EPHI, NATIONAL DATA MANAGEMENT CENTER FOR HEALTH (NDMC):- QUICK UPDATE ON COVID-19, 062st

This update summarizes:

- **Ethiopia's Covid-19 Situation Updates**
- **Global and Regional Burden Of Covid-19**
- **Mask Related Acne ("Maskne") and Other Facial Dermatoses**
- **Updates Related to SARS-Cov-2 Coronavirus Vaccination**
- **Data privacy protection and geographic data use as an answer to COVID-19 in Uruguay**
- **What Works to Control Covid-19?**

Ethiopia's Covid-19 Situation Updates

➢ Since the last brief (10 June 2021), 1,426 new confirmed corona virus disease 2019 (COVID-19) cases and 40 new deaths have been reported nationally. To date, a total of 274,601 COVID-19 cases and 4,260 related deaths (case fatality rate (CFR): 1.55, which is similar compared to the last week's rate) have been reported from 9 regions and 2 city administrations in the country. Compared to the cases and deaths reported a week ago, the national cumulative case and death reported this week remained stable without increment.

• There are 18,125 active cases currently, of which 237 (1.31%, slightly increased compared to last week's report) of them are critical. However, the number of active cases and critical cases have shown reduction by 3,597 and 34 cases respectively compared to the last week. So far 252,451 cases have recovered from COVID-19, out of which 4,949 recoveries were over the last one-week period which increased by 1% compared to the last week.

• The proportion of active cases among the total cases so far has decreased by around 1.35% while that of recoveries increased by the similar rate compared to the last week. However, the proportion of death remained nearly the same over the last one week period (Fig 1).
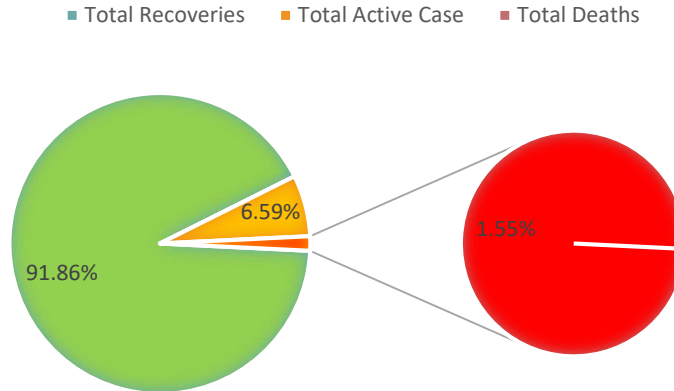
Fig 1: Proportions of active cases, recoveries and death as of June 17, 2021.

- The total number of tests done to date is 2,797,358. Among 37,503 laboratory samples tested over the last one-week duration, 1,426 of them tested positive for COVID-19, yielding a positivity rate of 3.8%; showing a 0.5% reduction from the last week's positivity rate.

