



# International monitor

## Country factsheets

# Foreword

Dear Reader,

A sector-wide internationalisation policy requires priorities. Which countries should the Top Sector Life Sciences & Health (Health-Holland) focus on? On the basis of which criteria does a country or region receive a higher priority? Which efforts need to be made in which countries? The Health-Holland International Monitor is introduced within the context of the Health-Holland International Strategy so that these questions can be answered systematically.

This International Monitor is a system for collecting and disclosing information about potential partner countries. For each country, the information available is brought together in country factsheets. Furthermore, the information is classified into categories to make it clear which efforts are desirable for which category of countries.

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# Introduction

## The choice of target markets up until now

Dutch products and services will add economic and societal value throughout the world in the coming years. That provides opportunities on the international market. A strategic approach is required to monetarise these opportunities that provides a basis for clear choices. Consolidating strengths will increase the effectiveness of the internationalisation and create clear expectations for both interested countries as well as the parties in the Netherlands that want to be part of the internationalisation. The Internationalisation Strategy 2015 has identified several target markets for which specific extra efforts have been made. Furthermore, in recent years, several lists of priority countries have arisen from the perspectives of trade, investment, innovation and R&D.

In the context of the Trade Agenda, the Ministry of Foreign Affairs uses a list of top-98 and top-25 priority markets for economic opportunities, supplemented with specific regions for development cooperation. The Ministry of Economic Affairs and Climate Policy (EZK) has identified countries that are interesting from the viewpoint of collaboration in research and innovation or attracting investments. The Ministry of Health, Welfare and Sport has a list of countries with which policy-based collaboration is desirable in their own policy areas. Companies and organisations make a choice, based on opportunities for growth, economic earning capacity and participation in activities. Until now, the “Priority Countries Overview”, which is based on research into international business by TFHC, was the most used overview for LSH companies.

However, due to the existence of these different overviews, an increasing lack of clarity arose about: (a) on the basis of which criteria a country was included in the various lists; (b) what the designation of a country means (focus or priority country); and (c) which effort from Dutch parties is linked to this type of country.

## Towards more structure

Needless to say, different and partly conflicting wishes play a role both within and outside the sector. For example, although a stated goal requires focus and making choices, nobody wants to miss out on opportunities. There is also the call for a detailed justification of choices, but for pragmatic or political reasons, the choices made are easily deviated from. In practice, the translation of the effort made by parties in countries is diverse. The concrete efforts are determined by an interaction of factors, such as the demand from the Dutch sector, the economic work plans of the Dutch diplomatic missions in the country concerned, the involvement of the Netherlands Enterprise Agency (RVO) and economic missions. Although this pragmatic way of working has yielded good results in recent years, the sector nevertheless desires a more structured, joint approach.

A clear and structured approach to the prioritisation of certain countries must be based on transparent selection criteria. Besides general economic and possibly policy criteria, the LSH sector needs specific selection criteria. For Top Sector LSH, the choice of countries in the context of the Health-Holland International Monitor requires paying specific attention to the following criteria:

#### A. Characteristics of the health and care system/market:

- Size of the care market/expenditure per capita;
- Connection with the themes (Knowledge and Innovation Agenda - KIA) and proposition of the Netherlands;
- Politically supported reform plans in healthcare that can provide a reason for new investments;
- Accessibility of the (public or private) funding and reimbursements system;
- Technological requirements that connect with the expertise of Dutch parties;
- Presence of venture capital and funding.

#### B. Specific interest from the different dimensions of internationalisation:

- R&D and innovation (research, innovative clusters, strategic public-private partnerships, access to key enabling technologies, etc.);
- Investments (presence of potentially interesting parties for the Dutch LSH ecosystem);
- Trade (opportunities for growth and estimation of the competitive position of Dutch organisations);
- Presence of Dutch attachés (economy/ innovation/Ministry of Health, Welfare and Sport).

