Task Force +Health Care
Dutch platform for the life sciences & health sector

Netherlands Enterprise Agency

COLOMBIA

Market Studies

Opportunities for the Dutch Health sector in Colombia

EXECUTIVE SUMMARY

October 2019

Colombia is Latin America's fastest growing and most stable economy. In the largest cities, one can receive a very high standard of healthcare. In fact, the Colombian health system has been named the best in Latin America and is ranked at number 22 worldwide by the WHO. Despite these successes, the Colombian public health system is currently emerging from a period of structural debt. The provision of quality healthcare in rural and remote areas is lagging, and health systems are not well-prepared for the impact of an ageing society and the subsequent increase in non-communicable diseases. Colombia, like many other countries in the Latin American region, has often been described as a country with a triple burden of disease, meaning there is a significant burden of NCDs, whilst having a burden of communicable diseases, and a high rate of accidents, suicides and homicides. Human talent in health is sparse and the system is in need of increased use of available data technology geared towards strategies of prevention.

Colombia can be described in two ways. On the one hand there is high income, highly developed areas, and high quality healthcare available with a strong private sector that is willing to invest. On the other hand, there is also low income communities, underdeveloped areas, and many poor people living with no access to quality healthcare. This combination means that Colombia is in need of both highly innovative healthcare solutions as well as developmental projects involving more basic healthcare products.

Colombia hopes to curb the costs of healthcare and revitalise its economy by investing in technologies related to health and by interacting with countries that face similar challenges. Since the Netherlands has a comparable health system to Colombia, Colombian healthcare stakeholders are eager to interact with the Dutch, with many of them looking to the Netherlands as their number one reference country.

In this report, developments and opportunities for Dutch companies and organisations in the fields of Public Health, Digital Solutions (eHealth, Big Data & VBHC) and Ageing & Elderly Care are further discussed.

This report was commissioned by the Netherlands Enterprise Agency (RVO.nl) and is produced by the Task Force Health Care (TFHC) in cooperation with the Embassy of the Kingdom of the Netherlands in Bogotá and Holland House Colombia (HHCO). It aims to align the respective health sectors of the Netherlands and Colombia. In an effort to increase mutual understanding and inspire collaboration between these countries, this report provides useful insights into the Colombian health system and sector and identifies potential areas of opportunity.

OUR APPROACH

TASK FORCE HEALTH CARE

IMPROVING HEALTHCARE TOGETHER

Established in 1996, Task Force Health Care (TFHC) is a public-private not-for-profit platform that represents and supports the Dutch Life Sciences & Health (LSH) sector. Our platform has a reach of 1200 LSH organisations in the Netherlands, with 130 dedicated and diverse partners. Our partners include government, industry, knowledge institutes, NGOs, and healthcare providers.

Our core mission is to improve healthcare and well-being internationally and in a sustainable and demand-driven manner, with the use of Dutch expertise. We are currently actively engaged with over 20 countries to stimulate and facilitate relationships on government-, knowledge- and business levels. Our partners are active around the world and provide innovative and sustainable solutions relevant to both global and local healthcare challenges.

A PROGRAMMATIC APPROACH

- Bridging **Knowledge**, Aligning Interests and Identifying Opportunities
- Fostering and Strengthening **Networks**
- Facilitating **Dialogues** on Health Themes and Opportunities to Collaborate

OUR FOCUS

- Mutual Interests and Benefits
- Developing Sustainable and Long-Term Approaches
- Demand-Driven and Context Specific

CONTENT

TOP REASONS – WHY COLOMBIA IS INTERESTING FOR THE DUTCH HEALTH SECTOR

Growth

With a growth rate of 3% GDP per annum, Colombia has the fastest growing economy in Latin America. Colombia's health sector is one of the country's most stable and productive, with market trajectories looking positive.

See Section 2.3

Long-Term Partnership

Four years (2015–2019) of intense bilateral high-level exchanges in healthcare has established the Netherlands as the number one reference country for many key stakeholders in Colombia.

See Section 1.1

High Quality System & Hospitals

Colombia has the highest-rated health system in Latin America, and according to the World Health Organization, has the 22nd best health system globally. 23 of the 58 best hospitals in Latin America are located in Colombia.

See Section 3.1

Business Partners

Both hospitals and health insurers are actively doing business with Dutch companies & organisations, either directly or through local representatives. This creates an inviting landscape for interested Dutch healthcare companies.

See Section 4.1

Healthcare infrastructure

Ongoing investments in healthcare infrastructure in both rural and urban areas are supported by public programmes and NGOs. Many of these are related to the recent Peace Treaty (2016) and influx of Venezuelan immigrants. Private hospitals are investing in the renovation of existing hospitals, as well as setting up elderly care centres. See Section 3.6

Alleviation of debts

End-point Agreement provides a 2 million USD investment into the public health system with the aim of increasing overall access to quality care and stimulating healthcare providers to invest in innovative solutions.

See Section 3.5

Prioritization

The new Minister of Health has prioritized non-communicable diseases, human talent, increasing quality, and cost effectiveness as key issues for the coming years. He is looking abroad for solutions related to prevention, screening, treatment, remote training, and education. See section 3.5

Prevention

Directors of hospitals, health insurance companies, and public sector decision-makers display great interest in solutions with regard to prevention, an area in which the Dutch excel.

See Section 5.2

HOW DOES COLOMBIA COMPARE?

Table 1: Geographic, Demographic, Economic, Business, and Health Context in Colombia compared to other Countries. Accumulated data from: World Bank Group Data (2019), World Health Organisation (2018), Healthdata.org (2019), BMI Medical Devices reports, IMS Market Prognosis (2016), International Trade Administration (2016)

	Brazil	Chile	Colombia	Mexico	Netherlands
Land Size (km^2)	8 515 767 049	756 950	1 109 500	1 972 550	33 690
Population (2019)	212 000 000	18 000 000	49 853 630	132 343 600	17 109 189
expected annual growth rate (%)	0.8	1.4	1.5	1.1	0.6
65 years and older (%)	9.6	12.2	9.1	7.6	19
expected in 2050 (%)	22.7	24.9	21	20.2	25
Maternal Mortality Rate (100 000 births)	58	17	71	38	7
Life Expectancy at Birth	76	80	75	77	82
Life Expectancy Global Rank (2017)	125	51	95	92	25
Economic Context					
GDP (current million USD) 2018	1 868 626	298 231	330 227	1 223 808	913 658
expected growth (2020)	1.1	4	2.7	2	2
GDP per capita (USD)	8 920 8	15 923 4	6 651 3	9 698 1	52 978 4
annual growth rate (%)	0.3	2.6	1.1	0.9	2.54
(Health) Business Context					
Ease of Doing Business Rank	109	56	65	54	32
Logistics Index	56	34	58	51	6
Pharmaceutical Market (bln USD-2016)	20 547	3 520	3 140	16 190	6 000
Expected growth 2016-2021 (%)	8.6	8.6	6.0	5.1	0-0.5
Medical Device Market (mln USD – 2016)	5 500 0	800 1	1 197 1	4 655 3	3 486 1
Expected growth 2016-2021 (%)	5.2	9.0	8.5	8.1	5.0
Medical Device Import from the Netherlands 000s USD	24 329	13 670	9 787	n/a	-
Ranking	17th	12th	16th	n/a	-
Medical Device Export to the Netherlands 000s USD (%)	n/a	737	n/a	69 879	-
Ranking	n/a	5th	n/a	4	-
Health Context					
Health Expenditure (bln USD)	155.3	2.8	21.1	64.2	81.7
Health Expenditure as % of GDP	11.77	8.53	7.4	6.1	10.69
Health Expenditure per Capita (USD)	1 015 93	1 190 55	358	461 79	4 746 01
Public Health Share of HE	46%	51.5%	75.5	52.1	86.7
Type of Health System	Social Health Insurance and supplementary private insurance	Social Health Insurance and supplementary private insurance	Social Health Insurance and supplementary private insurance	Social Health Insurance and supplementary private insurance	Social Health Insurance
Top three causes of death 1.	Ischemic heart disease	Ischemic heart disease	Ischemic heart disease	Ischemic heart disease	Ischemic heart disease
2.	Stroke	Stroke	Stroke	Chronic kidney disease	Alzheimer's Disease
3.	Lower respiratory infect	Alzheimer's disease	Interpersonal violence	Diabetes	Lung cancer

LIST OF FIGURES AND TABLES

ABOUT THIS REPORT

Background & Purpose

Aligning the interests and strengths of the Dutch health sector with the health sector dynamics and interests of Colombia

This market report was commissioned by the Netherlands Enterprise Agency (RVO) in the Netherlands. It is delivered by Task Force Health Care (TFHC), in close cooperation with the Netherlands Embassy in Bogotá, and Holland House Colombia – Dutch Chamber of Commerce (HHCO). This report provides an overview of the Colombian healthcare sector and highlights potential business opportunities for organisations active in the Health and Life Science sectors. It includes an in-depth analysis of requested areas and recommendations for organisations in the Netherlands that see opportunities in working in Colombia, and that consider it a potential growth market for their organisations.

Methodology

Step 1: Identification and mapping of Dutch interest in the Colombian health sector, and perceived barriers

In order to obtain a better understanding of the interests of the Dutch Health sector in Colombia, historical data, Dutch representation in Colombia, and results of a survey were referenced. The survey was sent out to Dutch actors within the Health sector where they were asked to share their activities, ambitions, and perceived opportunities and barriers in relation to Colombia. Data was classified into type of organisation, strength (e.g. Medical Devices or eHealth), current or past activity in Colombia, and their perception of Colombia in terms of market growth. The results are presented in Section 1 and are used to guide the report towards aligning challenges and opportunities in Colombia with Dutch expertise and solutions.

Step 2: Desktop Research

In order to obtain a better understanding of the Colombian health sector and its dynamics, a literature review was conducted. A range of documentation was used, including government documents, academic articles, and reports from various organisations and federations. The information gathered was synthesised in order to provide a thorough overview of the Colombian sector.

Step 3: Fact Finding Visit to Colombia

An important element of the study was the fact-finding visit to Bogotá, whereby a delegation from TFHC, accompanied by representatives of the Netherlands Embassy in Bogotá and HHCO, gained insights from key stakeholders in the Colombian health sector. During the two day fact-finding visit, 3 meetings and 4 roundtable discussions with representatives from the public and private sector, operating at the national, regional and local level took place. The list of interviewees is presented in Annex 1.

These meetings and discussions enabled the collection of information with regards to additional sources and provided valuable insights into the sector. The data from these interviews allowed for cross-checking of data that had previously been obtained, resulting in the development of an objective and realistic report. These meetings also raised awareness in terms of the expertise and smart solutions offered by the Dutch Health sector. The visit has resulted in the strengthening of existing relationships in Colombia, and initiation of new relationships that will benefit from follow-up activities.

1. MAPPING DUTCH INTEREST IN COLOMBIA

In order to understand the degree to which the Dutch are interested in the Colombian market, an online survey was sent out to health organisations and companies in the Netherlands. The survey was also shared with multiple Dutch network and cluster organisations in order to extend its reach. Using combined data from 81 survey respondents, we identified 53 unique organisations with activity and/or interest in Colombia. This interest ranges from already actively trying to enter the market by reaching out to potential clients to doing first explorations by reading reports or attending relevant events.

Looking more specifically at the data, out of the 81 respondents, 29 are already active in Colombia (see Figure 1). Figure 2 shows 43 organisations who see Colombia as their potential growth market, of which 19 are already active (44%), and 24 not yet active (56%) (see Figures 3 and 4). Combining the 29 already active organisations with the 24 organisations who are not yet active but who do see Mexico as a potential growth market, we come to the number of 53 unique organisations with activity and/or interest in Colombia.

