Health System and Markers of Health in Uruguay

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ABSTRACT
We describe the implementation of a new National Health System in 2007 in Uruguay, South America, to improve the health for all the Uruguayan population and improve the markers of health. A health system for the private and public hospitals was set up under the strict control of the Ministry of Public Health. We identified 15 critical health problems unresolved, which were also considered important factors to improve and we control their improvement during the next years. The Integrated National Health System incorporated high-cost technology such as cardiac surgery, medication of high-cost chemotherapy, treatments for the burned, and programs of organ transplants completely subsidized by the health system.

Keywords: Health markers, Health system, Infant mortality, Maternal mortality, National sanitary goals.

The Integrated Health System was created in Uruguay in 2007. This health reform has wholly integrated all the population—National Integrated System of Health (SNIS)—allowing a 85% coverage by the National Health System.

Previous to the implementation of this abovementioned single Integrated Health System, some problems that had existed before 2007 in all institutions (private and public) were identified:

- Inequity of benefits in the different medical centers, which depended on the user’s capacity of payment
- Public sector with huge weaknesses of assistance
- Recurrent shutting of private medical centers resulting in dismissals of medical and nonmedical staff
- Delays of payments to providers
- Uncertainty of management in health sector along the country

There was identified a lack of health plan oriented or determined toward sanitary objectives or to modify the health system in favor of the population. Special weaknesses were also identified regarding the control of medical centers (public or private) by the Ministry of Public Health. Nor was there an area of health economics that made comprehensive decisions for all health services in the country according to the health properties of society.

OBJECTIVES TO IMPROVE THE INTEGRATED HEALTH SYSTEM
- Rationalize structures all over the country—sanitary map
- Increase work on the first level of assistance—networks rationalizing appointments with specialists (NETS)
- Continuity of assistance to the user within the health system
- A digital computer system of the medical records of population
- Improve the rectory and control of sanitary policies of the Public Health Ministry
- Participation and communication of health policies to the population by means of education programs in preventive medicine
- Quality control in national health and creation of operating strategies of public and private medicine within the country

NATIONAL SANITARY GOALS
- Achieve to improve the health situation of the population
- Decrease inequities in health rights

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• Development alterations in first infancy
• Critical nutritional problems in first infancy
• Morbimortality due to nontransmitted diseases such as cardiovascular, chronic respiratory diseases, and diabetes
• Morbimortality due to cancer
• Morbimortality due to HIV-AIDS
• Suicidal incidence and mental health problems
• Lesions and death due to accidents at work or on roads
• Gender and generational violence
• Difficulty of access for the disable and assistance of the vulnerable elderly
• Problematic consumption of alcohol and psychoactive substances
• Leak persistence in the quality of sanitary assistance

The implementation of these public policies allowed us to improve our health indicators (Figs 1 to 5).

Expenses figures
The national health insurance multiplied by 5 the public funds destined to health coverage and by 3 the expenses for public hospitals.

WHO goal: public expense greater than 6% GDP, pocket expense less than 20% GDP

**Computer Registers of Electronic Clinical Records**

The clinical record (CR) is part of the assistance process. They are of user’s property and under the custody of the health provider. The quality of patient assistance is assessed by CR audits of Public Health Ministry (qualitative and quantitative).

The importance of access of micromanagement indicators of assistance processes is substantive toward quality accreditation.

The knowledge of quality indicators by users encourages a healthy competence among public and private services. In 2019, 26 million of registers were achieved in health system platforms.

Good practice policies work successfully on the first line of assistance.

Maternities of excellence are the objective of all health centers.
Computing Agency of Public Health Ministry
Assess the assistance costs of all health providers (public and private) in order to evaluate quality of benefits over which all citizens have rights and pay taxes.

There is a control of rectory of health system reform that regulates the way that private centers work and the amount of users in each center. It also regulates the sanitary lines, national objectives, and goals within each center every year.⁶

Also controlling:
Georeferencing, Coverage of emergency and urgency services
Professional enablement and registration of qualifications
The perinatal computer system (SIP-PLUS) is the network system that we use in all the country to have the data of all the maternities and allows us to monitoring the maternal, perinatal morbidity and mortality.
• Death certificate
• Integral vaccination certificate

![Figure 4: Evaluation in 2018 of advances of each line of action in each strategic objective (in percentage)](image)

| 1. Unwanted pregnancy in teenagers | 2. Premature birth and low birth weight | 3. High cesarean rate |
|-----------------------------------|---------------------------------------|----------------------|
| Evolution of the percentage of teenage pregnancy (Uruguay 2015 - 2018) | Evolution of the percentage of prematurity and low birth weight (2015-2018) | Evolution of the percentage of cesarean delivery (2015 - 2018) |
| Year | % | Year | % of Prematurity | % low birth weight | Year | % Cesarean | Percentage of low-risk cesarean |
|------|---|------|----------------|------------------|------|----------|-----------------------------|
| 2015 | 5.3 | 2015 | 9.11 | 7.66 | 2015 | 43 | 16.4% |
| 2016 | 4.2 | 2016 | 9.16 | 7.76 | 2016 | 42 | 15.9% |
| 2017 | 12.7 | 2017 | 9.45 | 8.10 | 2017 | 44 | 15.9% |
| 2018 | 11.5 | 2018 | 9.17 | 7.61 | 2018 | 44 | 15.9% |

- Mapping of neonatal and maternity uci (Sanit Map)
- Audit of severe premature babies
- Transfer MMI
- Guidelines: prevention of premature delivery and immediate attention of premature newborn
- Derivation unit and link implementation (UDE)
Contd...

