

AUGUST 2022

Inception paper

Digital Health and Rights in Bangladesh and Colombia

Digital Health and Rights:

A Participatory Action Research Project

Global Health Centre, Graduate Institute, Geneva

This inception paper has benefited from the contributions of Digital Health and Rights Project at the Global Health Centre, Graduate Institute, Geneva, with financial support from the Open Society University Network (OSUN) and COLEV, an interdisciplinary research group from Universidad de los Andes, COLEV seeks to produce and communicate evidence that facilitates dialogue between academia and public health decision makers, to provide informed responses to COVID-19 in Colombia.

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Contents

1. Overview	4
2. Bangladesh	7
2.1 Background: Governance, populations, health, and the digital context _____	7
A. Government structure _____	7
B. Demographics _____	7
C. Digital Context _____	8
D. Health services _____	9
2.2 Legal framework and policies relating to health, and digital health _____	10
A. The Constitution _____	10
B. National policies regarding health and health services _____	11
C. National policies regarding Information and Communications Technologies _____	12
D. Promoting digital literacy and health services under other relevant national policies _____	15
2.3 Digital health interventions _____	16
A. SRHR related apps in Bangladesh (from Google Store) _____	18
2.4 Conclusions _____	18
3. Colombia	20
3.1 Background _____	20
A. Government structure and social context _____	20
B. General demographics _____	21
C. Economic and political data _____	21
D. Digital usage, internet coverage _____	22
E. Gender equality and LGBTIQ+ communities _____	23
F. Group demographics _____	25



G. Health infrastructure _____ 26
H. HIV statistics _____ 27

3.2 Legal framework and national public policies on health and digital health _____ 28

A. The Constitution _____ 28
B. National laws and policies on HIV _____ 28
C. National laws on privacy and data protection _____ 29
D. National laws and policies on ICT and cybersecurity _____ 30
E. National laws on health and digital health _____ 32

3.3 Conclusion _____ 35

4. Reflections and Conclusions..... 37

Annex A..... 40

Annex B..... 45



1. Overview

The inclusion of digital technology has transformed health systems in low-resource settings and has the potential to ensure effective and fast health care delivery. The COVID pandemic has further accelerated the digitization of health care delivery using multiple digital platforms. The 2021 State of Digital Health Report¹ found that global digital health funding increased in 2020 by 79% to reach USD\$57.2 billion. According to the World Health Organization, the term “Digital Health” means “*the field of knowledge and practice associated with the development and use of digital technologies to improve health*”². In addition, it encompasses e-health and other uses of digital technologies such as the “*Internet of Things, advanced computing, big data analytics, artificial intelligence including machine learning, and robotics*”³. However, there remain threats to privacy, equality, autonomy, and human rights regarding health data. The risks are even greater for youth and marginalized and criminalized groups (people living with HIV, migrants, women, LGBTIQ+ population), who rarely participate in policy decision-making. While the domestic health systems of low and middle income countries (LMIC) are struggling to adopt new technologies, international agencies are in the process of revising the ethics, practices, and tools to help them catch up³. However, a lack of proper planning at the initial stage and a lack of acknowledgment of local contexts might preclude the leveraging of health data and technologies to design and provide inclusive and better digital health care services.

This paper was written in the framework of *Digital Health and Rights: A Participatory Action Research Project* to explore these concerns. The project involves a transnational consortium that brings together social scientists, civil society leaders and affected communities for qualitative research and policy advocacy. Researchers at Universidad de Los Andes (Colombia) and BRAC James P Grant School of Public Health⁴, BRAC University (Bangladesh) co-authored this paper with support and guidance from the Global Health Centre at the Graduate Institute Geneva (Switzerland), and input from the project partner STOPAIDS (UK). The study focuses on Bangladesh, Colombia, Kenya, Ghana, and Vietnam. In our project’s uniquely collaborative and multidisciplinary approach, researchers collaborate across national borders to conduct comparative desk reviews, draft working papers, and conduct digital ethnography in online spaces where young people gather to seek health information. Building on this research, we then conduct in-person qualitative field research, including in-depth interviews, focus group discussions, and key informant interviews. The results of these multiple methods are combined to develop our findings and analysis. This paper is thus the first phase of the study in Bangladesh and Colombia.

1 CB Insights. (2021). State of Digital Health: Global 2021. Retrieved from [www.cbinsights.com: https://www.cbinsights.com/reports/CB-Insights_Digital-Health-Report-2021.pdf](https://www.cbinsights.com/reports/CB-Insights_Digital-Health-Report-2021.pdf)

2 World health Organization, “Global strategy on digital health 2020-2025” 2021, page 11: <https://apps.who.int/iris/bitstream/handle/10665/344249/9789240020924-eng.pdf>

3 Stevens.P and Cory, N. (2020). Building a Global framework for digital health services in the era of COVID-19. <https://itif.org/publications/2020/05/26/building-global-framework-digital-health-services-era-COVID-19/>

4 BRAC PROJECT: <https://bracjpsph.org/> - COLEV PROJECT: <https://colev.uniandes.edu.co/>

Based on a desk review of laws, policies, and demographic and health information collected from November 2021 to April 2022, this paper seeks to pinpoint trends in digital health in Bangladesh and Colombia that may impact digital health and human rights of young people more broadly. It identifies key strengths and weaknesses in the legal frameworks and national policies related to digital health, as well as digital health interventions implemented in the two countries. We aim to probe further using in-depth qualitative research.

Bangladesh and Colombia are significantly different countries in terms of population size, culture, and economy. Bangladesh is a younger state, having achieved independence at least 150 years after Colombia. Bangladesh is about 13% the size of Colombia, with nearly three times the population. However, more people (about three times) are unemployed in Colombia. 92% of people in Bangladesh are Muslims, whereas Colombia is Christian majority country with around 89% of its population following Christianity. Moreover, there are distinct differences in the health and financial sectors, and civil rights. According to the quality of life index, computed by the World Data, Colombia ranks much higher than Bangladesh, especially in health and medical services⁵. According to the World Bank (2019), Bangladesh spent 2.48% of its national budget on health, whereas Colombia spent 7.7%.^{6,7} However, there are also surprising commonalities between these very different contexts. Both countries have growing access to internet and digital technologies, including both mobile phones and fixed internet. In both countries, there are, nevertheless, inequalities regarding access. These include poor internet infrastructure in rural areas and less access for women and girls, which persist alongside other forms of inequalities. In addition, both countries have developed telemedicine policies and implementation strategies and introduced digital security acts and right to information acts. However, in terms of building an overarching digital health system, both countries have yet to develop national-level digital health strategies or regulations to ensure digital health service provider quality.

Despite the many differences, both countries have strived to build up legal and policy frameworks concerning digital health. Data regulation is critical as the expansion of digital health infrastructures and systems reshape power and agency with consequences for the protection from discrimination and access to services. As digital data and analytics are increasingly used to justify social interventions, it is necessary to analyze how individuals, groups, and minorities are affected by digital interventions and to pay close attention to the values that legislation promotes. Overall, our multi-country study seeks to understand how young adults experience the digital transformation in health and its effects on their human rights, including equity, privacy, autonomy, and equality. We also seek to explore how digital health is governed, and the role of young adults and affected communities in governance. In each country, we focus on specific areas of interest and relevance to this broader research agenda: In Bangladesh, we are exploring the experience of young men with accessing sexual and reproductive health (SRH) information and services. Bangladesh is a culturally conservative society where discussion on SRH amongst unmarried young males and females is considered taboo⁸. In addition, male SRH programs do not exist, with the primary focus on maternal, newborn, and child health (MNCH) and on female adolescents and women⁹. In Colombia, we are interested in the experience of people living with and affected by HIV, including Venezuelan migrants and refugees, and LGBTIQ+ communities. The comparison between the Colombian and Bangladeshi digital health contexts illuminates areas that require further investigation in both countries, discussed further in the conclusions.

5 World Data (2022). <https://www.worlddata.info/country-comparison.php?country1=BGD&country2=COL>

6 World Bank (2022). <https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=BD>

7 World Bank (2022). <https://data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS?locations=CO>

8 Ahmed F, Kabir AKL, Islam MS, Rouf ASS. Adolescent male reproductive health knowledge and practices in Bangladesh. Dhaka Univ J Pharm Sci. 2008; 7(2):149-54

9 Ainul, S., Bajracharya, A. Reichenbach, L. and Gilles, K. (2017). Adolescents in Bangladesh: A Situation Analysis of Programmatic Approaches to Sexual and Reproductive Health Education and Services, Situation Analysis Report. Washington, DC & Dhaka, Bangladesh: Population Council, The Evidence Project. Retrieved from http://evidenceproject.popcouncil.org/wp-content/uploads/2017/02/Bangladesh-ASRH-Report_January-2017.pdf



This paper reveals the need to approach the issue of digital health, data, and infrastructure from an intersectional point of view. Certain obstacles perpetuate when populations are neglected, made invisible, or marginalized, such as people living with HIV, gay men and other men who have sex with men, sex workers, transgender people, people who use drugs, and young men with unmet SRH needs. The growing digital transformation of health systems should be accompanied by careful reflection and a constructive engagement in policy-making processes and implementation to avoid reproducing existing inequalities. Ultimately, the increasing importance of digital technologies and data infrastructures in relation to health must be critically analyzed regarding the kind of judgments and values proclaimed by such data-intensive systems, who they represent, and who may be included or excluded.

The paper considers first Bangladesh and then Colombia, providing an overview of (i) Background information on governance and populations, health systems, and the digital context; (ii) The legal framework and policies on health, including digital health; (iii) National laws and policies regulating Information and Communication Technologies and concerning data protection and (iv) An overview to key digital health interventions. We conclude each section with reflections and end with concluding questions and concerns to investigate further in the study.

2. Bangladesh

2.1 Background: Governance, populations, health, and the digital context

The People's Republic of Bangladesh, since its independence in 1971, was constituted on four fundamental principles of the state. These are nationalism, socialism, democracy, and secularism; and a further pledge to establish a socialist society through a democratic process. The national constitution of Bangladesh outlines to build an exploitation-free society where the rule of law, fundamental human rights, freedom, equality, and justice (political, economic, and social) will be secured for all citizens¹⁰.

A. Government structure

Bangladesh is a parliamentary republic, with a prime minister and a president elected by the national assembly. However, this system was interrupted by a series of coups before being restored in 1990. The parliament of Bangladesh, called the Jatiya Sangsad (House of the Nation), is a unicameral entity consisting of 350 seats, 300 of which are filled through direct election. The remaining 50 seats are reserved for women; each political party nominates a certain number of female parliamentarians according to the seats they won in the direct election. Legislators serve five-year terms. The president also serves a five-year term, with a two-term limit. The president then appoints the leader of the legislative majority party (or coalition of parties) as prime minister.

Bangladesh follows a common law system. However, Bangladesh Supreme Court has the power to interpret and declare laws, made by the parliament, null and void and enforce fundamental rights of the citizens¹¹.

B. Demographics

According to the World Bank, Bangladesh has a population of 164 million (164,689,383), 49.4% of whom are female¹². Bangladesh ranks 8th in the world in terms of total population, or 2.11% of the total world population. Its population density is one of the highest in the world, with more than one thousand people living per square kilometer throughout the country. Almost 40% of the population lives in urban areas.

10 The Constitution of the People 's Republic of Bangladesh. <http://bdlaws.minlaw.gov.bd/act-367/section-24547.html>

11 Sial. O. (2008). A Research guide to the legal system of the people's republic of Bangladesh. <https://www.nyulawglobal.org/globalex/Bangladesh.html>

12 World Bank (2022). <https://data.worldbank.org/indicator/SP.POP.TOTL?locations=BD>. Accessed last on 8th March 2022.

The country has eight administrative divisions. Each division is then divided into several districts (64 in total), and each district is divided into several upazilas (495 in total). Each upazilas are the collective form of several unions-composed of several villages or wards (total 4571).

Despite the country's tremendous success in controlling population growth (with a current fertility rate of 2.1%), the population of Bangladesh is expected to go up to 220 million by 2050¹³. Bangladesh is a young country with a median age of 27.6 years. According to UNFPA, one-fifth of the Bangladeshi population are young people between the ages of 15-24 years¹⁴.

According to the latest Labor Force Survey (2016-17), the total labor force participation rate is 58.1%, with male and female participation rates respectively 80% and 36%. Around 85% of the total labor force is engaged in informal jobs. According to the survey, the male labor force participation rate was similar in urban and rural areas (81% and 80%, respectively). However, more females from rural areas (38.5%) participated in the labor force compared to those residing in urban areas (30.8%). The labor force market was still dominated by the agriculture sector with 40.4% share of the labor force, followed by service (39.3%) and industry (20.3%)¹⁵. 51% of women of 20-24 years-old were married before 18.

Life expectancy at birth in Bangladesh is 72.3 years and is higher for females (73.8 years) than males (70.2 years)¹⁶. According to UNICEF, Bangladesh has successfully cut down its under-five mortality rate and infant mortality rate by more than half compared to the beginning of this century.

According to the constitution, Bangladesh designates Islam as the state religion but upholds the principle of secularism. Sunni Muslims constitute 89% of the population, and Hindus make up 10%¹⁷. The remainder of the population is predominantly Christian, mostly Roman Catholic, and Theravada-Hinayana Buddhist. Ethnic minorities concentrated in the Chittagong Hill Tracts (CHT) and northern districts generally practice non-Islamic faiths. Despite this religious diversity, overall sexual conservatism is reflected in laws that criminalize same-sex sexual behavior under Bangladeshi law, which was put in place to follow the British Indian Government's Section 377 of 1860.

In many former British colonies, such laws have also been used to criminalize third-gender people. However, in 2013, the Bangladesh government officially recognized Hijras as a separate gender identity.

C. Digital Context

In Bangladesh, mobile phones are the primary means of internet access, especially for the underserved low-income population and those living in rural areas. As of December 2020, Bangladesh had 170 million mobile connections; among them, 60% used mobile internet¹⁸.

According to the Bangladesh National ICT Household Survey 2018-19, 82% had their own mobile phones: 45% used a feature phone, 41% used a smartphone, and 14% used both types of phones¹⁹. Mobile finance is important in Bangladesh: there are 32.3 million active mobile financial services (MFS) accounts with average daily transactions of USD\$2.1billion.

13 UNFPA (2022). <https://www.unfpa.org/data/BD>, Accessed last on 8th March 2022

14 UNFPA (2022). <https://www.unfpa.org/data/BD>, Accessed last on 8th March 2022

15 Labour Force Survey 2016-17 (2018), Bangladesh Bureau of Statistics. https://mole.portal.gov.bd/sites/default/files/files/mole.portal.gov.bd/page/ac7088c7_a211_4905_9ff3_1e62af00c837/LFS_2016-17_compressed.pdf

16 Bangladesh Statistics 2019 https://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/a1d32f13_8553_44f1_92e6_8ff80a4ff82e/2020-05-15-09-25-dccb-5193f34eb8e9ed1780511e55c2cf.pdf

17 Economic Census, 2013, Bangladesh Bureau of Statistics

18 Achieving mobile-enabled digital inclusion in Bangladesh, GSMA (2021)

19 Bangladesh National ICT Household Survey 2017-18. <https://1e8q3q16vyc81g8i3h3md6q5f5e-wpengine.netdna-ssl.com/wp-content/uploads/2020/05/Bangladesh-National-ICT-Household-Survey.pdf>

As of 2022, 31% of the population, or 52.58 million people, actively used the internet. This represents an increase of 11.6% from 2021. According to government data, there are ten times more mobile internet users than internet users of other methods²⁰. Despite this rapid growth of internet users, the infrastructure has struggled to keep up. Bangladesh ranks 130th in terms of mobile internet speed worldwide²¹.

Bangladesh's National ICT Household Survey 2018-19 found a gender gap of 55.6% mobile use, meaning more males than females have access to mobile facilities. According to this survey, the 15-24 age group was the largest group of internet users. The survey also found a significant gap between urban and rural users (54.8% and 34.8%, respectively). Usage appears to be closely linked to education: 94% of the uneducated survey population did not use the internet. The primary reported reason for not using the internet was an inability to do so (64.7%). Female respondents frequently reported cultural norms and an inability to obtain permission to use the internet in their daily life.

Bangladesh had 49.55 million active social media users in January 2022, which is more than one-fourth of the total population, with an annual increase of 10% (however, individuals may have more than one social media account). Almost all these users operate through mobile phones²². The National ICT Household Survey 2018-19 stated that an overwhelming 92% of respondents had used the internet for social networking in the past 3 months. Facebook has 44.70 million users in Bangladesh, more than any other social networking site.

