



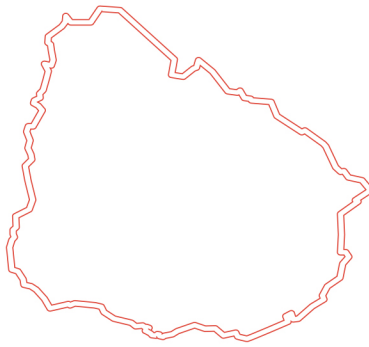
URUGUAY

Coronavirus UY and solving the pandemic through technology

by Dina Yael



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EXECUTIVE SUMMARY

This investigation involves a case study of the “Coronavirus UY” system, which is administered by the Uruguayan Ministry of Public Health (Ministerio de Salud Pública, MSP) as an information management mechanism to face the COVID-19 pandemic. It is a computer system developed primarily by the Agency for Development of Electronic Government and the Information and Knowledge Society (Agencia de Gobierno Electrónico y Sociedad de la Información y del Conocimiento, AGESIC), at the request of private and public actors. One of its most important components is a smartphone application called Coronavirus UY.

The goal of the Coronavirus UY application is to provide relevant public information on transmission statistics for the novel coronavirus and on current public health measures; to accompany cases of possible infection through the collection of individual self-diagnosis information; to provide remote medical care during periods of confinement; and since mid-2020, to warn people in cases where they have been in close proximity to infected persons. The system aims to gather information in a centralized manner to guide government actions both as a whole and in relation to individual cases, where it may provide anything from care recommendations to consultations via telemedicine.

Given the potential impact of the novel coronavirus, the system targets the whole population, with some emphasis on those groups at higher risk of the virus due to advanced age and preexisting conditions.¹ Moreover, it is worth noting that the deployment of measures had to be implemented by a government that had recently been inaugurated and represented a significant political shift, which makes the existence of regulatory and institutional structures enabling quick, coordinated action especially important.

From the study of conditions immediately preceding the technological implementation and of how these developed as the pandemic progressed, several significant elements stand out. First, the initial actions with technological components were adopted by the incoming administration alongside other public health measures, through coordination among various government agencies, ministries and private actors, in direct communication and with no intervening competitive evaluation of different proposals. Second, despite the development of an initial data collection and processing model, over time the mobile application’s functionalities increased to include exposure alerts, even though the system had a robust epidemiological surveillance network capable of developing contact traceability in a traditional manner. Third, solid regulatory and institutional development, especially in terms of state agencies for e-government and with standards around personal data protection, made the institutional structure for state modernization the logical point for coordinating public action, even when responsibility for the measures rested with the MSP.

Finally, the case exhibits a few peculiarities that require a critical look at the response to the public health crisis through the use of digital technologies. On the one hand, conditions for access to technology and connectivity are still unequal, limiting the scope of digital mechanisms and motivating a certain political criticism aimed at encouraging the population’s use of the system. On the other hand, the speed of deployment meant a lack of both public participation in the design and formal evaluation of the data processing system’s impact. At the same time, despite the existence of some transparency measures for some of the technological components, there is still no participatory institutional mechanism for on-going evaluation and monitoring of the system’s operation.

¹ Editors’ note: This report refers to the period directly following the arrival of the COVID-19 pandemic in Latin America, known as the “first wave.” It is therefore the period prior to the introduction of new variants with greater potential for infection and impact among younger groups.

The fact that some regulatory developments occurred in parallel to the technological deployment also deserves attention, in particular, the approval of a Telemedicine Law and the recognition of the need for consent for the use of health data. However, given the exceptional context in which the Coronavirus UY application was implemented, the possibility of moving ahead with the technological initiative while institutions quickly organized to facilitate its operation can be understood as a positive sign of the country's readiness to respond to a contingency such as the COVID-19 pandemic. This is true as long as the measures adopted are framed under a solid, preexisting structure and do not serve to advance opportunistic purposes taking advantage of the emergency situation. The latter does not seem to have been the case, although it is a point that deserves more in-depth monitoring over time.

INTRODUCTION

On March 1, 2020, a new government took office in Uruguay, representing the political sector that had been in opposition for 15 years and thus interrupting a seemingly permanent hegemony. However, a few days after this transition began, the novel coronavirus pandemic introduced a series of public policy challenges for the new administration.

On March 13, 2020, the Ministry of Public Health (Ministerio de Salud Pública, MSP) confirmed the first cases of COVID-19 in Uruguay over Twitter. That same day, President Luis Lacalle Pou and his Cabinet declared a national state of health emergency due to the pandemic (Decree 93/020, 2020, p. 3).² Although a restrictive quarantine like that of other countries in the region was not implemented, measures did include partial border closure, mandatory quarantine for travelers from countries declared at risk, and the suspension of public performances and of monitoring school attendance.³

The strategy proved successful. Uruguay was initially seen as one of the most successful countries in Latin America in fighting the COVID-19 pandemic.⁴ From March to December 2020, while Argentina and Brazil recorded 9 million total cases and more than 200,000 deaths, Uruguay had around 13,000 cases and just over 100 deaths, while maintaining one of the lowest infection rates in South America in proportion to its population.⁵ The country’s response combined border surveillance and mass testing of the population, with a broad system for information on and monitoring of infections.⁶

This study analyzes the Coronavirus UY application, launched by the Uruguayan government on March 20, 2020, and related aspects of its development and implementation. It is one of the most visible initiatives of a technological strategy that included, in addition to the application, a series of citizens’ services in the form of a “virtual assistant” on government web sites and popular platforms like Facebook and WhatsApp, which was part of strengthening communications and information channels. The initial goal in launching the application was actually to avoid saturating the health system, especially its communication channels, as the COVID-19 pandemic spread around the country. Since then it has been updated several times and

2 It is worth mentioning that, starting in January 2020, before the first cases, the country was already preparing for a possible incursion of the COVID-19 pandemic through border control, planning and training. See, e.g.: <https://www.paho.org/es/file/83084/download?token=d45Hp1sr>.

3 <https://www.presidencia.gub.uy/comunicacion/comunicacionnoticias/lacalle-medidas-coronavirus-conferencia>

4 This report was prepared between September and December 2020, as infections were increasing.

5 See: <https://coronavirus.jhu.edu/>. Accessed on December 21, 2020.

6 “In Midst of Covid Chaos, One Latin American Nation Gets It Right”. Bloomberg, June 30, 2020. Available at: <https://www.bloomberg.com/news/articles/2020-06-30/in-midst-of-covid-chaos-one-latin-american-nation-gets-it-right>

it currently has an exposure alert system (a function previously known as contact tracing) based on implementation of an Application Programming Interface (API) developed by Google and Apple to perfect the tracing and accompaniment of new cases.⁷ This makes it possible to put the user in contact with his or her health care provider to coordinate testing to confirm or rule out infection and monitor patients with symptoms via telemedicine.

