCES	DATA SOURCES				
	SES	ENNyS	ENFR	Population censuses	EUGSS
Universe	Total population	Sample	Sample	Total population	Sample
Periodicy	Constant	Sole edition (2004-2005)	2005, 2009	Every 10 years	2003, 2005, 2010
Coverage	Total territory	Areas of more than 5,000 inhabitants	-	Total territory	-
Admitted Disaggregation					
Geographic	X	X	X	X	X
Causes	X	-	-	-	X
Age	X	X	X	X	X
Gender	X	X	X	X	X
Administrative unit	X	-	-	-	X
Diagnosis	X	-	-	-	-
Educational level	-	X	X	X	X
Income level	-	X	-	-	X

Sources: Own elaboration based on official data. SES = Statistical System of Health (Argentina); ENNyS = National Survey on Nutrition and Health (Argentina); ENFR = National Survey on Risk Factors (Argentina); EUGSS = Health Services Utilization and Expenditure Survey (Argentina).

de Epidemiología y Control de Infecciones Hospitalarias], national and jurisdictional authorities and the staff of the Dr. Juan H. Jara National Institute of Epidemiology [*Instituto Nacional de Epidemiología "Dr. Juan H. Jara"*].

Despite this obstacle, we should mention the importance of creating research networks advocated by civil societies, in coordination with the Ministry of Health and other institutions of the health system, about health information systems to strengthen the leadership in the production and use of the information.[6]

Taking into consideration the capacity of disaggregation of the provincial territories into departments, localities, public health care areas or program areas, or hospitals, there are few provinces that can offer this type of availability being, mostly, data for more recent years, and non-homogenous regarding this level of disaggregation. As a result, only five provinces have geographically disaggregated data available almost since the beginning of the century: Corrientes, Chubut, Mendoza, Neuquén and Santa Fe. Other three provinces (Córdoba, San Luis and Tierra del Fuego)

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include geographically disaggregated data for the last four or five years of the period under study. In the case of the province of Jujuy, the geographically disaggregated data only include the year 2012.

Similarly, a great number of the indicators, especially quality indicators, several access indicators and coverage indicators depend on surveys and censuses which are not always conducted with the same periodicity. This situation worsens considering that the SES does neither publish nor provide public access to the disaggregation of many of its indicators.

Despite the above-mentioned information, the same trend may be observed in the provincial data at national level, that is to say, an increase in data availability for the latest annual figures.

In line with the objectives set at the beginning of this article, and the geographic and temporal disaggregation having already been put forward, other variables of data disaggregation as well as the features of their publication should be evaluated. In table 8 several features of the sources of data used are exhibited.

It should be noted that, in the case of the SES, the disaggregation shown is neither available for immunization coverage and prenatal care rate data nor for the indicators which, given their nature, do not allow specific disaggregations such as, the number of health care establishments per 1,000 inhabitants or the ratio of physicians per inhabitant (which does not admit disaggregation by gender or age). However, the SES is one of the few sources of data that keep records of mortality and morbidity.

With respect to the other sources, they are specific population surveys (except censuses), in which periodicity is not defined (as in the case of the ENNyS) and their data correspond to a population sample, therefore, there are limitations as to extending these data to the entire Argentine territory.

Finally, censuses are an excellent source in terms of population representativity and disaggregation of all its data. Nevertheless, the amount of data that may be collected in terms of health is minimal. Furthermore, censuses are conducted every ten years, thus making short-term decision-making and the evaluation of the respective results impossible. It is important to mention that all these sources are accessible to the population in general.

DISCUSSION

Health system strengthening is one of the four strategic pillars of the WHO, which are provided in *The world health report 2000* and was reaffirmed in the 2003 report. Moreover, the latter document affirms that the scarcity of health data is one of the biggest challenges faced by health systems to promote equity.[6]

In order to make up for the scarcity of health data, and due to the need to coordinate and align organizations for the development of health systems, in 2005 the WHO launched the Health Metrics Network (HMN). These health metric networks proposed the inclusion of indicators in the health information system that provide relevant information to monitor advances and implement changes in health services and policies[8]:

> All countries therefore need a nationally defined minimum set of health indicators used regularly in national programme planning, monitoring and evaluation. Although health indicators are needed to monitor local and national priorities, indicator definitions must also meet international technical standards. Moreover, national indicators should be consistently linked and harmonized with key indicators in major international and global initiatives, such as MDGs.

Among these health indicators, those indicators that are related to health services, which are the subject matter of this research study are included. The state and national mechanisms must guarantee access to health services as well as provide and finance these services,

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especially, in situations of economic and/or political crisis. Consequently, the availability of periodical and disaggregated data related to a territory or population is essential for its management and distribution of the financial resources for such purpose. Moreover, these data provide opportunities to improve these services.

In many cases, these data are generated through different systems and sources of information that are not accessible for being easily gathered and compared.[6]

In Argentina, there are no previous research studies that explore the monitoring of health care service indicators, although there are other assessment experiences that may be used as background information on the topic, such as the evaluation carried out by Camilo Marracino *et al.,* in 2000, which exclusively analyzes the indicators for monitoring coverage plans.[9] More recently, Eleonora Rojas Cabrera[2] researches the possibilities of the official information system in Argentina to monitor the right to health care in early childhood, from the perspective of the access to benefits and services provided by the State in the international field. This latter study is postulated as direct background information for the current research study, as it evaluates the capacity of the official statistical system of Argentina to obtain health care indicators, within the framework of human rights.