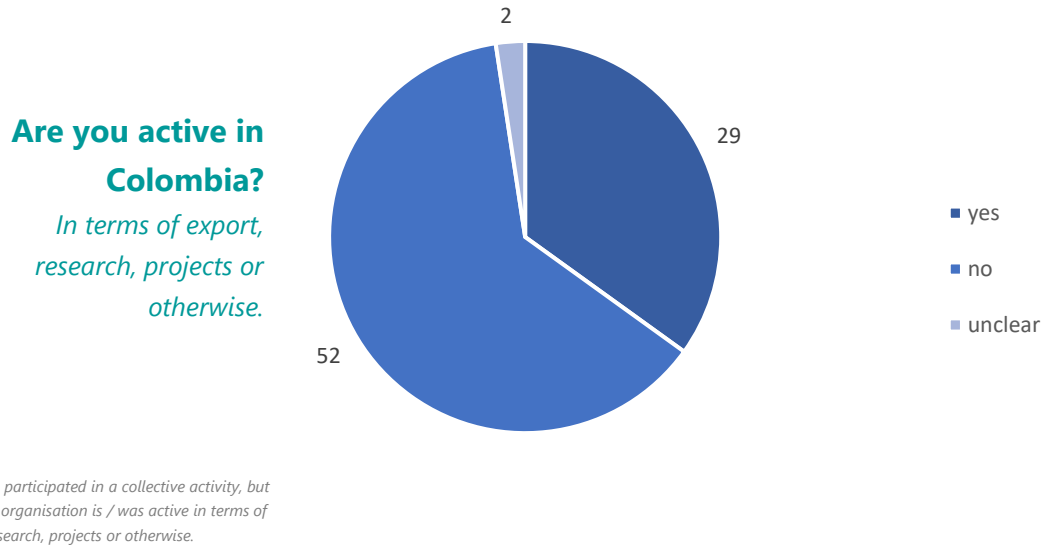


Figure 1: Dutch activity in Colombia according to interest survey

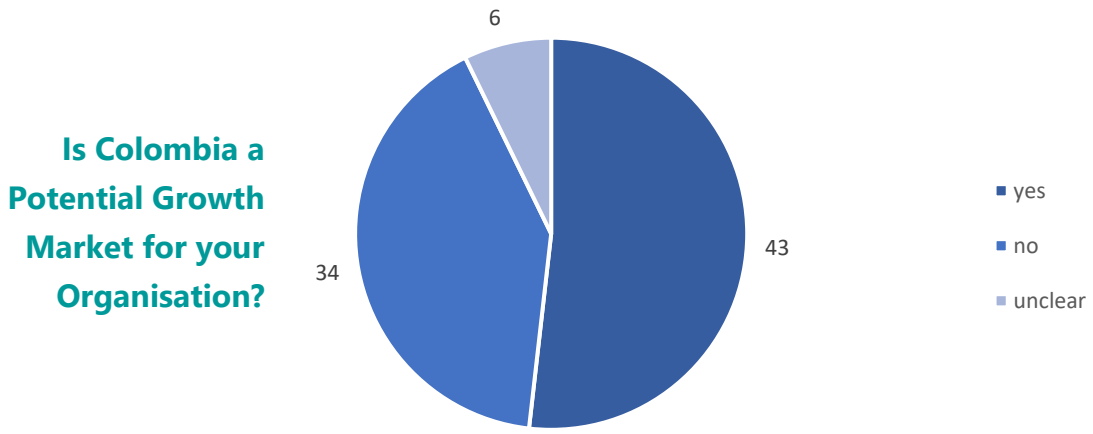


Figure 2: Colombia as a potential growth market, according to interest survey

43 parties who see potential: active or not active yet

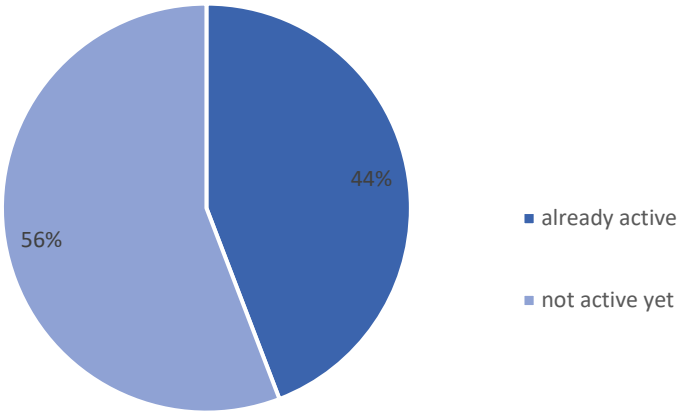


Figure 3: Interested parties divided by already active and not yet active

Interest by Strength*

*Excluding Regional Business Development Agencies

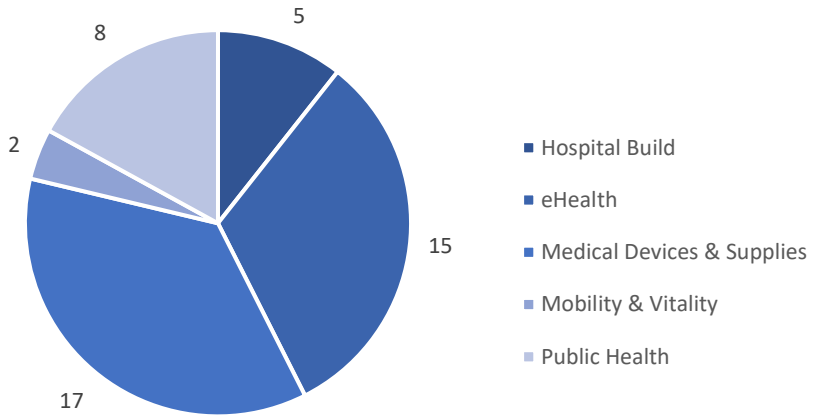


Figure 4: Interest of Dutch organisations, grouped per strength

Table 2: Perceived barriers to the Colombian market, according to interest survey and interviews

Perceived Barriers in becoming active in Colombia

Experienced or predicted.

1	Regulations
2	Lack of funding/financial support
3	Distance
4	Language
5	Technology Maturity

Regulations

Regulatory affairs in Colombia are perceived as more lenient compared to other Latin American countries, such as Brazil and Mexico. However, the procedure can be very bureaucratic and time-consuming. Local distributors and agents typically offer a complete regulatory package, with the foreign product registered in their name. The downside is that when ending the commercial relationship with the entity, one will need to conduct the whole process again. By appointing a knowledgeable legal representative who can conduct the application and registration through INVIMA (Instituto Nacional de Vigilancia de Medicamentos y Alimentos), companies can register their products under their own company name and maintain control of their sales in the country. After submitting application and registration documents, it generally takes 90 days to obtain approval or receive requests for clarification/additional documentation. If the Dutch company has a marketing authorization from a reference country (i.e. GHTF-founding member countries: US, EU, Canada, Australia or Japan), medical device registration and approval is relatively simple. Read more in Section 4.1.

Lack of Funding/Financial Support

One might experience more difficulty when attempting to introduce more expensive medical devices or solutions into the Colombian public sector market. The public sector has been accumulating debt over a number of years, which has resulted in the introduction of cost-saving strategies in the past couple of years, impeding the public sector's ability to invest in foreign innovative solutions. In June of 2019, the Colombian government initiated the roll-out of the 'End-Point Agreement'. With this measure in place, the government is investing 2 million USD in the public health sector. Public health sector providers will invest this money in their institutions, improving access to and quality of healthcare. This initiative is expected to ease the process of purchasing innovative medical solutions in the public sector (more info in Section 3.2).

Since Colombia is a young middle-income country, players in the healthcare sector may expect foreign aid to bring both the solutions and the financing, whilst foreign countries, including the Netherlands, have been changing their policies towards Colombia from aid to trade. Usually, a foreign company demonstrates the effectiveness of their product through a small pilot or study. The results obtained from the pilot is demonstrative of the efficacy of the product, which they then present to other Colombian clients. This is helpful as it demonstrates the suitability of a product in the Colombian context. Hospitals usually have budgets for small pilots but investing in these pilots as the seller can also be a very fruitful commitment.

Long-Distance Business

In Colombia, it is important to build strong relationships with future clients or project partners. Face-to-face contact, during lunch, drinks or dinner results in more trust and understanding. Showing your face regularly proves your sincerity in working with them. It is important to keep reminding your Colombian counterparts when you expect a response or if you are working on a proposal. Making contact can sometimes be difficult, thus, long-distance business can be challenging. The flight from the Netherlands to Bogotá is long (~11 hours) but traveling within Colombia is relatively cheap. It is generally acceptable to use WhatsApp as a means of communication, and this form of communication often works better than email.

Language

The national language in Colombia is Spanish, and overall, the country ranks low on the English Proficiency Index (EPI) of Education First (ranked 60 out of 99 countries and regions). Nevertheless, high-level functionaries in the main cities do understand and speak intermediate to high-levels of English. Younger generations, especially those receiving some form of higher education, tend to be proficient in English. It is a good show of respect and a convenient ice-breaker to learn a few Spanish phrases. When the purpose is to have a more complex or technical conversation, it is always advised that one bring along an interpreter or ask one's counterpart to bring one to the meeting if your Spanish is not proficient.

Technological Maturity

Colombia's transition from paper administration to digital administration has been perceived as slow by some Dutch companies, especially those attempting to implement digital solutions in the Colombian health sector. Colombia has recognized this situation and is pro-actively working to change the country's perception of technological transition through programmes initiated by the Ministry of Information Technology and Communications (MinTIC). According to a recent international study, the percentage of companies in Colombia currently investing in programmes for digital innovation is 28%, compared to the global average of 23% (Digital Transformation Study, 2018). Furthermore, the percentage of organisations using data for digital evaluations has increased from 34% in 2016 to 46% in 2018 (read more in Section 5.2)

Collective Activities Between Colombia and the Netherlands

In order to give an impression of the past engagements between the Colombian and Netherlands health sectors, an overview of collective activities between the Netherlands and Colombia is presented in the list below. *Collective activities are defined as:* incoming and outgoing trade/innovation missions, collective trade fair visits, fact finding visits and network events which connect decision-makers in the Dutch and Colombian health sector. Dutch participants in these activities may overlap with respondents from the interest survey. The overview is not intended to be exhaustive but gives a good impression of the ongoing interaction between the Netherlands and Colombia. Additional relevant health care events in Colombia are listed in Annex 2.

Timeline (Past Activities)

- **2006:** Visit Minister of Health Hoogervorst to Colombia: Signing of Complementary Cooperation Agreement with the Colombian Ministry of Health.
- **2015:** Visit Minister of Health Schippers: Signing of Memorandum of Understanding and work plan with Colombian Ministry of Health.
- **2016** (January): Launch of 'Marktverkenning Life Sciences & Health Colombia' report, mapping the Colombian Healthcare sector and identifying opportunities for Dutch companies and organisations.
- **2016** (June): Holland Pavilion on trade fair Meditech in Bogotá – 16 Dutch companies and organisations.
- **2016** (November): Incoming delegation of El Bosque hospital and Compensar insurer (6 participants).
- **2017** (March): High level incoming delegation of Colombian hospitals & health insurers (18 participants).
- **2017** (October): Dutch Life Sciences & Health Roadshow through Colombia (Bogotá, Medellín, Bucaramanga, 10 participants).
- **2018** (March), Incoming delegation of Colombian politically influential people in healthcare (8 participants).
- **2018** (September), Incoming delegation of directors of health insurers through ACEMI (10 persons).
- **2018** (November), Economic mission led by Prime Minister Rutte and SG Gerritsen to Bogotá & Calí (25 Dutch companies and organisations).
- **2019** (June), Incoming delegation of Colombian health stakeholders on Oncology and Palliative Care (12 participants), including the executive director of the National Cancer Institute.

2. INTRODUCING COLOMBIA

2.1 History & Geography

Colombia is a republic under the 1991 constitution. Public powers are divided between the executive, legislative, and judicial branches of government, with the president elected by universal suffrage. In 2018, current president Iván Duque Márquez was elected to office. Colombia has a land area of 1 138 910 square kilometres, with diverse and rich natural landscapes. The country has flat coastal lowlands, central highlands, high Andes Mountains, and eastern lowland plains. The climate is tropical along the coast and eastern plains but cooler in the highland regions.

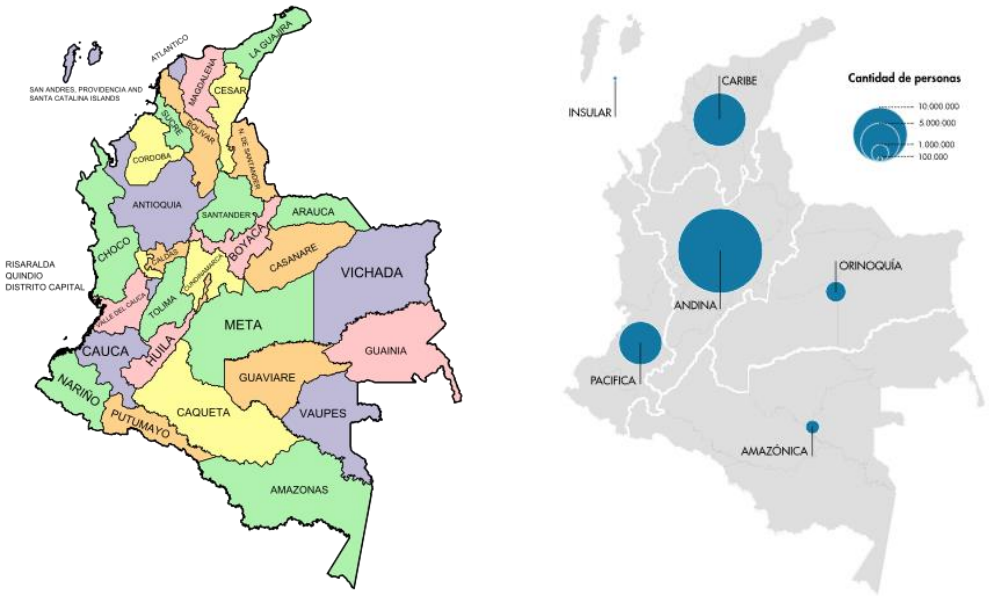


Figure 5: Departments of Colombia (left) and population per geographical region (right)

Colombia is divided into 32 departments, 1127 municipalities and five districts. The five districts are: Bogotá (Capital District), Barranquilla (Special District – Industrial and the Port), Cartagena de Indias (Touristic and Cultural District), Santa Marta (Touristic, Cultural and Historical District) and Buenaventura (Special District – Industry, Port, Biodiversity and Ecotourism). Half of the population live in the six biggest departments (Table 3), with the majority of the Colombian population living in the municipal capitals (78%).

Approximately 80.8% of the Colombian population live in urban areas, with a rate of urbanization of 1.22%. Most of the population (77.8%) live in the north and west, where much of the agricultural opportunities and natural resources are found. The south and east, which constitutes around 60% of the country, is sparsely populated (Figure 5).