- The distribution of cumulative cases by region is top in Addis Ababa (178,438) followed by Oromia (38,871) and Amhara regions (11,769). Over the last 7 days, top new case reporting regions that reported over one hundred cases were Addis Ababa, Oromia, Amhara and Tigray region. Those two top reporting regions (Addis Ababa and Oromia) account for 79.26 % of new cases identified over the two weeks which increased by 6% compared to the last week (fig 2).
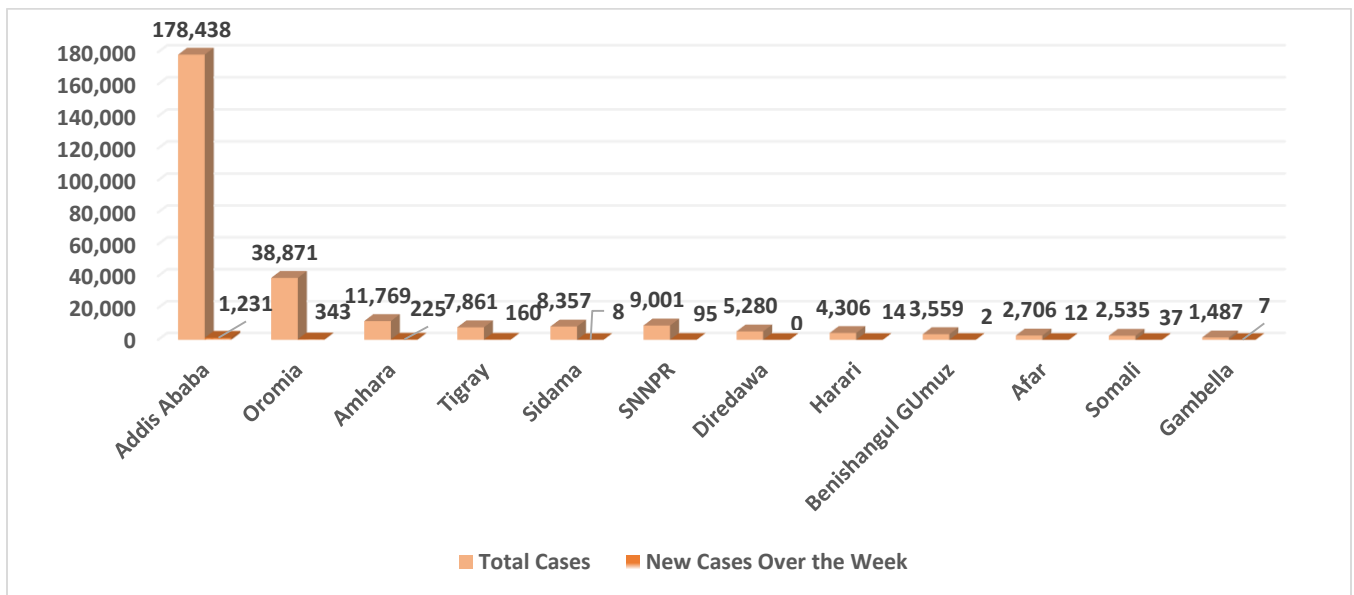

Fig2: Total cases and new cases (over a week time) by region based on available reports.

Case Management and Infection Prevention Control (Ipc)

➢ There are a total of 18,125 active cases in the country currently as of June17, 2021

- This week, June 11- June 17, 2021, there are 4,166 newly recovered cases bringing the total number of COVID-19 recovered cases to 252,451.
- There are 237 patients in severe condition as of June 17, 2021, and all the other patients are on medical care in stable condition.

Home Based Isolation and Care (HBIC)

Since Home Based Isolation and Care (HBIC) is started in Ethiopia:

➢ A total of 198,975 COVID-19 confirmed cases are followed in the HBIC as of June 17, 2021

- 197, 808 of them have recovered in the HBIC as of June 17, 2021.
- 2,469 cases are currently on HBIC.
- 32 COVID-19 related deaths have occurred in the HBIC.
- 2,190 cases have been transferred from treatment centers to HBIC.
- 856 cases have been transferred from HBIC to treatment centers.

EPHI and FMOH COVID 19 response highlights of the week /trainings and supply

➢ There is the on-going distribution of PPE, Viral Transport Media (VTM), swabs, pharmaceuticals, and other medical supplies to isolation and treatment centers.

- Five days COVID 19 comprehensives training for 45 health workers working in confined settings of Amhara region is started on June 14/2021 and on its third day at Bahirdar city.

- Three days COVID-19 Training material Revision and finalization for approval workshop for 15 EPHI staffs is completed in June 17/2021 at Dire International Hotel, Adama. City**References**

    1. *Public Health Emergency Operations Centers (PHEOC), Ethiopia.*
    2. *https://twitter.com/lia_tadesse.*
    3. *http://www.covid19.et/covid-19/.*
    4. *EPHI's PHEM daily COVID-19 SITREP report.*

Global and Regional Burden Of Covid-19

- Globally the total number of cases is extended to 177,815,072 as of June 17, 2021. A total of 162,322,203 cases recovered and 3,848,922 people died since the beginning of the outbreak. Globally, in a week time, from June 7 to June 17, 2021, COVID-19 cases increased by 1.5% and deaths by 1.9%. In the past week, Asia is the leading in terms of cases followed by

Europe and North America. Europe continued to be became a lead in terms of the number of deaths followed by South and North America (Table 1).

Table 1. Global cases and deaths reported as of June, 2021.