### Incidence of suicide and mental health problems

| Year | Male | Female | Total |
|------|------|--------|-------|
| 2015 | 30.41 | 7.37 | 18.55 |
| 2016 | 32.72 | 9.08 | 20.54 |
| 2017 | 32.76 | 7.44 | 19.70 |
| 2018 | 32.10 | 9.13 | 20.25 |

### Injuries and deaths due to road and work accidents

| Year | Injured number | Rate/100,000 hab | Mortality rate 100,000 hab UNASEV |
|------|---------------|-----------------|---------------------------------|
| 2015 | 29,610        | 868.6           | 14.8                            |
| 2016 | 26,821        | 783.5           | 12.8                            |
| 2017 | 27,324        | 795.7           | 13.5                            |
| 2018 | 25,595        | 745.1           | 15.1                            |

### Gender and generation violence
- Re-profiling of the Reference Teams in domestic violence with a Generational view
- 100% of SNIS providers have ERVD
- 89.3% of providers with approved care protocol
- Clinical manual validation
- Health care for women who experience partner violence or sexual violence
- Study on the link and women victims of feminicide
- Protocols for situations of abuse and sexual abuse of children and adolescents (2017-2019)

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**4. Vertical transmission of syphilis and HIV**

| Year | % | % HIV+ |
|------|---|--------|
| 2015 | 1.8 | 1.8 |
| 2016 | 1.5 | 1.5 |
| 2017 | 1.1 | 1.9 |

**5. Alterations of early childhood development**

- Preparation of a risk score (CNVy SIP)
- National Development Surveillance Guide (GNVD)
- Incorporation of the application of the GNVD at 4 months, 18 months and 4 years in Goal 1
- Development Attention Units (SERENAR)
- Polymaltose iron was added to PIAS

**6. Critical nutritional problems in early childhood**

- Creation of the "National Honorary Coordinating Council for Policies aimed at combating overweight and obesity"
- Update of the Breastfeeding Standard Development Attention Units
- Guide of preparations 6 to 12 months
- Training in: Guide for the prevention of iron deficiency in pregnant and breastfeeding and under 2 years
- BPA re-accreditation in quality in maternity hospitals
- Monitoring of the Code of Marketing of Breast Milk Substitutes NETCODE

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Fig. 5: Evaluation in 2019 facing the 15 critical problems. Evaluation of government expenses in the Integrated Health System-SNIS
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**HEALTH WORKERS**

They have represented (2018) the 6.8% of the total working force with a decrease in precariousness and underemployment, a drop of 32% in multi-employment in 2008 and a drop of 27% in 2018.

**HIGH-COST TECHNOLOGY INCORPORATION COMPLETELY SUBSIDIZED BY THE HEALTH SYSTEM**

Through a National Fund—Institutes of Highly Specialized Medicine (IMAE)—the ministry subsidizes high-technology procedures as well as high-cost procedures such as neonatal cardiac surgery, adult surgery, treatments for the burned, programs of organ transplants, specialized and high-cost medication, and treatments such as chemotherapy.

From 2015 up to date, new technologies and medication have been incorporated to the health fund—IMAE:

- Surgical treatment of refractory epilepsies
- Implementation of a pilot plan for cardiac defibrillators implants on primary prevention
- Incorporation of surgical treatments of aorta aneurisms
- Financing congenital retinoblastoma
- Incorporation of new chemotherapy treatments and new diseases coverage
- Policies for coverage of infertility treatment by the government
- Free incorporation for all providers of screening since the first trimester of pregnancy for all the population

This health system has wholly implemented social strategies in the community aligned to decrease nontransmitted diseases based on prevention, avoidance of tobacco consumption, nutrition, social vaccination programs were set up, prevention of pregnancy diseases and pathologies through increasing prenatal controls, and screening since the first trimester of pregnancy.

This system has allowed a better sanitary control of the society with a qualified and equitable assistance of the population, therefore improving the health indicators of our country: better access to health, better coverage and quality of assistance, as well as more quality of the expense.