Table 3: Geographical Division of Colombia (10 biggest departments)

Geographical Division of Colombia (10 biggest departments)				
Department	**Capital**	***Number of municipalities***	***Percentage of population***	***Percentage of GDP***
Antioquia	Medellín	126	11.18%	14.49%
Boyacá	Tunja	123	10.91%	2.69%
Cundinamarca	**Bogotá***	116	10.29%	31.58%
Santander	Bucaramanga	87	7.72%	6.46%
Nariño	Pasto	64	5.68%	1.50%
Tolima	Ibagué	47	4.17%	2.14%
Bolivar	Cartagena de Indias	46	4.08%	3.59%
Cauca	Popayán	42	3.73%	1.79%
Valle del Cauca	Cali	42	3.73%	9.71%
Norte de Santander	San José de Cúcuta	40	3.55%	1.54%

* Bogotá is not considered a separate department, due to it being the capital.

2.2 People and Demography

As of July 2019, Colombia had a population of 49 853 630 people, making it the third most populous country in Latin America. The majority of people are *mestizos* (mixed race, usually having Spanish and indigenous descent), Caucasian, Afro-Colombian, or of Amerindian descent.

Colombia is in the midst of a demographic transition due to steady declines in its fertility, mortality, and population growth rates (Figure 6). The birth rate has fallen from more than 6 children per woman in the 1960s to just above replacement level today as a result of increased literacy, family planning services, and urbanization. In 2018, 22.6% of the population was under the age of 15 years, and only 9.1% was over the age of 65.

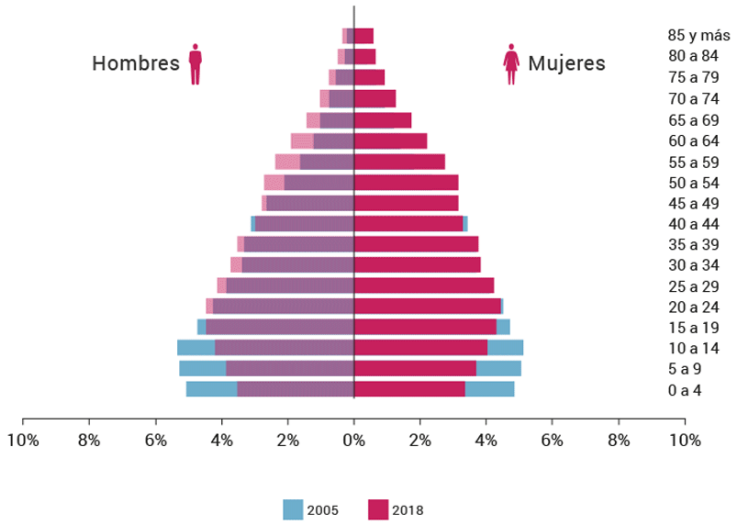


Figure 6: Population pyramid of Colombia in 2005 (blue) and 2018 (pink).

2.3 Economy

With over 49 million inhabitants, Colombia is one of Latin America's most dynamic destinations. It is the 59th largest export economy in the world according to the World Bank report (2017) and the third most business friendly country in Latin America and the Caribbean (RVO, 2018).

With 3.1% economic growth during the first trimester of 2019 and similar growth expected for the remainder of 2019, Colombia currently has the strongest and fastest growing economy in Latin America. Main exports include oil and coal, which have enjoyed stable prices over the years. These steady prices are an advantage to Colombia, compared to other Latin American countries that rely on raw materials like copper and gold, and have had exports decrease substantially. Main contributors to Colombia's economy are the construction sector which is growing by more than 10% annually, and the development of foreign investment which has been on the rise over the last four years (The Economist, 2019).

Colombia is considered an upper middle-income country based on its per capita Gross National Income (GNI). Although real GDP growth averaged 4.7% during the past decade, it fell to an estimated 1.8% in 2017. This was due to falling world market prices for oil and lower domestic oil production due to insurgent attacks on pipeline infrastructure (The World Bank, 2019). In 2018, economic activity showed signs of recovery: between January and September the economy expanded by an annual average of 2.5%. This growth was driven by domestic and public consumptions, and a slow-pace increase in exports. Colombia's economy is expected to see growth at a moderate pace over the 2019-2021 period, and investment in non-mining sectors is expected to exceed 11.5 million USD by 2022.

Table 4: Economic Indicators for Colombia

	Netherlands	Colombia					
	2018	2016	2017	2018*	2019*	2020*	2023*
GDP PPP (bn USD)	972.45	686.9	709.42	744.7	784.75	830.36	986.19
real growth (%)	2.8	2.1	1.4	2.7	3.5	3.6	3.7
per capita PPP (000)	56.57	14.09	14.39	14.94	15.58	16.32	18.85
Inflation rate (%)	1.4	7.5	4.3	3.2	3.4	3.2	3
Unemployment (%)	3.9	9.2	9.4	9.7	9.7	9.5	9
Government net lending/borrowing (% of GDP)	1.1	-2.4	-2.6	-2.2	-2.6	-1	-0.9
Government gross debt (% of GDP)	54.4	49.8	49.8	50.5	49.2	47.3	41.4

(IMF, 2019)

Colombia has signed or is in the negotiating phase for free trade agreements (FTA) with more than a dozen countries (including the EU and the US). Colombia is a founding member of the Pacific Alliance, a regional trade bloc formed in 2012 by Chile, Colombia, Mexico and Peru to promote regional trade and economic integration. After 7 years of negotiation, in May 2018, Colombia formally joined the Organization for Economic Cooperation and Development (OECD), becoming the third Latin American country to be part of the organization. Membership is expected to act as a seal of trust for the reception of foreign investment and will spur the alignment of the country's public policies with the agency's standards.

Colombia's labour force is comprised of an estimated 25.76 million people. The majority of the labour force works in the services sector (62%), followed by industry (21%), and lastly agriculture (17%). The country has a relatively high Gini coefficient of 52 (2018). The Gini coefficient measures the grade of inequality of income or wealth distribution of a nation's residents. The high degree of socioeconomic disparity leads to wide differences in both health indices and access to healthcare services among different socioeconomic groups.

3. THE COLOMBIAN HEALTH SECTOR

Approximately 96% of the Colombian population is covered by the mandatory health insurance system. Due to the government's commitment to achieving universal health coverage, this number is expected to increase over the next few years. Colombians are insured in a two-tiered health system. People can purchase health insurance in the private market through payroll and employer contributions, and those who can't afford private insurance are provided with subsidized public health insurance.

Colombia is ranked by the World Health Organization as having the best health system in Latin America, and as number 22 worldwide. Colombia's relatively large proportion of public spending and the small amount of private and out-of-pocket spending differs greatly from the average public and private spending in other Latin American countries (Invest in Bogotá, 2019). Out of the 58 best hospitals in Latin America, 23 are located in Colombia – of which seven are in Bogotá. 20% of all health institutions in Colombia are located in the Bogotá region, followed by the department of Antioquia and Valle del Cauca (both 10% of institutions).

Table 5: Colombian hospitals in the top 20 Ranking Américana Economia (2018)

Colombian hospitals in the top 20 Ranking *Américana Economia (2018)*		
Ranking	**Hospital**	**Location**
3	Fundación Valle del Lili	Calí
5	Fundación Cardioinfantil	Bogotá
8	Fundación Cardiovascular de Colombia	Floridablanca
9	Hospital Pablo Tobón Uribe	Medillín
11	Centro Médico Imbanaco	Calí
16	Hospital San Vicente Fundación	Antiquoia

3.1 The Colombian Health System

The Colombian healthcare system is a managed competition system, comparable to the Dutch system. Colombia has one of the most decentralized systems in the world. It is decentralized in structure, both vertically (from the state to the insurer and the provider), and horizontally, between the different agents that form it. Since the Colombian healthcare system was decentralised in 1993, there has been a significant increase in private health insurance uptake, in line with decreasing out-of-pocket spending (BMI, 2017).

3.1.1 The Sistema General de Seguridad Social en Salud (SGSSS)

The General System of Social Security in Health (SGSSS) compromises the institutions, norms and procedures through which the state guarantees the provision of healthcare to Colombians. Health insurance is compulsory and currently 96% of the population is covered through some form of insurance. There are three regimes distinguishable in the SGSSS: The contributory regime (44.8% of population), a subsidised regime (45.4% of population) and a special benefit regime (4.2%). Approximately 20% of the total affiliates and health care institutions are located in the Bogotá region, followed by the departments of Antioquia and Valle del Cauca with approximately 10% each. For those (communities and individuals) who are not covered through the General System of Social Security in

Health (SGSSS), the *Entidad Territorial* (ET) (local government entity) is responsible for purchasing and providing health services. Around 75% of ETs directly provide between 11 and 40 services (Ministerio de Salud, 2018).

Text Box 1 ***Risk Pooling by ADRES***

As from August 2017, risk pooling in Colombia is conducted by the *Administradora de los Recursos del Sistema General de Seguridad Social en Salud (ADRES)*. It was previously conducted by FOSYGA. ADRES calculates capitation payment called *Unidad de `pago por Capitación (UPC)* for members of the contributory regime. The UPC is dependant on the risk group of the member, and other epidemiological characteristics ADRES also reallocates funds for the subsidiary system, but these are not risk-adjusted.

All inhabitants are required to register at an *Empresa Promotora de Salud* (EPS), the Colombian health insurance entities. Since inhabitants can choose their own EPS, EPSs compete for enrolees and providers compete for their inclusion in an EPS. EPS's may not reject applications. The collected contribution from all EPSs are pooled together at ADRES. As of August 2017, the substituted *Fondo de Solidaridad y Garantía* (FOSYGA*)* reallocates contributions back to the EPSs depending on the amount and type of members. Thus, the system creates a solidarity based health system (see Text Box 1). EPSs contract *Intstituciones Prestadoras de Servicios* (IPS), such as hospitals, clinics, laboratories, and health professionals. There are about 46 000 IPS in the country, many of them smaller, specialised clinics. Some EPS have their own IPSs but have additional contracts with (specialised) IPSs. Individuals who have economic means can choose to pay an additional health insurance called "Prepaid Medicine," where they can choose which health services they would like, and thus have access to the best medical care available (The World Health Organization, 2017).

There are a total of 44 EPSs in Colombia. The Colombian Institution *Cuenta de Alto Costo* publishes a ranking of the best EPS and IPS on points of risk and quality annually, stimulating EPS and IPS to invest in the quality and efficiency of their services. The rankings can be found through: https://cuentadealtocosto.org.

Text Box 2: ***Rural and Urban Differences in EPS Coverage***

Even though health coverage has increased nationwide since the implementation of Law 100 (1993), differences in type of affiliation per region can still be observed. On average 45.4% of the population is covered through the subsidized system, and 44.8% through the contributory system. In the poorer coastal and Amazonian regions, over 75% of the population depend on the subsidised scheme, whilst in wealthier regions such as Bogotá most inhabitants are covered through the contributory scheme (83%). There are still huge gaps in the level of care received through the subsidized and the contributive systems. Patients in the subsidized system generally receive less and a worse quality health care. This is often caused by delayed access to medical care and late diagnosis and treatment.

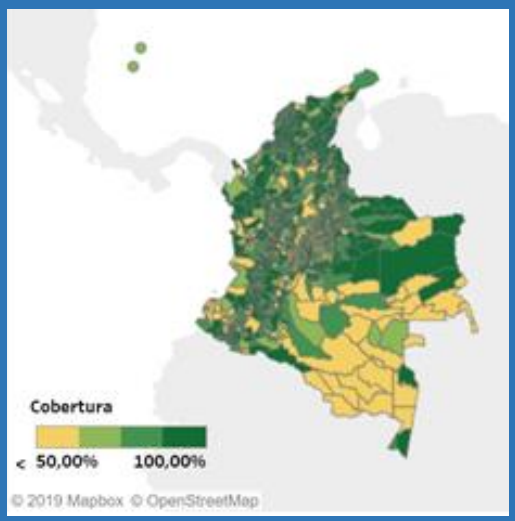


Figure 7: Distribution health coverage

3.2 Health Expenditure

In 2016, Colombia's Total Health Expenditure (THE) per person was 358 USD. The majority of this is government health spending (65%), followed by out-of-pocket spending (21%) and the remaining is prepaid private spending (Healthdata, 2018). Projections show that by 2050 government health spending will reach 396 USD per person, out-of-pocket spending will increase to 99 USD and private spending is expected to increase to 88 USD per person (Healthdata, 2018). Rising healthcare costs are likely to place a significant burden on household incomes in times of emergency. The barriers to public access mean that patients often seek private consultations when there is a sense of emergency and waiting times for public services are too long (BMI, 2017).

Table 6: health spending in Colombia and the Netherlands

	Colombia		***Netherlands***	
Health spending	**2014**	**2040***	**2014**	**2040***
per capita, PPP (USD)	975*	2 398	5 234*	10 186
Uncertainty interval		1 616 – 3 727		8 436 – 12 098
As % of GDP	7.2	8.5	10.7	13.4
Uncertainty interval		5.7 – 13.2		11.1 – 16.0

* 2014 data is spending per capita, adjusted to 2015 purchasing power parity dollars.

Estimations done by Institute for Health Metrics and Evaluation (IHME) (2017). *Financing Global Health 2016: Development Assistance, Public and Private Spending for the Pursuit of Universal Health Coverage.* Seattle, WA.

Table 7: Health Expenditures in 2018 (adjusted from Así Vamos en Salud, 2019).

Health Expenses (in mln USD, 2016=100)	**2012**	**2014**	**2016**
Subsidiary Regime	559 654	809 607	855 821
Contributory Regime	746 199	822 506	944 956
Uninsured Population	106 724	73 323	35 508
Public Health	101 788	85 416	67 006
Non-POS Recoveries and Guardianship Failures	127 674	141 736	145 575
ECAT Coverage	10 461	12 053	12 936
Other health expenditure	13 798	2 514	2 600
	-	42 984	15 468
Health Guarantees Sub-Account Operating Expenses	12 647	12 431	13 532
Total Expenses	**1 678 949**	**2 002 574**	**2 093 407**

3.3 Health Status

Although Colombia has made vast improvements in increasing life expectancy and reducing infant mortality over the past 2 decades, there are significant and evolving health challenges relating to disease. According to the World Health Organization healthy life expectancy in Colombia was 67.1 years, which is quite low in comparison to the Netherlands (World Health Organization, 2018).