	COVID cases	Weekly % change	deaths	Weekly % change
Global	177,815,072	1.5	3,848,922	1.9
Europe	47,302,291	0.6	1,089,159	0.6
North America	40,254,960	0.5	909,720	0.5
Asia	53,950,691	1.9	756,249	4.2
South America	31,085,362	3.3	956,269	2.9
Africa	5,150,242	2.8	136,254	1.9
Oceania	70,805	1.3	1,256	0.2

- USA has recorded the highest number of cases 0.3% (34,264,727 to 34,365,985 cases) and 0.4% (613,494 to 616,150 deaths) that accounts 19.3% of the total global cases and carried 16% of global deaths as of June 17, 2021, showed declining trend.
- India is the 2nd highest in terms of cases in a week time by 1.8% (29,183,121 to 29,700,313) and deaths by 6.2% (359,695 to 381,931).
- Brazil became the 23d rand worldwide with increased number of cases in a week time by 2.9% (17,125,357 to 17,629,714) and deaths by 2.9% (479,791 to 493,837).
- Ferance ranked 4th globally with 5,747,647 cases and 110,578 deaths.
- Turkey ranked 5th globally with 5,348,249 cases and 48,950 deaths.
- The line share of Africa to the global COVID-19 pandemic was 2.9% and 3.5% of the global cases and deaths as of June 17). The cases in the continent have increased by 2.8% in a week time (5,009,823 to 5,150,242 cases). Similarly, the total number of deaths in Africa has increased from 133,746 to 136,254 showing 1.9%. Total recoveries stand at 4,583,122.
- South Africa is the leading in the continent with 1,774,312 cases and 1,774,312 deaths. Morocco (524,975 cases, 9,221 deaths), Tunisia (374,312 cases, 13,721 deaths), Egypt (275,010 cases, 15,723 deaths) and Ethiopia become the 5th rank with (274,601 cases, 4,260 deaths). These are the most four leading countries next to South Africa in reporting COVID-19 cases in Africa. (See table below).

Table 2: Cases and deaths reported in selected African countries as of June, 2021.

Africa	June 10		June 17	
	Cases	Deaths	Cases	Deaths
South Africa	1,712,939	57,310	1,774,312	1,774,312
Morocco	522,389	9,190	524,975	9,221
Tunisia	360,285	13,229	374,312	13,721
Egypt	270,292	15,471	275,010	15,723
Ethiopia	273,398	4,226	274,601	4,260

- In East African, COVID-19 cases and deaths have shown fast progress. As of March, Ethiopia and Kenya continued to be the major drivers of the COVID 19 burden in east African countries.
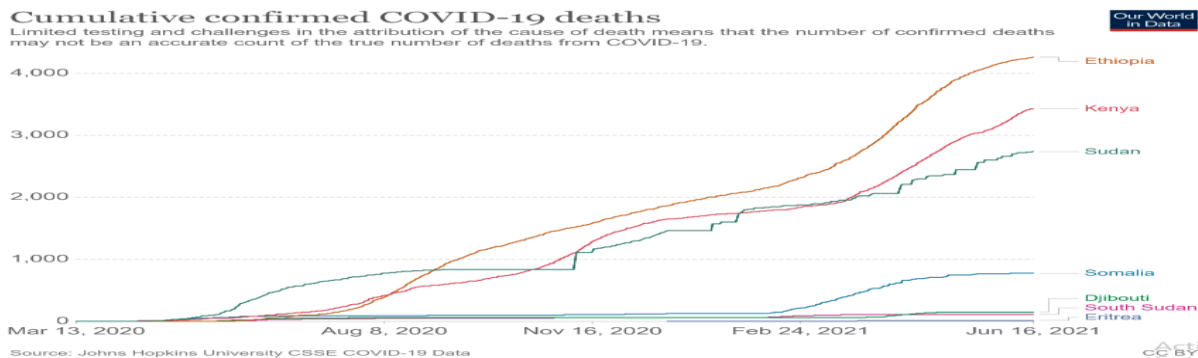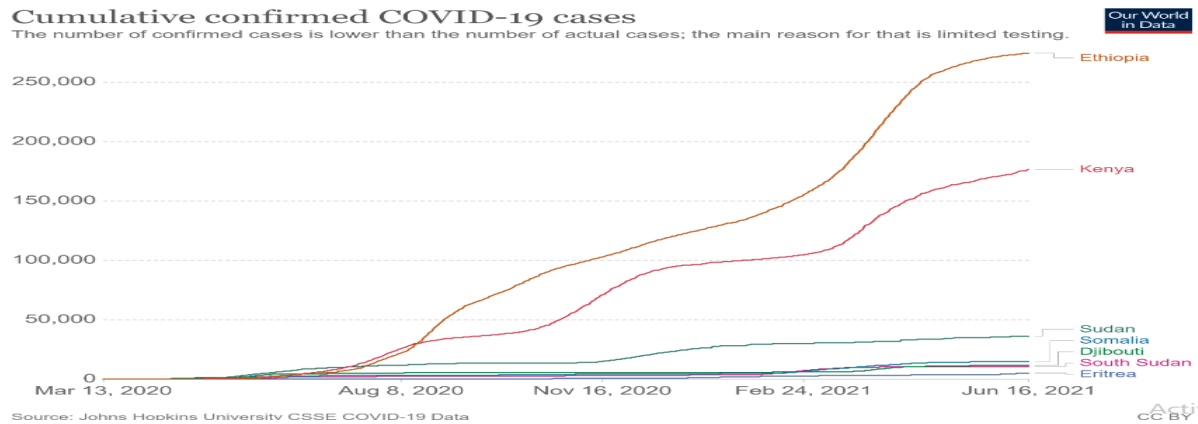
Cumulative confirmed COVID-19 cases
The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.