7 The API developed by Apple and Google was launched in May 2020 and it was quickly announced that it would be adopted by various countries in the region, such as Brazil, Ecuador and Panama, in addition to Uruguay. The model was based on experiences found in some Asian countries considered to have successfully contained the virus, which generated a series of concerns and questions in terms of the effectiveness and degree of intrusion into privacy involved in these cases. See, e.g. Canales, María Paz, “La herejía tecno-optimista”, available at: <https://www.derechosdigitales.org/wp-content/uploads/herejia-tecno-optimista.pdf>. The model adopted by Apple and Google, on the other hand, was a development with multiple precedents in terms of centralized and decentralized protocols enabling tracing based on proximity. See IPOL, “National COVID-19 contact tracing apps”, available at: [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/652711/IPOL_BRI\(2020\)652711_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/652711/IPOL_BRI(2020)652711_EN.pdf)

Background

Uruguay is a unitary state with a central government composed of Executive, Legislative and Judicial branches. The country is organized in 19 departments covering a territory of 176,215 square kilometers. To understand the implementation of the Coronavirus UY system—and in particular, the homonymous mobile application on which this study focuses—a few key indicators on the sociodemographic context, access to technology and the internet, and pre-existing initiatives linked to e-government and artificial intelligence are presented below.

Since the object of our study is a digital tool for addressing the public health emergency in conjunction with other measures and actions related to the operation of health services nationally, an overview of the country’s Integrated Health System will also be presented.

Sociodemographic context

According to the latest Census (2011), Uruguay’s total population is 3,505,985 people, the vast majority of whom live in urban areas. More than half the population is concentrated in the capital, Montevideo, and its metropolitan area. It is a country with a low birth rate, high life expectancy, stable population growth and aging of the age structure. Furthermore, it has historically been characterized by international migration: in its foundational stage by the wave representing the arrival of immigrants and more recently, from 1960 to 2009, by the emigration of Uruguayans, especially young people of reproductive age, to other parts of the world, a phase marked by a negative migration balance.

In the last few years this trend of emigration has been cancelled out, and even reverted, with the emergence of new migratory origins (Population Commission, 2017, p. 14). According to the 2011 Census, there were 16,506 foreign-born people—0.5% of the total population—who arrived in Uruguay between 2006 and 2011. However, these figures do not reflect the new migration flow. In 2019 alone a total of 3,331 residencies were granted; of them, 50.9% were to migrants who came from other American states outside Mercosur (National Directorate of Migration, 2019).

a) Internet access and device use

In contrast to other countries in the region, Uruguay holds a public monopoly on telecommunications through the National Telecommunications Administration (Administración Nacional de Telecomunicaciones, Antel), which has authority over the optic fiber connectivity network in the whole country. Antel has made it possible for the government to implement digital inclusion and universalization through “Universal Home Service” launched in 2011.⁸ This service requires only a telephone line and paying for the “Basic landline service plan,” whose monthly cost is 215 Uruguayan pesos, or around 5 USD. The Plan includes a traffic limit of one gigabyte per month that can be topped up freely. In April 2020, as a result of the pandemic and to encourage voluntary quarantine, all Plan connections received 50 GB free, which benefitted 120,000 households.

The government also offers each child and adolescent entering the public education system a computer under the “Basic Computer Educational Connectivity for On-line Learning Plan” (“Plan de Conectividad Educativa de Informática Básica para el Aprendizaje en Línea”), better known as “Plan Ceibal.”⁹ One hundred

8 <https://www.uypress.net/auc.aspx?13004>

9 See: <https://www.ceibal.edu.uy/es>.

per cent of educational centers in the public system have a WiFi network (2,931 institutions),¹⁰ most with optic fiber provided by Antel.

For its part, the Ibirapitá Plan promotes the digital inclusion of retirees earning less than 36,152 nominal pesos per month (around 840 USD), in order to improve social inclusion, participation and equity. The plan provides a free tablet with a friendly, intuitive interface and invites its target population to workshops on digital literacy. Antel also provides subsidized plans for these devices.

Uruguay is the country with the highest level of internet access per inhabitant in the region, and it is represented in the Digital Nations group, which brings together the world’s leading countries in digital government.¹¹ The Survey on the Use of Information and Communication Technologies (Encuesta de Usos de Tecnologías de la Información y la Comunicación, Eutic),¹² conducted by AGESIC and the National Institute of Statistics (Instituto Nacional de Estadística, INE) from October to November 2019, concluded that nine out of ten Uruguayans had used the internet in the previous three months and around 80% do so every day (Eutic 2019, p. 20). The use of tablets and cellular telephones remains constant; cell phones are virtually universal among Uruguayans, while tablets are used by a third of them (Eutic 2019, p. 22).

Among households in the highest income quintile, 95% have an internet connection and 86% have fixed broadband. Among lower-income households, 84% have an internet connection and 51% have fixed broadband. While the internet access gap between the first and fifth quintiles is small, access to fixed broadband shows marked differences depending on household income, where those with higher income are at an advantage (Eutic 2019, p. 14). Even so, socioeconomic differences in connectivity rates for households of the first and fifth quintiles have continued to decrease, dropping from 66% in 2010 to 11% in 2019. The internet access gap between Montevideo and the country’s interior is also around 11%.

While it could be claimed that internet access in Uruguay is universal, not everyone has access to a phone with the specifications required for using the Coronavirus UY app, whose exposure alerts only work on mobile phones that have the most recent versions of Android or iOS operating systems installed. On phones that fail to meet these requirements, the application only serves to provide updated information on how the pandemic is evolving. This is an important point since the exposure alert system’s effectiveness depends on achieving a high level of adherence among the population. International studies on the subject have shown that for the notifications to really be effective, a high level of adoption (between 50% and 60% of the population) is required.¹³ Even so, lower rates could be helpful if they are applied in conjunction with other epidemiological surveillance strategies, as in the Uruguayan case.

10 Figures published at <https://www.ceibal.edu.uy/es/articulo/ceibal-en-cifras>

11 See: <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/politicas-y-gestion/cumbre-ministerial-del-d9-uruguay-recibe-lideres-mundiales-gobierno-digital>

12 <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/datos-y-estadisticas/estadisticas/encuesta-uso-tecnologias-informacion-comunicacion-2019>

13 Patrick Howell O’Neill, No, coronavirus apps don’t need 60% adoption to be effective, MIT Technology Review, June 5, 2020, available at: <https://www.technologyreview.com/2020/06/05/1002775/covid-apps-effective-at-less-than-60-percent-download>

Institutional context for digital technologies

The entity offering Coronavirus UY in app stores is AGESIC, which also played an important role in coordinating public and private actors for development of the application.

AGESIC was created in 2005 as a decentralized body, reporting to the Office of the President and given broad technical autonomy. Its general objectives include improving citizens’ services, harnessing the possibilities offered by information and communication technologies (ICT) and fomenting development of the information and knowledge society in Uruguay, with emphasis on inclusion in its inhabitants’ digital practices and strengthening society-wide skills for using technology.¹⁴

AGESIC is the agency responsible for state digital policy and was deeply involved in the coordination of public and private actors to create the Coronavirus UY system and application. In addition to digital strategies employed by both the government and citizens, AGESIC takes the lead on developing various action plans and strategies for e-government and open government, among others.¹⁵ It has also headed the process for developing Uruguay’s artificial intelligence strategy, whose final document, published in September 2020, presents contributions received through a broad-based process of public consultation.¹⁶ The goal of the strategy is to promote and strengthen the responsible use of AI in public administration, identifying specific objectives and lines of action.