Text Box 3: Debt in Colombia's Health System

In December 2017, La Republica announced that, according to the Ministry of Health, 250 of the 947 public hospitals were in medium to high financial risk (RVO.nl, 2018). A report by the Colombian Association of Hospitals and Clinics (ACHC) revealed that the debt to hospitals and clinics for the provision of health services in the country reached USD 7.3 trillion in 2017, the largest amount owed in the last 18 years. The deficits and financial crisis in the public health system were mainly caused by mismanagement and corrupt practices by EPS, according to former Health Minister Alejandro Gaviria, speaking in December 2015. This behaviour has prevented public health care providers from investing in quality improvements, purchasing innovative medical equipment, and paying their medical staff.

The current Colombian President announced an alleviation fund for the health sector during his election period. In June 2019, the Colombian government began rolling-out the first phase of the 'End-Point Agreement'. With this measure the government is providing a 2 million USD investment into providers operating in the public health sector. The End-Point Agreement is one of the most transcendental measures that has ever been adopted to structurally alleviate the problems of the Colombian health sector. The investment aims to increase the sustainability of the Colombian health sector such that Colombians will have greater access to quality services. This investment is expected to result in an increase in the purchasing of innovate medical solutions in the public sector in the coming years.

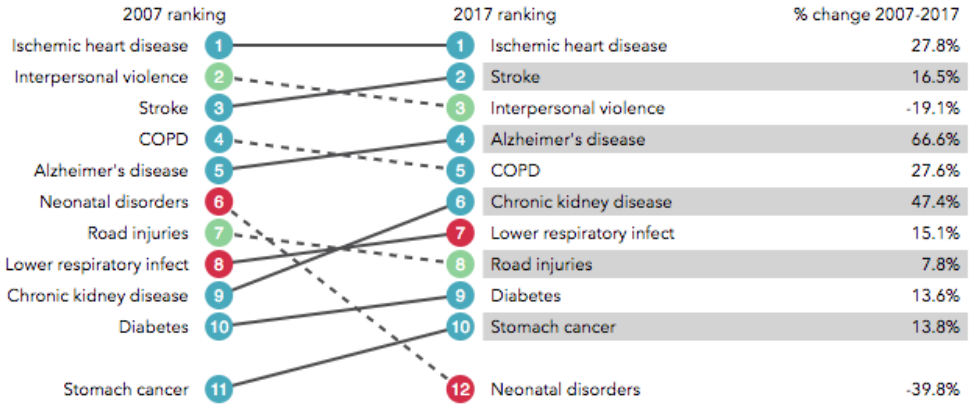


Figure 8: Top 10 causes of death in 2017 and percent change, 2007-2017, all ages, number (Healthdata, 2018)

Colombia, like many other countries in the Latin American region, has often been described as a country with a triple burden of disease. This means there is a significant burden of NCDs, whilst having a burden of communicable diseases, and a high rate of accidents, suicides and homicides. Colombia's triple burden is clearly visible in its top three causes of death (see Figure 8).

3.3.1 Non-Communicable Diseases

In terms of the overall number of deaths, NCDs are the leading cause of death in Colombia, accounting for 75% of all deaths. The most prevalent NCDs are cardiovascular disease (CVD), cancer, diabetes and chronic respiratory disease. Like many other middle-income countries, tobacco use, and high intake of sugar are some of the most common causes of NCDs. More information about the current state of tobacco use and obesity in Colombia can be found in Text Boxes 4 and 5.

CVD

In 2016, cardiovascular disease (CVD) caused almost 58 000 deaths in Colombia, equating to 28.7% of all mortalities in Colombia. Three-fourths of these deaths are caused by Coronary Heart Disease (CHD), cerebrovascular disease or stroke (STR). In just six years the total number of deaths caused by CHD and STR has increased from 43 055 (2010) to 50 093 (2016) (DANE, 2016). CVD is a high-cost illness, increasing costs for the health system (Cuenta de alto costo, 2018).

Text Box 4: Obesity in Colombia

According to a 2018 study conducting by the Food and Agriculture Organization (FAO) of the United Nations, one out of four Colombian adults suffer from obesity. 56.6% of men and 61.2% of women are overweight, and this number has been increasing drastically over the last couple of years. This is an alarming result for health decision-makers, since studies have found that the per capita costs of overweight and obese people are 9.9% and 42.7% higher respectively, compared to individuals in the normal weight range (Gil-Rojas, 2019).

Cancer

Cancer is a growing public health problem in Colombia, as it's incidence and mortality affects both the adult and paediatric population. In 2010, 33 450 registered deaths were caused by cancer (16.9% of total deaths). The incidence rate is 151 per 100 000 men, and 146 per 100 000 women, which is average for a middle-income country. The most common types of cancers affecting men are those located in the prostate, stomach, lung, colorectal and lymphatic system, and for women the breasts, cervix, stomach, lung, and colorectal areas. In paediatric oncology, the most common types of cancer are haematological and central nervous system tumours. While the incidence rate of paediatric cancers is below 3%, there is a high mortality rate. Compared to other countries, Colombia has a high incidence rate of stomach, cervix and paediatric acute leukaemia (Pardo, 2015). Age is the risk factor with the greatest effect on cancer in Colombia and can be explained by an increasing life expectancy in the country. Other risk factors include tobacco use, poor diets as well as other social and environmental factors.

Diabetes

The 2015 National Health Survey showed that 22.82% of the population suffered from hypertension. Approximately 6.4% of the population enrolled in the General Social Security Health System were seen for hypertension and 1.43% had diabetes. This is a lower rate than the calculated 3.51% estimated in the 2007 National Health Survey. In 2015, the prevalence of chronic kidney disease was 2.5% in women and 1.6% in men (PAHO, 2017). The Cuenta de Alto Costo showed that chronic kidney disease and its precursors, diabetes and hypertension, are health problems that result from insufficient early detection, and inadequate research and monitoring (Cuenta de Alto Costo, 2016).

Text Box 5: *Tobacco Use and Tax Reform*

Up until recent years (as late as 2015), Colombia has had one of the lowest taxes on tobacco products in the Americas. While in Colombia the average price for cigarettes was 1.82 USD (PPP), in countries such as Chile, Ecuador, and México the cost of cigarettes was above 5 USD. In December 2016 drastic changes took place in the realm of tobacco use in Colombia. Finally, after decades of cheap cigarettes, congress took a crucial decision which consisted of multiplying by three the specific component of the excise tax, splitting the increase over two years. As a result, in January 2017 the specific component jumped from 700 pesos to 1200 pesos, and since January 2018 it has been set at 2100 pesos. Tax transfer to price happened gradually and by May 2018 real prices were 40% above 2016 levels. The number of smokers in Colombia fell by 15% in the first year of the reform, and most of this reduction can be safely attributable to the tax increase. Consumption intensity has also reportedly decreased (The World Health Organisation, 2018).

3.3.2 Communicable Diseases

According to the latest official data available (2016), approximately 10% of all deaths in Colombia are caused by communicable diseases and maternal, prenatal and nutritional conditions. This is higher than Chile (8%), lower than Brazil (14%), and double that of the Netherlands (5%) (The World Health Organization, 2016). Vector borne diseases still reap havoc across Colombia, and include dengue fever, malaria, yellow fever, and most recently the zika virus.

3.4 Vulnerable Groups in Healthcare

3.4.1 Displaced Population

The scope of damage brought about by armed conflict in Colombia is vast; 270 000 deaths, 80 000 disappearances, and 8.2 million people internally displaced between 1958 and 2017 (and those numbers only reflect those who have officially registered with the government, likely a low estimate). The conflict stretched over decades and is still present in some areas. In 2016 the biggest paramilitary group, FARC, was demobilised after a peace accord between the movement and the Colombian government. Nevertheless, other paramilitary groups, such as ELN, are still active. The 2015 National Survey of Mental Health and Census of FARC-EP indicate that about 10.87 percent of the Colombian population deal with mental health issues — mainly post-traumatic stress disorder, depression, and anxiety (Hertie, 2018). Armed conflict resulting in gender-based violence is widespread across Colombia. Research shows that a lack of training and poor implementation of treatment protocols impede timely access to medical services and create obstacles for women and girls seeking post-violence care (Human Rights Watch, 2018).

3.4.2 Rural population

There is limited access to healthcare in the more rural and remote areas of Colombia. This is partly due to safety concerns since rural areas were targeted by conflict in the previous decade. Historically, little money has been allocated to public hospitals in these areas. Rural areas also face challenges in terms of healthcare workforce, and public hospitals and other providers find it difficult to attract and retain doctors and nurses, especially amongst more specialised disciplines like anaesthesiology. In rural areas, the capacity issues are also paired with higher transportation costs, which reduces access to care. However, now that some armed groups are demobilising, it has become safe enough to provide healthcare to some of these isolated areas. The current government has constructed a *Plan Nacional de Salud Rural* (PNSR) (National Rural Health Plan), which aims to increase and improve healthcare infrastructure in rural and post-conflict regions and diminish inequalities in access and quality between urban and rural areas. The PNSR stretches over 15 years and is financed by both the Colombian government and foreign donors. The development of primary care and mental health programmes and infrastructure in rural areas might provide possibilities for more Colombian-Dutch collaborations in the near future (See Text Box 6).

3.4.3 Indigenous Population

Indigenous people in Colombia suffer disproportionate limitations in terms of their ability to enjoy social and economic rights. Between January and August 2017, at least 24 children — the majority of which belonged to Wayuu communities—died in the province of La Guajira from cases of malnutrition and limited access to drinking water (Human Rights Watch, 2018).

Text Box 6: European Countries Participating in Projects within PNSR (Ministerio de Salud, 2018)

Post Conflict Mental Health Project, Collaboration between Colombia and Denmark: This project seeks to improve mental health in the stigmatised population and conflict zones through evidence-based interventions and diagnoses. The project is developed with the Dignity Institute and the Externado University of Colombia with a duration of 3 years and a budget of USD 850 000, with the possibility of an extension of 3 years and additional financing of USD 1 700 000. The project is in the Action Plan formulation stage. Dutch mental health companies and organisation might find it interesting to seek participation.

Primary Health Care in Rural Areas Under the MoU between Colombia and Norway: Signed in December 2017 with the Kingdom of Norway, a Work Plan has been established to obtain cooperation in primary health care in rural areas on specific issues such as telemedicine, family medicine, and strengthening in nursing. The MoU frames actions for the next 5 years and resources will be allocated according to each action specifically. The project is in the approval of the Action Plan phase. Dutch primary care companies or education and training institutes might find it interesting to seek participation.

Complementary Health Cooperation Agreement between Colombia and the Netherlands: The workplan signed in November 2018 regards modalities related to the promotion of cooperation programs within the following lines of work: rural health, quality in the provision of services, strengthening public health, strengthening human talent and financial sustainability. Dutch actors interested in setting up projects, research or training regarding one of these themes might make use of the signed workplan to obtain public support from both the Dutch and the Colombian Ministry of Health.

Text Box 7: *Economic and Disease Impact on Health System: Venezuelan Immigration To Colombia*

The Venezuelan crisis has led to one of the largest immigration crises in Latin America, as an estimated 7% of the population has fled the country. Most people seek refuge in Colombia: in 2018, between 1.2 and 1.9 million Venezuelans migrated with an intention to stay in Colombia (OECD, 2019). This number is expected to grow to a total of 3 to 5 million refugees. In order to handle this influx, the Colombian government has made efforts to provide timely border assistance, ensuring emergency and childbirth care, and relaxing immigration regulatory requirements. The government estimates to have spent 1.5 billion USD (0.5% of Colombia's GDP) on the Venezuelan crisis and refugees and has received a 700 million USD loan from the World Bank to reduce the immediate (financial) impact (Bloomberg, 2019). Between April 2018 and March 2019, the UN supported the vaccination of 8.5 million Venezuelan children against measles and 4.7 million children against diphtheria, helping to contain the spread of communicable diseases.

Over the past year, the UN distributed 348 tons of medicines and medical supplies to 41 priority hospitals and 23 health facilities in 18 states. UNHCR developed a Regional Refugee Migrant Response plan for which it is seeking funds of USD 315.5 million for Colombia (UNHCR, 2019). The **'Dutch Relief Alliance'**, consisting of NGOs - SOS Kinderdorpen, Cordaid, Plan International, Save The Children and Terre des Hommes is active in Colombia through this plan. In August of 2019 Health Ministers and public health officials of 10 countries in the region came together in Colombia to see how the country is dealing with health issues related to immigrants (such as infectious diseases, HIV, tuberculosis, mother and child care, etc.) and to discuss joint actions to more effectively address Venezuelan migration, inviting not only countries in the region but the entire international community to accompany them (Ministry of Health Colombia, 2019).

3.5 Current Policy Planning & Public Investment

More resources for health as well as plans to improve public health and public hospitals are the current focus of the Ministry of Health and Social Protection. The total public health budget for 2019 is 32.3 billion pesos (9.4 million USD), which is 7.7 billion pesos (2.2 million USD) more than in 2018.