Source: Johns Hopkins University CSSE COVID-19 Data

Cumulative confirmed COVID-19 deaths
Limited testing and challenges in the attribution of the cause of death means that the number of confirmed deaths may not be an accurate count of the true number of deaths from COVID-19.

Source: Johns Hopkins University CSSE COVID-19 Data

Figure3: The burden of COVID-19 in Eastern African countries.

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Mask Related Acne ("Maskne") and Other Facial Dermatoses

➢ The covid-19 pandemic has led to a marked increase in the use of personal protective equipment (PPE) both in and out of healthcare settings

- Mask related acne and irritant contact dermatitis are the most common facial dermatoses associated with mask wearing

- During the covid-19 pandemic, a prospective cross sectional study of 833 medical school staff in Thailand, including healthcare and non-healthcare workers, showed a self-reported prevalence of 54% adverse skin reactions to surgical and cloth masks

- The pathogenesis of PPE related acne is thought to be three fold:
  - ✓ Creation of a humid microclimate inside the mask
  - ✓ Mucosa can be colonised by bacteria which could increase bacterial load on the surrounding skin
  - ✓ Friction effect of a close fitting mask can damage the follicular ostia causing chronic irritation, and this effect is worsened by heat and humidity
- Retinoid such as adapalene cream alone or in combination with benzoyl peroxide cream once daily can be used for mild cases, with the addition of an oral tetracycline such as lymecycline 408 mg once daily for up to 12 weeks for moderate to severe cases
- General measures to prevent PPE related facial dermatoses are
  - ✓ Cleanse skin with a gentle soap-free cleanser
  - ✓ Apply a light emollient at least 30 minutes before applying facial PPE
  - ✓ Apply a silicon based barrier tape e.g. siltape (Advancis) to nasal bridge and cheeks
  - ✓ Take time to fit the mask and ensure it is not over tight
  - ✓ Take regular breaks from the mask (every one hour for respirators) to relieve the pressure and prevent moisture build up
  - ✓ Stay well hydrated
  - ✓ Maintain oral hygiene (teeth brushing twice daily and daily interdental flossing/brushing)

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Updates Related to SARS-Cov-2 Coronavirus Vaccination

Covid vaccines among immune compromised clients

➢ Inducing immunity against the SARS-CoV-2 coronavirus is of the utmost importance for bringing the COVID-19 pandemic under control, protecting vulnerable individuals from severe disease and limiting viral spread.

- The new study at Johns Hopkins University conducted among organ transplant recipients, all of whom had been fully vaccinated with two doses of an mRNA vaccine, either Pfizer-BioNTech or Moderna. The procedure of organ transplantation requires the clients must take immune-suppressing medications to ensure that their body does not reject the transplanted.

This further may expose to develop non response to the vaccines, cause them vulnerable to Covid-19.

- The result of this study revealed that even if the clients were fully vaccinated, the majority of the patients had no antibodies against the coronavirus, and only few of the patients had had at low levels.