In Latin America, there are various evaluations, such as the study conducted in Mexico by the National Council for the Evaluation of Social Development Policy (CONEVAL) [*Consejo Nacional de Evaluación de la Política de Desarrollo Social*] in 2012, in which indicators of access and effective use of health services were proposed, based on sources of public data, in order to monitor and evaluate the Social Health Protection System [*Sistema de Protección Social en Salud*].[10] During the last years, The National Health Fund (FONASA) [*Fondo Nacional de Salud*] of Chile has made a systematic effort to clarify the transfer to health care services, taking into consideration that it is essential to analyze the management indicators which enable a more efficient use of the resources assigned to these services.[11]

Based on the limited bibliography about this topic, a question arises as to whether Argentina is placing little emphasis on gathering data about indicators of access and use of health services compared to other indicators such as those which evaluate the health status of the population (infant mortality, life expectancy, among others). A hypothesis suggests that this shortcoming in data collection may be due to the fact that the changes in the indicators of health status of the population are prioritized in order to indirectly estimate health system improvement. Those indicators change because it is the effective application of specific health programs, which do not actually generate any significant health care system reforms. In such case, it would show disinterest in improving health care systems, both in their organization and financing.

Consequently, in order to face the constant public health challenges and, at the same time, adopt measures that help to improve significantly the results of implemented interventions, the countries must determine which the data gaps are and address them both in public and private sectors.[12]

CONCLUSIONS

Based on the analysis conducted in this work, the data available at an official level in Argentina do not allow to calculate all the indicators, which shows the need to incorporate new sources or adapt those that already exist. In several cases, indicators may only be developed for a specific moment in time, which prevents the monitoring of advances, the identification of challenges and, at the same time, the evaluation of the results of programs aimed at this field. On the other hand, the lack of disaggregated data makes it difficult to study the situation of specific population groups, as regards to health care service access.

Furthermore, almost all the information about health care systems only refers to the

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provision of services or health care investment, which generate much of the employment and health care expenditure. According to the WHO, there are activities that should be included in a broader concept of what a health system is, which should be quantified and evaluated to analyze how they impact people's health.[13]

REFERENCES

1. Rodriguez Acosta S. Barreras y determinantes del acceso a los servicios de salud en Colombia [Tesis de Maestría]. Barcelona: Programa de Máster de Investigación en Economía Aplicada, Departament d'Economia Aplicada, Universitat Autònoma de Barcelona; 2010.

2. Rojas Cabrera E. Posibilidades de monitoreo del derecho a la salud en los primeros años de vida en Argentina: Una lectura a partir del acceso a las prestaciones y servicios comprometidos. In: Martinez Pizarro J, Rojas Cabrera E, Santillan Pizarro M, (ed.). El Consenso de Montevideo y la agenda de investigación sobre población y desarrollo: algunos temas seleccionados. Río de Janeiro: Asociación Latinoamericana de Población (ALAP); 2016. p. 25-44.

3. Organización Mundial de la Salud. Estadísticas Sanitarias Mundiales. Ginebra: OMS; 2009.

4. Organización Mundial de la Salud. Informe sobre la salud en el mundo 2008: La atención primaria de salud, más necesaria que nunca. Ginebra: OMS; 2008.

5. Organización Mundial de la Salud. Informe sobre la salud en el mundo 2000: Mejorar el desempeño de los sistemas de salud. Ginebra: OMS; 2000.

6. González Pons S. Sistema de monitoreo del desempeño del sistema de salud: Informe final de consultoría presentado a Fundación Plenitud, dentro del proyecto Observatorio de la Salud. Santo Domingo: Fundación Penitud; 2011.

7. Santillan Pizarro M, Ribotta B, Acosta L. Las posibilidades de las fuentes de información sociodemográficas para el monitoreo del derecho a la salud de las personas mayores en la Argentina, 1999-2013. In: Comisión Económica para América Latina y el Caribe. Notas de Población N° 102, (LC/G.2673-P). Santiago: CEPAL; 2016. p 95-122.

8. Organización Mundial de la Salud, Health metrics network. Assessing the National Health information system: an assessment tool. Geneva: WHO; 2008.

9. Marracino C, Vera Figueroa M, Abadie JP. Indicadores de resultados para monitoreo de programas de coberturas [Internet]. 2001 [cited 10 May 2016]. Available from: http://tinyurl.com/lbvq6uz.

SALUD COLECTIVA. 2017;13(1):73-90. doi: 10.18294/sc.2017.991

10. Consejo Nacional de Evaluación de la Política de Desarrollo Social. Indicadores de acceso y uso efectivo de los servicios de salud de afiliados al Seguro Popular. México DF: CONEVAL; 2014.

11. Huerta R, Paúl I, Leyton C. Impacto de indicadores de gestión en salud sobre estrategias de un servicio de salud público. Revista de Salud Pública. 2012;14(2):248-259.

12. Organización Panamericana de la Salud. Capacidades en salud pública en América Latina y el Caribe: evaluación y fortalecimiento. Washington DC: OPS; 2007.

13. Organización Mundial de la Salud. Monitoreo, evaluación y análisis de las estrategias nacionales de salud: Una plataforma dirigida por los países para la información y la rendición de cuentas. Ginebra: OMS; 2012.

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