3.5.1 The Ten-Year Public Health Plan 2012-2021

The 2012-2021 ten-year public health plan was formulated under the National Development Plan 2010-2014 and aims to reduce health inequality. It focuses on the right to good health, improving living conditions, reducing the burden of existing disease, and maintaining zero tolerance for mortality, morbidity and avoidable disability (Ministerio de Salud y Protección). The plan is guided by eight priority areas:

1. Environmental health
2. Mental health and social coexistence
3. Food and nutrition
4. Sexuality and sexual and reproductive rights
5. Healthy living and communicable disease
6. Public health in emergencies and disasters
7. Healthy living and non-communicable conditions
8. Workplace and health

The 2012-2021 Ten-Year Public Health Plan contains policy guiding principles and key actions of environmental intervention, behaviour, health services and social participation. Provincial, district and local governments must adapt it to their own conditions and manage it for execution.

3.5.2 The National Development Plan 2018-2022

On the 7th February 2019, President Ivan Duque announced the National Development Plan 2018-2022 "*Pact for Colombia, Pact for equity*" (PND), which sets out socio-economic spending for his administration. The plan includes the biggest social investments that have ever been made in Colombia, accumulating to 6.4 million USD (Colombia Reports, 2019; PND, 2019). Reducing poverty and increasing equity are at the heart of the PND, as the plan is built on three pacts: *pacto por la legalidad* (pact for the legality – effective and transparent justice, freedom and democracy), *pacto por el emprendimiento* (pact for entrepreneurship – formalizing and setting up a dynamic, inclusive and sustainable economy) and *pacto por la equidad* (pact for equity – modern social policy).

The *pacto por la equidad* focusses on bridging historical gaps in social inclusion, poverty and opportunities in life. The goals of this pact align with a selection of Sustainable Development Goals (SDGs). From these SDGs, five are identified by the Colombian Ministry of Health as focal points: 1) Reduce Poverty, 2) Zero Hunger, 3) Good Health and Well-Being, 5) Gender Equality and 11) Sustainable Cities and Communities. As a result, the second strategic line in the pact for equity is "health for all, which is of a high quality, is efficient and sustainable" (PND, 2019).

The health chapter of the PND aims to set out the development of a sustainable health system, consisting of qualitative health care, universal health coverage, and a public health plan which aligns with the social, demographical and epidemiological changes in Colombia. To reach this, the PLN 2018-2022 identifies 6 objectives:

1. Strengthening governance of the health system, on both national and local level;
2. Defining priorities and implementing public health interventions, to increase quality of life;
3. Improving the quality of all actors in the health sector;
4. Increasing infrastructure and endowment, to ensure accessible and quality care;
5. Set up agreements for recognition, training and quality employment for health workers;
6. Financial sustainability of the system.

These 6 objectives are divided into a selection of strategies (article 127-141), such as 'Generating Performance Incentives', 'Encouraging Research in Healthcare' and 'Reducing Gaps in Human Talent'.

3.5.3 Public Health Priorities

Besides the 10-year plan and the NDP, the Ministry of Health and Social Protection (MSPS) defines its own public health priorities. Its goal is to guarantee the full enjoyment of the right to health in the territories of Colombia. This can be divided into four sub-goals: To improve the health conditions of the population, to strengthen the local health authorities, to articulate the agents of the health system and territorial actors around actions required, and lastly, to coordinate intersectoral actions.

More specifically, the MSPS has defined ten public health priorities:

1. Noncommunicable Diseases, specifically hypertension and diabetes;
2. Communicable diseases (malaria, dengue, TB, leprae);
3. Maternal and women's health;
4. Children's health (child abuse and malnutrition);
5. Mental health care (depression, interpersonal violence);
6. Consumption of psychoactive substances;
7. Environmental health (water, air, asbestos, good roads/road accidents);
8. HIV/AIDS;
9. Cancer (breast and cervix, stomach, prostate);
10. Health of migrant population.

Text Box 8: **New Public Projects Mentioned as Pivotal for Dutch-Colombian Collaboration (Interview with Ministry of Health, July 2019)**

The Integral Territorial Action Model (MAITE): In 2019, MAITE (*Modelo de Atencion Integral Territorial*) was announced to replace the former MIAS (*Política de Atención Integral de Salud*). MAITE Lines of Action are: (i) assurance; (ii) public health; (iii) service provision; (iv) human talent; (v) financing; (vi) differential approach; (vii) intersectoral articulation; and (viii) governance. The development of concrete projects funded by MAITE will be conducted by each individual department, governors, mayors, secretaries of the Department of Health, IPS and EPS managers, community leaders, and patient associations. Drafted plans are available publicly. Approaching regional players in health care by referring to specific goals in their MAITE plan might help secure public funds for integrated primary health projects (Interview with Ministry of Health Colombia, 2019).

AI Hospital: AI Hospital is a new funding programme that has been developed by the Ministry of Health and Social Protection in order to improve the quality and sustainability of public hospitals. AI Hospital will support the increase in the development of infrastructure, provision of care, and accompany administrative and financial processes for the improvement of liquidity and sustainability. It will also support and strengthen the skills and abilities of human talent in health. In the first four months of government (2018 – 2019) 187 billion pesos (54 million USD) were invested in 'AI Hospital', which were prioritized in the hospitals of Quibdó, San Andrés, Tumaco, Buenaventura, Leticia, Puerto Carreño, Valledupar and Maicao.

3.6 Health Infrastructure

There are 3 620 hospitals and clinics in Colombia, accounting for a total of 74 082 hospital beds. 75% of hospitals are public and the remaining 25% are private. According to most recent official data, Colombia has 1.7 hospital beds per 1000 inhabitants, compared to 3.3 in the Netherlands and an average of 2.3 in Latin America (OECD, 2018). New demands on the SGSSS will require intense investment in healthcare infrastructure, and it is estimated that Colombia needs to invest 19.8 billion USD in healthcare infrastructure between now and 2035 in order to cope with the increased demand (KPMG, 2018).

Between 2010 and 2018 roughly 102 million USD in infrastructure was allocated. In 2018 alone, 1300 new public hospital beds were announced, to be delivered over a period of four years. Hospital build projects include the expansion of existing hospitals in Bogotá, Calí and Medellín, and the development of nine completely new public hospitals. One of the cities with the biggest increase in infrastructure in the sector is Bogotá. The capital has designed an ambitious project to introduce seven new clinics by 2022 in the neighbourhoods of Usme, Bosa, Antonio Nariño, Usaquén and Fontibón. In 2019 there will be a bid for these hospitals, which will equate to 200 000 square meters of new buildings. In Calí, the government of the department and the mayor's office have worked to improve the operation of the Hospital Universitario del Valle and the construction of two new hospitals in Cartago and Buenaventura. Medellín works on the development of the Unidad Hospitalaria de Buenos Aires and a Center for Comprehensive Family Care (*Centro de Atención Integral para la Familia*). Several projects in the intermediate cities are also in stages of development or execution. There are no recent figures on the exact number of projects that are being developed throughout the national territory. In 2016 the Ministry of Health allocated 954 000 USD for the production of 196 health centers in the country (La República, 2019).

The tendering procedure for public authorities is described in three key laws; Law 80 (1993), Law 1150 (2007), and Presidential Law 734 (2012). Companies have the option to submit proposals individually or may choose to form a consortium or joint venture. Tenders are published on this website: http://www.contratos.gov.co/.

Foreign companies are heavily regulated when it comes to participating in public tenders. In accordance with Article 747 of the Commercial Code, a foreign company is required to have a branch / legal entity in Colombia unless there

is a partnership with a local company. In these cases, the local company functions as a contractor for the assignment in question. Furthermore, it is crucial that the company has a legal representative in Colombia. If the management / board /administration does not have a permanent delegate in Colombia, this role can be fulfilled by a lawyer. Every company that wishes to be eligible for a public tender must register with the Registro Único de Proponentes (RUP).

Private institutions with a monopoly, such as a private clinic with a specialization for which there is no direct competitor, are bound by the same procurement rules as public institutes. Private parties also have the option of cooperating with the public sector, for example, to be eligible for government funding in a Public-Private Partnership (PPP). If this is the case, the same tender rules as the public party are applied. Private players who do not fall within the aforementioned categories may create their own procedures. As a result, the procedures can vary considerably depending on the private provider. Private bodies always have the option to purchase products and services through direct channels, and in these cases a tender procedure is avoided (Marktverkenning Life Sciences & Health, 2016).

3.7 Health Professionals

On average there are 11.5 health workers per 1 000 inhabitants in Colombia, with approximately 1.8 doctors per 1000 inhabitants compared to 3.5 in Netherlands and 3.4 as the OECD average. Bogotá is the only city that has a health personnel density which is comparable to Europe and the United States. Cities such as Vichada, and Guainía have less than 1 doctor per 1 000 inhabitants available.

Table 8: Health Professionals in Colombia

Description	Colombia (2014)	Netherlands (2015)	OECD Average (2015)
Physicians (per 1000 people)	1.8	3.5	3.4
Nurses (per 1000 people)	1.1	10.5	9.8

Source: OECD, 2015

3.8 Further Reading

If you would like to expand your understanding of the Colombian health system, the following publications provide excellent overviews:

- A more detailed description of Colombia's health system and schematic overviews can be found in the Colombian Life Sciences & Health Sector report by RVO, Task Force Health Care and Holland House.
- OECD Reviews of Health Systems: this publication provides an overview of the healthcare system, the performance of the system and primary care organisation in Colombia.
- The National Development Plan 2018-2022 (Spanish)
- Read the Pan American Health Organisation country report Colombia.

4. MARKET STRUCTURE AND ACCESS

4.1 Market Access

The Colombian market is relatively open but not always easily accessible to newcomers (Export.Gov, 2018). Colombia is currently ranked 65 out of 190 countries in the Ease-of-Doing-Business-Index, which places it below Puerto Rico and above Luxembourg (World Bank Group, 2019). The strong growth of the Colombian health market has attracted more attention to the already competitive and consolidated market. However, registration of medical devices is described as challenging by some importers (BMI, 2017).

Dutch suppliers may have an advantage in the Colombian market since Colombia is the only Latin American market to have a system of 'managed-competition', and the Colombian and Dutch health markets have much in common. Therefore, solutions which prove successful in the Dutch context may prove useful in Colombia too. Multiple Dutch organisations have found their way into the Colombian market. Through our interest survey, we identified 29 active Life Sciences & Health (LSH) companies and 43 Interested LSH organisations (see Section 1). This interest ranges from those stating that they are already actively trying to enter the market by reaching out to potential clients, to doing first explorations by reading reports or attending relevant events. Since this survey only included 83 respondents out of the full list of over 3000 LSH organisations in the Netherlands, the real number is likely to be higher. The section below highlights their experiences on market entry in Colombia.

4.1.1 General Market Entry Strategies

In order to enter the Colombian health market, Dutch suppliers need to register their business, appoint a legal entity, and establish an office or appoint a local business representative. For SMEs, the most common route to market is through a Colombian qualified Importer or Legal Representative. Local companies may operate as a manufacturer's representative (sales agent), importer/distributor, or dealer, separately or all at the same time. Key considerations in selecting a business partner in the Colombian context are connections with both the government and hospitals as well as health insurers. Having logistic networks across Colombia and experience with import procedures and public tenders is also important. SME's don't frequently set up a business in Colombia. Holland House Colombia is a useful entity that can help one find the right client, agent or distributor, act as a legal entity, and can assist you with your first local desk space. More information on setting up a business in Colombia can be found in the KPMG report Investment In Colombia (2018).

After setting-up in Colombia, suppliers need to classify their product and register with the Instituto Nacional de Vigilancia de Medicamentos y Alimentos (Invima). Registrations are valid for ten years. For Class I and IIa devices, once INVIMA receives an application for renewal your registration will be automatically renewed. For Class IIb and III devices, application renewals are due to INVIMA three months before the expiration of the registration certificate.

4.1.2. Dutch Cases of Market Entry

Multiple Dutch organisations have found their way into the Colombian market (29 of them responded to the interest survey in Section 1). Find examples of lessons learnt and best practices in Text Box 9 and 10 on the next page.

Text Box 9: *Case Study Market Entry Telecom Tube Systems (Strength: Hospital Build)*

Telecom Tube Systems produce and sell pneumatic tube systems for the transport of blood bags, clinical samples, ward supplies, medicines like cytostatics, or other hospital goods within hospitals. Colombia is their largest market in Latin America (20% of Telecoms total market). Their experience in the country has been a positive one, and they describe the market as easily accessible.

Tips for Dutch entrepreneurs, thinking about entering the Colombian market:

- **Make use of the network** provided by Holland House Colombia, TFHC, and Embassies. These are incredibly useful resources.
- **Speak Spanish,** and if you cannot, learn how to apologise for not knowing how to speak Spanish, in Spanish. Most organisations in Latin-America are relatively hierarchical, but people in leadership positions are generally easy-going and approachable.
- Latin-Americans should be approached with an attitude that shows that you **respect the achievements** of their health system.
- The larger your business, the more you should be '**on top of things'** in Latin America. Ensure that your local representative keeps your product as their top priority. Travelling twice per year and asking for monthly or 3-monthly reports from supervisors is sufficient.
- **Seeing is believing:** We start pilots in hospitals and then go into the country to showcase these via brochures and movie clips. We do not leave a potential client before we have made a custom design for them by sketching a plan together at the meeting.

Text Box 10: *Case Study Market Entry Eurotape (Strength: Medical Devices)*

Eurotape is a manufacturer and developer of top quality self-adhesive products for reusable surgical covering materials such as double-sided OP-tapes, inserts, die-cuts, OP-strips and related products.