- The result of this study after providing third dose of COVID vaccine (any of Pfizer, Moderna or Johnson & Johnson) after two weeks of providing the vaccine showed that, their antibody levels were begin among those who had no antibodies after they had two completed doses and increased in antibodies levels against the coronavirus among those who had low levels.

- Generally, this finding showed that to give a concern about clients with immune-compromised are still vulnerable to Covid-19 even after they completed two doses of the vaccine, so to this informs to consider third doses of Covid-19 vaccine.

Vaccine Against SARS-CoV-2 Variant

➢ Researches done in England indicates that, the Delta variant may be associated with different symptoms than the original variant. These symptoms frequently experienced by this variant infection are is headache, followed by sore throat, runny nose, and fever (more like a "bad cold" in young people).

- Findings from England and Scotland showed that Delta (B1617.2) is 40-60% more transmissible than Alpha (B1117) and the risk of admition to hospital is 2x higher in those with the Delta variant as compared to Alpha. Two doses of the Oxford–AstraZeneca and Pfizer–BioNTech COVID-19 vaccines were highly effective (96% and 92%, respectively) in reducing the risk of SARS-CoV-2 hospitalisation in people infected with the Delta variant. No rise in reinfections is observed for the moment.

- This indicates us for continuous provision of Covid-19 vaccination for all candidate population, because these vaccines protect from the earlier forms of the virus as well as the newer variants.

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Data privacy protection and geographic data use as an answer to COVID-19 in Uruguay

➢ The spread of the COVID-19 or SARS-CoV-2 virus and the consequent declaration of a pandemic, issued by the World Health Organization in March 2020, are now a problem that exceeds the sanitary issue. It brings deep repercussions at an economic, social, political, cultural and environmental level with impacts on the local, regional and global scale. Consequently, the measures or responses implemented by different countries involve different dimensions that affect the lives of their inhabitants.

• According to recent scientific research, established transmission pathways of SARS-CoV-2 are said to be both, **close contact with patients** with COVID-19 and the **absorption of droplets through the airways** (Tan and Wang, 2020).

• Therefore, the location of a virus carrier is particularly relevant as its proximity to other people is the main factor of infection (Yi, Lagniton, Ye, Li, and Xu, 2020). Thus, geographic data and geomatics tools (GeoSciencie) take a prominent role in addressing this pandemic.

• One of the GIS main strengths is the ability to integrate diverse georeferenced data sets; this facilitates the aggregation of health data with contextual characteristics. There are several academic studies of descriptive models that leverage this capability to examine the geographical associations of COVID-19 with the socio-economic and environmental characteristics of the region. Based on the importance of the concept of proximity or direct contact associated with the spread of the virus, this article proposes a reflection on the role of geographical information as a tool for combating COVID-19 and its relationship with individual and collective law.

Use of geographic information

• Incorporating geographic information science and technology into surveillance, modeling, and response to the COVID-19 pandemic, improves not only the understanding but also the control of the disease. This pandemic has highlighted the usefulness of applying geosciences to visualize cases and identify the most vulnerable areas, as well as the use of location-based intelligence tools to improve data representation deficiencies. (Rosenkrantza, Schuurmana, Bellb, & Amramc, 2020).

- Therefore, in this article two different uses of geographic data are presented, one related to mobile applications and the other to the use of the geographical information as response in the fight against this pandemic.

Using location in apps

- Nowadays, there are a wide number of mobile applications that require the geolocation of the devices as an input to carry out their function. This is the case of those which allow home delivery (PedidosYa, Rappi), request transfer in vehicles (Uber) and even messaging applications in which the location can be sent in real time to other contacts (WhatsApp). All applications that require this type of geolocation ask the user for permission to gather this data.

- .The use of localization by applications can be diverse. There are many applications in which the user's location data is key for them to operate. On the other hand, there are other applications in which the user's location is not essential but still requested. In those cases, location data is used to promote commercial stores when proximity is detected. In all cases, the use given to this information by application providers is uncertain.

- When using this app, access to the location and microphone of the user's mobile device is requested. With these permissions, the place where the user was watching the game could be clearly identified because the device's microphone and geolocation were activated. With microphone access granted, anytime the user was near television broadcasting a football game was detected, registering its location. Having gathered this information, it was possible to localize bars and restaurants which broadcasted football matches without paying royalties.