D. Health services

Bangladesh's health system, through several reforms, has established an extensive health service infrastructure since its independence. NGOs, government, and international welfare organizations pluralistically control the current health system. This creates coordination issues between different ministries on the implementation of primary health care services in rural and urban areas. The shortage of trained health providers, unregulated informal providers, and low annual allocation for this sector makes it even more challenging.

The country's success in achieving several MDG targets including reducing under-five child mortality and increasing immunization coverage and survival rates from malaria, tuberculosis (TB), and diarrhea has been noteworthy. However, Bangladesh has had mixed progress towards achieving SDG health targets. While the country is performing well regarding under-five mortality rate and neonatal mortality rate, the country is yet to reach its targets for maternal mortality rate, stunting and wasting²³. It has a well-established vaccination system: 72% of under-five children received ORS package (packages, or pre-packet fluids), 98% of infants received a third dose of DTP-containing vaccine, and 93% of all children received two doses of measles vaccine²⁴.

During the 2008-09 elections, the current government promoted health digitization as one of its key objectives, with the slogan, "Digital Bangladesh". Since then, Bangladesh has made immense progress in the digital health sector, including the deployment of the open-source District Health Information Software 2 (DHIS 2). This has enabled the country's health system to possess a health data warehouse that enables data-driven decision-making²⁵. Since 2009, bulk SMS messaging has been used to provide

20 BTRC (2021). <http://old.btrc.gov.bd/content/internet-subscribers-bangladesh-december-2021>.

21 Speedtest Global Index. (2022, February 16). Bangladesh's Mobile and Fixed Broadband Internet Speeds. Retrieved from Speedtest: <https://www.speedtest.net/global-index/bangladesh>.

22 Kemp, S. (2022, February 16). Digital 2022: Bangladesh. Retrieved from Dataportal: <https://dataportal.com/reports/digital-2022-bangladesh>.

23 Rajia S, Sabiruzzaman M, Islam MK, Hossain MG, Lestrel PE (2019) Trends and future of maternal and child health in Bangladesh. PLOS ONE 14(3): e0211875. <https://doi.org/10.1371/journal.pone.0211875>.

24 Bangladesh demographics by UNICEF. <https://data.unicef.org/country/bgd>.

25 Khan, M. A., Cruz, V. D., & Azad, A. (2019). Bangladesh's digital health journey: reflections on a decade of quiet revolution. WHO South-East Asia Journal of Public Health 8(2).

health information on immunization, non-communicable diseases, infectious diseases, antibiotic resistance, maternal health, and more. The Directorate General of Health Services has started using social media platforms like Facebook to spread health information²⁶. During the COVID-19 pandemic, audio recordings on COVID awareness were played during call ring time.

However, as mentioned earlier, discussions on sexual and reproductive health (SRH) is still considered a taboo in Bangladeshi society. Adolescents and young people aged 15-30, lack access to SRH education, information, and services²⁷. Inaccessibility or unavailability of information and services, and a lack of awareness about available services, lead to harmful health impacts. These include unplanned pregnancies, sexually transmitted infections (STIs), and gender-based violence (including intimate partner violence, or IPV). A recent study recorded intimate partner violence (IPV) among 45% of respondents²⁸. These gaps also affect mental health and well-being.

To address these gaps in SRH services, the Bangladesh government has undertaken a national-level policy to provide comprehensive sexuality education (CSE)²⁹. Under this policy, the government initiated the provision of SRH services through adolescent friendly health corners (AFHCs) in 2015 at the district and sub-district (Upazila) level. Despite these efforts and programs, there are still many unmet needs for youth and adolescents regarding sexual and reproductive health rights (SRHR) that require immediate attention. These initiatives face challenges, such as lack of trained teachers and unwillingness to teach SRH, and social, cultural, and religious biases that hinder SRH discussions in the classroom. These barriers prevent existing curricula from being implemented.

As a result, digital platforms may be a valuable channel for collecting and disseminating SRH-related information for adolescents and youth who are actively engaged online. Digital media and platforms can be used to relay messages about SRHR to the most vulnerable youth in Bangladesh while maintaining their anonymity and privacy³⁰. Moreover, anonymously linking young people to SRHR services will help the youth population to access such information, overcoming the stigma and personnel challenges in reaching this population. This approach has the potential to ensure privacy, confidentiality, anonymity, and secure access for adolescents and youth.

2.2 Legal framework and policies relating to health, and digital health

A. The Constitution

Several provisions of the Constitution uphold rights relevant to digital health. Article 15 of the Constitution defines health as a fundamental human right. The state has a fundamental responsibility to ensure “the basic necessities of life, including food, clothing, shelter, education, and medical care through planned economic growth, increase of productive forces, and a steady improvement in the material and cultural standard of living of the people.”

In addition, Article 16 advocates “to [progressively] remove the disparity in the standards of living between the urban and the rural areas.” It also emphasizes development of the public health, education, and communication sectors, and rural electrification. Article 17(b) mentions adaptation of effective

26 Waldman, L., Ahmed, T., Scott, N., Akter, S., Standing, H., & Rasheed, S. (2018). We have the internet in our hands: Bangladeshi college students' use of ICTs for health information. *Global Health* 14, 31, <https://doi.org/10.1186/s12992-018-0349-6>.

27 Upadhyay, U. et al. (2021). Development and validation of the sexual and reproductive empowerment scale for adolescents and young adults. *Journal of Adolescent Health* 68(1), 86-94.

28 Istihak Rayhan, Khaleda Akter. (2021). Prevalence and associated factors of intimate partner violence (IPV) against women in Bangladesh amid COVID-19 pandemic, *Heliyon* 7 (3). <https://doi.org/10.1016/j.heliyon.2021.e06619>

29 National Strategy for Adolescent Health (2017-2020), Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh

30 Daniels, M. (2020). Reaching hard-to-reach youth with SRHR messages in Bangladesh. NWO.

measures in updating education to the needs of society, to produce trained and motivated citizens to serve those needs. This section indicates that the state must understand the changing contexts of the society and design education materials and delivery methods with corresponding pedagogy, and proper training. Understanding and implementing digital health certainly will need such an effort.

Article 18(1) declares the state must consider the improvement of public health, including nutrition, as one of its primary duties. Article 19 upholds equal opportunities for all citizens regardless of their gender identities.

Together, these constitutional provisions provide a basis for governance of digital health. However health and population policies do not alone adequately address digital and data governance.

B. National policies regarding health and health services

i. National Health policy 2011

The *National Health Policy 2011*³¹ is based on the *National ICT Policy 2009* and incorporates elements of the current government's election manifesto, "Digital Bangladesh & Vision 2021"³². The national health policy has nineteen objectives, the tenth of which directly emphasizes the effective use of information and communications technologies (ICT) in health service delivery and management. The *National Health Policy 2011* also emphasizes an ICT-based health information structure, including e-governance, e-health, telemedicine, and electronic public awareness campaigns. As the health system of Bangladesh is largely fragmented, digitally reaching people has immense potential to ensure quality health services. The national health policy therefore aims to increase the coverage of health services through the provision of e-health services and telemedicine.

The health policy also proposes an integrated management information system for monitoring, planning, and executing healthcare activities. Subsequently, the web-based platform District Health Information System 2 (DHIS 2) was adopted in 2009. The DHIS 2 platform allows data collection at the community level, which can be analyzed at the central, state, and district levels. This includes reproductive, maternal, newborn, child, and adolescent health (RMNCAH) data available from the community level to the tertiary hospital level. However, poor quality of reporting have resulted in the under-usage of this data for health planning purposes³³.

In setting out this ambitious digital agenda, the 2011 National Health Policy notes challenges ahead, including the lack of human resources and infrastructure to provide digital health services. The health policy identifies the referral system as one of the greatest challenges of overall service delivery. Digital health can play a major role in this regard. However, as discussed below, stronger regulation will be essential.

ii. Bangladesh Population Policy 2012

The *Bangladesh Population Policy 2012* has several objectives regarding population growth and reproductive health³⁴. It mandates increasing accessibility and availability of family

31 Ministry Bangladesh Health Policy (2011). http://www.mohfw.gov.bd/index.php?option=com_content&view=article&id=74&Itemid=92

32 Digital Bangladesh & Vision 2021. http://btri.portal.gov.bd/sites/default/files/files/btri.portal.gov.bd/page/a556434c_e9c9_4269_9f4e_df75d712604d/Digital%20Bangladesh%20Concept%20Note_Final.pdf

33 Begum, T. et al (2019). 'Using DHIS2 Software to collect Health Data in Bangladesh', Working Paper, USAID, Measure Evaluation.

34 Bangladesh Population Policy (2012). https://bangladesh.gov.bd/sites/default/files/files/bangladesh.gov.bd/policy/98896a22_df81_4a82_b70c_24125dec56d7/Bangladesh-Population-Policy-2012.pdf

planning methods to eligible couples, raising awareness of the necessity of family planning, and providing services for sexually transmitted infections (STIs), reproductive health, and counseling services. The policy mandates client-centered services through existing Health and Family Welfare Centers situated in district, upazila, union, and village levels, along with door-to-door services. However, any mention of digital health services is absent in this policy. The behavior change communication (BCC) program set out in the policy, as one of the strategies of implementation, only includes radio, television, print media, and other available mass media platforms, without mention of much-used social media platforms such as Facebook, YouTube, or TikTok^{35,36}. These platforms are the most popular among youths, and some of course did not exist when the policy was formulated. The policy references the role of the Ministry of Posts, Telecommunications and Information Technology in disseminating event information through government websites solely to disseminate events. This misses an opportunity for the ministry in reaching out to more citizens through other online platforms.

iii. Medical Practice and Private Clinics and Laboratories (Regulation) Ordinance, 1982

Bangladesh has 16,979 private health facilities, including 4,452 hospitals, 1,397 clinics, 10,291 diagnostic centers, and 839 dental clinics³⁷. However, the Medical Practice and Private Clinics and Laboratories (Regulation) Ordinance of 1982 includes no provision for sharing health data with the government. When a dengue outbreak started in Bangladesh in the early 2000s, private hospitals were asked to share information on dengue and other infectious diseases with the Ministry of Health. They did so again during the current COVID-19 pandemic. However, according to this ordinance, while most private hospitals have well-developed data storage systems, they are not bound to share health information with the government. Hence, there is a need for this ordinance to be updated with regard to digital health infrastructure and data governance.

C. National policies regarding Information and Communications Technologies

This next section provides an overview of laws and policies relating to digital technologies. While Bangladesh has several policies that set out a framework for robust digital governance, some loosely phrased legal provisions create the risk of misuse of these policies for political purposes. This could lead to the promotion or sharing of confidential sexual and reproductive health information. Some of the national policies have been generated and revised according to the current government's election manifesto, "Digital Bangladesh & Vision 2021", declared on December 12, 2008³⁸. It emphasizes four pillars of "Digital Bangladesh": i) Digital government, ii) Human resource development, iii) IT industry promotion, and iv) Connecting citizens. The stated goal of this manifesto is to bring more services to people's homes through greater digitization wherever possible.

35 Social Media Stats Bangladesh (2022). <https://gs.statcounter.com/social-media-stats/all/bangladesh>.

36 Apurba Fatima (2021). <https://thefinancialexpress.com.bd/views/rise-of-tiktok-in-bangladesh-from-enjoying-bite-sized-entertainment-to-appreciating-innovative-creators-1628839541>.

37 Bangladesh Bureau of Statistics. (2021). Report on the Survey of Bangladesh Private Healthcare Institutions 2019.

38 Digital Bangladesh & Vision 2021. http://btri.portal.gov.bd/sites/default/files/files/btri.portal.gov.bd/page/a556434c_e9c9_4269_9f4e_df75d712604d/Digital%20Bangladesh%20Concept%20Note_Final.pdf.

i. Information & Communication Technology Act 2006

The *Information and Communication Technology Act 2006* sets out definitions of several digital terminologies and the state's role in governing them³⁹. It promotes privacy and confidentiality of digital information, stating that accessing any electronic record, book, register, correspondence, information, document, or other material without the prior consent of the user will constitute an offense. It also states a list of cybercrimes and respective penalties.

Critics have claimed this act is used for political purposes, especially to harass political opponents. Under Section 57, a person updating a status on social media, blogpost, or news portal can be prosecuted if a case is filed against them by any third party. This may be penalized with a minimum of 7 years and a maximum of 14 years of imprisonment and a maximum fine of Tk 1 crore (almost USD\$11,000)⁴⁰. Journalists have argued the Act threatens press freedom. However defamation cases can be filed against the plaintiff in the absence of legitimate proof.

The Act protects the Government, the Controller, the Deputy Controller, the Assistant Controller, or any person acting on his behalf from any suit, prosecution, or other legal proceedings if they breach any rule or regulation of the Act in good faith. Thus, the objectivity of the law is questionable, and its loosely written provisions increase the possibility of exploitation by government officials to breach the privacy and confidentiality of citizens' data.

ii. National ICT Policies 2009, 2015, and 2018

The current government of Bangladesh mandated the first *National Information and Communication Technology (ICT) Policy* in 2009. The ICT policy is meant to be a guide for all planners, private enterprises, NGO/Civil society organizations, and executive officers as a "benchmark of electronic delivery of citizen services".

One of the ten objectives of the *ICT Policy of 2009* is healthcare. This objective includes twenty action plans to improve the delivery of healthcare. These include increasing focus on health personnel activities, improving availability of health information, proper maintenance of infrastructure, utilizing Geographic Information System (GIS) for planning, promote health communication among health centers, using of telemedicine and helpline services along with mobile health units (especially for maternal and child health, and vulnerable populations), utilizing ICT infrastructure for monitoring and capacity building of the health workforce⁴¹.

In 2015, the current government updated the *National ICT Policy of 2009* to be *the National ICT Policy 2015*. In the new version, the government envisioned creating a network of health institutions; maintaining transparency and ensuring accountability in diagnosis, medication, and health awareness; creating a complete medicine database; establishing video conferencing in all government hospitals, building infrastructure to maintain electronic health records, creating access for electronic payment for health services, developing local medical software; utilizing GIS information for predicting outbreaks and conducting surveillance, and using ICT for provider-to-client communication⁴².

39 Bangladesh Information and Communication Technology Act (2006). <https://samsn.ifj.org/wp-content/uploads/2015/07/Bangladesh-ICT-Act-2006.pdf>

40 "If any person deliberately publishes or transmits or causes to be published or transmitted in the website or in any other electronic form any material which is false and obscene and if anyone sees, hears or reads it having regard to all relevant circumstances, its effect is such as to influence the reader to become dishonest or corrupt, or causes to deteriorate or creates possibility to deteriorate law and order, prejudice the image of the state or person or causes to hurt or may hurt religious belief or instigate against any person or organization, then this activity will be regarded as an offense"- Section 57(1) of ICT Act 2006

41 These include, i) improvement of healthcare delivery system management using telemedicine and modern technologies; ii) improvement of community awareness and access to health care facilities for all including difficult to access areas (with a special emphasis on child, maternal and reproductive health); iii) ensuring quality assurance of healthcare services and iv) enhancing capacity of National Health Service Delivery System.

42 Bangladesh Information and Communication Policy (2009). <https://policy.gov.bd/policy/ict-division?lang=en>.

In 2018, the current government updated the policy again to establish the *National ICT Policy 2018*. This policy focuses on automation, interoperability, artificial intelligence (AI), enterprise resource planning, digital commerce, digital security, digital payment, intellectual property rights, and the digital divide. It envisions Bangladesh to be a knowledge-oriented developed country by 2041, keeping with the “Digital Bangladesh” manifesto. This policy has eight objectives and 55 strategic themes, some short-term (to be completed within 2021), some mid-term (to be completed by 2030), and others long term (to be completed by 2041). In contrast with the earlier versions, this new policy strongly emphasizes digital security: it has proposed personal data protection, safe internet use, safe information storage and management, and keeping all data within the country. The policy proposes creating an equitable environment across rural and urban areas and different genders, and ensuring a non-discriminatory system for all citizens. Unlike the first policy of 2009, health is not addressed as an objective, but is rather a strategic theme under the objective of enhancing productivity. Under this strategic theme, there are 26 action plans. Most of the short-term action plans have already been fully realized.

The *2018 ICT Policy* proposes a national e-Health policy, which is currently under the process of cabinet approval. The policy also proposes to ensure Portable Electronic Health Records (EHR) for all citizens, develop a Clinical Decision Support System (CDSS), improve the Routine Health Information System (RHIS), and establish an online prescription system. The policy also proposes to develop a Massive Open Online Course (MOOC) for health personnel. The policy aims to take telemedicine and tediagnosis to the village level via community health clinics and Union Health Centers. Moreover, the policy looks to establish data-driven health governance and utilize personalized medicine services in the future. Finally, the policy proposes using augmented and virtual reality for nursing and midwifery education.

iii. Right to Information Act 2009

The *Right to Information Act 2009* refers to the constitution of Bangladesh and mandates the “right to information” as a fundamental constitutional right⁴³. It focuses on the transparency and accountability of the system to ensure good governance and eliminate corruption.