AGESIC plays an important role in the area of health. Since 2009 it has had an Institutional Cooperation Framework Agreement with the Ministry of Public Health¹⁷ that facilitates the coordination of actions to develop technological projects in the MSP’s Implementation Units. In this context, both entities, together with the Ministry of Economy and Finance and the Office of the President, are responsible for implementation and development of the Salud.uy Program, set up in 2012 to promote the use of ICT in the health sector.

Thanks to its outstanding role in the field of health and e-government, AGESIC was directly involved in implementing Uruguay’s digital strategy to face the COVID-19 pandemic.¹⁸ Actions included a multi-channel communications strategy to reach the greatest possible number of people with high-quality information. A virtual assistant was implemented on both government and public and private health service provider web sites regarding the disease and its spread in Uruguay, contention measures, recommendations and a single epidemiological questionnaire created by the MSP. The same virtual assistant was integrated into WhatsApp and Facebook Messenger. All communication pathways lead to this single form, which is also integrated into the Coronavirus UY mobile app (AGESIC 2020).

14 <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/institucional/cometidos>

15 See: <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/institucional/cometidos>

16 See: <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/comunicacion/noticias/inteligencia-artificial-para-gobierno-digital-hay-estrategia>

17 Available at: <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/politicas-y-gestion/convenios/msp-sueiidiss-agesic>

18 <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/comunicacion/noticias/estrategia-digital-frente-coronavirus-covid-19>

The Ministry of Industry, Energy and Mining (Ministerio de Industria, Energía y Minas, MIEM) was another of those involved in the coordination among private and public actors for developing the application. This agency is responsible for designing and implementing government policies on the industrial, energy, mining, telecommunications, audio-visual and postal services, industrial property and micro, small and medium business sectors. It must also guide the transformation and strengthening of the nation's productive machinery, its energy grid and the communications infrastructure, for sustainable and inclusive development.¹⁹

Another relevant entity was the National Agency for Research and Innovation (Agencia Nacional de Investigación e Innovación, ANII), which promotes research and the application of new knowledge to the country's productive and social reality. ANII makes funds available to the public for research projects, and national and international post-graduate scholarships, and it offers incentive programs for innovative and entrepreneurial culture in both the private and public sectors.²⁰

Although the Coronavirus UY application was offered and promoted by AGESIC, it falls within the remit of the MSP; its functionalities, including data collection and delivery, are linked to the diverse actors found in the health system. One of the keys to the tool's creation is that since 2007, Uruguay has had a National Integrated Health System (Sistema Nacional Integrado de Salud, SNIS) that is also highly digitalized and interoperable with the Salud.uy program.

Law 18.211 created the SNIS and regulated the right to health protection enjoyed by all residents in the country. The law defines system users as all people residing in the country; they are enrolled either automatically or at the request of the National Health Board (Junta Nacional de Salud, JUNASA), at one of its participating health service providers.²¹ Implementation of the SNIS in 2008 meant the universalization of health care coverage via National Health Insurance (Seguro Nacional de Salud, SNS). The health system provides care to all inhabitants of the country, so the Coronavirus UY app and its functionalities are activated for everyone who wants to use it, with no distinction of any kind, including migrants with temporary or permanent residency.

Regulatory context

Adherence to international treaties

Like most countries in the region, Uruguay is a participant in the main international human rights treaties that recognize privacy as a fundamental right, such as the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights and the American Convention on Human Rights, among others.

Likewise, it has been a pioneer in Latin America in adhering to some of the highest international standards specifically related to personal data protection. In 2012, it was the first non-European country to ratify Convention 108 of the Council of Europe²² on protection of individuals with regard to the automated

19 <https://www.gub.uy/ministerio-industria-energia-mineria/institucional/cometidos>

20 <https://www.anii.org.uy/institucional/acerca-de-anii/#/acerca-de-anii>

21 Art. 49

22 <https://rm.coe.int/16806c1abd> (in Spanish); <https://www.coe.int/en/web/conventions/full-list/-/conventions/rms/0900001680078b37?module=treaty-detail&treatynum=108> (in English)

processing of personal data and its Additional Protocol.²³ Also since 2012 Uruguay is one of the countries with an adequate level of personal data protection in accordance with European Union standards pursuant to Directive 95/46/EC, “on the protection of individuals with regard to the processing of personal data and on the free movement of such data.” With that, cross-border flow of personal data between the European Union and Uruguay is made possible with no additional restrictions.

In 2010 Uruguay became a member of the Executive Council of the Ibero-American Network for Protection of Personal Data (Red Iberoamericana de Protección de Datos Personales, RIPD), and from 2019 to 2020 it assumed the presidency of the Council via the Uruguay Personal Data Regulation and Control Unit (Unidad Reguladora y de Control de Datos Personales, URCDP). The country is also a member of the Executive Council of the International Conference of Data Protection and Privacy Commissioners (ICDPPC).

b) National standards

Uruguay adopted a general data protection law in 2008—Law 18.331 on Protection of Personal Data and Habeas Data Action—whose first article recognizes that “the right to the protection of personal data is inherent to the human being and is therefore included in Article 72 of the Constitution of the Republic.” The law was updated in 2018 to take into account new technological developments and evolution in how personal data are processed (Law 19.670, 2018).

In 2020, Decree 64/020 regulated Articles 27 and 40 of Law 9.670 and Article 12 of Law 18.331 to harmonize the legislation with international treaties on the matter to which the Uruguayan government is signatory. European Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data was taken into consideration for the Decree. Furthermore, the “Standards for the protection of personal data for Ibero-American States,” Convention 108 of the Council of Europe, its Additional Protocol and the Modernization Protocol were all taken into account.

Decree 64/020 incorporates data protection measures by design and by default, to be based on prior impact assessments, especially in cases where there is greater risk to individuals (Clause V). Moreover, it sets security criteria and deadlines for reporting each incident to the national data protection authority, with no limit on the volume of data; and it requires that, in cases of breaches affecting data protection, data holders who may have been significantly affected in terms of their rights must be informed of such in clear and simple language (Art. 4).

c) Regulatory agency and data protection officers

Law 18.331 Article 31 created the oversight body responsible for monitoring compliance with relevant legislation: the Personal Data Regulation and Control Unit (URCDP). The Unit is a decentralized agency of the AGESIC, granted broad technical autonomy and whose jurisdiction covers the whole country.