In addition to these and other specific LSH criteria, the Top Sector examines the top-9 and top-25 priority markets of the Ministry of Foreign Affairs (BZ). This analysis is based on an extensive econometric model in which various macroeconomic indicators, ease of doing business and impact of economic diplomacy are taken into account. Besides individual countries, the list consists of markets that in several cases must be seen in relation to each other. This more general analysis is used to enrich criteria that are primarily relevant for Top Sector LSH.

Based on the criteria, the target markets have been divided into four categories. Category I encompasses the countries in which there is the broadest interest from the Dutch LSH sector. For the countries in categories II and III, interest is narrower and more specific, and category IV contains the countries with which incidental contacts exist, often in response to current developments. The efforts from the Top Sector correspond with these categories.

## Health-Holland International Monitor

The Priority Countries Overview of the former LSH Alliance has been summarised in a priority countries table. This list reflects the Dutch LSH sector's interest in foreign markets and its interaction with these markets. This overview was useful in prioritising the effort of the Top Sector, but the underlying analysis was limited.

In the context of the new strategy, the Health-Holland International Monitor is now being introduced, and this makes a more systematic justification possible. The International Monitor is compiled from brief country memoranda (factsheets). The factsheets are an inventory of the available information about the opportunities for the Dutch sector in the priority markets and thematic interests. Furthermore, the factsheets contain a brief analysis of the (desired) relationship between the Netherlands and the market concerned. Factsheets are written for a broader group of interested public and private parties from the Dutch LSH ecosystem. Assessment and validation by (SME) organisations, public-private partnerships and regional clusters are part of this process. Qualitative input from public

and private sources is brought together and enriched with quantitative input (e.g. based on market studies and the input of experts). Subsequently, blank spots in (market) knowledge about the country concerned are identified. From the perspectives of innovation and knowledge and attracting investment and trade, a joint ambition and global realisation of the desired effort and a more detailed exploration are formulated. The compact factsheets therefore provide guidance and direction and, in so doing, provide the first step towards a joint public-private agenda.

### Initial classification of target markets

An initial categorisation of target markets was produced, based on advancing insights from the International Strategy 2015 and in anticipation of the Health-Holland International Monitor. This overview will be further validated and supplemented based on relevant information, but it will provide a firm footing and direction for the Top Sector's efforts in the coming period. The categorisation of countries and categories will be periodically updated.

### Overview

Country/ Region	Category I (broad interest)	Category II (interest from a specific perspective)	Category III a (specific interest)	Category III b (markets to be explored)	Category IV (other countries - incidental and reactive)
Africa other (Nigeria, Ghana, Uganda)				X	
ASEAN 5	X				
Australia				X	
Belgium			X		
Brazil		X			
Canada			X		
Chili					X
China		X			
Colombia		X			
East Africa		X			
Eastern Europe			X		
France	X				
Germany	X				
Gulf region		X			
India	X				
Iran					X
Israel				X	
Japan		X			
MENA 7 (Iraq, Egypt, Algeria), Morocco, Lebanon, Tunisia, Jordan)					X
Mexico				X	
Nordics		X			
Peru					X
Poland			X		
Russia					X
South Africa			X		
South Korea				X	
Spain					
Switzerland			X		
Taiwan				X	
Turkey					X
Italy			X		
United Kingdom	X				
United States	X				

# ASEAN 5

ASEAN 5 in the scope of this factsheet refers to the Southeast Asian nations of Malaysia, Singapore, Thailand, Vietnam and Indonesia. These five countries show strong economic growth and have strong commitments to achieve and strengthen universal health coverage. Based on the ASEAN market study (2019) there is a significant interest from the Dutch LSH sector in exporting smart solutions in the Dutch strengths of e-health, medical devices and public health.