The Act mandates the government head office, divisional office, regional office, district office, and upazila offices to assume the responsibility of providing information upon request by citizens. However, this did not include union offices, though Union Digital Centres (UDC) were established in all unions across the country following the current government’s 2008 election manifesto. UDCs are information and service delivery outlets situated in union councils. UDCs ensure vulnerable population groups such as rural women, older people, persons with disabilities, and others may access necessary information and services⁴⁴. Thus, the Act is yet to include unions under its provision.

The Act also mandates every organization to preserve and catalog information for a definite period. However, if the privacy of any individual is at risk of being breached or if a person’s physical safety is endangered, an organization may not provide information for such a query. When submitting an information request, a citizen does not have to provide his/her national identification number (NID) or phone number, only an address and email-id or fax number, which allows citizens to seek information from the state anonymously without risking her or his confidentiality. There is a provision for a reasonable fee for such information, which the officer-in-charge decides.

The Act mandates the establishment of an Information Commission to oversee the activities described under the Act. The Commission is responsible for identifying impediments against the preservation and implementation of citizens’ right to information, conducting research to ensure the right to

43 Right to Information Act (2009). <https://macademy.gov.bd/wp-content/uploads/2016/12/information-act.pdf>

44 Union Digital Centers. <https://a2i.gov.bd/publication/union-digital-centres/>

information, and recommending laws and policies to the government to preserve and implement the underlying spirit of right to information⁴⁵.

iv. Digital Security Act 2018

The *Digital Security Act 2018* was established to “make provisions for ensuring digital security and identification, prevention, suppression and trial of offences committed through digital device and for matters ancillary thereto”⁴⁶. While it was established to protect citizen rights in digital spaces, some have alleged that the Act was established to give the state authority to target critics.

Under this Act the Bangladesh Telecommunications and Regulatory Commissions (BTRC) can block or remove any data that hampers the country’s solidarity, financial activities, security, defense, religious values, or public discipline. The Act enables extra territorial application (prosecution of anyone violating the law regardless of borders). This gives the government expansive rights to control information online. It also sets out heavy penalties for illegal access to any critical information infrastructure, computers, digital devices, or computer systems; damage of computers or any computer system via extracting data; modification of computer source code; digital or electronic forgery; identity fraud or impersonation; and unauthorized collection or use of identity information⁴⁷.

While the Act acknowledges privacy and confidentiality of users of digital spaces, it protects services providers by stating “no service provider shall be liable under this Act or rules made thereunder for facilitating access to any data-information, if he proves that the offence or breach was committed without his knowledge, or he exercised all due diligence to prevent the offence”⁴⁸. This approach provides extensive safeguards to any authority overseeing public data, especially data on sensitive topics like health.

Critics and human rights activists have raised concerns that the Act has given the state authority to target critics for political motivations. There have been several instances where defamation cases are filed, especially against journalists^{49,50,51,52}. Experts say that this Act has been abused and was a blow to the democratic stature of the country, as it has been used mostly by the ruling party⁵³.

D. Promoting digital literacy and health services under other relevant national policies

In addition to the laws and policies described above, the Bangladesh government has highlighted digital components within several other policies to achieve its goal of building “Digital Bangladesh”, in addition to new policies and strategies currently under development.

As a part of this initiative, the government mandated ICT-based education up to secondary level in its *National Education Policy 2010*⁵⁴. The policy aims at ensuring digital literacy among secondary

45 Right to Information Act (2009). <https://macademy.gov.bd/wp-content/uploads/2016/12/information-act.pdf>

46 Digital Security Act (2018). <https://www.cirt.gov.bd/wp-content/uploads/2020/02/Digital-Security-Act-2020.pdf>

47 Digital Security Act (2018). <https://www.cirt.gov.bd/wp-content/uploads/2020/02/Digital-Security-Act-2020.pdf>

48 Digital Security Act (2018). <https://www.cirt.gov.bd/wp-content/uploads/2020/02/Digital-Security-Act-2020.pdf>

49 bdnews24.com (2022). <https://bdnews24.com/media-en/2022/06/08/rangamati-journalist-fazle-elahi-arrested-under-digital-security-act>

50 TBS (2022). <https://www.tbsnews.net/bangladesh/three-sued-under-digital-security-act-defamatory-comments-431250>

51 Kunwar Khuldune Shahid (2022). <https://www.dailydot.com/debug/bangladesh-digital-services-act-online-voices/>

52 Ali Riaz (2021). <https://carnegieendowment.org/2021/12/09/how-bangladesh-s-digital-security-act-is-creating-culture-of-fear-pub-85951>

53 Centre for Governance Studies (2022). <https://cgs-bd.com/article/6953/The-Digital-Security-Act-2018--Who-are-the-Real-Victims>

54 National Education Policy (2021) https://moedu.portal.gov.bd/sites/default/files/files/moedu.portal.gov.bd/page/ad5cfca5_9b1e_4c0c_a4eb_fb1ded9e2fe5/National%20Education%20Policy-English%20corrected%20_2_.pdf



students. It clearly describes ICT education as necessary for ensuring transparency in the government system, and exporting human resources, and capable of building a service industry in Bangladesh. The policy also instructs for the development of an ICT-based education for constructing national-level data collection, preservation, and processing infrastructure. Additionally, the policy mandated basic computer-operating skills among all graduate-level students. A separate ICT-based course was introduced in secondary and higher secondary school curricula. However, the impact of this change in policy has yet to be examined.

Similarly, the *National Youth Policy 2017* prioritizes ICT-based activities, education, and employment⁵⁵. There are training provisions, youth campaigns, and incentives for ICT-based start-ups. Under this policy, the government established “Youth Digital Resource Development Centres” at the local level across the country. The policy also recommends ensuring affordable and quality health care for youth, with emphasis on ‘at risk’ youth and youth with special needs.” The policy mandates the provision of permanent rehabilitation and medical treatment for young victims of calamity, accidents, and torture. The policy directs awareness-raising of mental health and expands medical treatment and counseling services to cure any youths suffering from frustration, depression, and other mental or psychiatric problems, in addition to reproductive health, sexually transmitted infections, and nutrition problems. Unfortunately, the policy does not address the use of digital platforms to enable youth to seek health information and services.

The government is drafting a National Digital Health Strategy to improve the accessibility, affordability, and overall quality of health care services⁵⁶. The process is currently being led by the Management Information System (MIS) under the Directorate General of Health Services (DGHS), supported by WHO and the Ministry of Health and Family Welfare (MoHFW). The draft plan is yet to be shared with a broader audience.

The Information and Communication Technology Department is drafting a new ‘Data Protection Act, 2022’. However, although this recognizes the average citizen’s right to know what personal information is being collected and how the data will be used and stored, it exempts government agencies -including law enforcement agencies- from having to comply, leaving space for misuse. Expert opinions are being gathered on the draft before the draft is finalized⁵⁷.

The Bangladesh Telecommunication Regulatory Commission (BTRC) is drafting a ‘Regulation for Digital, social media and OTT Platforms’ in which service providers, rather than end users, would be accountable for harm⁵⁸. This regulation is still under debate. Experts have pointed out the difficulties in determining what constitutes a violation of the regulation, which prohibits any content that “creates unrest or disorder or deteriorates or advances to deteriorate law and order situation”, or “is offensive, false or threatening and insulting or humiliating to a person”. This lack of clarity leaves space for misuse.

2.3 Digital health interventions

The digital health landscape in Bangladesh has been flourishing in recent years, with an influx of e-health, m-health, telemedicine, and new mobile apps. These provide a wide range of services, such as online consultation with doctors, at-home medicine delivery, and other diagnostic solutions. For this report, we surveyed available digital health services, with a special focus on mobile apps that address

55 [http://www.dyd.gov.bd/sites/default/files/files/dyd.portal.gov.bd/policies/21e565b2_252f_4f80_bfce_31a1cb33163d/Draft%20English%20Version%20of%20National%20Youth%20Policy%202017%20\(1\).pdf](http://www.dyd.gov.bd/sites/default/files/files/dyd.portal.gov.bd/policies/21e565b2_252f_4f80_bfce_31a1cb33163d/Draft%20English%20Version%20of%20National%20Youth%20Policy%202017%20(1).pdf)

56 WHO (2019). <https://www.who.int/bangladesh/news/detail/17-10-2019-bangladesh-initiates-digital-health-strategy>.

57 Amnesty International (2022). <https://www.amnesty.org/en/latest/news/2022/04/bangladesh-new-data-protection-bill-threatens-peoples-right-to-privacy/>.

58 The Bangladesh Telecommunication Regulatory Commission Regulation For Digital, Social Media And OTT Platforms (2021). http://old.btrc.gov.bd/sites/default/files/notice_files/The%20Bangladesh%20Telecommunication%20Regulatory%20Commission%20Regulation%20For%20Digital%2C%20Social%20Media%20And%20OTT%20Platforms%20%202021.pdf



SRHR, in keeping with our study focus. We identified these services using online searches via Google Play Store, Google Search, and WHO Digital Health Atlas⁵⁹. Key findings are summarized below.

These digital health service providers can be categorized as i) Government; ii) Non-Government, and iii) Private service providers. The types of services provided by these institutions include i) Consultation; ii) Health care information, and iii) Health care services (i.e., test result delivery through electronic media, medicine delivery, health insurance, etc.). We briefly described 25 service providers or start-ups in Annex A.

Most of the digital health services we identified are private projects in the start-up or pilot phase. Out of the 25 initiatives listed, we identified only one government-led digital health service and two led by non-profit organizations. Their services range from online consultation (audio and video) to diagnostic services at home. We identified a small number of services that provide capacity building for health personnel. Several other digital health services cater to specific clients, such as pregnant women, foreign expats, and persons with disabilities. Most of the digital health services we identified in Bangladesh are associated with consultation: clients can either consult doctors on-the-go or book appointments for sessions online or in associated private hospitals. We found only one service which let the clients choose their diagnostic tests providers.

Separately, the government of Bangladesh built the app *Surokkha* for mass vaccination during COVID-19. The app was successful and enabled coordination of the complete vaccination process⁶⁰. This app is a successful example of homegrown information technology and tracking service.

Overall, we found a lack of patient autonomy (patients making decisions about their care without being influenced by the providers), data security, and transparency with patient data in these services. There should be a national-level guideline to regulate and monitor these health services, as such regulatory policy is absent. Moreover, the adaptability of these digital health services to the needs of end users, especially marginalized people, remains a valid question in ensuring access.

Furthermore, the country's digital divide might create a barrier for a large portion of the population. However, a digital health transformation may just be the solution to remove inequality in health in Bangladesh, as cheap smartphones, network improvements and growing digital literacy may reduce social inequality⁶¹.



Figure 1: Types of institutions and digital health care provided

59 WHO (2021). <https://www.digitalhealthatlas.org/en/-/>

60 Mohammad Al-Masum Molla (2021). <https://www.thedailystar.net/news/bangladesh/news/silent-heroes-surokkha-2224306>

61 Nahaly Nafisa Khan (2021). <https://www.thedailystar.net/supplements/30th-anniversary-supplements/going-digital/news/digital-transformation-the-health-sector-making-healthcare-more-inclusive-and-accessible>

A. SRHR related apps in Bangladesh (from Google Store)

There are reportedly 234 accessible health-related apps in Google Play in Bangladesh⁶². The same study found usability of these apps in Bangladesh to be significantly poor. We identified several downloadable apps that provide SRHR knowledge and advice.

For instance, the app Amra Jante Chai⁶³, produced by BRAC James P Grant School of Public Health, has five features upon its download⁶⁴. Under each theme, videos are available on topics like reflection on one's body, wet dreams, masturbation, menstruation, family planning, sexuality, sexual illness, sexual violence or abuse, gender, and consent. The app features a downloadable link for a game, but, unfortunately, most mobile phones do not allow the device to download the game for security reasons.

Other apps such as Bangla Sex Tips, by DigBazar GmbH, 'Male sexual problems and solutions', address the most-sought information on male sexual body parts and their associated problems, and different illnesses that males have related to sexual health. As for reproductive health, the app Maa (মা) by AGAMiLabs, caters to pregnant women.

Our review of existing apps on SRHR found some common setbacks. First, none of them can confirm the authenticity and accuracy of the information provided. Some even reaffirm common myths and misconceptions that are prevalent, such as nocturnal emission is a disease. Second, most such apps lack a Bangla language option, which might exclude a certain cohort of the population from accessing information. Third, some of the contents were found to be monotonous and lacked interactive tools, which could eventually cause users to lose interest. Frequent use of pop-up adverts makes navigation through the apps challenging. Some of the apps also only have the option for binary genders, excluding people of other genders from the very beginning.

In sum, the digital health sector in Bangladesh is in a preliminary stage and must overcome obstacles to effectively serve young people with essential SRH information and services.

2.4 Conclusions

In Bangladesh, since the pandemic started, utilization of the digital platform has increased exponentially from both the user and service delivery perspective due to lockdown and confinement at home for long periods. This holds true for the healthcare industry as well. Despite the country's recent spree in digitizing services, there are existing loopholes that need to be addressed simultaneously.

First, many private health start-ups exist that mainly provide digital health services. However, there is a lack of regulations to monitor their activities.

Also, the health data set is yet to be consolidated under one umbrella. Although the government introduced DHIS2 in 2009, which both the Directorate General of Health Services (DGHS)⁶⁵ and Directorate General of Family Planning (DGFP)⁶⁶ have since used, a number of areas of concern remain. First, both directorates maintain parallel HMIS, therefore creating a few issues, including multiple counting, and non-accountability of service outreach. The system also lacks critical information such

62 Islam, M.N., Karim, M.M., Inan, T.T. et al. Investigating usability of mobile health applications in Bangladesh. BMC Med Inform Decis Mak 20, 19 (2020). <https://doi.org/10.1186/s12911-020-1033-3>

63 <https://play.google.com/store/apps/details?id=com.nrezo.bracathon&hl=en&gl=US>

64 They are - Nijeke Jano (Know Yourself), Bhenge Feli Bhul Dharona (Let us break down the misconceptions), Video, Games, Abeg Onubhuti Maniye Newar Koushol (Strategies to Manage Emotions and Feelings).

65 <https://dghs.gov.bd/>

66 <https://dgfp.gov.bd/>



as family planning statistics. It is still largely dependent on international donors, but sustaining such a digital system requires a long-term financial plan. Technical challenges remain, including unique identification numbers, where national identification (NID) cards are only provided to citizens above 18 and above, excluding children. This complicates the storage and updating of children's health data. Another barrier is the capacity of health sector field staff. While digitizing health information, the use of universal terminologies is important. The absence of a standard guideline on unique health terminologies aggregation of health data becomes difficult while entering in the national database using DHIS2.

Though Bangladesh has standard national health and digital policies, any policies covering both health and digital rights remain absent. There still exists a lack of data sharing mandates between public and private health service providers, which results in partial health data incapable of supporting policy generation. This must be addressed to ensure data accuracy, as policy design heavily relies on available health data. The absence of digital health policies also makes sharing health data on online platforms, especially sensitive data, like SRHR, risky under the existing digital rights because of the lack of well-defined privacy protections.

The recent push for introducing private and public digital healthcare delivery services and instituting new digital acts and regulations is a sign of its increasing appeal at the policy level. However, whether the newly introduced enactments and laws are effective enough to guarantee accessible and equitable digital health care, as well as the protection of individual rights, remains to be seen.

3. Colombia

Colombia has a robust legal framework that governs the interactions carried out through digital technologies. Although there is no public policy regulating digital health in Colombia, existing regulations on privacy and data protection, access to ICT, cybersecurity, and health in general, among others, regulate –directly and indirectly– the use, access, and appropriation of digital technologies in health. Even if certain challenges and concerns must be addressed to ensure that digital health systems operate in compliance with human rights obligations, there are regulatory provisions that protect specific digital rights of people who use and interact with digital health systems. Accordingly, the following chapter will provide a general overview of Colombian legislation on digital health. It will emphasize specific group populations that are often marginalized by society, among which are people diagnosed with positive HIV, women, the LGBTIQ+ community, and migrants, among others.