The URCDP received 1,902 requests and 91 complaints in the course of 2019; the most common were for video surveillance, commercial data, spam and the exercise of rights. According to current data from the “Survey of knowledge, attitudes and practices for Digital Citizenship” (CAP), 53% of Uruguayans of legal age know that there are regulations protecting personal data (in 2016 it was 42% and in 2014, 36%). According to that study, 65% of those polled in 2018 considered that personal data protection in Uruguay is achieved in practice; 1 out of 3 Uruguayans of legal age have requested their personal data be eliminated

23 On October 20, 2018, Uruguay signed the Modernization Protocol for Convention 108 of the Council of Europe via Decree 64/020, 2020.

from or changed in a database at least once; and 6% report having suffered some privacy breach (photos or videos) or abuse of personal information they provided on the internet.²⁴

Law 19.670 stipulates that public, state or non-state and private entities that process sensitive data as their main business, as well as those that process large volumes of data, must appoint a personal data protection officer (Art. 40). These officers must advise on the formulation, design and application of personal data protection policies; supervise compliance with legislation; and propose relevant measures to adapt to both national legislation and relevant international standards. They must be legal professionals or knowledgeable in law, with an emphasis on human rights and knowledge of regulations concerning personal data protection and IT tools.²⁵

The URCDP trains officers in their roles and keeps them up to date as institutional changes occur. Resolution 32/020 establishes the criteria for appointing the officers and the procedure for reporting the appointments, which is done using a registration system owned by the URCDP.²⁶

d) Data protection in the area of health

Chapter IV of Law 18.331, titled “Sensitive data,” establishes that specially protected data as defined in Art. 4 are those revealing racial and ethnic origins, political preferences, religious or moral beliefs, union affiliation and information referring to health or sexual activity.

Article 19 indicates that public and private health facilities and health-related professionals may collect and process personal data related to the physical or mental health of patients who attend these facilities or who are or have been under treatment, respecting the principles of professional secrecy, specific legislation and the law’s provisions.

Article 17 of Law 18.331 establishes that personal data may only be used to achieve purposes directly related to the legitimate interests of the issuer and the end user, with prior consent from the data owner, to whom the purpose of the sharing must be disclosed. In other words, the data subject must consent to use of the data and must be informed beforehand, except in the case of legal exceptions, such as “sharing when necessary for public health, emergency reasons or for epidemiological research,” safeguarding the identity of the owners.

As we shall see in greater depth below, in terms of health data, such as those collected by the Coronavirus UY application, Ruling 2/020²⁷ by the URCDP clarifies that processing such data may be conducted without prior consent from the data subjects, due to the public health emergency and based on legal authorization.²⁸ It is noteworthy that this ruling was published the same day that the application was introduced to the public, on March 20, 2020.

24 <https://www.gub.uy/unidad-reguladora-control-datos-personales/comunicacion/noticias/28-enero-dia-internacional-proteccion-datos-personales>

25 <https://www.gub.uy/unidad-reguladora-control-datos-personales/institucional/normativa/resolucion-32020>

26 <https://www.gub.uy/unidad-reguladora-control-datos-personales/institucional/normativa/resolucion-32020>

27 <https://www.gub.uy/unidad-reguladora-control-datos-personales/institucional/normativa/dictamen-n-2020>

28 URCDP, Ruling 2/02, Section IV.

Pre-pandemic legislation defined the confidentiality of health information. Decree 274/010 of September 2010 regulates Law 18.335 of 2008, which governs the rights and obligations of patients and health services users. Article 30 defines that a clinical history²⁹ shall be confidential and may only be accessed by the patient’s health care managers and administrative personnel linked to the institution; the patient or those persons authorized by the patient; and the legal representative of a patient declared legally incompetent, his or her spouse, cohabitating partner or nearest relative, in cases of the patient’s incapacity or manifest disability.

Access to the clinical history is also authorized for “the Ministry of Public Health, including the National Health Board when considered relevant.” Even so, the law stipulates that “health services and health care workers must respect confidentiality regarding the content of the clinical history and may not reveal it except where necessary for the patient’s treatment or as required by judicial order or pursuant to the provisions of Article 19 of Law 18.335.”³⁰ Information exchanged via telemedicine, as for any medical consultation, is also covered by Decree 302 of the Penal Code, referring to professional secrecy.

e) Electronic health systems and conditions for data processing

For the telemedicine functionality included in the Coronavirus UY app to work, it is necessary for the doctor to have access to the patient’s electronic clinical history, which is found in the health service provider’s database and comes under the institution’s responsibility.

The “National Electronic Clinical History System” (Sistema de Historia Clínica Electrónica Nacional, HCEN) is the set of institutions and persons, procedures and technologies that interact to make the exchange of clinical information possible and contribute to the continuity of care for users and patients. For its part, the HCEN platform facilitates continuity of care through access to and consultation of an individual’s complete electronic clinical documents.³¹

Act 19.335 authorizes the Executive branch to define the clinical information exchange mechanisms for the purposes of care, using the National Electronic Clinical History system, to guarantee the right to protection of the inhabitants’ health and their access to comprehensive health services networks. Exchange of clinical information must guarantee the information’s confidentiality in accordance with Law 18.331 on Protection of Personal Data (Art. 466).

The law is regulated under Decree 242/017, which also alludes to Law 18.331 and establishes that electronic clinical history data may not be used for any purposes other than care, except when necessary for public health or sanitation reasons, due to emergency or for the conduct of epidemiological studies, provided that the owner’s identity is protected (Art. 5). The same Decree stipulates that all health care providers, public and private, must keep an electronic clinical history for each person and are responsible for its security. Institutions with legal jurisdiction in health are responsible for providing mechanisms and procedures for electronic administration and identification to those who access electronic clinical histories (Art. 3 and 12).

For its part, telemedicine has a more recent institutional structure, associated with the existence of the Coronavirus UY application and the public health emergency. Although there was already a bill on the issue filed in the National Legislature by senators of different parties prior to the pandemic, it was resolved to

29 This case refers to clinical history in general— i.e. the medical procedures that are recorded in a patient’s medical record—as distinct from the National Electronic Clinical History analyzed separately in this report.

30 Decree 274/010, 2010, Point E.

31 Decree 242/017, Art. 14 and 15, 2017.

declare it urgent and consider it immediately.³² On April 2, 2020, Law 19.869 was passed establishing general guidelines for implementing and developing telemedicine as a means for providing health care services. Regarding data security, as we have seen with other legislation, it was declared that all data and information transmitted and stored based on the use of telemedicine must be considered sensitive data in accordance with the provisions of Law 18.331.

Data exchanged over the HCEN and data gathered over telemedicine are both covered by administrative mechanisms for data protection and, therefore, there are administrative routes for those affected to file complaints. Complaints to begin an “Administrative proceeding to determine the existence of a potential violation of the provisions of Law 18.331 on the Protection of Personal Data and ‘Habeas Data’ and to take the corresponding legal measures” may be filed on the Personal Data Regulation and Control Unit³³ web site.

The complaint can be filed online on the URCDP site, or in person by filing the complaint form that can be downloaded from the web for free. Law 18.331 establishes that, unless declared inadmissible, the parties must be summoned to a public hearing within three days of the date the complaint was filed. The complainant must provide his or her personal information and an electronic address if available, identify the perpetrators with as much detail as possible and furnish a description of the events leading to the complaint.³⁴

All of the above paints a picture of a collection of government agencies with different levels of responsibility over different components of a technological system like Coronavirus UY. The next chapter focuses on how the program is integrated into this institutional context.