## Key indicators

		Malaysia	Indonesia	Thailand	Vietnam	Singapore
	<b>GDP<sup>1</sup></b> (2019, in millions of euros)	364,701	1,119,190	543,649	221,633	314,833
	<b>Health Expenditure as % of GDP<sup>2</sup></b> (2018)	3.8	3.3	3.8	5.9	4.5
	<b>Ease of doing business<sup>3</sup></b> (2019)	12	73	21	70	2
	<b>Size of medical device market<sup>4</sup></b> (2016 in millions of euros)	1,043	2,200	1,001	830	456
	<b>Medical Device import from NL</b> (2018 in millions of euros)	15.4	3,013	20.2	8.6	27.1
	<b>Medical Device export to NL</b> (2018 in millions of euros)	76.3	2.5	7.1	14.1	240.2
	<b>Size of pharma market<sup>5</sup></b> (2018 in millions of euros)	2,538	5,007	3,860	3,993	764
	<b>Healthcare finance system</b>	Universal Health Coverage & private insurance	Universal healthcare coverage (JKN) and private insurance	Universal healthcare system and private insurance	Limited government budget, off-budget donor assistance and private out-of-pocket expenditures	Subsidised Health Services and co-payment

<sup>1</sup> Source: World Bank; [www.data.worldbank.org/indicator/NY.GDP.MKTP.CD](http://www.data.worldbank.org/indicator/NY.GDP.MKTP.CD)

<sup>2</sup> Source: World Bank; [www.data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS](http://www.data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS)

<sup>3</sup> Source: World Bank; 1 = most business friendly regulations. [www.data.worldbank.org/indicator/IC.BUS.EASE.XQ](http://www.data.worldbank.org/indicator/IC.BUS.EASE.XQ)

<sup>4</sup> US International Trade Administration; Kenya, Country Commercial Guide

<sup>5</sup> Medic East Africa, East Africa Market Insights 2019.

## LSH trends & developments

All ASEAN 5 countries are facing challenges related to ageing populations, shortages of medical staff and a rising burden of non-communicable diseases (NCDs). Moreover, the implementation of universal health coverage (UHC) policies, a growing middle class, and medical tourism contribute to a further increase in healthcare demand. These challenges require solutions that increase the accessibility to care (mainly related to the rural areas of Vietnam, Indonesia, Malaysia and Thailand) and the efficiency and effectiveness of care. E-health solutions are considered to be a promising solution to address these challenges.

The COVID-19 outbreak will most likely accelerate the digital transformation of healthcare delivery models. It is also important to emphasise that 80 percent of medical devices in the ASEAN 5 countries are imported. Strong growth is expected in the medical device market. From the perspective of the Netherlands, the following market trends in the ASEAN 5 market are of interest:

### Trade

1. Advanced devices and e-health technologies to increase the accessibility, efficiency and effectiveness of cares:
  - advanced medical devices for diagnosis and treatment;
  - robotics;
  - e-health;
  - telemedicine and monitoring tools/apps;
  - AI and other key enabling technologies nanotechnologies, advanced materials, and advanced manufacturing and processing (production technologies) and biotechnology;
  - data infrastructure (connecting data, systems, information and persons in a convenient, safe and secure way) – Note: the countries are at different stages, with Singapore being the most advanced.
2. Healthy ageing to optimise the opportunities for physical, social and mental health of elderly people:
  - promotion of healthy living;
  - prevention of non-communicable and communicable diseases, including screening programmes;
  - rehabilitation;
  - elderly care at home (to help senior people live a mobile and independent life);
  - growing importance of mental health.
3. Health infrastructure to improve access to healthcare in rural areas and increase efficiency in urban areas:
  - smart and sustainable hospitals/clinics (physical infrastructure);
  - using technologies to overcome the lack of health infrastructure in rural areas (digital infrastructure);
  - management of internal processes of care providers, including value-based healthcare.

## Innovate

### Singapore

Warm relations exist between the RVO and Enterprise Singapore. Active participation of Enterprise Singapore in EUREKA programmes like GlobalStars (2 calls) and EUREKA Clusters AI calls is leading to collaborative industry-led R&D projects in diverse technological fields, including LSH. These address a societal challenge or need, leading to innovative, affordable and marketable solutions.