The structure of the chapter is as follows: (i) Colombia’s background, which explains the government structure and social context, general demographics, economic and political system, the context of special group populations, health infrastructure, and HIV statistics; (ii) the legal framework and national public policies on digital health that comprises analyzing regulation on access to the right to health, HIV, privacy and data protection, ICT, cybersecurity and digital health and (iii) the conclusion that highlights the principal legal strengths and weaknesses concerning digital health in Colombia, as well as further questions derived from elaborating this analysis.

3.1 Background:

A. Government structure and social context

Colombia gained independence on July 20, 1810⁶⁷. The country is a Social Rule of Law state and a decentralized, democratic, participatory, and pluralistic unitary republic⁶⁸. The Republic of Colombia is led by three public branches: the executive, the legislative, and the judiciary⁶⁹.

Until recently, Colombia grappled with one of the largest armed conflicts in history. The Revolutionary Armed Forces of Colombia (FARC) were engaged in an armed conflict against the Colombian Government that lasted more than 50 years. By means of the Peace Agreement that concluded in August 2016 in la Havana, Cuba, the Colombian Government and the FARC agreed to end the conflict and build a stable and lasting peace⁷⁰. The Peace Agreement is well known nationally and internationally

67 Procolombia, Colombia.co. “The Independence Campaign, led by Simón Bolívar, was resoundingly successful in the Battle of Boyacá Bridge, an event that defined Colombian independence.” <https://www.colombia.co/en/colombia-country/history/the-battle-of-boyaca-the-decisive-feat-for-colombian-independence/>

68 Colombian National Constitution, Article 1

69 Id. Article 113.

70 See the complete English version of the Colombian Peace Agreement in the following link: <https://www.peaceagreements.org/viewmasterdocument/1845>

because it placed the victims at the center of the process. It succeeded in including a gender approach throughout the whole agreement⁷¹.

B. General demographics

As of July 2022, Colombia has a population of 51,524,816. It is expected that the population will continue to grow until 2050 to 55.96 million, and that following 2050, the population will slowly decline due to the low national fertility rate. The population growth rate is currently 1.08%, and the fertility rate is 1.78 births per woman, decreasing by 1% per year. The three largest cities, Bogotá, Cali and Medellín, have a combined population of 12,067,222⁷². In 2020, 22.18% of the population was between the ages of 0 and 14; 68.76% between 15 and 64 years; and 9.06% 64 years and older⁷³. 50.9% of the population is female and 49.1% is male, and approximately 19% live in rural areas⁷⁴.

C. Economic and political data

According to the World Bank, the economy had an estimated growth of 9.9%⁷⁵ in 2021⁷⁶. Nonetheless, it predicted a slowdown of 4.1% in 2022 and 3.5% in 2023⁷⁷. The real gross domestic product (GDP) in 2020 decreased by around 6.8% compared to the previous year. However, according to the OECD, in 2022 the GDP is expected to grow by 5.5%⁷⁸.

In 2020, the gross income per capita amounted to 5800 U.S. dollars (USD), down from 6600 USD per person in 2019⁷⁹. The World Bank confirmed that the monetary poverty rate increased from 34.7% in 2018 to 35.7% in 2019, which resulted in around 662,000 people falling into poverty⁸⁰. In 2021, the Foreign Direct Investment was at 6.51 million USD as of November 2021, increasing by 5% compared to the previous year⁸¹. The COVID-19 pandemic impacted the distribution of income across households in Colombia. The loss of up to 6.2 million jobs created an “average reduction of 16.5% of household disposable income, with important income losses at the bottom of the distribution”⁸².

71 See the Conciliation Resources’ article titled “Innovations in the Colombian peace process” of June 2016, available in the following link: <https://www.c-r.org/resource/innovations-colombian-peace-process>

72 World Population Review, Colombia Population 2022 (Live): <https://worldpopulationreview.com/countries/colombia-population>, <https://datos.bancomundial.org/indicador/SP.RUR.TOTL.ZS?locations=CO>

73 Statista, “Colombia: age structure from 2010 to 2020”: <https://www.statista.com/statistics/369019/age-structure-in-colombia/#statisticContainer>

74 Datareportal, “Digital 2021: Colombia,” February 11, 2021: <https://datareportal.com/reports/digital-2021-colombia#:~:text=There%20were%2034.73%20million%20internet.at%2068.0%25%20in%20January%202021.>

75 This estimated growth was perhaps calculated based on the bouncing back from the pandemic.

76 World Bank, “Global Economic Prospects,” January 2022, page 87: <https://img.lalr.co/cms/2022/01/11164025/9781464817601.pdf>

77 Id, at page 84.

78 OECD, “Colombia Economic Snapshot - Economic Forecast Summary (December 2021)”: <https://www.oecd.org/economy/colombia-economic-snapshot/>

79 Statista, “Gross national income per capita in Colombia from 2010 to 2020”: <https://www.statista.com/statistics/1069931/gross-national-income-per-capita-colombia/>

80 World Bank, “Poverty & Equity Brief - Latin America & The Caribbean Colombia”, April 2021, page 1: https://databank.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AF8C-750588BF00QA/AM2020/Global_POVEQ_COL.pdf

81 Ministry of Trade, Industry and Tourism of Colombia, “Información Balanza Cambiaria Comportamiento de la Inversión Extranjera Acumulado a noviembre de 2021,” Office of Economic Studies, January - November 2021, page 4: [https://www.mincit.gov.co/getattachment/estudios-economicos/estadisticas-e-informes/informes-de-inversion-extranjera/informes-de-inversion-extranjera-\(balanza-cambiaria\)/2021/noviembre/oee-mab-informe-cambiario-a-noviembre-2021.pdf.aspx](https://www.mincit.gov.co/getattachment/estudios-economicos/estadisticas-e-informes/informes-de-inversion-extranjera/informes-de-inversion-extranjera-(balanza-cambiaria)/2021/noviembre/oee-mab-informe-cambiario-a-noviembre-2021.pdf.aspx)

82 CORREDOR, Federico. RIOS, Paola. RODRÍGUEZ, David. “The effect of COVID-19 and emergency policies on Colombian households’ income,” Universidad del Rosario, page 3: <https://www.uexternado.edu.co/wp-content/uploads/2021/02/DDT-67.pdf>

D. Digital usage, internet coverage

Although COVID-19 negatively impacted the Colombian economy, the digital transformation continued. By the fourth trimester of 2021, 37.96 million Colombians had access to mobile internet and 8.43 million to fixed Internet⁸³. By March 2021, the penetration rate for mobile Internet was 64.4 per 100 inhabitants, increasing 5.5% with respect to the same period of 2020⁸⁴. Due to COVID-19, Internet traffic in the second quarter of 2021 reached 430 million Gigabytes (GB), presenting a positive variation of 84.9% compared to the same period of 2020⁸⁵. As of 2019, high income households⁸⁶ enjoyed a higher download speed of 35.3 Megabit per second (Mbps), while low income households connected at a lower speed (6.2 Mbps)⁸⁷. According to the National Department of Statistics (DANE), in 2019 Bogotá registered 92.5% of the highest use of mobile phones, followed by Risaralda (91.5%), Valle del Cauca (90.7%) and Quindío (90%). The departments with less usage were Vaupés (24%) and Vichada (38.1%), two departments located in remote areas⁸⁸.

Colombia's telecommunications and Information and Communication Technologies sectors grew rapidly during 2012⁸⁹. According to the Inter-American Development Bank, Internet penetration and use and broadband contribution to the GDP were among the most relevant indicators that reflected this expansion⁹⁰. The Ministry of Information and Communications Technology reported that by mid-2021, Colombia exceeded 8 million unique fixed Internet users during the first quarter of 2021, with a goal of 70% by August 2022⁹¹.

While as noted above, ICT coverage is improving in Colombia, there are still some concerns. On the one hand, although access to the Internet is getting cheaper, it is not affordable enough for everyone. According to an analysis made by DW Akademie, an organization dedicated to strengthening the human right to freedom of expression, while Colombia is becoming an online country, a digital divide still separates cities from the countryside⁹². As they note, "in Colombia's bigger cities, people generally have access to a good 4G connection, and if they've run out of data, the Internet is still accessible using free Wi-Fi spots."

However, the situation in the countryside is very different. Due to the geographical diversity of the country, as well as the sparse population in some areas and the impact of the armed conflict, building the necessary infrastructure for 4G coverage has been challenging. Although the Ministry of ICT has worked on improving the 4G connection in most of the municipalities, the reality is that, in most cases, this technology does not reach the places where people work, live, and travel. In 2018, the deputy director of Fedesarrollo (The Foundation for Higher Education and Development in Colombia) indicated that people with fewer resources face greater barriers to online access, creating barriers to education.

83 See the Communications Regulation Commission's website for updated indicators: <https://crcom.gov.co/es>

84 Communications Regulation Commission, "Data Flash 2021 -023 - Internet Móvil," Postdata, July 2021, page 1: <https://img.lalr.co/cms/2021/09/20122435/Da-ta-Flash-2021-023-Internet-M%C3%B3vil.pdf>

85 Communications Regulation Commission, "Tráfico de Internet móvil alcanzo los 430 millones de GB en el segundo trimestre del 2021," November 16, 2021: <https://www.crcom.gov.co/es/noticias/comunicado-prensa/trafico-internet-movil-alcanzo-430-millones-gb-en-segundo-trimestre-2021>

86 According to the DANE, the term household strata is defined with the aim of charging differentially public services.: <https://www.dane.gov.co/index.php/69-espanol/geoestadistica/estratificacion/468-estratificacion-socioeconomica>

87 Ministry of ICT, "Boletín trimestral de las TIC: Cifras tercer trimestre de 2019," page 14: https://colombiatic.mintic.gov.co/679/articles-125648_archivo_pdf.pdf

88 National Department of Statistics (DANE in Spanish), "Indicadores básicos de tenencia y uso de Tecnologías de la Información y las Comunicaciones - TIC en hogares y personas de 5 y más años de edad," 2019, page 21: https://www.dane.gov.co/files/investigaciones/boletines/tic/bol_tic_hogares_2019.pdf

89 MARÍN, Javier. BARRAGÁN MARTÍNEZ, Xavier. Zaballos, Antonio G. "Informe sobre la situación de conectividad de Internet y banda ancha en Colombia," IDB, June 2014, page 16: <https://publications.iadb.org/publications/spanish/document/Informe-sobre-la-situaci%C3%B3n-de-conectividad-de-Internet-y-banda-ancha-en-Colombia.pdf>

90 Id.

91 Ministry of ICT, "Colombia superó los 8 millones de accesos fijos a internet en el primer trimestre de 2021," July 21, 2021: <https://mintic.gov.co/portal/inicio/Sala-de-prensa/178505:Colombia-supero-los-8-millones-de-accesos-fijos-a-internet-en-el-primer-trimestre-de-2021-Karen-Abudinen-ministra-TIC>

92 ERB, Sebastian. "Colombia is becoming an online country, but a digital divide still separates cities from the countryside," Dw Akademie, February 18, 2019: <https://www.dw.com/en/colombia-is-becoming-an-online-country-but-a-digital-divide-still-separates-cities-from-the-countryside/a-47563079>



E. Gender equality and LGBTIQ+ communities

Colombia has made substantial developments with respect to gender equality, both through the signing of laws and the ratification of international human rights treaties protecting rights for women. According to the OECD, Colombia rose to a ranking of 22 out of 153 countries in the World Economic Forum's 2020 Global Gender Gap Index, from and 40 out of 149 countries in 2018⁹³. Among the most outstanding laws on gender are the *Quota Law* (Law 581, 2000), the *National Policy on Gender Equality* (Conpes 161, 2013), and the law that acknowledged the economic contribution of unpaid care work (Law 1413, 2020), among others.

Nonetheless, there are still some challenges on the path to gender equality. For instance, certain stereotypes and forms of discrimination persist that relate to unpaid (domestic) work, victimhood and displacement due to armed conflict, indigenous and persons of Afro-Colombian origin, sexual and gender-based violence (such as family domestic violence, sexual violence, trafficking, and femicide). To address these and other concerns, the OECD recommended strengthening the inclusion of women in policy-making processes and justice institutions and reshaping the role of women at home, at school, in the workspace, and in public spaces.

The COVID-19 pandemic had a negative impact on female employment. Based on a study sponsored by the International Labour Organization and UN Women, female employment in Colombia contracted 19.6% between July and September of 2020 compared with the previous year⁹⁴.

Regarding women's access to digital technologies, women have less knowledge than men about digital Government services. According to the Economic Commission for Latin America and the Caribbean (ECLAC), women participate less actively than men in the following areas: (i) requesting information from public authorities; (ii) presenting requests and/or claims; (iii) obtaining information on procedures and/or services; (iv) contacting and carrying out procedures before public entities and (v) making payments for procedures and services such as health services and tax duties⁹⁵. This may be due in part to their lesser access to digital services. Indeed, only 48% of women are able to pay for fixed or mobile Internet, and a low proportion of women also use mobile devices⁹⁶. In the words of *Fundación Karisma*, a Colombian NGO dedicated to promoting digital rights, not only are there some women who lack access to digital technologies, there are also other women whose access is limited through poor quality and unreliable online connections⁹⁷.

Concerning the enjoyment of health services, Law 100 established that public health services must be provided universally, that is, without discrimination. Additionally, the National Government implemented the *National Public Policy on Gender* which comprises actions related to health and sexual and reproductive rights and victims of the armed conflict⁹⁸. They further issued Law 1257, 2008, which assists women victims of conflict through subsidies for housing, food, and transportation, among others⁹⁹. The During 2021 Ministry of Health worked on a draft resolution to adopt a mainstreaming

93 OECD, "Overview of gender equality in Colombia - Current status of gender equality in Colombia," 2020: <https://www.oecd-ilibrary.org/sites/99444453-en/index.html?itemId=/content/component/99444453-en>

94 ISAZA CASTRO, Jairo Guillermo. "El impacto de la COVID-19 en las mujeres trabajadoras de Colombia," ILO Office for the Andean Countries, March 2021, page 15: <https://colombia.unwomen.org/sites/default/files/Field%20Office%20Colombia/Documentos/Publicaciones/2021/03/COVID19%20-%20Colombia.pdf>

95 CEPAL, "Mujeres en la economía digital - Superar el umbral de la desigualdad," October 2013, page 39: https://repositorio.cepal.org/bitstream/handle/11362/16561/1/S2013579_es.pdf

96 Id. at page 40.

97 BOTERO, Carolina. "Inequidad digital de género," Karisma, 19 de octubre de 2020: <https://web.karisma.org.co/inequidad-digital-de-genero/>

98 Ministry of Health website, "Política Nacional de Equidad de Género para Mujeres:" <https://www.minsalud.gov.co/proteccionsocial/promocion-social/Paginas/Politica-de-Equidad-de-Genero-para-las-Mujeres.aspx>

99 Ministry of Health website, "Ley 1257, 2008: Medidas de atención para mujeres víctimas de violencias:" <https://www.minsalud.gov.co/proteccionsocial/promocion-social/Paginas/Medidas-de-atencion-Ley-1257-de-2008.aspx> Additionally, the Ministry of Health issued Resolution 595 of April 3, 2020 to allocate and distribute resources for women victims of violence. See the Resolution here https://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%20No.595%20de%202020.pdf

gender approach in the health sector to close the gender and sexual orientation gaps in Colombia¹⁰⁰. In November 2021, the Ministry of Health published this draft for public comment¹⁰¹.

The Colombian normative framework disposes of a set of legal dispositions that protect sexual and reproductive rights. First, by means of the Constitution and the International Law of Human Rights, the State is obliged to respect the rights and freedoms of people¹⁰². The sexual and reproductive rights are developed both in the Constitution of 1991 and in different international instruments and are materialized in the right to equality and non-discrimination, right to personal and family privacy, right to freedom of personal development, right to freedom of conscience, and right to responsibly decide the number of their children¹⁰³.

Decree 2968, 2010 created the *National Intersectoral Commission for the Promotion and Guarantee of Sexual and Reproductive Rights*. Within the functions of the Commission are to coordinate the formulation and implementation of plans aimed at promoting and guaranteeing sexual and reproductive rights, creating participatory mechanisms, and recommending updating the legal framework, among others¹⁰⁴. Lastly, the Ministry of Health issued the *National Policy of Sexuality, Sexual and Reproductive Rights*, whose aim is to develop sectorial and intersectoral actions in guarantee of sexual and reproductive rights¹⁰⁵.