32 Record of Sessions of the Senate, March 24, 2020, Item 13.

33 <https://www.gub.uy/tramites/denuncias-unidad-reguladora-control-datos-personales-urcdp>

34 <https://www.gub.uy/tramites/denuncias-unidad-reguladora-control-datos-personales-urcdp>

Case description

The Coronavirus UY system

To fully understand the Coronavirus UY mobile app, it is important to understand the similarly named system of which it is a part, which is itself a component of the National Coronavirus Plan.

The Coronavirus UY System is a solution developed to gather diagnostic data and to provide information on COVID-19. It includes various pathways for interacting with citizens: the mobile app; one chatbot for WhatsApp and another for Facebook Messenger; a chatbot incorporated into MSP-related websites; a protocol for phone consultations that health care providers must use (the only part of the system that existed prior to the pandemic); and a telephone switchboard that answers calls from the free hotline provided by the MSP.

All routes of contact make it possible for people to submit one single form with personal information (age, telephone, ID number), symptoms and preexisting conditions. The form has been updated as the system has added functionalities. Information from the form is collected in a central database using a single in-box to which the MSP and each of the health care providers have access for conducting follow-up on patients, depending on their health status. This information allows the MSP and the health care provider to contact users by phone or using the Coronavirus UY app. The centralized database belongs to the MSP and that agency establishes the guidelines and protocols for its use.

The Coronavirus UY System is integrated into health care providers’ pre-existing systems, which have tools for monitoring cases not necessarily related to the pandemic. The system integration facilitates consolidating the in-box, whose use ends up being more administrative than clinical. Individuals are classified according to their level of risk, and each health care provider monitors his or her patients depending on that level (Bouza, 2020).

As explained above, the Coronavirus UY System interacts with the HCEN platform, on which clinical information is exchanged with health care providers. Furthermore,

“it contains information from the digital system developed by the National Emergency System (Sistema Nacional de Emergencias, Sinae), which maintains a list of beds and respirators available among health care providers, as well as the highs and lows of in-patient units at public and private health facilities around the country. Finally, it also communicates with the system used by laboratories so that health care providers and the MSP may access clinical results for COVID-19 and have a direct, real-time record” (Bouza, 2020).³⁵

The Coronavirus UY system has a web interface through which the MSP and health care providers have access to decision-making dashboards, tables and modules for epidemiological risk calculation, surveys and registries. Furthermore, a workflow process was implemented for the proper handling of data by health care providers (Milano, Vallespir, Viola, 2020, p. 54). Doctors have their own in-box through which the users they are monitoring are introduced, having been categorized by the system depending on their risk level, according to criteria defined by the MSP’s epidemiology experts (Milano, 2020).

35 https://www.youtube.com/watch?v=b59OqBFqKUg&ab_channel=ISuy

All these tools are synchronized with the National Coronavirus Plan, enabling constant monitoring of the pandemic’s evolution nationally³⁶ and seeking to facilitate decision-making for public policies. The system also has a module available to medical services at all levels (common, moderate and intensive), for relieving health personnel who may be exposed to potential COVID-19 cases.

The Salud.uy Program was responsible for training health care provider staff, via videoconference, in using the form and the platform that gives access to the availability of resources at health facilities.³⁷

The Coronavirus UY application

The Coronavirus UY app is part of the broader system described above and has been available for downloading in the Google Play, Apple Store and Huawei markets since March 20, 2020—seven days after the first documented COVID-19 cases in Uruguay. Its use by citizens is voluntary; there is no obligation from authorities. However, some sectors have required its use. For example, in professional soccer, its use became mandatory when championships resumed, according to an announcement by the president of the Uruguayan Soccer Federation.³⁸ In addition, people who entered the country from abroad are directed to use the app, as stipulated in Decree 195/020.³⁹

Installing the app requires an operating system higher than Android 6.0 and iOS 10 on iPhones. However, more recent versions are required for some of the functionalities that were added over time, such as the exposure notification system.

a) Operation

Opening the app for the first time shows detailed Terms and Conditions (T&C) of use. Once these are accepted, one can: (i) activate exposure alerts, (ii) report a trip abroad, (iii) report contact with a confirmed COVID-19 case, (iv) report symptoms, (v) obtain a sworn health declaration for entering Uruguay. If exposure notification is activated, notifications to alert others can be set up. The Privacy Policy is also accessible from the main menu.

The app makes it possible to see a screen with information on how the pandemic is evolving in the country, including daily cases, active cases, recovered cases, cases in intensive care, deaths, and the number of tests administered both that day and since the beginning of the pandemic. The same information is presented as total numbers and graphics on development. There is also a notifications screen and another with information on the individual’s health status based on medical monitoring if the person is under clinical follow-up.

36 <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/comunicacion/noticias/estrategia-digital-frente-covid-19>

37 <https://youtu.be/D7-sAiG3fvO>

38 <https://www.subrayado.com.uy/el-futbol-uruguayo-vuelve-el-8-agosto-y-el-clasico-sera-el-domingo-9-n647554>

39 Poder Ejecutivo y Consejo de Ministros, 2020, <https://www.impo.com.uy/bases/decretos-originales/195-2020>

According to the application user manual,⁴⁰ in cases of clinical follow-up, information on co-morbidities will be requested in addition to data such as age, disability and sex, intended to “help the health team attending your case to assess potential risks” (Salud.uy, 2020, p. 14). The app offers the option to click yes or no for the following: diabetes, cardiovascular disease, chronic pulmonary disease, chronic liver disease, chronic neuron disease, congenital or acquired immune dependency, cancer, receiving treatment with immunosuppressant drugs, currently postpartum, lactating mother. A footnote makes clear that the reports are added to the user profile by the health care provider and monitored by the attending physician. Once the clinical history has been completed, an option pops up for filing a first self-monitoring report, which must then be completed twice a day. Information is also requested on hearing loss, since there is a proposal to make the app accessible using sign language during telemedicine consults (Milano, 2020).

The Coronavirus UY app user manual also instructs the user to complete reports if the patient is in clinical follow up for COVID-19, as well as if he or she has symptoms and is waiting for test results. The self-monitoring reports are received in the system’s in-box and are available to health care providers, who have access to information on the patients under their care.

Once they access the data, health care providers may recommend: continuation of follow-up; cancellation of follow-up in cases where symptoms have subsided; a clinical tele-consult to analyze the patient’s health status; or administering a COVID-19 test.

The self-monitoring report requests information on “temperature, continuous or persistent cough, muscle and joint pain, nasal congestion, watery or viscous nasal discharge, sore throat and diarrhea.” There is also a field for comments where the information on health status may be supplemented. In the “My current health” option, the patient being monitored may access the results of his or her test if one has been taken or coordinate information for scheduling. Validations of status reports and information on pending tele-consults can also be found.

Depending on the person’s health situation, the health care provider may use the app to issue notifications on:

- Continuing follow-up via the app. At least twice a day the user receives a reminder of the importance of performing and reporting self-monitoring.
- Requesting a tele-consult for more details and deciding how to continue care.
- Coordinating a test to confirm or rule out COVID-19.
- Coordinating the patient’s admission should he or she need hospital care.