- This event highlights the risks brought by the misuse of the data accessed by some apps. Although prior consent to have access to location data is requested, users do not always become fully aware of the implications and consequences of this authorization. Thus, it is important to stand out the relevance of including the ethical use of geographic information on the collective agenda.

The geoinformation use in the fight against the pandemic

Exposure Notification

- With the global health emergency as a framework and considering the fact that epidemiological monitoring is thought as a key to contain the pandemic, two leading companies in terms of technology in mobile devices, Apple and Google, joined forces to

develop a system that facilitates the crisis monitoring, by sending alerts of proximity to infected users. This system, called **exposure notification**, is based on the premise of taking care of the security and privacy of users. The app strictly focuses on carrying out the required epidemiological monitoring and does not directly use the **user's location data**.

- Exposure notifications can then be enabled in different apps on both iOS or Android mobile operating systems. These apps require a strict authorization from Apple and Google in order to provide the user with **exposure notifications**. Authorization which is only given to official institutions in each country, in the case of Uruguay, the app is called Coronavirus Uy.

- Exposure notifications do not use location data, they work using bluetooth to share codes with other devices that are nearby and have downloaded and activated this app. Each mobile device constantly broadcasts a random number and simultaneously records those codes coming from nearby devices. (Betarte, et al, 2020). These indicators are stored in each device for 14 days. In the event that a user tests positive for COVID-19, he can inform the application, which will request permission to upload the numbers generated by its device to a central server. Every day, the indicators received by each mobile are compared with those uploaded to the central server and in case of a match, an exposure alert notification will be given. From this alert, each person can use the application to request more information or assistance but can also choose not to tell anyone that they received the alert.

- From our point of view, exposure alert applications are an efficient and decentralized mechanism for people to collaborate and receive virus exposure alerts quickly, while at the same time, respecting the privacy and willingness of all involved. In the case of Uruguay, the Coronavirus UY application also allows citizens with possible symptoms of the SARS-CoV-2 virus to be connected to health care providers, in order to reduce waiting times for medical attention.

- Despite the possible efficiency of this application, its success depends exclusively on the population's active use (Cascón, 2020).

- Although in the next section we will go into the legal aspects, it is important to clarify that all the information collected in the application is covered by the Law on Protection of Personal Data and by the privacy policy of the application itself.

COVID-19 situation mapping

- The global understanding of this pandemic's impact has proportionally grown with the use of mapping apps in public and private sectors. The most popular uses of mapping tools are the daily publications of news agencies or online dashboards in near real time (Boulos and Geraghty, 2020). Although many dashboards have been made, the most widespread example has been developed by the Johns Hopkins University. These maps provide a clear visual representation of the impact of COVID-19 on morbidity and mortality and represent an effective political and social tool to communicate the impact of the disease (Rosenkrantza, et al, 2020).

The protection of personal data in Uruguay

- Uruguay's commitment to personal data protection arises from the ratification of different international instruments that address this issue. Since 1948 Uruguay has ratified the Universal Declaration of Human Rights, the International Covenant on Civil and Political Rights (1966), and at a regional scale, the American Convention of Human Rights Pact of San José, Costa Rica.

- The Uruguayan personal data protection main rule is the Personal Data Protection Law (Law No 18,331) which establishes the right to personal data protection as "inherent to the human person" and refers to the Constitution of the Republic.

- According to the referred law, personal data is defined as "information of any kind referring to specific or determinable natural or legal persons"; this is "… any numerical, alphabetic, graphic, photographic, acoustic or any other information that refers to them."

- In short, personal data is "… any type of information that can directly identify us or makes us identifiable, as our name, address, telephone, identity card, RUT, fingerprint, member number, student number, a photograph or even DNA."

- However, as sensitive data the law considers: "personal data that reveal racial and ethnic origin, political preferences, religious or moral convictions, union affiliation and information regarding health or sexual life."

- In this sense, it is important to specify that as one of the forms of protection the law requires to publicize personal data, the express consent of the person involved must be given and in the case of sensitive data, an express and written consent is required. (Betarte et. Al, 2019).