Regarding the right to abortion, the Constitutional Court recently reversed the existing regulation. According to Case Law C-055, 2022, the Court concluded that the right to abortion must be respected as long as it is practiced before the 24th week of pregnancy¹⁰⁶. This shift in legislation was a victory, since, before 2022, abortion was permitted only in three exceptional situations: rape, risk to the life of the mother, and malformation of the fetus¹⁰⁷. Data on lesbian, gay, bisexual, transgender, and intersex communities is limited. In 2019 (DANE) included questions on gender identity and sexual orientation in the National Survey on Consumption of Psychoactive Substances. Given controversies over some definitions, the DANE provided guidelines on terms that required clarification¹⁰⁸. According to the survey, 1.2% of Colombian adults identified as lesbian, gay, or bisexual¹⁰⁹. However, some analysts argue that the data does not capture everyone. Nina Chaparro, *DeJusticia's* gender coordinator, argues that the data processed underrepresents these communities and points out the survey was carried out only in urban areas¹¹⁰.

In Colombia, according to an Ombudsman's report, 98 people with diverse sexual orientations and gender identities were killed between 2020 and 2021¹¹¹. Most of the murders were reported in the Colombian Caribbean, Antioquia, and Valle del Cauca. Among the victims, 27 were transgender women, followed by men who have sex with men (14 cases), lesbian women (8 cases), one transgender man,

100 https://drive.google.com/file/d/1uW6_m0iRFIDY4s8QMFFKuhCv9Z8ma7m/view.

101 FENALCO, "MinSalud adoptará los lineamientos para la transversalización del enfoque de género en el sector salud," Observatorio Jurídico, October 26, 2021: https://fenalco.com.co/es/noticias/regulatory_impact/notijur/C3%ADdico-196-minsalud-adoptar%C3%A1-los-lineamientos-para-la-transversalizaci%C3%B3n-del-enfoque-de-g%C3%A9nero-en-el-sector-salud/

102 National Policy of Sexuality, Sexual and Reproductive Rights," Ministry of Health and Social Protection, page 29: <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/DE/LIBRO%20POLITICA%20SEXUAL%20SEPT%2010.pdf>

103 Colombian Constitution, Articles 13, 15, 16, 18 and 42.

104 Decree 2968, 2010, Articles 1 and 3.

105 National Policy of Sexuality, Sexual and Reproductive Rights," Ministry of Health and Social Protection, page 56.

106 Constitutional Court, Press Communication Case Law C-055, 2022, page 1: <https://www.corteconstitucional.gov.co/comunicados/Comunicado%20de%20prensa%20Sentencia%20C-055-22%20-%20Febrero%2021-22.pdf>

107 Colombian Criminal Code, Article 122 "Abortion".

108 National Administrative Department of Statistics, "National Survey on the Consumption of Psychoactive Substances," August 2020, page 7: <https://www.dane.gov.co/files/investigaciones/boletines/encspa/presentacion-encspa-2019.pdf>

109 Id. at page 64.

110 ORTIZ FONNEGRA, María Isabel. "Cuántos colombianos con LGBT,? August 13, 2020: <https://www.eltiempo.com/justicia/servicios/encuesta-del-dane-midio-por-primera-vez-cantidad-de-personas-lgbt-en-colombia-529124>

111 Colombian Ombudsman. "Entre 2020 y 2021, asesinaron a 98 personas con orientación sexual e identidad de género diversas," June 25, 2021: <https://www.defensoria.gov.co/es/nube/comunicados/10218/Entre-2020-y-2021-asesinaron-a-98-personas-con-orientaci%C3%B3n-sexual-e-identidad-de-g%C3%A9nero-diversas-OSIGD-dEFENSOR%C3%8DA.html>



and 27 cases without defined gender identities. Reported violence included psychological violence, economic violence, physical violence, sexual violence, and the killing of community leaders. Among other recommendations, the Ombudsman suggested following the good practice guidelines initiated in Decree 762, 2018¹¹², which incorporated the concerns highlighted by the Constitutional Court on discrimination and historical violence against LGBTIQ+ communities in Colombia¹¹³.

F. Group demographics

i. Youth demographics

The DANE defined that in Colombia, youth is the stage of life between 14 and 28 years-old. According to data from the National Population and Housing Census, as of 2020, young people between ages 14 and 28 represented 25% of the total population, equivalent to 12.5 million people. Within this young population, 50.4% are men and 49.6% are women; 75% live in urban areas and 25% in rural areas¹¹⁴.

One of the problems that has most affected Colombian youth is unemployment. In February through April of 2021, of 12.5 million youths, 42% were employed, and 13.2% were unemployed¹¹⁵. From a gender perspective, 61% of men and 39% of women were employed while 44% of men and 56% of women were unemployed¹¹⁶.

The Ministry of Health has prioritized young people's access to health services. Through the model "*Friendly health services for adolescents and young people*," the Ministry of Health created a space for health entities to generate comprehensive and differential care channels for the population ages 10 to 29¹¹⁷. Several international organizations are working to strengthen youth access. These include the United Nations Population Fund (UNFPA), which works with juvenile oversight to monitor how youth access health services and develop recommendations¹¹⁸. Another program, "*Salud Jóven*", developed in association with UNICEF, AstraZeneca, and the Johns Hopkins Bloomberg School of Public Health, aims to educate youth about non-communicable diseases¹¹⁹.

The Ministry of ICT finds that 84% of youth ages 12 to 24 use the Internet¹²⁰. Many report using social apps like WhatsApp, Facebook, Instagram, YouTube, and Uber¹²¹. Despite public general comments about youth wasting time on mobile devices, young people use these as educational and communicative tools and as sources of information.¹²² Experts emphasize that while mobile apps are on the rise, they should not substitute basic health services provided by public health institutions¹²³.

112 Decree 762, 2018: <https://dapre.presidencia.gov.co/normativa/normativa/DECRETO%20762%20DEL%2007%20DE%20MAYO%20DE%202018.pdf>

113 Colombian Ombudsman. "Informe de Derechos Humanos de personas OSIGD - LGBT 2020 y 2021," pages 6 and 9: https://www.defensoria.gov.co/attachment/3756/INFORME%20DERECHOS%20HUMANOS%20DE%20PERSONAS%20OSIGD-LGBT%202020%20y%202021%20Vol.2.pdf?g_show_in_browser=1

114 PNUD, Colombia. "Situación de los Jóvenes en el mercado laboral tras un año de pandemia," June 17, 2021: <https://www.co.undp.org/content/colombia/es/home/-/sabias-que/-situacion-de-los-jovenes-en-el-mercado-laboral-tras-un-año-de-pa.html#:~:text=%C2%BFcu%C3%A1ntos%20j%C3%B3venes%20hay%20en%20Colombia,el%2049%2C6%25%20mujeres>

115 PNUD does not refer to the rest of the youth population that is neither employed nor unemployed.

116 Id.

117 Ministry of Health website, "Servicios de salud amigables para adolescentes y jóvenes (SSAAJ):" <https://www.minsalud.gov.co/salud/publica/ssr/Paginas/Servicios-de-salud-amigables-para-adolescentes-y-jovenes-SSAAJ.aspx>

118 UNFPA Colombia, Jóvenes: <https://colombia.unfpa.org/es/temas/j%C3%B3venes>

119 Plan Internacional, "Programa de Salud Jóven:" https://www.plan.org.co/proyectos/programa_de_salud_joven/

120 Ministry of ICT website, "Colombia avanza en su meta de estar conectada en un 70% en 2022: DANE," September 21, 2021: <https://mintic.gov.co/porta/inicio/Sala-de-prensa/182108:Colombia-avanza-en-su-meta-de-estar-conectada-en-un-70-en-2022-DANE>

121 La FM, "Estas son las aplicaciones que más utilizan jóvenes universitarios en Colombia," April 17, 2019: <https://www.lafm.com.co/tecnologia/estas-son-las-aplicaciones-que-mas-utilizan-jovenes-universitarios-en-colombia>

122 Sentir by Colmédica, "¿Qué consumen los jóvenes colombianos en su celular,?" January 15, 2020: <https://www.feelbycolmedica.com/que-consumen-los-jovenes-colombianos-en-su-celular/>

123 LÓPEZ BEJARANO, Joaquín Mauricio. "Las plataformas se han concentrado en el contacto directo con los usuarios," La República, July 20, 2018: <https://www.larepublica.co/internet-economy/conozca-algunas-aplicaciones-destacadas-para-diferentes-consultas-sobre-salud-2751636>



ii. Migrant demographics

Venezuela's economic crisis has triggered mass migration. A total of 1,729,537 Venezuelan migrants entered the country by December 2020¹²⁴. The Colombian government has been working on guaranteeing migrants access to health services. An example is the precedent of the Constitutional Court that ruled that undocumented migrants have the right to access health services only if they are placed in emergency situations. Additionally, the Colombian government has been working to set forth secondary legislation aimed at allowing Venezuelan migrants to access economic and social services throughout the regularization of their migration situation in Colombia.

Through Conpes 3950, 2018 – a national policy document – the government proposed a series of actions aimed at improving the healthcare of Venezuelan migrants. These actions included identifying health supply needs in border areas, providing technical assistance to register regular migrants with the health system, bringing assistance to irregular migrants, and improving the public health response capacity, among other actions. During migration, the risk of contracting HIV increases. Based on a report by Profamilia, an NGO dedicated to promoting sexual and reproductive rights in Colombia, these risks can be exacerbated due to displacement and vulnerabilities during transit. These dynamics can seriously affect women and girls who travel alone, without a network or support to protect them from human trafficking and sexual exploitation¹²⁵.

In 2019, 1,053 migrants were treated for HIV, a 29.3% increase compared to 2018. Although there is no data on the distribution of Venezuelan migrants living with HIV who have migrated to different countries in Latin America, the number of foreigners living with HIV in Colombia increased; 573 new cases were reported, and 94% are Venezuelan migrants¹²⁶. According to Profamilia, men use HIV health care services more than women. Concerning the migrant and refugee population, the number of men (718) is twice that of women (335).

The government has taken important actions in response to this situation. For instance, in accordance with a communication issued by the Ministry of Health, the Venezuelan migrant population will start benefiting from antiretroviral treatment. This medication arrives as part of a donation made by Brazil to contribute to an effective response to combat HIV and to reduce the gaps in access¹²⁷.

G. Health infrastructure

The health system in Colombia is regulated by Law 100, 1993, and by secondary regulations. According to Law 100, through institutions, laws, and procedures, the comprehensive Social Security System provides comprehensive coverage of contingencies, especially those that impair health and economic capacity, and is divided by two and is made up of two systems: subsidized and contributory¹²⁸. The public Social Security Service's governing principles include efficiency, universality, solidarity, integrality, unity and participation¹²⁹. Once a person has been affiliated with the Social Security System, the individual and his family acquire rights and duties specific to the system they are affiliated with¹³⁰.

124 Colombian Immigration Authority. "Boletín anual de estadísticas de flujos migratorios 2020," page 78: <https://www.migracioncolombia.gov.co/documentos/estadisticas/publicaciones/BOLETIN%202020%20FINAL.pdf>

125 Profamilia, "Desigualdades en salud de la población migrante y refugiada venezolana en Colombia," Bogotá D.C. Colombia 2020, page 77: <https://profamilia.org.co/wp-content/uploads/2020/05/Desigualdades-en-salud-de-la-poblacion-migrante-y-refugiada-venezolana-en-Colombia-Como-mejorar-la-respuesta-local-den-tro-de-la-emergencia-humanitaria.pdf>

126 Id. at page 78.

127 Ministry of Health, "Población migrante será beneficiada con tratamientos para VIH," February 6, 2022: <https://www.minsalud.gov.co/Paginas/Poblacion-migrante-sera-beneficiada-con-tratamientos-para-VIH.aspx>

128 Law 100, 1993, Preamble: http://www.secretariassenado.gov.co/senado/basedoc/ley_0100_1993.htm

129 Id. at Article 2.

130 Decree 780, 2016, Article 2.1.3.1: https://www.minsalud.gov.co/Normatividad_Nuevo/Decreto%200780%20de%202016.pdf

Affiliated individuals can access health services starting from the date of membership, and any additions made to the person's condition may not affect the continuity of the provision of services¹³¹. Nowadays, there are a significant number of private health providers that make use of mobile applications to offer greater attention and coverage and also to offer premium services. These include Colsanitas, Coomeva, Famisanar, Colmedica, and Cafesalud, among others¹³².

H. HIV statistics

According to UNAIDS, in 2020, there were approximately 180.000 children and adults aged 15 and over living with HIV, of which 29.000 are women, 150.000 are men, and 1.400 are children aged 1 to 14 years-old¹³³. In 2020 9.300 cases of adults and children newly infected with HIV were recorded, of which 700 are women aged 15 and over, 8.400 are men aged 15 and over and 200 are children aged 1 to 14. Regarding men who have sex with men, the population size estimate is 300.000. Cases are mainly located in Bogotá, Cali, and Medellín where HIV prevalence is 17%. Concerning transgender people, the population size estimate in total is 5.900 in Bogotá, Medellín, and Cali, whose HIV prevalence is 21.4%. Finally, reported knowledge about HIV prevention among young people aged 15 to 24 years is 30.2¹³⁴.

The "*Cuenta de Alto Costo*"¹³⁵, a non-government organization that is part of the Social Security System in Health, has been helping to investigate populations living with HIV in Colombia. Pursuant to the report on the *Situation of HIV and AIDS in Colombia by 2021*, the *Cuenta de Alto Costo* reported that between February 1, 2020, and January 31, 2021, 9.210 cases were diagnosed in Colombia, decreasing by 26.48% compared to the previous year. The median age in men was 29, and in women, 34¹³⁶. A total of 134,636 people are living with HIV in Colombia¹³⁷. Due to the impact that the COVID-19 pandemic has had on accessing health services in Latin America and the Caribbean, a decrease in the number of tests performed to diagnose HIV means many people may not have been diagnosed with HIV.

According to *Cuenta de Alto Costo*, the local territories with the highest number of cases continue to be Bogotá D.C., Antioquia, and Valle del Cauca¹³⁸. Bogotá D.C. registered 2,274 (24.69%) of new cases of people living with HIV, whereas Antioquia registered 525 (16.56%), and Valle del Cauca registered 989 (10.74%) people living with HIV¹³⁹. Additionally, in 2020-21, 60.09% of new cases were men who have sex with men (55.21%) and people who use psychoactive substances other than via injection (5.58%)¹⁴⁰. Of the new cases, 5,355 are affiliated to the contributory system, 3,496 to the subsidized system, and 117 are unaffiliated¹⁴¹.

131 Id. at Article 2.1.3.4.

132 RODRIGUEZ, Sergio. "7 EPS que compiten con applications," LR La República, February 12, 2016: <https://www.larepublica.co/internet-economy/7-eps-que-compiten-con-aplicaciones2349351#:~:text=Sura%2C%20Coomeva%2C%20Colsanitas%2C%20Colm%C3%A9dica,de%20colombianos%20que%20seg%C3%BAAn%20el>

133 Colombia UNAIDS: <https://www.unaids.org/en/regionscountries/countries/colombia>

134 Id.

135 Although the Cuenta de Alto Costo is a non-government organization, it is a reliable entity that issues accurate results from the different allied actors that are part of the health system in Colombia.

136 Cuenta de Alto Costo, "Situación del VIH y Sida en Colombia 2021," Bogotá D.C., Colombia, February 2022, page 31: https://cuentadealtocosto.org/site/wp-content/uploads/2022/02/CAC.Co.Libro_Sit_VIH2021_v8.pdf

137 Id. at page 32.

138 Id. at page 33. In accordance with the Cuenta de Alto Costo, Bogotá D.C., Antioquia and Valle del Cauca were the cities with the higher number of cases of HIV in 2020

139 Id. at page 34.

140 Id. at page 35.

141 Id. at page 35. The report also analyzes other categories of affiliation such as the special and the one of the health care fund.

3.2 Legal framework and national public policies on health and digital health

A. The Constitution

The Colombian Constitution guarantees and protects its citizens' rights to health and other related rights. On one side, Article 11 defines the right to life as inviolate¹⁴². Article 49 refers to public health and environmental protection as public services for which the State is responsible and asserts that all individuals have the right to access services that promote, protect and rehabilitate public health¹⁴³. The Constitution also upholds the right to social security¹⁴⁴.

The Constitution also sets forth provisions protecting rights relevant to the digital world. For instance, Article 15 establishes the right to personal and family privacy and the right of everyone to know, update and rectify information collected about them. In accordance with the Constitution, the ability to engage in correspondence and other forms of private communication must be guaranteed¹⁴⁵. Moreover, Article 20 states that every individual has the right to freedom of expression and to disseminate his or her thoughts and opinions, to transmit and receive accurate and impartial information, to establish mass communications media, and to make corrections¹⁴⁶. Some of these rights are discussed further in the following sections.