If the user receives a notice for a tele-consult, the app will alert him or her of the day and time. When the time comes, another alert will be received indicating that the doctor will be available for the tele-consult in a few minutes and providing additional guidance for properly engaging in the activity. Once the attending physician is on the other end of the line, access to the tele-consult is given.⁴¹ The doctor may update the patient’s data depending on the symptoms shown.

40 Available at: <https://www.gub.uy/ministerio-salud-publica/comunicacion/publicaciones/app-coronavirus-manual-usuario-nueva-funcionalidad>

41 <https://www.gub.uy/agencia-gobierno-electronico-sociedad-informacion-conocimiento/comunicacion/publicaciones/app-coronavirus-manual-usuario-nueva-funcionalidad>

At first the app only allowed registration of one user, the owner of the phone where the app is installed. A later update enabled adding more than one person to the same device, which facilitated access for family or community groups where not all members had their own device, for example. Follow-up can be done from the app for cases involving underage patients and people who have difficulty using a cell phone or who have not downloaded the app. For this, information related to the person to be affiliated is requested and the health care provider must use an activation code to activate monitoring. Once linked, each person's status and follow-up may be accessed.

COVID-19 tests are managed by each user's health care provider. Laboratories won public tenders to fulfill this role and are the same throughout the whole system. The care received by users depends on each health care provider. There are providers who allow home-based testing, for example, while others coordinate transportation with the patient⁴² to get to the laboratory where the test will be safely conducted, with no need to get out of the car. Finally, there are providers who require users to show up in person at the facility to have the test done there.

b) Objectives of the application

The application's objectives changed in public statements as new functionalities were added. On March 20 at the first presentation, authorities at the press conference indicated that they were pursuing two goals: to inform the public, centralizing sources; and to allow users to connect with public health authorities to clear up doubts. They also hinted that a second version of the app would soon be introduced with the goal of caring for people already diagnosed as positive cases via telemedicine (which was still not legally institutionalized). The obvious need was to connect citizens showing possible COVID-19 symptoms with their health care providers as quickly as possible while avoiding in-person care during the public health emergency.

On June 15, when the new version including exposure notifications was introduced, no mention was made of who the app's target population was; instead, the population in general was encouraged to download the app and activate the exposure alerts.

According to developers, the Coronavirus UY system and app enable storing all information in a single database to conduct follow-up of clinical cases and transmission vectors, to manage public health criteria for decision-making and to optimize care services for the population.

The objective of the exposure notifications is to assist MSP tracers in their job of following the epidemiological trail to control outbreaks in the traditional manner. The mechanism works based on detection of a positive case, which requires the patient to report a list of people with whom they had contact in the previous days, along with their phone numbers, so the people may be contacted. The tracers then contact each of these individuals, requesting that they enter quarantine or get a COVID-19 test, depending on the case. The electronic alerts activated by the app supplement action based on automatic exposure alerts generated from Bluetooth signals. They are especially useful for communicating with people who may be beyond the reach of epidemiological tracers.

It is worth mentioning that the MSP had an epidemiological tracking and surveillance structure that acted in other events, which was duly activated and ramped up in the context of the pandemic.⁴³

42 Since 1993, taxis in Montevideo have been required to have a barrier separating the driver from passengers.

43 See: <https://www.paho.org/es/file/83084/download?token=d45Hp1sr>.

c) How the exposure alerts work

The version of the Coronavirus UY app presented on June 15 integrated the Application Programming Interface (API) with exposure alerts functionality developed by Google and Apple. Up to that point, the app had been downloaded 325,000 times and had conducted 52,000 consults (Office of the President, 2020). Google and Apple together created the exposure notification system to alert people who may have been exposed to COVID-19 infection, due to their physical proximity to people confirmed as infected. The alert system uses Bluetooth low energy (BLE), which avoids impact on the device’s battery charge and its usable time (Coronavirus UY, 2020).

Activation of exposure notifications is voluntary via opt-in, which means that the functionality is not pre-activated on installation and may be deactivated at any time. For it to work adequately Bluetooth must also be activated in the phone’s settings. Prior to activation there is a detailed explanation of how the system works and on the data that are shared between available devices, where it is specified that the system does not share data collected by this function and that privacy is respected pursuant to Law 18.331 on personal data protection.

Once the functionality is activated, the application shows a message warning that the phone is collecting data in a secure manner and that it shares codes at random with nearby devices. The date, duration and strength of the signal are shared with the Coronavirus UY app.

If alerts are not activated, the app does not allow re-activating them from the app; this must be done using the device settings. There it explains that, by not activating Bluetooth, the Exposure Logging Status remains deactivated. Exposure notifications can be deactivated on the same settings screen, along with the possibility of indicating that it be updated monthly and notify the user both that it is active and of the potential exposures that are being shared with the public health authority. The settings screen provides an option facilitating access to more information on the exposure alerts. In short, it is explained there that the activated alerts allow the device to notify the user if he or she has been near a person who was identified as carrying COVID-19. This facilitates rapid access to any necessary medical care, as well as taking preventive measures.

The cell phones of people who agree to activate the alerts emit Bluetooth signals that can be captured by the phones of other users who are in sufficient proximity. The signals contain alphanumeric codes randomly generated by each cell phone that change approximately every 15 minutes. This communication takes place between nearby cell phones and the information is stored on them. It does not go through antennae, data centers or telephone operator systems, cell phone manufacturers, app providers or government entities, including the MSP. Each cell phone is responsible for keeping the codes it emitted and received during the previous 15 days (Coronavirus UY, 2020).

If the user took a COVID-19 test and the result was positive, he or she has the possibility, on a wholly voluntary basis, to collaborate so that those who were in proximity (within five meters for more than five minutes in the last 15 days) receive alerts. It is made clear that the system works without revealing personal data (neither the cell phone’s identifying information nor the places the person visited), and that privacy will always be respected in accordance with Law 18.331. When the device receives the codes, it compares them to the ones it captured, and if matches are found (if they meet the distance and contact time criteria), it may emit an alert to inform the user that he or she was exposed to the virus.⁴⁴

44 If the user receives an alert, he or she must contact their health care provider, not necessarily via the app, to find out how to proceed with medical care.

d) Authorizations for use of data in the application

Installation of the application on mobile devices is optional, as is entering data into the single form. Self-monitoring reports are voluntary; the application sends reminders twice a day to file them. The exposure alert notification system, as we have seen, only works if the user agrees to activate it, and even then, it requires his or her permission and participation for specific actions. The alert system may be deactivated at any time.

If a person receives a positive test result and is willing, he or she will have the possibility to share with the Coronavirus UY server—under government control—the codes that the cell phone emitted over the previous days. The server receives this information and stores it temporarily (for approximately 15 days) without connecting it to any information from the devices or the people who use them.

When the user activates the Coronavirus UY app for the first time, an explanatory text titled “On data usage” appears on the home screen. When the app is opened, detailed terms and conditions for use are presented and it is necessary to view all 11 pages to accept them and proceed to the next step. The document informs that use involves collecting and processing data in accordance with national laws and that this will be limited to the purposes for which the data were shared. Furthermore, the T&C refer to the application’s privacy policy for specific questions related to data protection. In terms of the functionality for issuing sworn statements for entering Uruguay from abroad, the application offers information in other languages (English and Portuguese) on data collection.