Eurotape is in touch with a possible kit-packer in Colombia. The Spanish sales director of Eurotape for Latin America participated in a Life Sciences & Health Roadshow organised by RVO in cooperation with Task Force Health Care, Holland House Colombia and The Dutch Embassy in Bogotá. Meetings like these provide great opportunities in terms of being introduced to new potential clients, strengthening relationships with pre-established contacts, and gaining a better understanding of the health sector dynamics. It takes time to understand the market dynamics and identify the best route. Eurotape came to understand that by packing and sterilising their product in Colombia, and thus creating a product that was 'made in Colombia' would open up many more doors compared to processing the product elsewhere.

4.2 Market Trends, Medical Supply Chain and Procurement

Colombia's health market relies heavily on imports, it is price-driven with quality being a key-consideration (especially in the private sector) (Export.Gov, 2016). As Colombia gains political and economic stability, the market is beginning to show potential. This is primarily driven by major government investments under the National Development Plan (see Section 3.5) and a strengthening private health sector.

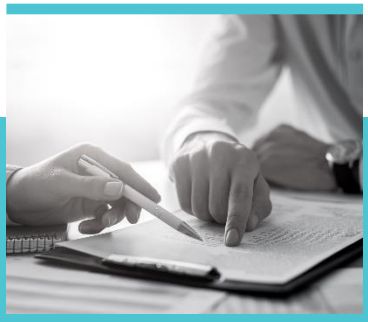
4.2.1 Public Health Market

In an effort to achieve effective universal healthcare coverage, there has been an increasing trend in public spending since the 1990s (Xcenda, 2017). In 1995, public health expenditure accounted for 55.06% of total health expenditure (THE) in Colombia, which has increased to 65.08 percent in 2016 (World Health Organization, 2014; healthdata.org, 2018).

Hospitals are the main end-users in Colombia's healthcare market. Generally, the main drivers for procurement in public hospitals are concerns to increase the efficiency, decrease the operation costs, and receive acknowledgement/accreditation for their quality of service. Historically, innovation has been driven by a specific doctor in an ad hoc manner, or by a manufacturer who helps run pilots with the ultimate goal of introducing and selling their products. However, many Colombian universities are reversing this trend by stimulating innovation through education and technology-transfer.

Procurement in the public sector mainly takes place through public tenders, which are described in Law 80 (1993), law 1150 (2007) and presidential law 734 (2012).

PROCEDURES OF A PUBLIC TENDER



- **Feasibility studies: A study on the need for a public tender.**
- **Request for proposals: Description of the criteria for eligibility.**
- **Contract phase: Definition of the details regarding a public tender**
- **Sistema Electrónico de Contratación Pública (SECOP): Posting of the public tender in the official procurement portal.**

PROCEDURES OF A HEALTHCARE TENDER

- **Public tender: Full tender procedure.**
- **Short selection: A shorter tender procedure mainly used to procure health services or medical equipment.**
- **Merit-based selection: Used in the selection of consultants.**

FOREIGN SUPPLIERS

Colombia does not discriminate against foreign suppliers in public tenders. Foreign suppliers are, however, bound to strict regulations to participate in public tenders. Foreign companies need to register with the Registro Único de Proponentes (RUP) and appoint a legal entity (representante legal) in Colombia. They also need to establish an office or work with a local company.

4.2.2 Private Health Market

In many cases private entities are bound to the same rules and regulations as public hospitals. A common model whereby private facilities apply for government funding in procurement is through public-private partnerships. Private players who do not fall under criteria set by the government may install their own procurement procedures.

Text Box 11: *Doing Business in Colombia According to Key Stakeholders:*

From a roundtable discussion at the Dutch Embassy in Bogotá (July 2019) with key stakeholders that are active in the Colombian healthcare sector, a.o. Philips Healthcare, Association of Pharmaceutical Industries, ANDI, Sanofi, Fagron and the chamber of commerce, the following conclusions were distilled:

- For the regular sale of diagnostic technology, it is easier to do business with the private sector. Providers of technology directly approach the medical specialist or private hospital director.
- 90% of all business from foreign companies in healthcare is concentrated in the capital (Bogotá).
- Currently, large foreign groups are active in the Colombian private sector. These groups purchase for large hospital networks. In order to enter in these types of negotiations, international status (of the Dutch supplier) and relations through embassies and diplomatic groups are essential.
- Public-private partnerships (PPP) in Colombia are very difficult to complete. They are very challenging in terms of legislation and credibility. It is very difficult for private companies to make large investments because of the lack of trust in public institutions.
- The EPSs are in control of expenditure. They decide what type of investments are made and to which service providers.
- Payments to providers of medical equipment has improved recently, from 100 days to 80 days.

4.2.3 Role of EPS in Both Public and Private Health Sector

There are currently 44 Entidades Promotoras de Salud (EPS) in Colombia, most of which operate under the Subsidized Regime, 10 of which operate under the Tax Regime and three who work in both regimes simultaneously. As Colombians are obligated to be covered by one of the EPS schemes, and EPSs are responsible for providing a basic package (POS), the EPSs have an important role to play in the Colombian health system. Being a solidarity system (like the Dutch system), high-risk client groups are supported by the system as a whole. EPSs are incentivised to provide only necessary care and prevent its covered population from falling ill, especially with high-cost illnesses.

Text Box 12: *Case Study Market Entry Spectator Video Technology (Strength: eHealth)*

Spectator Video Technology develops eHealth and telecare platforms and integrated personal alarm systems to be used by healthcare providers and their clients. They have local offices in Manizales.

Our main clients in Colombia are the EPSs. We are currently doing several pilots together with different EPSs and their clients (the hospitals). EPSs provide the budgets for the implementation of eHealth and telemedicine services for their clients. Being able to offer qualitative and accessible tools and easy to integrate technical solutions provides EPSs with a competitive advantage, both towards patients and health providers. At the same time, it saves them money because through means of prevention, early detection or assistance from a distance, many complications and covered costs are avoided.

4.2.4 Key Purchasing Criteria for Imported Products/Services

Imported healthcare products and services are generally considered attractive to the Colombian market when they are (Source: Roundtable with healthcare stakeholders, 2019):

- **Priced favourably**: Colombia is a price-sensitive market. Prices are a major selling factor and health investments are based on pricing first, followed by quality and impact.
- **Accompanied by reliable aftersales support**: Suppliers with a reputation to deliver excellent post-sales support are preferred.
- **Accompanied with training and demonstrations**: Colombian end-users want procured technology to be effectively implemented such that they have a positive impact on their operations. To this end, training staff on new technologies is valued.

European providers of healthcare solutions are known for their outstanding aftersales support and provision of training and demonstration sessions. (Export.gov, 2018). This reputation is an advantage to Dutch providers of medical solutions.

4.3 Colombia's International Economic Trade Partnerships

- Andean Community since 1969 (Colombia, Bolivia, Ecuador, Peru)
- Andean community with Mercosur since 2005 (Brazil, Argentina, Paraguay, Uruguay)
- Colombia – Central American Northern Triangle since 2007 (El Salvador, Guatemala, Honduras) (FTA)
- Colombia with EFTA countries in 2008 (Switzerland, Norway, Iceland and Lichtenstein)
- Colombia United States Trade Promotion Agreement since 2012 (FTA)
- Andean Community with EU since 2013 (FTA) (EU, Colombia, Peru & Ecuador)
- Bilateral trade agreements with Canada, Mexico and Chile

Benefits of the trade agreements include:

- Opening markets for goods, services, government procurement and investment;
- Better conditions for trade through new rules on non-tariff barriers, competition, transparency and intellectual property rights;
- A more stable and predictable environment for businesses with a bilateral dispute settlement mechanism and a mediation system for non-tariff barriers;
- Arrangements for cooperation on competitiveness, innovation, production modernisation, trade facilitation and technology transfer;
- A comprehensive trade and sustainable development chapter with commitments aimed to ensure high levels of labour and environmental protection, which includes a transparent arbitration system and procedures to engage with civil society.

4.4 Tips for Organisations Exploring the Colombian Health Care Market

Find useful Dutch organisations below. For a list of Colombian organisations please view Annex 4.

- The Netherlands embassy in Bogotá, supports cooperation between Colombia and the Netherlands in the field of Life Sciences & Health through the Department of "Economy & Trade".
- Netherlands Enterprise Agency (RVO.nl), stimulates entrepreneurs in sustainable, agricultural, innovative and international business.
- Task Force Health Care, maintains bilateral relations between the Life Sciences & Health sectors in Colombia and the Netherlands (platform TFHC Latin America) through trade missions and business support.
- Holland house Colombia, is a strategic partner for entrepreneurs with interest in doing business in Colombia.

4.4.1. Inter-American Development Bank (IADB)

The Inter-American Development Bank (IDB) focuses on and finances projects that stimulate economic development in Latin American and Caribbean countries (Inter-American Development Bank, 2019). The IDB has set up a multi-

year country strategy for the period of 2019-2022 for Colombia, in which they address the challenges Colombia is facing, as well as highlighting the opportunities available. These opportunities can be of interest for the Dutch LSH sector.
An overview of Colombia's country strategy can be found here:
https://www.iadb.org/en/countries/colombia/overview.
For more information about potential opportunities in cooperation with the IDB, you can contact Corinne Abbas or Jules van Son from the Dutch Enterprise Agency (RVO).

- Corinne Abbas: corinne.abbas@RVO.nl

- Jules van Son: jules.vanson@RVO.nl

Additional information about projects with international organisations can be found on the following website: https://www.rvo.nl/onderwerpen/internationaal-ondernemen/netwerken-en-contacten/internationale-organisaties

5. ALIGNING DUTCH STRENGTHS WITH COLOMBIAN OPPORTUNITIES

Whilst Section 2 of this report shows the interest of the Dutch Health sector in Colombia, this section aligns Dutch strengths in the sector with Colombian opportunities.

5.1 PUBLIC HEALTH

The Netherlands has key strengths in the sphere of Public Health. This refers to the identification and implementation of policy and practice in the health system which improves access, coverage, quality, or efficiency. Organisations with products and solutions pertaining to this strength offer solutions in health financing, supply chain management, and emergency responses. Organisations typically partner with government, public health agencies and NGOs (The World Health Organization, 2019).

5.1.1 Trends

Companies and organisations offering specific knowledge or solutions, especially in the sphere of public health, are advised to keep themselves informed of events and trends in the Colombian health sector. Trends are influenced by public policy which effect the availability of specific budgets for investment in knowledge and innovation. Key trends distilled from the fact-finding visit and supplemented by desk research include:

5.1.2 Increasing Capacity: Shortages in Health Care Personnel

During a roundtable session with high-level healthcare stakeholders organised at the Embassy of the Kingdom of the Netherlands in Colombia in July 2019, health care personnel were mentioned as one of the main challenges facing the Colombia health system. These gaps include shortages in human talent, and gaps in quantity, quality and relevance of training (see list of participants in Annex 1). Colombia will need to find solutions that solve their issues regarding shortfalls in their training programs, as well as in the quality of training received. IPS is dissatisfied with the available talent and competencies of trained medical personnel in Colombia (National Development Plan 2018-2022). The Dutch health sector on the other hand, is a well-staffed and talented health sector with 14% of the Dutch labour force working in the health sector (Dutch Ministry of Health, 2019).

One of Colombia's biggest challenges in human talent in health is the shortage of qualified personnel for recruitment. While the scarcity of health personnel concerns both rural and urban areas, the urgency is significantly higher in rural areas. In many regions there are no health professionals that can provide emergency care, and in some areas, there are circa two general practitioners per 1 000 inhabitants (National University of Colombia, 2019). In 2015, the National Registry of Human Talent in Health listed 600 000 health professionals, technicians and auxiliaries licensed to practice (PAHO, 2017). While the number of medical students has been increasing over the last decades, the number of nursing students has been decreasing. Each year 5 000 physicians and 3 600 nurses graduate from the 44 medical and 65 nursing programmes on offer in Colombia (World Bank Group, 2015). Currently, there is no clear quantitative insight in terms of the overall distribution of healthcare personnel or the gaps and needs related to specific geographical regions and institutions. This is due to the decentralised character of the health system. Thus, use of data technology in this field is needed, not only to measure the current numbers but also to be able to predict future needs (GestarSalud, 2019).

In the National Development Plan 2018-2022 (more info in Section 3.5.2), the set-up of agreements for recognition, training and quality employment for health workers' is mentioned as one of six key focus points for the 6 million USD plan. In terms of training, a major focus is being applied to the setting up of multidisciplinary teams and practice within these teams during the education programmes. This is new to the Colombian context but an integral part of how healthcare education and provision is organised in the Netherlands. Tools and training programmes that focus on this multidisciplinary aspect might resonate with the Colombian healthcare sector, as well as solutions that contribute to reducing shortages in human resources (Organization for Health Excellence, 2019).

Text Box 13: *Migration of Health Workers*

Latin American nurses frequently migrate internationally, resulting in a shortage in nurses. While no estimate has been calculated on the proportion of specialists that leave Colombia, the numbers are on the rise (World Bank Group, 2015). The migration of a large number of nurses to countries such as Chile, Italy, Spain and the United States attracts attention. Between 2006 and 2016, 2 094 Colombian nurses applied to migrate to Spain. Officially, 1 590 nurses succeeded, making Spain home to the largest population of migrant nurses (Pastor-Bravo, 2019). Developed countries position themselves as attractive destinations for Latin American nurses, by offering good living and working environments and a high quality of life. The impact of migration of nurses – and other professional talent – has a greater effect on the country of origin than its effect on the destination country. While migrating nurses may be replaced in absolute numbers they are often not replaced in terms of quality, as professional nurses are often replaced by technical nurses (Malvarez & Castillon Agudelo, 2005; Siantz & Malvárez, 2008).