B. National laws and policies on HIV

Law 972, 2005, in conjunction with other public policies and regulations, sets forth the legal framework to improve health care for people diagnosed with catastrophic illnesses, including HIV. Through this law, the Colombian government identified that the HIV response, including access to care, is a matter of national interest¹⁴⁷. In addition, the law sets forth the state's duty to guarantee that the Social Security System in Health guarantees the provision of medicines, reagents, and medical devices for the diagnosis and treatment of catastrophic illnesses.

The *Ten-Year Health Plan 2012-2021* was created to reduce inequalities in accessing health services and eradicate discrimination against vulnerable populations. Among the plan's objectives are the promotion of healthy living and the treatment of communicable illnesses¹⁴⁸. Furthermore, the *National Policy of Sexuality, Sexual and Reproductive Rights*, issued in 2014, was designed to ensure a comprehensive approach to sexual and reproductive health and to provide health services without distinction due to vulnerable conditions¹⁴⁹. The added value of this policy is that it positions the term "sexuality" in the human rights discourse¹⁵⁰.

The government's *National Response Plan against STI, HIV, the TB/HIV and Hepatitis B and C co-infections in Colombia*, was a harmonized response to the need for a comprehensive framework that fulfills the obligations stated in health regulations from a rights perspective, including the rights of

142 Colombian Constitution, Article 11: https://www.constituteproject.org/constitution/Colombia_2005.pdf

143 Id. at Article 49.

144 Id. at Articles 46 and 48.

145 Id. at Article 15.

146 Id. at Article 20.

147 Law 975, 2005, Article 1: http://www.secretariassenado.gov.co/senado/basedoc/ley_0972_2005.html

148 Ministry of Health, "Ten-Year Health Plan 2012-2021": <https://www.minsalud.gov.co/plandecenal/Paginas/home2013.aspx>

149 Ministry of Health, "National Policy of Sexuality, Sexual and Reproductive Rights", 2014: <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/DE/LIBRO%20POLITICA%20SEXUAL%20SEPT%2010.pdf>

150 Ministry of Health, "National Response Plan against STI, HIV, the TB/HIV and Hepatitis B and C co-infections in Colombia, 2018-2021," pages 29-33: <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/PP/ET/plan-nal-respuesta-its-vih-coinfeccion-tbvih2018-2021.pdf>

people affected by HIV, hepatitis B and C. This plan also aimed to leverage the achievement of national and international goals and indicators. It was updated in 2022¹⁵¹.

High judicial court decisions have strengthened the enabling legal environment for the HIV response. Until 2019, the transmission of HIV and hepatitis B were penalized by the Colombian Criminal Code. Article 370 of the Criminal Code stated that anyone who, after being informed of positive HIV or hepatitis B status, performs practices through which they may contaminate another person, would incur a prison sentence of six to twelve years¹⁵². However, in a decision by the Constitutional Court in 2019, the judicial institution declared this article unenforceable. The Court found that the legal disposition was not a necessary or proportional measure and that it stigmatized populations living with HIV or hepatitis B¹⁵³.

C. National laws on privacy and data protection

Statutory Law 1581, 2012¹⁵⁴ regulates the general provisions for privacy, personal data protection, and *Habeas Data* in Colombia. The aim of Law 1581 is to regulate the constitutional right of all individuals to know, update, and rectify information collected about them in databases and files, as well as the right to access information more broadly¹⁵⁵. Among the guiding principles that apply to this regulation are equality and lawful purpose in processing personal data, freedom, veracity or quality, transparency, access and restricted circulation, security, and confidentiality¹⁵⁶. Within the rights of the data holders under Law 1581 are the rights to know, update and rectify their personal data; the right to be informed about the use of their personal data; and the right to revoke authorization and/or request the suspension of data processing in case of non-compliance with the law¹⁵⁷. According to Article 2, when sharing private databases with third parties, the data owner must be informed in advance and request his authorization. The law also asserts that the authority in charge of data protection in Colombia is the Delegation of Data Protection of the Superintendence of Industry and Commerce, which exercises surveillance and control to guarantee the due treatment of personal data¹⁵⁸.

The Statutory Law also sets forth special data categories. Articles 5 and 7 highlight two such categories: “sensitive data” and data of children and adolescents. According to the law, “sensitive data” refers to any data affecting privacy; or whose improper use can result in discrimination on the basis of racial or ethnic origin, political orientation, religious or philosophical convictions, membership in trade unions or human rights organizations; as well as data related to health, sexuality or biometric data¹⁵⁹. The processing of sensitive data must be prohibited unless the holder has given her or his authorization; the processing is necessary for the vital interest of the holder; it is carried out in the course of legitimate activities; and is carried out with with due guarantees given by the respective organization, or has a historical, statistical or scientific purpose¹⁶⁰. With regards to data of children and adolescents, the law proscribes the processing of any such data that is not of a public nature¹⁶¹.

151 Id. at page 11

152 Colombian Criminal Code (Law 599, 2000), Article 370: http://www.secretariasenado.gov.co/senado/basedoc/ley_0599_2000.html

153 Dejusticia, “Corte Constitucional retiró norma que castiga a personas que viven con VIH o hepatitis B,” June 6, 2019: <https://www.dejusticia.org/derecho-a-vivir-libre-de-estigmas-la-corte-constitucional-tumbo-norma-que-castiga-a-personas-que-viven-con-vih-o-hepatitis-b/>

154 Regulated by Decree 1377, 2013 available here: <http://wsp.presidencia.gov.co/Normativa/Decretos/2013/Documents/JUNIO/27/DECRETO%201377%20DEL%2027%20DE%20JUNIO%20DE%202013.pdf>; Statutory Law 1581, 2012: <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=49981>

155 See Law 1712, 2014 which regulates transparency and the right to information.

156 Id. at Article 4.

157 Id. at Article 8.

158 Id. at Article 19.

159 Id. at Article 5.

160 Id. at Article 6.

161 Id. at Article 7.

The Ministry of Health issued in September 2021 the *Privacy and Personal Data Protection Policy*. This policy details the guidelines for the registry, custody, protection, delivery, modification and deletion of personal data collected by the Ministry of Health. Taking into account the importance of respecting the privacy of personal data, the Ministry of Health collects, stores and uses the data in a secure and appropriate way and in accordance with the current regulation on privacy and data protection. Ultimately, the Personal Data Protection Policy allows the holder to know, access, rectify and delete the information provided or to revoke authorization for data processing¹⁶². This Policy applies to all data and personal data possessed by the Ministry of Health or any of the public servants, contractors, operators, suppliers, third parties, or general citizens who are related to the Ministry or are subject to treatment¹⁶³.

While Colombia has a robust law on data protection, concerns have been raised about unlawful surveillance for political purposes. According to some NGOs dedicated to promoting digital rights, despite the existence of this law, there are some ongoing concerns related to interference in the right to privacy in Colombia. According to several NGOs dedicated to promoting digital rights, the legislation on the processing of personal data contains gaps regarding the powers, scope and surveillance capacity of national intelligence agencies in Colombia¹⁶⁴. These regulatory shortcomings are accompanied by abusive surveillance practices that violate the right to privacy.

Further concerns have been raised about unlawful interference or interception of private communications. The most notorious such scandal involved the dissolved Administrative Security Department (Departamento Administrativo de seguridad, or DAS). In September 2009, it was revealed that an estimated 600 public figures, including parliamentarians, journalists, human rights activists, lawyers, and judges had been subjected to unlawful surveillance by the DAS. Several high-ranking members of the DAS were accused and incarcerated due to the illegal interception. In 2011 The DAS was shut down and replaced by a new agency by President Juan Manuel Santos¹⁶⁵.

D. National laws and policies on ICT and cybersecurity

Colombia has a solid legal framework for ICT and cybersecurity. This set of laws, policies, and resolutions are intended to regulate the deployment of technologies in an efficient, productive, secure, and non-discriminatory manner.

Law 1341, 2009 (the law that regulates Information and Communication Technologies - ICT) defines the principles and concepts of the information society, including overall governance of ICT, and it establishes the National Spectrum Agency, which provides technical support for the management, planning and exercise of surveillance and control of the radio spectrum, as well as the quality and coverage of the telecommunications service. Additionally, the law regulates the State's powers relating to the planning, management, adequate and efficient administration of resources, regulation, and surveillance of this service¹⁶⁶. The State's role in the ICT sector is intended, among other things, to foster investment and protect the environment and public health¹⁶⁷.

Thus, it stipulates that ICT development must be guided by principles of equality, non-discrimination, and respect for human rights¹⁶⁸. The State should prioritize access to ICT for the most vulnerable

162 Ministry of Health, "Privacy and Personal Data Protection Policy," September 2021, page 3.

163 Id. page 6.

164 Privacy International, "The Right to Privacy in Colombia" 16° período de sesiones del Comité de Derechos Humanos, marzo de 2016, página 3: https://privacyinternational.org/sites/default/files/2017-12/HRC_colombia.pdf

165 Semana, "El DAS deja de existir para dar paso a la Agencia Nacional de Inteligencia," 30 de octubre de 2022: <https://www.semana.com/politica/articulo/el-das-deja-existir-para-dar-paso-agencia-nacional-inteligencia/248740-3/>

166 Law 1341, 2009, Article 1: http://www.secretariasenado.gov.co/senado/basedoc/ley_1341_2009.html

167 Id. at Article 4.

168 Id. at Article 2.

and poor populations, mainly those living in rural and remote areas. Furthermore, the State must guarantee the promotion of multi-platform public interest content to contribute to the generation of civic values; the recognition of ethnic, cultural, and religious identities; gender equality; and political and social inclusion, among other values.

Law 1341 further authorizes the Ministry of ICT to develop telemedicine in Colombia. Pursuant to this Law, the Ministry of ICT can use national resources allocated to ICT to expand telemedicine, particularly to remote areas¹⁶⁹. The legal regime for the protection of end users is guided by the provisions of Law 1581 and the rights derived from the use of ICT in health¹⁷⁰.

Resolution 500, 2021 determines the guidelines and standards as part of the *Digital Government Policy* in Colombia¹⁷¹. Resolution 500 was issued to establish digital security and general guidelines on privacy in order to implement the security and information privacy plan¹⁷². The legal obligations set forth in this Resolution include implementing controls and interoperability processes in a secure manner and in compliance with the Digital Government Policy guidelines¹⁷³. Additionally, in March 2020, Colombia deposited the instrument of accession to the Budapest Convention at the Council of Europe¹⁷⁴. By means of Law 1928, 2018, the Colombian Congress approved the Budapest Convention which aims to prevent, detect, investigate, and prosecute transnational organized crime in cyberspace¹⁷⁵.

Colombia has a set of important instruments that make up national public policy on ICT. First, Conpes 3975, 2019 sets forth the *National Policy for Digital Transformation and Artificial Intelligence*¹⁷⁶. It aims to enhance social and economic value through the strategic use of digital technologies the public and private sectors¹⁷⁷. Conpes 3975 aims to reduce the barriers and gaps to accessing and using digital technologies and to enhance conditions for digital innovation.¹³³ This policy also recognizes the use of other emerging technologies, such as the Internet of Things, robotics, and quantum computing. With respect to the use of digital technologies in health, Conpes refers to the use of AI in clinical procedures, the implementation of a digital electronic record, and the improvement of health services through the use of technology¹⁷⁸.

Additionally, as part of building a transformative national digital strategy, the Colombian government created the High Council for Digital Transformation of the Presidency of the Republic. The High Council is the result of a national initiative aimed at promoting competition and moving towards the fourth industrial revolution. Quoting former High Councilor Victor Muñoz, government digitalization “generates competitiveness and developments in sectors such as health, education ... automation and immersion processes [typical of] the fourth industrial revolution”¹⁷⁹.

The High Council for Digital Transformation has been working on, among other things, drafting an “Ethical Framework for Artificial Intelligence” to limit the risks and maximize the opportunities of artificial intelligence while highlighting the importance of ethics in the design, development, and implementation of AI in Colombia. Notably, the government has recognized the need to adopt an

169 Id. at Article 40.

170 Id. at Article 53.

171 Resolution 500, 2021: https://gobiernodigital.mintic.gov.co/692/articles-162625_recurso_2.pdf

172 Id. at Article 1.

173 Id. at Article 6.

174 Ministry of Foreign Affairs website, “Colombia se adhiere al Convenio de Budapest contra la ciberdelincuencia,” March 17, 2020: <https://www.cancilleria.gov.co/news-room/news/colombia-adhiere-convenio-budapest-ciberdelincuencia>

175 Law 1928, 2018: http://www.secretariasenado.gov.co/senado/basedoc/ley_1928_2018.html

176 Conpes document 3975, 2019: <https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3975.pdf>

177 Id. at Article 3.

178 Id. at Articles 8 and 45.

179 Presidency of the Republic of Colombia's website, “the Government’s digital transformation will allow the reactivation of the economy, the fight against corruption and the closeness between the Government and the citizens,” archive from 2018 to 2020, May 08, 2019: <https://id.presidencia.gov.co/Paginas/prensa/2019/190508-Transformacion-digital-Estado-permitira-reactivar-economia-combatir-corrupcion-acercar-ciudadano-Gobierno.aspx>

ethical framework as a non-binding regulation for public entities¹⁸⁰. Among the most prominent principles developed in the Ethical Framework are transparency and explainability, privacy, security, responsibility of all actors, inclusion, and non-discrimination based on such categories as sex, race, disability, age or sexual orientation¹⁸¹.

E. National laws on health and digital health

i. National laws on health

Article 11 of the Constitution refers to the right to life as inviolate¹⁸². Article 49 refers to public health and environmental protection as public services for which the State is responsible and assures that all individuals are guaranteed access to services that promote, protect and rehabilitate public health¹⁸³. Furthermore, Law 100, 1993 establishes and regulates the comprehensive Social Security System¹⁸⁴. The law governing the provision of the public Social Security Service contains the principles of efficiency, universality, solidarity, integrality, unity and participation¹⁸⁵.

The right to health enjoys legal protection. Law 1751, 2015 regulates the right to health as fundamental, autonomous and irrevocable both individually and collectively¹⁸⁶. Consistently with the provisions stated in Law 100, Law 1715 refers to the elements and principles applicable to the right to health, i.e., availability, acceptability to all people regardless of their culture, accessibility to all health services and technologies, quality, universality, equity, progressivity of the right, and interculturality, among others¹⁸⁷. Ultimately, Article 10, literal g, mentions the right of individuals to the confidentiality and reserved treatment of their medical records¹⁸⁸.

Despite the progress made in terms of access and guarantee of health services in Colombia, there are still some challenges related to the deployment of the service, especially those caused by the COVID-19 pandemic. Based on research conducted by Universidad Nacional, one significant obstacle is related to the nature and installed capacity of the Intensive Care Units (ICU)¹⁸⁹.

ii. National policies on digital health

While Colombia lacks a national public policy on digital health, some legal and political instruments address issues related to health and ICT.

Law 1419, 2010 sets forth the guidelines for the development of telehealth in Colombia. According to the law, telehealth is defined as the group of activities related to health, services, and methods carried out remotely with help of ICT. They include, among other things, telemedicine and tele-education for health¹⁹⁰. Telemedicine is further defined as the provision of remote health services, including health

180 High Council for Digital Transformation of the Presidency of the Republic. "Ethical Framework for Artificial Intelligence in Colombia," May 2021, page 9: <https://dapre.presidencia.gov.co/TD/Marco-Etico-IA-Colombia-2021.pdf>

181 Id. at pages 23-31.

182 Colombian Constitution, Article 11: https://www.constituteproject.org/constitution/Colombia_2005.pdf

183 Id. at Article 49.

184 Law 100, 1993: http://www.secretariasenado.gov.co/senado/basedoc/ley_0100_1993.html

185 Law 100, 1993, Article 2: http://www.secretariasenado.gov.co/senado/basedoc/ley_0100_1993.html

186 Law 1751, 2015, Article 2: https://www.minsalud.gov.co/Normatividad_Nuevo/Ley%201751%20de%202015.pdf

187 Id, Article 6.

188 Id. Article 10, literal g.

189 Echeverry, Raad, Jairo. Navarro, Vargas, José Ricardo. "Problemas ético-clínicos en la atención médica durante la pandemia por COVID-19 en Colombia: una mirada global para un aporte local," Universidad Nacional, Faculty of Medicine, Bogotá: http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-00112021000100400

190 Law 1419, 2010, Article 2: <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=40937>



promotion, prevention, diagnosis, treatment, and rehabilitation through the use of technology¹⁹¹. Law 1419 was regulated by means of Resolution 2654, 2019, which among other things, required that for the practice of telemedicine in Colombia, health providers must obtain informed consent and communicate about possible risks, benefits, liabilities and the management of privacy and data confidentiality¹⁹². The law specifies that telehealth is intended to improve access, continuity, and quality of healthcare, and to impact public health and education for health through the use of ICT.