**REFERENCES**

1. Han A, Stewart DE. Maternal and fetal outcomes of intimate partner violence associated with pregnancy in the Latin American and Caribbean region. Int J Gynaecol Obstet 2014;124(1):6–11. DOI: 10.1016/j.ijgo.2013.06.037.
2. Shah PS, Shah J, Knowledge Synthesis Group on Determinants of Preterm/LBW Births. Maternal exposure to domestic violence and pregnancy and birth outcomes: a systematic review and meta-analyses. J Womens Health (Larchmt) 2010;19(11):2017–2031. DOI: 10.1089/jwh.2010.2051.
3. Shapiro-Mendoza CK, Barfield WD, Henderson Z, et al. CDC grand rounds: public health strategies to prevent preterm birth. MMWR Morb Mortal Wkly Rep 2016;65(32):826–830. DOI: 10.15585/mmwr.mm6532a4.
4. Bennet S. The mystique of markets: public and private health care in developing countries. London (Public Health and Policy Dep. Publ. 4); 1991.
5. World Health Organization (WHO). Declaration of Alma-Ata. International Conference on Primary Health Care, Alma Ata, USSR. Geneva: WHO; 1978, http://www.who.int/hrp/nph/docs/declaration_almaata.pdf.
6. Organización Panamericana de la Salud (OPS). Rectoría y gobernanza hacia la salud universal. En: Salud en las Américas 2017. Washington, DC: OPS; 2017, http://www.paho.org/salud-en-las-americas-2017/post_type=poster&post_id=3098&lang=es Acceso el 20 de mayo de 2018, http://www.paho.org/salud-en-las-americas-2017/post_type=poster_t&es&lang=es.
7. Báscolo EP, Yavich N, Denis JL. Analysis of the enablers of capacities to produce primary health care-based reforms in Latin America: a multiple case study. Family Pract 2016;33(3):207–218. DOI: 10.1093/fampra/cmw038.
8. Dmytraczenko T, Almeida G., Toward universal health coverage and equity in Latin America and the Caribbean: evidence from selected countries. Washington, DC: World Bank; 2015, https://openknowledge.worldbank.org/handle/10986/22026 License: CC BY 3.0 IGO Acceso el 10 de diciembre de 2017, https://openknowledge.worldbank.org/handle/10986/22026.
9. Sanchez M, Ciconelli RM. The concepts of health access. Rev Panam Salud Publica 2012;31(3):260–268. DOI: 10.1590/S1012-49892012003000012.
10. Knaul FM, Arreola-Ornelas H, Méndez-Carniado O, et al. Evidence is good for your health system: policy reform to remedy catastrophic and impoverishing health spending in Mexico. Lancet 2006;368(9549):1828–1841. DOI: 10.1016/S0140-6736(06)69565-2.
11. Pan American Health Organization (PAHO), Health in the Americas 2012. Washington, D.C.: PAHO; 2012, http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=25190&Itemid= Acceso el 5 de enero de 2018, http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&gid=25190&Itemid=.
12. World Health Organization (WHO). Uruguay: building the national integrated health system. Geneva: WHO; 2015, http://apps.who.int/iris/bitstream/handle/10665/187934/WHO_HIS_HGF_CaseStudy_15.10_eng.pdf?sequence=1&isAllowed=y Accesso el 4 de febrero de 2018, http://apps.who.int/iris/bitstream/handle/10665/187934/WHO_HIS_HGF_CaseStudy_15.10_eng.pdf?sequence=2&isAllowed=y.
13. Puras D. Universal health coverage: a return to Alma-Ata and Ottawa. Health Hum Rights 2016;38(9974):1230–1247. DOI: 10.1016/S0140-6736(14)61646-9.
14. Gulliford M, Figueroa-Monhoz J, Morgan M, et al. What does “access to health care” mean? J Health Serv Res Policy 2002;7(3):186–188. DOI: 10.1093/jhsrp/xyp025.
15. Dmytraczenko T, Almeida G., Toward universal health coverage and equity in Latin America and the Caribbean: evidence from selected countries. Washington, DC: World Bank; 2015, https://openknowledge.worldbank.org/handle/10986/22026 License: CC BY 3.0 IGO Acceso el 10 de diciembre de 2017, https://openknowledge.worldbank.org/handle/10986/22026.
16. World Health Organization (WHO). Uruguay: building the national integrated health system. Geneva: WHO; 2015, http://apps.who.int/iris/bitstream/handle/10665/187934/WHO_HIS_HGF_CaseStudy_15.10_eng.pdf?sequence=1&isAllowed=y.
17. Atun R, Monteiro de Andrade LO, Almeida G, et al. Health-system reform and universal health coverage in Latin America. Lancet 2013;385(9974):1230–1247. DOI: 10.1016/S0140-6736(14)61646-9.
18. Guifrida M, Figueroa-Manhoz J, Morgan M, et al. What does “access to health care” mean? J Health Serv Res Policy 2002;7(3):186–188. DOI: 10.1093/jhsrp/xyb025.
19. Puras D. Universal health coverage: a return to Alma-Ata and Ottawa. Health Hum Rights 2016;38(9974):1230–1247. DOI: 10.1016/S0140-6736(14)61646-9.
20. Atun R, Monteiro de Andrade LO, Almeida G, et al. Health-system reform and universal health coverage in Latin America. Lancet 2013;385(9974):1230–1247. DOI: 10.1016/S0140-6736(14)61646-9.