5.1.3 Reducing the Burden of Non-Communicable Diseases

In 2015, the Colombian government made a commitment to reduce premature death from CVD, diabetes, cancer, and chronic respiratory diseases by 8% among the population aged 30-70. This would reduce deaths from 221 per 100 000 inhabitants to 192 per 100 000 by 2018. The Comprehensive Health Care Model is tackling this challenge through strategies designed to upgrade human resources and improve health infrastructure, health care procedures, and clinical practice guidelines (Ministerio de Salud y Protección Social, 2016).

According to a 2010 assessment of cancer care by the MSPS, the main challenges and priorities in Colombian cancer care were the following: concentration of oncological services in the main capitals, lack of human talent in oncology, underdevelopment of care services such as palliative care, fragmentation of service provision, and lack of an integrated critical care route. As a result, the **10-year Plan for Cancer Control 2012-2021** was set up with the aim to reduce mortality from cancer by 30% during this period.

This is done through six strategic lines:

1. Risk control (prevention);
2. Early detection (screening);
3. Attention and recovery from cancer (integral cancer care, use of technology);
4. Improvement of quality of life (palliative care, rehabilitation and reconstruction);
5. Knowledge and technology management (information systems, evaluation and monitoring);
6. Training and development of human talent (education and training)

Funds for the plan stem from the SGSSS, the National Public Health Plan, the general budget from the government, local resources, insurance companies and law 643/200. While the plan is set up by the central government, the local entities (departments, municipalities) must integrate the plan in their jurisdiction and formulate their own annual health plans (Vergara-Dagobeth, Suárez-Causado & Gómez-Arias, 2017).

The Netherlands is known for its achievements in population screening. The Dutch government offers a population screening programme for three types of cancers: breast, cervical and colon cancer. Citizens are actively invited to participate. The screenings are more likely to detect smaller tumours, but early detection results in less spread of tumours (de Munck et al., 2018). This means that breast-conserving therapy is more often possible for women. As a result, procedures such as hormonal therapy, chemotherapy, radiation, and breast surgery are required less often. Survival rates increase and costs are reduced (Health Council of the Netherlands, 2014). Because of these national programmes, Dutch companies specializing in oncology screening software or in quality control for screening have been able to develop themselves in unique, leading companies in the international context.

Colombian delegations of healthcare leaders, specifically focussed on the topic of oncology, have shown active interest in working with Dutch companies and organisations in this field through their visits to the Netherlands in June and October of 2019.

5.1.4 Opportunities

- Solutions that contribute to reducing the shortages of human resources;
- Solutions that help reduce work pressure for healthcare personnel;
- Solutions concerned with growing and retaining the health workforce;
- Solutions aimed at training and educating health personnel;
- Solutions that focus on multidisciplinary healthcare training and provision;
- Solutions that help manage the growing disease burden of high-cost illnesses and other non-communicable diseases;
- Solutions that help improve the quality of life of those suffering from chronic and/or non-communicable diseases;
- Solutions that help improve prevention and health promotion;
- Solutions that focus on early detection of non-communicable and/or chronic diseases, such as cancer;
- Solutions that focus on oncological services, especially within the scope of screening, technology and information sharing;
- Predictive technology, value based healthcare and outcome based care solutions.

5.2 DIGITAL SOLUTIONS: E-HEALTH, BIG DATA AND VBHC

The Dutch have strengths in the digital solutions sphere, which encompasses solutions which help connect actors in the health systems, often through the exchange and storage of health information. Organisations within this strength offer solutions in health information exchange, interoperability, telemedicine, serious gaming and personal health monitoring. These organisations typically partner with health care providers and consumers. Policy documents and medical practitioners in Colombia mainly use the terminology of *aplicaciones* (apps), *big data* and *telemedicina* (telemedicine).

5.2.1 Trends

The use of digital solutions, such as telemedicine, e-health, big data and value based health care, are becoming more prevalent in Colombia. A few years back the Ministry of Information and Communication Technology (MinTIC) and MSPS (MinSalud) created the Strategic Technology Plan (PETIC), which included three strategies to digitalise the Colombian health system. The three strategies entailed: a unified electronic medical history, telemedicine and health apps. Along these strategies, two main trends were distinguished during this study in digital solutions in Colombia: 1) the use of technology to provide remote care, 2) the unification of data systems for the effective use of available data to provide *'outcome based care'*.

5.2.2 Using Technology to Provide Remote Care

Shortages in personnel and materials are at the heart of the inequality in health access between rural and urban areas in Colombia. Telemedicine can help deliver advice, training & education, interventions and follow-up for remote admissions (Colombian Association for the Advancement of Science (ACAC), 2019) (more info in Section 3.4.2). However, physicians remain sceptical and cautious regarding the use of remote consultations, as the physical presence of the physician is still preferred in order to ensure correct diagnosis and treatment.

Text Box 13: Case Study: Dutch Companies Offering Ambulatory Services with Colombian Partner

Philips is currently working with Cafam (Colombian health insurer) to offer a range of ambulatory services with the aim of increasing Cafam's virtual presence and decrease its paperwork. Health insurers feel incentivised to offer quality and timely care through digitalization.

Dutch company *Spectator Healthcare* works together with Colombian organisation *Angeles al LLamado* to offer a low cost, high quality telemedicine solution through a tailored app called *VimediApp* for its clients in the region of Pereira. The platform offers real-time tele-assistance. The project also contains an application specifically aimed at bikers, called MediBike Pereira. Making this project a real Dutch-Colombian enterprise.

5.2.3 The Unification of Data Systems for the Effective Use of Available Data to Provide *'Outcome Based Care'*

Through clinical information, Colombian doctors are able to identify which diseases cause the highest mortality rates. This is profound compared to 20-30 years ago when there was no statistics on mortality (ACAC, 2019). However, it is important to use available data and technology to predict and prevent deaths. According to high-level Colombian stakeholders in this field, this is no common practice yet due to several obstacles:

- Lack of centralised data information hubs;
- Outdated and fragmented database technology of individual health providers
- Lack of funds to purchase state of the art technology presented at international congresses and events
- Personal data protection is still a main issue
- Lack of public policy that builds on prevention

While all the above obstacles are identified, Colombia is still leading in terms of data recollection in the region. The National Public Health Surveillance System (SIVIGILA) for example, has been internationally acclaimed for its data collection regarding all aspects of the Zika virus (Javeriana University, 2019). In addition, the district of Bogotá has 27 surveillance systems which provide systematic and timely information on the dynamics of events that affect or may affect the health of the Colombian populations. This data provides many opportunities for the sector in terms of using these indicators to improve processes and provide care. Nevertheless, digital and technical platforms that use and connect to this data are currently missing (District Health Secretary Bogotá, 2019). Other individual or regional projects that are noteworthy in terms of Colombia's data in health efforts can be found in Text Box 14.

Colombian healthcare providers are motivated to take action and anticipate the installation of public policies. They have shown eagerness to begin with accessible Dutch solutions in order to demonstrate how the sector itself can achieve change (Cafam, 2019).

Text Box 14: *Successful initiatives in data collection and sharing in Colombia*

Since 2018, Bogotá provides an open health observatory platform called SaludData (**saludata.saludcapital.gov.co**) which allows citizens to interact with information, resources and services. Its objective is to be a two-way communication channel between citizens and public administration in order to promote spaces for participation, encourage good habits, prevention, good nutrition and healthy practices.

The District Health Secretary of Bogotá also launched an online platform which allows citizens to review the quality of services offered by different health providers in the region (**atuserviciobogota.co**). It can be compared to the well-known platform TripAdvisor but is focussed on healthcare. It allows citizens to make an informed decision from a wide array of services and health centers, while reducing negative experiences and lawsuits. The service system has been developed in Uruguay, and in collaboration with this country tailored to the Bogotá context (District Health Secretary Bogotá, 2019).

Opportunities

The Netherlands is well known for its experience with predictive technology, value based healthcare solutions and experiments with outcome based care. According to HIMSS Analytics (2018), the Netherlands has the highest ICT penetration in hospitals and clinics. Big Public Private Partnerships focus on predictive technology and outcome based care (Health Holland, 2019). Companies such as Value2Health, Performation and De Praktijk Index all offer highly interoperable data solutions that have no current competitor on the Colombian market.

- Telemedicine solutions that enhance doctor-to-doctor and doctor-to-patient communication;
- Telemedicine solutions that enable remote (urban-rural) consultations and follow-up;
- Solutions that provide medical devices and/or equipment from/to a remote location;
- Solutions that enhance hospital administrative functions and collaborative tools;
- Solutions that integrate and/or unify existing data to a (simplified) database;
- Solutions that enhance health information exchange and guarantee patient data security and privacy;
- Digital solutions in the scope of outcome and value measurement;

Text box 15: *Example of Value Based Health Care in the Netherlands*

Seven Dutch top clinical hospitals have united under the Santeon label to share open information in order to improve care. The hospitals use the *Value-Based Health Care* (VBHC) method. Supported by patient and doctor-relevant indicators (such as survival, complications, quality of life), and by process indicators and costs, they bring teams together that analyse results and (treatment) processes and agree to objectives and improvements based on these indicators. They identified the need to work with other comparable hospital teams and outcomes to improve each individual hospital. Santeon currently has VBHC programs for breast, prostate, lung and colon cancer, hip osteoarthritis, stroke, chronic kidney damage, birth care, rheumatism, coronary artery disease and IBD (Inflammatory Bowel Disease). Santeon hospitals work with state-of-the-art but accessible Dutch technology and software providers such as Topicus (for screening) and Performation HOTflo (for outcomes and benchmarking) to achieve quick and positive results.

5.3 HEALTHY AGEING: MOBILITY AND VITALITY

The World Health Organization defines Healthy Ageing as "the process of developing and maintaining the functional ability that enables wellbeing in older age". Ageing occurs at different rates and is influenced by many factors such as nutrition and mobility. Healthy ageing encompasses solutions which help people increase mobility and vitality. Dutch organisations within this strength offer solutions in areas such as mobility aids or monitoring systems and typically partner with organisations which deliver elderly care, primary health care, rehabilitation services and care to vulnerable groups, such as mental health and special needs patients.

5.3.1 Trends

Colombia's population has been steadily ageing for several decades. In 1985, 3.8% of Colombians were over 60 years old. Eight years later, the figure jumped to 4.52%, then reached 6.31% in 2005 and reached 9.23% in 2018. This percentage will rise to 20.9% by 2050 (WHO, 2019). The public strategy regarding the issue is based on the Aging and Old Age Policy 2015 – 2024 (*Política Colombiana de envejecimiento humano y vejez),* implemented by the former Minister of Health. The policy is focussed on older adults and their human rights, active ageing and social protection (MinSalud, 2015).

The current Ministry has distinguished two priorities for the coming years (MinSalud, 2019):

1. Strengthening the quality of life and improving health status in the course of life, especially in old age;
2. Increasing quality and infrastructure of care provision to the elderly.

5.3.2 Care Provision & Innovative Solutions

Currently, Colombia only has one specialised geriatric care hospital (in Calí). Another high-complexity hospital is being developed in Palmira, Valle, a project led by geriatricians. It is a PPP intended to create a large ageing and elderly care network in the Colombian Southwest.

According to participants of a roundtable meeting on the subject at the Embassy of the Kingdom of the Netherlands in Bogotá in July of 2019, home care, day care and residential care are fragmented and held back by policy (Hogar Día Mi Casa, 2019). There is a dire need to generate insights in terms of the resources that are present in the elderly care system. From there one can elaborate on how to improve the system (Colombian Association of Gerontology and Geriatrics (ACGG), 2019). Colombia seeks knowledge from experienced countries in terms of policy-making and different forms of care provision in order to deal with the challenges of a rapidly aging population (Universidad del Rosario, 2019).

In practice, there are cases where private entities such as Hogar Día Mi Casa and Fundación Jeymar individually, through private funds, aim to close the gap of available care by giving to the vulnerable elderly. Another small initiative is the Center for Dementia Care, incorporated at the San Ignacio Hospital. These initiatives are keen to work with providers of mobility and vitality solutions as these solutions are currently sparsely available in the country (Roundtable on Ageing Society, 2019).