During the COVID-19 pandemic, telehealth was strengthened in Colombia. As noted by the Ministry of Health, the services legally introduced and implemented included outpatient and home care, virtual follow-up for patients in preventive isolation, the use of digital platforms for telehealth activities, mental healthcare, and rehabilitation, among others¹⁹³.

The aforementioned efforts made it possible to elucidate a political vision on digital health and the challenges and concerns the country faces in this regard. In outlining a political vision for e-health, the Ministry of Health highlighted three elements:

1. Identify the thematic dimensions needed to apply technologies to health.
2. Create skills in health system personnel.
3. Define the roles and responsibilities of the actors participating in the health system and the technologies involved¹⁹⁴.

Among other concerns identified by the Ministry are the absence of a legal and political framework governing the regulation and scope of digital health, the limitations and asymmetries in digital health management, the lack of information about the current state of technology and connectivity associated to the health system, and barriers to participation and empowerment of people and communities, creating social gaps. In summary, capacity to use digital health is concentrated in urban areas.

One of the main challenges facing e-health in Colombia has been creating an integrated and efficient electronic medical record system. Even though the electronic medical record was legally defined in 1981, it was not until 2020 that the elements of the electronic medical record were formally regulated. This was done by means of Law 2015, 2020¹⁹⁵, and Resolution 866, 2021¹⁹⁶, which regulated the interoperability of the electronic medical record. Through these records, relevant clinical data elements can be exchanged, as well as patient documents and clinical records. This set of regulations set forth, among other things, security and privacy requirements for data processing, the liability of actors processing clinical data, and a prohibition on commercializing and exploiting health data¹⁹⁷.

i. Access to health services by migrants

With regards to migrants, though the Constitution does not mention a right to health for non-citizens, the Constitutional Court does. The Court has concluded that all foreigners living in Colombia have the right to receive a minimum level of attention by the State in cases of emergency and necessity in order to meet their primary needs. Additionally, the Court emphasizes that the aforementioned rule does

191 Id. at Article 3.

192 Id. at Article 7.

193 Ministerio de Salud y Protección Social, "Durante la pandemia se consolidó la telemedicina en el país," 28 de octubre de 2020: <https://www.minsalud.gov.co/Paginas/Durante-la-pandemia-se-consolido-la-telemedicina-en-el-pais.aspx>.

194 Ministry of Health and Social Protection, "Salud Digital: Experiencias, lecciones aprendidas y retos en el contexto nacional."

195 Law 2015, 2020: <https://dapre.presidencia.gov.co/normativa/normativa/LEY%202015%20DEL%2031%20DE%20ENERO%20DE%202020.pdf>

196 Resolution 866, 2021: https://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%20No.%20866%20de%202021.pdf

197 Id. at Articles 18, 19, 20 and 22.

not prevent legislators from extending these protections by issuing complementary legislation¹⁹⁸. To define the content of these rights, the judiciary established the following rules:

1. The legislator may not ignore the constitutional rights of non-nationals, even if they are in irregular status;
2. The Colombian authorities cannot disregard their duty to guarantee and respect non-nationals' fundamental rights;
3. The recognition of non-nationals' rights does not imply that applying differential treatment to nationals is impossible, but doing so must be justified¹⁹⁹.

At the same time, the Constitutional Court, through its case law, has progressively guaranteed a great number of services (such as treatments of catastrophic illness or prenatal and postpartum checkups). These services continue to be conditional on emergency situations. For instance, in 2017, in a case involving an Argentine undocumented migrant, the Court concluded that migrants had the right to receive a minimum standard of care in emergency cases even when they lacked sufficient financial resources to cover the costs. However, the Court was emphatic in affirming that this minimum standard included required surgical interventions, but not the delivery of medicines or subsequent treatment²⁰⁰. In a subsequent case, the Court highlighted the right of Venezuelan newborns of irregular migrant parents to be registered in the Social Security System in Health by presenting their birth certificate; and affirmed the duty of local border entities to provide health services free of charge during and after childbirth²⁰¹. Finally, the Court extended the scope of emergency cases to comprehensive and specialized treatments when the patient is suffering from catastrophic illness, if the doctor classifies these treatments as urgent or necessary to protect the patient's life²⁰².

In conclusion, although the Constitutional Court has progressively guaranteed, broadly and protectively, migrants' right to health, this is still only understood as a right linked to emergencies. As noted by Hernández Zuluaga and Moya Ortiz, the *Acción de Tutela*, a constitutional action aimed at protecting fundamental rights, has become an instrument used by migrants to protect the right to health²⁰³.

As ruled by the Constitutional Court, irregular migrants have the right to access health services only if they are placed in emergency situations. Additionally, the Colombian government has been working in setting forth secondary legislation aimed at allowing Venezuelan migrants to access economic and social services throughout the regularization of their migration situation in Colombia. For instance, through the issuance of Decree 216, 2021, the government created the Temporary Statute for the Protection of Venezuelan Migrants, a temporary permit that allows migrants to regularize their migration status²⁰⁴. Hence, Venezuelan irregular migrants can access the Social Security System in Health and other financial, economic, educational, and employment services²⁰⁵ only after registering in the *Temporary Statute*²⁰⁶. Venezuelans who fail to register into the Statute –either because they lack

198 See Case C-834/07 of the Constitutional Court, available in the following link: <https://www.corteconstitucional.gov.co/relatoria/2007/C-834-07.htm>

199 See Case T-051/19 of the Constitutional Court, available in the following link: <https://www.corteconstitucional.gov.co/relatoria/2019/T-051-19.htm>

200 See Case T-314, 2016 of the Constitutional Court, available in the following link: <https://www.corteconstitucional.gov.co/RELATORIA/2016/T-314-16.htm>

201 See Case SU-677/2017 of the Constitutional Court, available in the following link: <https://www.corteconstitucional.gov.co/relatoria/2017/SU677-17.htm>

202 See Case T-705/2017 of the Constitutional Court, available in the following link: <https://una.uniandes.edu.co/images/Volumen5/20202-10.MoyaYHernandez.pdf> These and other cases were analyzed in the aforementioned publication.

203 Id, at page 336.

204 Decree 216, 2021, Article 3: <https://dapre.presidencia.gov.co/normativa/normativa/DECRETO%20216%20DEL%201%20DE%20MARZO%20DE%202021.pdf>

205 Id. Article 14, paragraphs 1 and 2.

206 See the requirements in Article 3 of Decree 216, 2021.

information or did not comply with the conditional requirements stated by the law– will be excluded from accessing those services²⁰⁷.

Concerning migrants in particular, an ethnographic study published by the *Journal of Migration and Health* concluded that Venezuelan migrants living in Colombia and Peru faced significant legal, financial, and discriminatory obstacles along their access trajectories to healthcare mainly during the pandemic²⁰⁸. Migrants therefore turned to other alternative and cheaper informal telemedicine models such as WhatsApp. However, they acknowledged these services did not include other additional services such as laboratory tests. Non-biometrical services conducted by other specialists in traditional/religious/spiritual medicine represented another alternative. In conclusion, despite the barriers faced by migrants in accessing health services, technology opened new and affordable solutions through telemedicine and the use of social media.

i. Digital health apps

Colombian government agencies, working through the Ministry of Health, have launched several digital health apps that aim to facilitate individual access to health services. For instance, the Ministry of Finance, with the support of the Global Fund to Fight AIDS, TB and Malaria (“The Global Fund”), launched the *Te cuidamos* strategy. This includes a web page and a digital health app designed to expand the national response to HIV in eight territories. This initiative was funded by the Global Fund and managed by EnTerritorio, an office of the Departamento Nacional de Planeación (DNP). The project aims to promote sexual health self-care and HIV prevention for key populations (men who have sex with men, transgender people, sex workers, and people who use drugs²⁰⁹).

Through the online platform *Te cuidamos.com*, people can access a great variety of services including free HIV tests, the delivery of prevention kits, and information about the nearest location to access services. The website and digital platforms provide self-care information, information on realities and myths about HIV and COVID-19, gender and self-care information, transgender, and sexuality information, and more. Other digital health apps founded by both public and private entities are listed in Annex B.

3.3 Conclusion

As mentioned in the Introduction, although Colombia lacks a public policy on digital health, the current legal framework addresses important themes directly or indirectly related to digital health. Additionally, Colombia has a digital transformation policy that applies to all sectors which, in the case of health, is focused on interoperability. However, since digital health is a new topic recently introduced to the political agenda, it requires additional impetus and prioritization on behalf of the Colombian government.

Although the Social Security System on Health is well structured and regulated, concerns remain related to marginalized and vulnerable communities’ access to health services. For instance, population groups such as women, LGBTIQ+, community and migrants face certain barriers when accessing public services such as health, work, or education that reconfirm the position of vulnerability of these groups. In the case of migrants, until they legalize their migration status in Colombia, they will not be able to access a comprehensive system of health services. Moreover, these barriers will remain

207 The Temporary Statute for the Protection of Venezuelan Migrants (issued by means of Decree 216, 2021) was further regulated through Resolutions 971, and 1178 of 2021.

208 ZAMBRANO BARRAGAN, Patricio. RAMÍREZ HERNÁNDEZ, Sebastian. FELINE, FREIERC, Luisa, LUZES, Marta. ROBCZYKE, Rita. RODRÍGUEZ, Alexander. BEACH, Charles. “The impact of COVID-19 on Venezuelan migrants’ access to health: A qualitative study in Colombian and Peruvian Cities.” *Journal of Migration and Health*, Volume 3, 2021, 100029, December 20, 2020: <https://www.sciencedirect.com/science/article/pii/S2666623520300295>

209 Te cuidamos website: <https://tecuidamos.com.co/acerca-nosotros>



if marginalized groups remain excluded from decision-making processes and internet access, from being included in official statistical sources, and from being treated equally.

With respect to the right to health, since the Constitution does not explicitly grant protection to the right to health, the Constitutional Court has been forced to fill this gap throughout its case law. Undoubtedly, the role of the Constitutional Court –and, in general, the judicial system– is crucial to protecting the digital rights that arise from the use of digital technologies to access health services as well as access to economic and social services in general. In addition, vulnerable groups like irregular or undocumented migrants have relied on actions such as the **Acción de Tutela** to request protection of their rights, which has caused judicial congestion and inefficiency.

Colombia is a landmark regionally and internationally concerning the protection of privacy and data protection. The guidelines and principles set forth in the law have guided the behavior of public and private actors to guarantee the confidentiality, transparency, and custody of users' personal data, especially sensitive health data. However, the lack of clarity concerning privacy surveillance powers is still a matter of concern.

Finally, it would be interesting to follow up on the aim of the Colombian government to issue a public policy on digital health. Although there have been unofficial pronouncements by the government expressing an interest in elaborating a public policy on digital health, to date, nothing has been drafted or issued.

4. Reflections and Conclusions

Bangladesh and Colombia have different histories, geographies, economies, governance, and populations. In addition, the former uses a common law system, while the latter uses a hybrid between the common law and the civil law systems. Under common law, the body of law is created by judges and similar quasi-judicial tribunals by virtue of being stated in written opinions²¹⁰, whereas in civil law systems, codified statutes predominate²¹¹. However, we find some similarities in regard to governance and access to digital health, especially for young people affected by HIV who may seek information and services on COVID-19 or on sexual and reproductive health. While both countries have taken the initiative of developing laws and policies to govern privacy and confidentiality and to promote equitable access, we find significant challenges remain.

Bangladesh and Colombia have significant differences in their populations. While Bangladesh has over 164 million inhabitants, Colombia is more than one-third smaller, with over 55 million inhabitants. Bangladesh has a dense population and is geographically much smaller than Colombia. Colombia has a slightly higher life expectancy. In addition, of course, there are cultural, ethnic, political, and linguistic differences.

However, there are also some striking commonalities. Both countries have a growing youth population. In 2019, 42% of the Colombian population was between 14 and 26 years old; one-fifth of the population in Bangladesh is between 15 and 24 years old.

There are some similarities regarding the developing digital infrastructure. While both countries are rapidly growing in this area, the digital divide persists between rural and urban areas and between genders; in both countries, the divide is related to both access and knowledge in using digital technologies. Both countries face a combination of gender stereotypes with respect to the relationship between women and technology. Gendered income gaps are enhanced by infrastructure injustice, such as different broadband speeds according to income, which may entrench or exacerbate existing forms of inequality. In Bangladesh, although the Constitution prohibits any kind of gender-based discrimination²¹², at times such discrimination is sanctioned by law^{213,214}; in Colombia, gender-based discrimination is prohibited, but historical violence against LGBTIQ+ communities continues.

210 Garner, Bryan A. (2001) [1995]. *A Dictionary of Modern Legal Usage* (2nd, revised ed.). New York: Oxford University Press. p. 177. ISBN 9780195077698.

211 The Common law and Civil Law Traditions, The Robbins Collection, Berkeley Law, <https://www.law.berkeley.edu/wp-content/uploads/2017/11/CommonLawCivilLaw-Traditions.pdf>

212 The Constitution of the People's republic of Bangladesh, ACT No 1972, Part iii, 42(1).

213 Inheritance of land in Bangladesh is governed by an individual's religion leaving much of the inheritance process of women unequal and discriminatory. The Succession Act 1925 (Part v, chapter1) is not applicable to the property of any Hindu, Muslim, Buddhist, Sikh or Jaina.

214 LGBT rights are suppressed in Bangladesh as the country still follows the Section 377 of Penal Code1860, inherited by the British Indian Government, under which, the punishment for homosexuality is up to life in imprisonment, making it unsafe for LGBT community to come out publicly.

Privacy and confidentiality of digital data are guaranteed in both countries by law. However, these standards leave loopholes that allow law enforcement, under circumstances vaguely defined in both countries, to access personal data. State agencies may, therefore, utilize data to harass political opponents and human rights activists or discriminate against minorities. Although sharing data with third parties is regulated in Colombia, there is remarkably little clarity concerning the use of personal data, including which levels of aggregation are permitted or prohibited, and under which conditions personal data can be repackaged and sold. The lack of clear steps to ensure data protection and constraint surveillance are especially problematic given that many digital platforms are privately owned and that many digital strategies are inscrutable to the public. Our review finds that Colombian legislation aims to harness AI's potential, but that it says little about correcting or limiting the possible harms of using private data to predict future behavior, including in relation to health.

The situation is not much different in Bangladesh. The country has yet to create an appropriate legal instrument to secure personal health data while ensuring its confidentiality. Also, the formulation of appropriate guidelines to ensure the security of private data in line with national guidelines approved by the Ministry of Information and Communication Technologies has yet to be initiated. The government and relevant stakeholders, including marginalized communities and young people, have yet to come together and work collectively on bridging the issue of digital rights and health rights in order to ensure effective and proficient health care service delivery using digital platforms. In both countries, the fundamental right to equitably access quality healthcare needs to be safeguarded under the existing digital rights and regulations.

Both countries have developed frameworks for digital health, stressing the importance of telemedicine, a process accelerated by the COVID-19 pandemic. The policies aim to improve access while guaranteeing the quality of digital services. As shown in Annexes A and B, our study documents a proliferation of digital health tools (including online consultation, video consultation, telemedicine and other mobile apps) in both countries. The increasing importance of digital technologies and data infrastructures concerning health must be accompanied by a thorough reflection on what kind of judgments and values are proclaimed by such data-intensive systems, who they represent, and who may be included or excluded. Such reflections are especially important given the relatively young and vulnerable populations in both countries. The development of legislation and frameworks for digital health governance in both countries seems to be focused on the promise of digital technologies to enhance health services, without necessarily considering how best to give voice and enable participation by civil society and the end users of digital health systems and strategies. We consider that input from civil society, activists, and in the case of this project, young people affected by HIV and TB, is important in digital health governance. Furthermore, the importance of addressing the issues of marginalization, gender and other forms of inequality that could significantly affect implementation must be considered within each context.

The comparison between Bangladesh and Colombia regarding the regulation of digital health rights demonstrates that both countries have issued strong regulations in fields such as telemedicine, the right to information, and cyber security. Other fields like data privacy and digital health strategies are still incipient either for one or for both countries. Ultimately, the results of this comparative exercise must be seen as a reflection of specific countries' contexts (i.e. size and population, the level of access to the Internet in rural and urban areas, and institutional factors, among others).

Through interviews and consultation with young adults in Colombia and Bangladesh, together with the results of similar enterprises in Ghana, Vietnam, and Kenya, this project can help to identify concrete actions to improve digital literacy and empower young adults to have a voice in the future design and governance of digital health. We aim to further explore the following questions:

- What intersectional differences do we see in access, literacy, and the use of digital technologies?