Responsible use of the app and associated information is requested, and misuse can lead to civil and penal action. “Personal data collected will be incorporated and handled in a Database whose purpose is the proper provision of care and service to individuals. No sharing of personal data is authorized, apart from the exceptions set forth in Law 18.331 and with other public or private institutions exercising the same care-oriented functions, where such sharing is necessary for the proper provision of care to the data owner. The managing authority for the Database is the Ministry of Public Health and the address where the owner may exercise his or her rights of access, correction, updating or elimination is atencionalusuario@msp.gub.uy” (Coronavirus UY, 2020).

e) Databases

The database used by the Coronavirus UY app, where all epidemiological forms end up, is centralized and managed by the MSP. Each health care provider has its own database, covered by current laws protecting personal data and sensitive data. The electronic clinical patient documents, updated by attending physicians, are stored at the medical facility where the patient received care. All information generated by health personnel about a specific patient remains in custody of the institution where the information was generated. Users may access their medical history using the providers’ websites, where available, or by requesting the history using their ID number.

The SNIS ecosystem of databases and clinical information exchange platforms is branched. There is a platform for access and privacy, through which user consent regarding individual clinical data is processed and which is part of the National Health Platform (Plataforma Nacional de Salud, PNS). In turn, the PNS is supported by the AGESIC Interoperability platform, at both technical and regulatory levels, expanding it and specializing it for the health sector. Health care providers have their own Health Information Systems to handle their patients’ clinical information. Supported by the RedSalud, providers can exchange clinical information using the Salud.uy Platform, depending on their interests, powers, privileges and specific

services. The MSP has a role in the ecosystem as auditor and controller.⁴⁵ The Salud.uy Platform is composed of the National Health Users Index (Índice Nacional de Usuarios de Salud, INUS), the National Registry of Clinical Documentation, the Health Bus, the Auditing System and the Health Appliance. In addition, pharmacies, laboratories and governing bodies, among others, participate with different levels of access to the information available in the system.

45 <https://centroderecursos.agesic.gub.uy/web/arquitectura-salud.uy/inicio/-/wiki/Arquitectura+para+Salud/Ecosistema+de+Salud+de+Uruguay>

Institutional configuration and decision-making process

The Coronavirus UY application and system bring together a series of public and private actors in an unprecedented initiative. We'll review how the decisions for achieving the system's implementation were made.

The new government took office on March 1, 2020. The first confirmed cases were documented on Friday, March 13. Nicolás Jodal, GeneXus CEO,⁴⁶ met with AGESIC authorities on March 14 to propose the implementation of the system and application. The following day, Jodal and MSP representatives met with President Lacalle Pou. On March 15, the government gave the green light to implement the proposed tools and asked developers to have the tool ready as soon as the following week. It is worth mentioning that as seen above, Uruguay had already been preparing to contain the COVID-19 pandemic even before the first cases in the country were recorded. One stage of preparation and alert was activated as soon as the World Health Organization (WHO) designated the spread of the novel coronavirus as a Public Health Emergency of International Concern (PHEIC).⁴⁷

What is worthy of attention, in terms of development of both the Coronavirus UY System and the mobile app, is the lack of an open public call for proposals issued by the government for their design or development, with quick action instead by the private sector in making a proposal to the public authority. In fact, at GeneXus development had started that very Friday the 13th, banking on the proposal's acceptance. The intention was to have a tool with official data that could be managed by authorities, due to the fact that, according to the company itself, data could not be held in private hands.⁴⁸

GeneXus was not the only company involved in this development. To set up the system and application, more than 12 private-sector tech companies came together in a completely unpaid effort. On March 20, after development in record time, system implementation began. It was presented at a press conference with participation from the Secretary to the Presidency, Álvaro Delgado; the Assistant Secretary, Rodrigo Ferrés; the Minister of Public Health, Daniel Salinas; the Director of AGESIC, Hugo Odizzio; and engineer Nicolás Jodal, “in representation of the Uruguayan software companies collaborating on this development.”⁴⁹ In other words, from the launch of the system with computer components, there has been an emphasis on the collaborative nature between the in-coming administration and the national software development industry, a collaboration not mediated by public tenders or openness to different bidders.

Collaboration with the private sector also extended to the international arena: technical links were key for including in the application the API for exposure notifications developed by Google and Apple, ahead of any of the many similar applications for mobile phones offered in the rest of Latin America. The gover

46 Founded in 1988, GeneXus is a Uruguayan company whose objective is “Simplifying software development, automating everything that can be automated.” (<https://www.genexus.com/en/company>)

47 See: <https://www.paho.org/es/file/83084/download?token=d45Hp1sr>.

48 <https://www.montevideo.com.uy/En-Perspectiva/Coronavirusuy-la-app-ha-sido-una-maravilla-conseguida-en-tiempo-record--uc748665>

49 <https://www.gub.uy/presidencia/comunicacion/noticias/gobierno-presento-aplicacion-digital-facilita-consultas-usuarios-coronavirus>

nment reacted with pride to the collaboration with these tech giants; President Lacalle Pou even shared on his Twitter account the correspondence he received from the CEOs of Google⁵⁰ and Apple.⁵¹

When the new version of the app, including the exposure alerts, was presented on June 15 at a press conference broadcast live on television, the table was occupied by Daniel Salinas, Health Minister; Omar Paganini, Minister of Industry, Energy and Mining; and Nicolás Jodal, “spokesperson for the private sector.”⁵² In the words of the Minister of Industry, the initiative corresponded to a collaborative effort that was “highly impartial, led by diverse institutions and companies who got to work immediately to develop the application.” According to Paganini, the team that developed the app took into consideration the government’s main policy directives regarding handling the pandemic: concern for health in a framework of the responsible exercise of freedom. This tool was chosen because, as conceived, it does not interfere with people’s privacy⁵³ and that is the political line of the liberal government that preferred to avoid imposing measures such as mandatory quarantine.

In other words, the government emphasized in their presentations to the press their concern for people’s freedom and the care of their data. At none of the conferences was it mentioned that the URCDP had issued a Decree authorizing the use of data collected by the system, in the sense that Law 18.331 allowed the use of personal data for health reasons without the owner’s prior consent, in the context of the public health emergency and as part of a state of emergency.

Gastón Milano, GeneXus CTO, Diego Vallespir and Alfredo Viola, adjunct professor and professor, respectively, of the Computing Institute of the University of the Republic’s School of Engineering, highlighted in an article published in November 2020 that this is an innovative project, the only known solution in the world that integrates and presents in a unified manner the country’s entire health services, incorporating capability for self-monitoring, remote monitoring of patients, and telemedicine (Milano, Vallespir, Viola, 2020, p. 53). According to the developers, the intention was to be proactive in managing the pandemic, making a solution available as soon as possible, and that the product, in terms of software, be robust and extremely safe, because it would handle sensitive data. They recount how, at the request of the Office of the President, the first version had to be ready in seven days and had to include: registration, classification based on an epidemiological assessment that would make it possible to see which citizens had higher probabilities of being infected, and putting them in contact with different healthcare providers by phone or video call, protecting health personnel from exposure to infection (Milano, Vallespir, Viola, 2020).