- Likewise, categories of specially protected data are regulated, such as health and telecommunications data, among others. Regarding health data, the law empowers public or private health institutions and health sciences professionals to "… collect and process personal data related to the physical or mental health of patients who have been under treatment…" provided that professional secrecy principles are complied with, and that the law itself establishes the need for express consent.

- Within this framework, and in accordance with transcribed legal definitions, location data fits into the personal data category, while the data on the health status of a person, such as being infected by COVID-19 must also be considered as sensitive and specially protected data.

- It is clear from the above that location and individual health data are protected by international and national regulations but can be limited when the community health good takes precedence, only with regard to the requirement of prior consent. Limitations that always protect the anonymity of the person so that the security and confidentiality in the treatment of the data is preserved.

- Therefore, it can be assured that Uruguayan legal requirements, in terms of personal data protection, are at the level of the highest international standards, which is materialized in the imposition of legal obligations to be contemplated in the technical requirements.

Conclusions

- Even though there are many uncertainties surrounding the pandemic, it is unquestionable that proximity between people is the main factor of contagion, thus the location of an infected person becomes particularly relevant for himself and for others. The spread of infectious diseases is mainly a spatial process; therefore, geospatial data, technologies and analytical methods play a key role in understanding and responding to the COVID-19 disease pandemic.

- The opportunities to incorporate geomatic tools into monitoring, modeling and response to this pandemic, range from developing spatial data infrastructures for surveillance, incorporating mobility data into infectious disease forecasting, using geospatial technologies for digital contact tracing, integrating geographic data into COVID-19 modeling, investigating geographical health disparities and social vulnerabilities, and reporting disease status or infrastructure status in order to return to normal operations.

- According to this research and regarding other location data apps, we can state that the registration of contacts via blue tooth used in the proximity alert applications is the most advanced technique and also the one that works best for tracking those who are infected. This tool is not only recommended in terms of its positional quality, but also and mainly, because it is more efficient in protecting individual privacy. In particular, the Coronavirus Uy application plays a fundamental role since it provides the above-mentioned benefits and, at the touch of a button, professional healthcare assistance to the community in general and to those infected.

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What Works to Control Covid-19?

- This study was conducted using cross-country panel data to examine the effects of a variety of non-pharmaceutical interventions used by governments to suppress the spread of coronavirus disease (COVID-19).

- This study has examined how the transmission of COVID-19 as captured by the reproduction number, R_0, is associated with various measures undertaken to control its spread by analysing daily data from 75 economies for the first half of 2020.

- There are a number of important findings from a policy perspective.
  - ✓ First, while the reduction of COVID-19 spread is strongly driven by increases in time at home, this relationship is weaker when household size is large and especially so in developing economies. This suggests that lockdown orders that aim to suppress the spread of COVID-19 by restraining the mobility of people are less likely to be effective in

communities with large households or where compliance is not compatible with the economic pressures that the population faces.

✓ Second, the largest reductions in Ro are driven by gathering bans and school closures, followed by the use of masks, mass testing, and workplace closure. These effects are largely driven when the measures are put in place in the early phase of the pandemic. More generally, this demonstrates the importance of considering behavioural incentives set by policies to ensure that they have desired effects.

✓ Third, the study found that contact tracing, when implemented early and in contexts where paid sick leave benefits tend to cover all types of workers (i.e., including self-employed and temporary workers), is strongly associated with reductions in Ro, especially in developing economies.

✓ Fourth, countries implementing workplace and school closures experienced larger contractions in GDP growth in the first half of 2020, while countries implementing other measures do not show significant contractions in economic growth.

✓ This highlights the importance of moving beyond these measures to more targeted strategies, such as gathering bans, testing, and contact tracing supported by appropriate incentives.

Conclusion

- The study found that that while lockdown measures lead to reductions in disease transmission rates as captured by the reproduction number, Ro, gathering bans appear to be more effective than workplace and school closures, both of which are associated with large declines in gross domestic product.

- Further, our estimates suggest that stay-at-home orders are less effective in countries with larger family size and in developing economies.

- The study also found that incentives are very important, as efforts at ramping up testing and tracing COVID-19 cases are more effective in controlling the spread of disease in countries with greater coverage of paid sick leave benefits. As future waves of the disease emerge, the use of more targeted and better incentivized measures can help keep the epidemic controlled at lower economic cost.

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