- How do young people in Bangladesh and Colombia utilize mobile apps, web platforms, and social media to access information about HIV, SRHR, and COVID-19?
- What do they experience as the benefits and risks of using these tools to access health information and services?
- How do young community members experience and manage the effects of digital technologies on equity, autonomy, privacy, and equality?
- What tensions are emerging in discourses about digital health in each country, and why?
- What is the empowerment potential of these new technologies in community-led monitoring, mobilization, and advocacy?
- Who is shaping the digital agenda in health?
- What is the role of the legal and judicial entities in defining, enforcing and implementing digital rights in Bangladesh and Colombia?
- To what degree are young people aware of their rights under the policies and laws of their respective countries?
- What policy recommendations do they have, and what ideals or visions do they have of the digital transformation?

Annex A

Types of digital health services in Bangladesh

Type of Institute/ Service	Name	Type of Services	Description
Government service	Shasthya Batayon	Phone consultation	Shasthya Batayon is a mobile-based healthcare service run by the Ministry of Health and Family Welfare and has a hotline service of '16263'. Through this helpline, people can get the doctor's advice at any time, and the patients can avail this service any time within 24 hours a day. In addition, people can get any information from government hospitals relating to the service or the doctors from this number. Along with this, if patients have any complaints or suggestions regarding any public or private healthcare services or hospitals, they can make this complaint easily and the authorities will make sure to keep the patient's information a secret.
Non-profit Organization	Dakterbari	Information management	Dakterbari is an online platform, a flagship charity-cum-social business under Dialme Limited, aimed at building a healthful Bangladesh and improving the health ecosystem by using mobile technology. They also use Facebook for people to search for reliable health practitioners and consult with them easily. This service provider opened its group in 2020 during COVID-19 pandemic.
Non-profit Organization	Digital Health Care Foundation	Information management; Consultation	This "foundation" is a non-profit and charity organization which puts its focus on digital healthcare. Their model aims to follow the 'Uber technology' model as it aims to map out all the available clinics, hospitals, in the upazilas, districts, and divisions. Moreover, they aim to integrate all the available services related to m-health within an app which will contain all the necessary services but eliminate the unnecessary ones. They also aim to motivate the poor to avail their services as their cost would be subsidized or very low so that the underprivileged population can get quality consultation/treatment from them.
Start-up (Private)	onHealth24	Appointment and prescription tracking	This is a website which allows patients to keep track of their appointments and test results along with managing prescriptions online through the help of the patient's computer or cellphone. All the patient needs to do is register on the onHealth24 website before managing their Healthcare data.



Start-up (Private)	Olwel	Booking doctors for home visit	Olwel is a Finland based startup which is also working in Bangladesh. This startup focuses on the convenience of patients who prefer receiving consultation or treatment from renowned doctors in the safety of their homes. In their website, it is mentioned that their service is "ideal for patients with movement difficulties and anyone who wants to avoid the traffic jam and the long queues at a doctor's office." They have an app along with the website, using which the patients can book a consultation with the doctors easily.
Start-up (Private)	Jeeon	Capacity building; Referral system	Jeeon is a startup which has emphasized its service in training remote doctors so that they can give better quality of healthcare to rural people. Moreover, this startup is continuously building connections with hospitals in order to improve the quality of services that the patients receive. In addition, one of the core works that Jeeon does is to empower local pharmacists and train them so that they can be a good source of reference for local communities. Jeeon also has an android platform called JeeonConnect where there are case solving games which the pharmacists or doctors can engage in to learn more about proper treatment and accurate prescription protocols. Another aspect of this platform is to collect information on health and market data related to rural doctors and medical practices in those localities which would benefit policies related to healthcare and programs all over Bangladesh.
Start-up (Private)	Pulse Health	Health insurance; Health monitoring	Pulse Health provides a cloud based smart health monitoring system along with providing them with health insurance. The community health workers provide periodic health-checkups such as checking body temperature, blood sugar, oxygen saturation and BMI using smart devices or the Pulse Health app to record the information which can be later accessed under personal profiles. The paramedics who serve the communities through Pulse Health also offer personalized health checkups when they meet regular customers for monthly checkups. They have designed their services in such a way that it is accessible to people from different classes. Their fight against non-communicable diseases and educating people about health insurance is one of their core focuses.
Start-up (Private)	HEALTHx	Health insurance; Home services; Telemedicine; Medicine delivery	Another service provider providing micro health insurance services, telehealth, and home healthcare services to the patients. Moreover, by making use of cloud-based SaaS solutions for different groups of people such as the pharmacies, physicians and hospitals are also benefiting a number of different groups. Some services that this platform provides are telemedicine related support, nursing care at home, physiotherapy care, medicine delivery services and attendant care.

Start-up (Private)	AmarLab	Home diagnostic service (specialized audience)	AmarLab is a startup focusing on digital healthcare. Their service contains at-home diagnostic test services and they transport these samples to the lab of patient's choice and even deliver the reports at the patient's doorsteps. Moreover, it is a unique platform in the sense that the patients have full autonomy to choose the test and diagnostic center they want their samples to get tested in, which also allows patients to compare test prices. Their aim is to provide support to those who cannot travel to diagnostic centers, for example because of disability or old age easily.
Start-up (Private)	Praava Health	Home service; Online consultation; Diagnostic service	Praava Health provides both in clinic or at home services to its patients and can be called a diagnostic center. From Praava patients can get services from dentists, nutritionists, health coaches, pediatricians, gynecologists along with psychological fields. Apart from direct in-clinic advice they also provide services through video conference and e-prescriptions. Moreover, health checkups can be ordered at home as well where blood and other samples can be provided from the homes of patients. In addition to this, COVID-testing is also a service they provide.
Start-up (Private)	BanglaMeds	Medicine delivery	According to its website BanglaMeds can be said to be an online pharmacy which helps deliver medicines to consumers who want to order drugs online. Their model is aimed at convenience and comfort of the people. The order could be made through their website and their app.
Start-up (Private)	Arogga	Medicine delivery	Arogga started with the aim to provide original medicines, products for menstrual hygiene, sexual health, medicine for diets and fitness, and health-related devices are also sold to the end users at a reasonable price. It is an online pharmacy and can be accessed through their app, website and number.
Start-up (Private)	DoctorKoi	Online consultation	DoctorKoi provides online consultations to people after the patients register on their website. The doctors who are part of their system have their information available on the website along with the fee they are charging for their services. Moreover, in the website their future plans to open an online pharmacy along with providing tests and checkups online are listed but not yet in action.
Start-up (Private)	Doctor Dekhao	Online consultation (specialized audience), reminder service	Doctor Dekhao is an app which can be used for video consultations, expert consultations, expatriate welfare (this includes consultation for Bangladeshi people who want access to quality services online with doctors who can relate to their cultural context better) and service for female entrepreneurs. This app also has an alarm which will go off if someone needs to take their medicine.

Start-up (Private)	Maya	Online consultation (video or chatting)	The Maya app provides question-answer based services to the users (both men and women). However, the service caters to women more than men. Both mental and sexual health-related issues, which may be considered taboo topics are addressed by this service. Users can ask health-related questions and get direct answers from the registered doctors in the app, and also have a consultation with the registered doctor if they need. Recently, it has been found that Maya has partnered with another organization named BanglaMeds in order to create a service delivering medicines to the users.
Start-up (Private)	Doctorola	Online consultation; Booking doctors for offline consultation	A startup by the name of Doctorola was launched in 2015. This service provider helps patients to book a doctor's appointment online. This startup has a website, an app, live chat options and even a call center to help manage appointments. In recent times, this service provider also handles appointments for a number of hospitals in Dhaka city. They also have multiple care packs for a number of different groups of people.
Start-up (Private)	Daktarbhai	Online consultation; Home diagnostic service	Daktarbhai is an app where patients can make doctor's appointments, have video consultations along with phone consultations, doorstep pathology test service is also available and patients can receive responses from a doctor on the go. There is also a hotline for Daktarbhai on the number '16643'. Moreover, in their website they also provide a health directory for Hospitals, Ambulances, Blood Banks, Pharmacies.
Start-up (Private)	Digital Healthcare Solutions	Online consultation; Insurance	Digital Healthcare Solutions aim to provide health for all by trying to eliminate the class differences in accessing good healthcare services. Some services that they provide are online consultation with qualified doctors through chat, text or calls, micro-insurance services which have benefited 6 million people. Moreover, they have different health programmes, where they have given instructions maternal and child health related information, diabetes, communicable diseases. They have partnered with the government, private organizations and NGOs, as well. Finally, they have developed tools for different groups of people in order to create a solution for maintaining records.
Start-up (Private)	Moner Bondhu	Online counselling	Moner Bondhu is a mental health related service provider, whose mission is to provide professional counseling to even the most marginalized of people. One of their core aims is to make counseling affordable and accessible for all, so that people can get help anywhere and anytime. This specific service provider offers access to trained therapists, counselors, psychologists, and even clinical social workers. Through their website and mobile app they provide services to the people who cannot access their wellness center in Dhaka.

Start-up (Private)	Moner Doktor	Online counselling	Moner Doktor is an online mental health consultation platform, where people can make use of audio or video platforms to have consultation with a mental health expert. It is mainly a website where one has to register or log in to create an account before one can consult with a doctor.
Start-up (Private)	Daktar Bondhu	Online video consultation and medicine delivery	Daktar Bondhu provides online video consultation services to patients from experienced doctors. This service provider also provides medicine delivery all over Dhaka within 24 hours. They claim that the medicines in their online pharmacy are cheaper and more authentic than the ones available at the regular pharmacies. They have an app and also their direct phone numbers where patients can book an appointment from.
Start-up (Private)	CMED	Referral service; Service for specialized audience	CMED Health Limited is a startup which focuses on preventive healthcare. One of their main aims is to assess and record people's health in the environment they live or work in and refer patients to reliable doctors if need be. They also put emphasis on reducing sufferings related to non-communicable diseases among patients and creating a health history which would enable better treatment by doctors. They also provide health information related to COVID-19 and have articles on maintaining a healthy life. Moreover, in their website they also sell health-related products such as Oximeter, Glucose test strips and other devices and products. CMED also has an app for children who are verbally impaired.
Start-up (Private)	mPower	Service design	mPower is a social enterprise which focuses on designing solutions, developing and customizing solutions, implementing solutions and managing transitions, and also research on impact. They have designed solutions for various fields. They are; Health and Nutrition, Water and Sanitation, Agriculture, Livestock, Governance and Rights, Education, Livelihood and Poverty Alleviation, Climate Change and Environment and finally Humanitarian Response. In the Health and Nutrition field, they had helped design solutions for or with various renowned organisations, such as BRAC, Telenor, Save the Children and others.
Start-up (Private)	Sebaghar	Telemedicine; Video consultation	Sebaghar is a telemedicine and doctor video consultation service. In order to get service from this service provider, one has to download the Sebaghar app first.
Start-up (Private)	Aponjon	Online consultation (specialized audience)	Aponjon is a mobile phone-based m-health service for expecting and new mothers in Bangladesh. The services are available in text and voice form through top mobile companies like Grameenphone, Robi, and Banglalink.

Annex B

Additional legal framework and national public policies in Colombia

National laws on ICT and cybersecurity

4. Decree 1078, 2015 regulates the field of information and communications technologies²¹⁵
5. Law 1978, 2019 modernizes the information and communication technologies field and creates a single regulator²¹⁶
6. Decree 1008, 2018 establishes the general guidelines for a Digital Government policy in Colombia²¹⁷
7. Law 2108, 2021 established the Internet as an essential and universal public service²¹⁸

Public policies on ICT and cybersecurity

1. “*Plan Vive Digital and Plan Vive Digital para la Gente*” was a political plan that defined the ICT policy between 2010 and 2018 in Colombia. This plan was aimed at achieving a democratic society through the use and appropriation of technologies²¹⁹
2. Decree 1008, 2018 establishes the general guidelines for a Digital Government policy in Colombia²²⁰
3. Conpes document 3975, 2019 sets forth the National Policy for Digital Transformation and Artificial Intelligence²²¹
4. Security and Privacy Model (*MSPI in Spanish*) is a manual launched by the Ministry of ICT for public entities to provide information security guidelines in their procedures²²²

National laws on health

1. Resolution 330, 2017 which adopts a participatory and scientific procedure to define the technologies that cannot be financed with public resources²²³
2. National laws and policies on HIV
3. Decree 1543, 1997²²⁴
4. Resolution 3442, 2006
5. Resolution 0459, 2012

215 Decree 1078, 2015: <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=77888>

216 Law 1978, 2019: <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=98210>

217 Decree 1008, 2018: https://normograma.mintic.gov.co/mintic/docs/decreto_1008_2018.htm

218 Law 2108, 2021: <https://dapre.presidencia.gov.co/normativa/normativa/LEY%202108%20DEL%2029%20DE%20JULIO%20DE%202021.pdf>

219 Ministry of ICT, Plan Vive Digital: <https://mintic.gov.co/portal/vivedigital/612/w3-propertyvalue-6106.html> and Plan Vive Digital para la Gente: <https://mintic.gov.co/portal/vivedigital/612/w3-propertyvalue-19436.html>

220 Decree 1008, 2018: https://normograma.mintic.gov.co/mintic/docs/decreto_1008_2018.htm

221 Conpes document 3975, 2019: <https://colaboracion.dnp.gov.co/CDT/Conpes/Econ%C3%B3micos/3975.pdf>

222 Security and Privacy Model: https://gobiernodigital.mintic.gov.co/692/articles-162625_recurso_1.pdf

223 Resolution 330, 2017: <https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/DE/DIJ/resolucion-330-de-2017.pdf>

224 Decreto 1543 de 1997



Personal data use

1. Law 1273, 2009 establishes the unlawful and unauthorized personal data processing as a crime and incorporates it into the Criminal Code²²⁵

Transparency and access to information

1. Law 1712, 2014 creates the Transparency and Access to National Public Information law²²⁶

Digital health laws and strategies²²⁷

1. Resolution 2654, 2019 establishes telehealth dispositions and parameters for the practice of telemedicine in the country²²⁸
2. The High Council for Digital Transformation of the Presidency is currently drafting a National Telemedicine Plan²²⁹
3. Resolution 521, 2020 adopts the outpatient care procedure in people in compulsory preventive isolation in the context of COVID-19.

Health strategies

1. *AiHospital Contigo* is an application that provides information for local authorities to monitor health promotion and prevention²³⁰
2. *Mi Seguridad Social* is a web portal for citizens to make reports and present inquiries related to the General Social Security Systems on Health and Occupational Risks²³¹
3. SIVICOS is a management tool to carry out the processes of inspection, surveillance and health control²³²
4. Technological rationalization of procedures and GENESIS system are tools to digitalize and integrate various procedures related to health
5. Apps sponsored by the Ministry of Health²³³
 - ClicSalud
 - DiscApp
 - SaludDatos
 - ColombiaSiVigila
 - GPC Salud
 - Aprende salud
 - Comunidad Salud
 - POS Pópuli

225 Law 1273, 2009: http://www.secretariassenado.gov.co/senado/basedoc/ley_1273_2009.html

226 Law 1712, 2014: <https://www.funcionpublica.gov.co/eva/gestornormativo/norma.php?i=56882>

227 High Council for Digital Transformation of the Presidency of the Republic, "Digital transformation projects, procedures and services for citizens.": <https://dapre.presidencia.gov.co/TD/DIGITAL-TRANSFORMATION-PROJECTS-PROCEDURES-AND-SERVICES-FOR-CITIZENS.pdf>

228 Resolution 2654, 2019: https://www.minsalud.gov.co/Normatividad_Nuevo/Resoluci%C3%B3n%20No.%202654%20del%202019.pdf

229 Id. 20, at page 51.

230 Id. 20, at page 52.

231 MinSalud, Mi seguridad Social: <https://miseseguridadsocial.gov.co/>

232 Id. 20 at page 53.

233 Deloitte: https://www2.deloitte.com/content/dam/Deloitte/co/Documents/technology-media-telecommunications/Brochure_ConsumoMovil_CO_LATAM_2020.pdf and <https://www.larepublica.co/internet-economy/conozca-algunas-aplicaciones-destacadas-para-diferentes-consultas-sobre-salud-2751636>

- Conoce Tu Riesgo
- Autocuidate

Agencies and institutions involved in governance of digital health rights

1. Ministry of Health and Social Protection (e.g. Directorate of Medications and Technologies on Health)
2. Ministry of Information and Communication Technologies
3. Communication Regulation Commission
4. Superintendence of Industry and Commerce – Delegation of Data Protection (among others)
5. High Council for Digital Transformation of the Presidency of the Republic
6. Cybersecurity Authority