In the Netherlands we define health by functional ability, rather than by disease status. With a healthcare system that focuses on community care and 'ageing in place', the Dutch have been able to facilitate quality care for everyone who needs it. The Netherlands is ranked first on the Global Access to Healthcare Index (2019) which measures countries worldwide on accessibility of healthcare and the overall healthcare system. Through forty years of experience with an ageing population, the Netherlands has a solid understanding of the specific healthcare

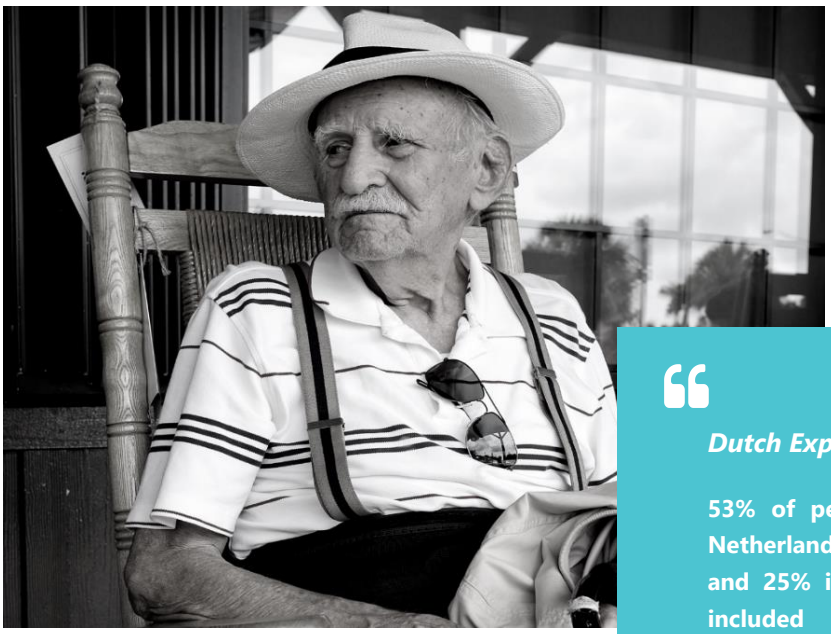
challenges that come with an ageing society. In 1975 more than 11% of the Dutch elderly (aged 65+) lived in institutional environments such as nursing homes or homes for assisted living. Nowadays this is only 4.5%, while the percentage of people aged 65+ in the Netherlands is much higher. This has led to cost reduction on a national level, and a great improvement in quality of life. Dutch knowledge can contribute to building a sustainable healthy living policy in Colombia. Dutch companies and organisations can share knowledge and advice on ageing policies and systems based on the Dutch experience together with a broad range of integrated products and solutions - from home care support systems to advanced medical equipment and nutrition.

5.3.3 Palliative Care

According to a report by the Palliative Care Observatory of El Bosque University, in 2016 only 40 percent of the 136 846 elderly who died had received palliative care for their conditions. More than 50 000 people did not receive any end of life support, which they are entitled to receive by law (Palliative Care Observatory, 2018). Colombian palliative care specialists recently visited the Netherlands and as a result presented a report to the Ministry of Health for reforms based on principles of Dutch Palliative care giving (Embassy of the Kingdom of the Netherlands in Bogotá, 2019)

Opportunities

- Solutions that support insight in the resources and quality of the elderly care system;
- Solutions that help elderly care institutions provide more accessible and quality care to more people;
- Solutions that help to manage and control the growing burden of people with Alzheimer's and other types of dementia;
- Solutions that support independent living and in-home care services;
- Solutions that support people living such that they can live happier and healthier lives, including special nutrition, social interaction tools, serious gaming, etc.
- Solutions related to the support, training and education of elderly care nurses, homecare service providers and palliative care giving organisations.



Dutch Expertise in Palliative Care

53% of people receiving palliative care in the Netherlands die at home, 22% in the nursing home and 25% in the hospital. Palliative care is not included in the study program for most professionals in the Netherlands. They are dependent on continuing education and building up practical experience, but this is not an easy task. This is why a nationwide network of palliative consultation teams is available to support professionals:
https://www.netwerkpalliatievezorg.nl/

CONCLUSIONS

This report has highlighted the top reasons why Dutch companies and organizations might be interested in the Colombian healthcare market. The report has also outlined trends, opportunities, and market entry considerations with a focus on three main areas of interests of Colombian stakeholders linked to Dutch strengths: Public Health, Digital Solutions (eHealth, Big Data & VBHC) and Ageing & Elderly Care.

As emphasized in this report, Colombia is currently experiencing a period of stable economic growth and is able to provide high quality healthcare to people living in the big cities. At the same time, the public system is emerging from a period of structural debt, and healthcare provision in rural and remote areas is lagging. The country is not prepared for an ageing society and the related impacts of non-communicable diseases. Human talent in health is sparse and of insufficient quality, and the health system is in need of data technologies that are geared towards strategies of prevention.

Colombia hopes to curb the costs of healthcare and revitalise its economy by investing in technologies related to health and by interacting with countries that face similar challenges. Colombia is dependent on foreign healthcare solutions and expertise, and since the Netherlands has a comparable health system to Colombia, Colombian healthcare stakeholders are eager to interact with the Dutch.

Government policies and budgets are focusing on financial sustainability, integrated decentralised care systems, and increasing healthcare infrastructure by 2022. Markets for medical cure and aged care are in search of quality and proven solutions that improve health outcomes, increase efficiencies, empower health workers and reduce overall costs.

The Netherlands is one of the frontrunners in terms of the digitalisation of healthcare. The Dutch are also well-known for their excellent long-term care system and related innovative approaches. The Netherlands is also home to multiple high-ranked university medical centres, related research infrastructure, and spin-off companies. Colombia offers many opportunities for Dutch providers in health expertise and solutions. Although there are challenges in terms of market entry, which requires investment of time and resources, challenges are somewhat alleviated by establishing partnerships with local actors who have experience in the Colombian market. It is vital that chosen partners have a good reputation and strong network.

With a government that is actively aligning health regulations to match those of other advanced markets, and with regular high-level healthcare delegations traveling to the Netherlands, the Netherlands has become Colombia's top reference country for healthcare. This makes for a seamless transition for companies wishing to expand and grow in Colombia.

Next Steps

This report marks an important step to strengthen the bilateral healthcare relation between Colombia and the Netherlands. Together with the Netherlands Enterprise Agency, the Netherlands Embassy in Bogotá and the Holland House Colombia, future steps and activities will be identified to further connect Colombian and Dutch healthcare stakeholders and strengthen the existing sustainable healthcare relationships. Please get in touch with the Netherlands Embassy and TFHC for more information.

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ANNEXES

Annex 1 – List of Interviewees

An important element of the study was the fact-finding visit to Bogotá, whereby a delegation from TFHC, accompanied by representatives of the Dutch Embassy in Bogotá and HHCO gained insights from key stakeholders in the Colombian health sector. The fact-finding visit took place over a period of 2 days and included 3 meetings and 4 round table discussions with representatives from the public and private sector, operating at the national, regional and local level. These organisations are listed in chronological order below:

Roundtable #1: Innovation, e-Health and big data

- District Health Secretariat of Bogotá
- National Institute for Food and Drug Surveillance (INVIMA)
- Colombian Association for the Advancement of Science (ACAC)
- Colombian Society of Anaesthesiology and Resuscitation (SCARE)
- CAFAM
- Colombian Public Health Association
- TLM Andina
- Javeriana University
- Elsevier

Roundtable #2: Ageing society

- Rosario University
- Colombian Association of Gerontology and Geriatrics (ACGG)
- Ageing institute – Javeriana University
- Jeymar Foundation
- Hogar Día Mi Casa
- San Ignacio Hospital – Javeriana University
- Palliative Care Association of Colombia – ASOCUPAC
- Colombian Association of Palliative Care
- Colombian Association of Haematology and Oncology

Roundtable #3: Strengthening Human Talent

- District Health Secretariat of Bogotá
- National Institute for Food and Drug Surveillance (INVIMA)
- Colombian Association of Palliative Care
- National University of Colombia
- Colombian Association of Integral Medicine Companies (ACEMI)
- Gestar Salud

- Colombian Society of Anaesthesiology and Resuscitation (SCARE)
- Organisation for Health Excellence
- Andes University
- Public Health Institute – Javeriana University
- Colombian Public Health Association
- Colombian Diabetes Association
- Colombian Association of Medical Schools

Roundtable #4: Doing Business in Colombia

- Association of Pharmaceutical Industries
- Chamber of health sector organisations (ANDI)
- Colombian Association of Haematology and Oncology
- Sanofi
- Alianza Vida
- Fagron
- Chamber of Commerce of Bogotá
- Invest in Bogotá
- Philips

Visit #1: Ministry of Health and Social Protection

Vist #2: Fundación Santa Fe de Bogotá

Visit #3: National Cancer Institute

Annex 2 – List of Relevant Events and Trade Fairs

Event	Main function	Upcoming date(s)	City
Meditech	The leading Colombian International Health Fair, organized by the Colombian Association of Hospitals and Clinics ACHC, and the International Center for Business and Exhibitions, Corferias.	14 – 17 July 2020	Bogotá
Foro de la Salud ANDI	The agenda presents experts in medical innovation, self-care, risk management, collaboration between agents, value-based health systems, and sustainability challenges within the framework of the National Development Plan and the End Point Agreement.	21 – 23 October 2019, next date to be confirmed	Cartagena

Annex 3 – Organisation of the Ministry of Health & Connected Institutes

Within the political and administrative scope, the following organisations and roles can be distinguished (in alphabetical order):

- **Administradora de los Recursos del Sistema General de Seguridad Social en Salud (ADRES):** responsible for the adequate flow of resources and respective controls.
- **Colciencias:** National Research Organisation.
- **Instituto de Evalucación de Tecnología en Salud (IETS):** respond to the needs of the health system in terms of technology evaluation and decrease the variability of clinical practice, through a valid and reproducible scientific method.
- **Instituto Nacional de Cancerología (INC):** National Cancer Institute, responsible for comprehensive cancer control through care for patients, research, training of human talent and development of public health (action) plans.
- **Instituto Nacional de Salud (INS):** is the scientific and technical authority, which has the following objectives: 1) development and management of scientific knowledge regarding health and biomedicine to improve health conditions, 2) carrying out basic and applied scientific research in health and biomedicine, 3) promotion of scientific research, innovation and formulation of studies in accordance with the public health priorities, 4) health surveillance and safety, production of biological inputs, 5) act as the national reference laboratory and coordinator of special networks.
- **Instituto Nacional de Vigilancia de Medicamentos y Alimentos (INVIMA):** national regulatory agency (scientific and technical monitoring), sets up health regulations on consumption and use of food, medicines, medical devices and other products subject to health surveillance.
- **Ministerio de Salud y Protección Social:** Responsible for the health system and social protection in health, through policies for health promotion, prevention, treatment and rehabilitation of disease and insurance, as well as intersectoral coordination for the development of policies on the determinants of health.
- **Secretarios de salud distritales:** management of public health on the district level.
- **Secretarios de salud municipales:** management of public health on a municipal level.
- **Superintendencia Nacional de Salud:** controls and surveys the administration, services and health benefits of the social insurance system; surveys if all is in accordance with the regulations of the health system.

Annex 4 – Top Ranking Colombian Hospitals

Colombian hospitals in the top 20 Ranking *América Economía (2019)*		
Ranking	**Hospital**	**Location**
3	Fundación Cardioinfantil	Bogotá
4	Fundación Valle del Lili	Calí
6	Fundación Cardiovascular de Colombia	Bucaramanga
9	Hospital Pablo Tobón Uribe	Medellín
12	Centro Médico Imbanaco	Calí
16	Hospital San Vicente Fundación	Medellín
25	Clínica Universidad de La Sabana	Bogotá
26	Clínica Las Américas	Medellín
28	Hospital General de Medellín	Medellín
28	Clínica Universitaria Bolivariana	Medellín
31	Clínica del Occidente	Bogotá
32	Mederi	Bogotá
33	Hospital General de Medellín Luz Castro Guttiérez	Medellín
39	SES Hospital de Caldas	Manizales
41	Clínica del Rosario Sede Tesoro Medellín	Medellín
42	Centro Cardiovascular Colombiano Clínica Santa María	Medellín
43	Clínica Medellín	Medellín
45	Fundación Hospital Infantil Los Ángeles	Pasto
48	Hospital Universitario Departamental de Nariño	Pasto
49	Hospital Universitario Infantil San José	Bogotá
50	Clínica de Marly	Bogotá
51	Clínica Los Nogales	Bogotá
53	Clínica Las Vegas	Medellín
55	Hospital Universitario Clínica San Rafael	Bogotá
57	Centro Policlínico Olaya	Bogotá
source	https://clustersalud.americaeconomia.com/gestion-hospitalaria/ranking-de-clinicas-y-hospitales-estos-son-los-mejores-de-latinoamerica-2019	

Annex 6 - List of Importers of Medical Devices & Supplies

Please note that there are many importers in Colombia, with varying degrees of quality and scope. Finding a suitable importer is an important process that might require an extensive investment of time. Holland House Colombia can help you with the qualification and selection of the right distributors. Below you will find a list of ten different Colombian importers and distributors (please note that this is not an exhaustive list).

Name	Website	Focus
Imcolmedica	https://www.imcolmedica.co	Mir Medical, diagnostics, medical equipment, laboratory, surgical, oxygen therapy, prehospital
Coralmedica	https://coralmedica.com/	Anaesthesia and ventilation, sterilization, hospital furniture, domotica, a.o.
Bioplast	https://www.bioplastsa.com/	Respiratory therapy, Genealogy and ultrasound, laboratory and general medicine
Agfa Geveart	https://medimg.agfa.com/main/	Digital and computed radiotherapy, printing, X-ray film, veterinary and IT
Promedco	https://www.promedco.com/	Ultrasound, X-ray, Monitoring, diagnostic equipment, furniture, and endoscopy surgery
Orthopaedics	http://www.orthopedicsco.com/	Orthopaedics
Instrumentación	https://www.instrumentacion.com.co/	Intensive care, surgical, hospitalization, vascular diagnostics, neurology, pulmonary, sleeping
CR Equipos	http://crequipos.com/	Ultrasound, X-ray, Monitoring, diagnostic equipment, furniture, and endoscopy surgery
Doquimed	http://www.doquimed.com	All segments of the health sector, specialized in diagnostics
Tecmeca	http://tecmeca.com.co/	Medical equipment, surgical instruments, gastric bands, breast and skin implants, wound care dressings, chemotherapy ports, mercury-free thermometers and urinary incontinence meshes.

Agenda

For more information on upcoming activities:

www.tfhc.nl/agenda/

www.rvo.nl/actueel/evenementen

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Written by:	Task Force Health Care
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Contact:	Suze Kruisheer suze.kruisheer@tfhc.nl +31 70 21 99 007