In terms of funding the system, the Coronavirus UY app had no international cooperation funding nor prior budget allocation. According to information from public authorities available in the press, the development and implementation of the application entailed no additional costs to the country. Contributions from the private sector were voluntary and the government had preexisting resources from AGESIC and the Ministry of Public Health.⁵⁴

50 <https://twitter.com/LuisLacallePou/status/1271559039814709251>

51 <https://twitter.com/LuisLacallePou/status/1274036151800811521>

52 The conference can be seen at <https://youtu.be/eEeAsInNUJ4>

53 Omar Paganini, Minister of Industry, Energy and Mining, at press conference, June 15, 2020, Office of the President <https://youtu.be/eEeAsInNUJ4>

54 <https://youtu.be/eEeAsInNUJ4?t=1713>

In addition to GeneXus and the government actors mentioned previously, we know that creation of the system included participation from: Antel, Claro, ITC, HG, BPS, Accesa, Quanam, Tryolabs, ISBEL, Abstracta, Qualified, DVelop, i+Dev, Concepto, Globant, Unidad Salud Sordos, Clínica Tiraparedes, BigCheese, InSwitch, IxDA, Dils, ICA, Google, Apple, Facebook, BlazeMeter and Sinch, among others (Milano 2020).⁵⁵

55 https://genexus.blog/es_ES/general-interest/aplicacion-coronavirus-uy-detras-de-la-pantalla/ (in Spanish); https://genexus.blog/en_US/general-interest/aplicacion-coronavirus-uy-detras-de-la-pantalla/ (in English)

Potential impact on the exercise of rights and final remarks

The Coronavirus UY System and mobile app continue to be used. After the initial enthusiasm, the government slowly stopped mentioning the system in daily televised press conferences. However, it continues to be part of the government’s “digital strategy” for confronting the virus. On December 1, 2020, a group of opposition legislators called on the government to begin a public service campaign to promote the application’s use, demanding not only communication measures on the system’s utility, but also facilitation of conditions for connectivity using promotional plans from Antel to upgrade mobile equipment.⁵⁶

On the two occasions when it was introduced to the public—March and June 2020—there were fewer than 50 daily infections in Uruguay. However, in December 2020, Uruguay started to see more than 300 infections per day.

Analysis of the tool in terms of its potential for discrimination showed no evidence with regard to its internal functioning since the application is mainly a means for connecting users to providers. Furthermore, in theory sufficient protections exist regarding data collection and access by the different actors involved in the initiative. Nonetheless, the new exceptions to shared access for sensitive data implemented during the public health emergency do open the door to concerns about potential misuse of data collected by the application.

On the other hand, while the aspect of automating risk classification does not involve any artificial intelligence elements, according to available information, and though it may be based on criteria defined by a group of epidemiological experts, it is still limited to available information: data used for any classification shall be those that each person reports based on his or her own assessment.

Regarding the level of app downloads,⁵⁷ it can be seen that, beyond the country’s degree of preparation for the use of digital technology, the most common difficulties with adherence are the same as those found internationally. In addition, the main comments from users in app stores point to usability or display problems in cases where devices are updated or changed. Problems with the notification of positive cases have also been reported, and concern has been expressed around the application’s impact on battery and data usage. Finally, users note operational difficulties in outlying areas or in cases where a VPN is used for non-Uruguayan IP addresses. All this points to different variables for the exclusion of diverse population groups regarding the application’s use.

Given the relatively low adherence to the app among the population and the installation requirements, statistical data generated may include socioeconomic biases that could end up being reflected in public policies. Accordingly, the fact that the application is just one part of a broader monitoring system should be understood as a good practice: the public policy can be sustained absent the application and based on data collected by the wider epidemiological surveillance strategies that are independent of the technological component.

56 “Diputados del FA piden al gobierno que incentive el uso de aplicación Coronavirus UY” [“FA Legislators ask the government to encourage use of the Coronavirus UY application.” El Observador, December 1, 2020. Available at: <https://www.elobservador.com.uy/nota/diputados-del-fa-piden-al-gobierno-que-incentive-uso-de-aplicacion-coronavirus-uy-202012214448>

57 According to information from late 2020, more than one million people had downloaded the app. See: “Alertas de exposición se multiplicaron por 10 en la aplicación Coronavirus UY” [“Exposure alerts increase tenfold in the Coronavirus UY app”], El País, December 29, 2020, available at: <https://www.elpais.com.uy/informacion/salud/alertas-exposicion-multiplicaron-aplicacion-coronavirus-uy.html>

In terms of formal auditing of the system’s different components, none have been considered, as had been contemplated in an impact study prior to implementation. AGESIC, however, does offer access to the app’s source code as a mechanism enabling future independent audits. According to the Ministry of Public Health, “With the goal of providing full transparency and guarantees around handling the data collected, in this first phase, the possibility of auditing the Coronavirus UY application’s documentation and source code, including its exposure alert functionalities, is made available to national institutions (academia, industry, organized civil society).”⁵⁸ This is a positive initiative, as is the existence of the other transparency and consent measures mentioned throughout this study.

The context of a health emergency must surely be taken into consideration in analyzing the system’s implementation. In this sense, factors favoring the speed of response include the country’s preparation in terms of digitalization and the existence of strong legislation and institutions for data protection, including in the health sector. Likewise, public–private cooperation was critical for a timely technological response that could supplement a series of prior epidemiological surveillance measures. The fact that it could be successfully developed during a change in administrations is also a positive sign regarding government institutional strength regardless of the government in office. If these conditions or results are maintained, and if the measures are sufficiently effective in terms of the problem they propose to address, the case could even come close to being considered a success.

Even so, it is worth mentioning that, according to information obtained, the process at no time contemplated participation from civil society in the design or evaluation of implementation, beyond access to the source code, nor were mechanisms considered for regularly monitoring and evaluating operation of the system. From this perspective, the agility of the initial response, facilitated by the configuration of a system via direct agreements between the state and businesses, had no counterpart involving increased public participation following implementation, consolidating a change marked by the omission of civil society. This could lead to significant implications in terms of the exercise of fundamental rights, should they fail to be developed under strict standards that should be subject to public scrutiny.

As we have seen, the URCDP receives complaints regarding personal data in general and also those that pass through the Coronavirus UY app. However, apart from possible requests for access to personal information, it is doubtful that any violation of rights would be spontaneously noticed by the owners of personal data, especially in the short term. This makes the implementation of a posteriori evaluation mechanisms even more relevant, both for adjusting the system to meet health objectives as well as in terms of proper functioning under current regulations on personal data. In addition, the continuous development of system tools for integrating new functionalities (which could potentially include more advanced formulas for automated data processing) invite the incorporation of prior impact assessment before such developments, especially considering the scope of the current pandemic and the potential utility of the system as a way to permanently provide remote health care services.

58 See: <https://www.gub.uy/ministerio-salud-publica/politicas-y-gestion/informacion-sobre-aplicacion-coronavirus>

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