Topics of interest:

- genomics and precision medicine
- preventive care
- digitalisation & data-driven healthcare
- health technologies

### Indonesia

The Dutch Research Council (now) invests in bilateral research cooperation with Indonesia via the Merian Fund. Indonesia and the Netherlands have a long history of collaboration in science, and joint fundamental and applied research programmes by Indonesia and the Netherlands have been carried out for decades. Indonesia is in the top-5 of the most promising emerging markets. Partnerships between the Netherlands and Indonesia have increasingly focused on societal challenges, and besides bilateral researchers, the research programmes contain stakeholders from the public and private sectors. The overarching theme for the Cooperation Indonesia (RISTEK-BRIN) programme is “Resilient [Societies](#)” – including health and quality of life.

### Singapore

Most of the Singaporean companies that operate in the Netherlands fall under:

- red Biotech (Healthcare): this includes producing vaccines and antibiotics, developing new drugs, molecular diagnostics techniques, regenerative therapies. One example is Cetas Healthcare;
- medical equipment.

Singapore has a vibrant biomedical and health-tech ecosystem, and houses many R&D centres, startup incubators and venture capitalists (VCs) in this field. With a diversity of corporate and public health-tech innovation partners, Singapore has created a dynamic ecosystem where talent, capital and expertise meet to pilot and scale digital healthcare and wellness solutions for Asia.

Investments have mainly been in wellness, health management solutions and medical diagnostics. In early 2021 the [“Go Beyond”](#) programme was launched to support startups and tech enterprises from Singapore to access the Dutch market as a gateway to Europe. The programme provides a guided pathway for ventures to scale to the Netherlands and other European markets.

## Malaysia

Various LSH companies from Malaysia are considering setting up a location in the Netherlands (R&D facility, and manufacturing plant). Areas of interest include:

- medical devices
- rubber gloves
- biotech

## Invest

LSH is not a proactive focus sector in these countries. The Netherlands Foreign Investment Agency (NFIA) is reactively open to any LSH opportunity that presents itself.

## Regional priorities

### Indonesia

The development of health-tech and telemedicine is expected to grow rapidly, together with edu-tech, following the rise of fintech in the country. The Indonesian Health-Tech Association is working together with the Ministry of Health and the Ministry of Communication and Informatics to prepare a regulatory sandbox to test innovation as well as health-tech and telemedicine. The development is primarily focused on bridging the geographical gap, especially in the remote and outer areas. Indonesia plans to move the capital to Kalimantan. In the long run, this may also offer opportunities for health infrastructure-related projects.

### Singapore

Singapore's focus is on finding ways to deal with the stress the ageing population and increasing disease burden place on the healthcare system. Besides focusing on prevention and promoting a healthy lifestyle, digitalisation is one of the pillars to help safeguard effective care in the future. Under Singapore's Smart Nation Initiative, health is one of the focus areas.

New market opportunities might emerge in the field of digitalisation and innovation. Singapore is examining technologies that facilitate telemedicine, telemonitoring, personal health management and prevention. Examples are home monitoring for the elderly or patients following surgery, and apps or wearables to improve healthy living. In addition, robotics and assistive technologies, such as artificial intelligence and augmented reality, are used. An example is data analytics to improve daily operations in hospitals, diagnostics and treatment. Personalised medicine is another promising area, as Singapore is building a genetic biobank as part of its National Precision Medicine Programme, and is home to many pharmaceutical multinational corporations (MNCs).

### Malaysia

Malaysia is looking for new and alternative care models beyond traditional settings. Because of COVID-19, there is an accelerated adoption of innovative projects by hospitals, including telemedicine services, decentralisation of care and EMR systems. Discussions on and proposed investment in value-based care solutions. There is a renewed recognition of and emphasis on investing in capacity building, improved diagnostics and supply chain management solutions. At USD 1.4 billion per annum, Malaysia is the second-largest market for medical devices of the ASEAN 4 countries. A jump in demand for a diversity of medical devices is expected, particularly those that increase operational efficiencies in primary care, diagnostics, EMR, aged care and supply chain management.

## Thailand

Before COVID-19, Thailand had developed one of the medical tourism industries in Southeast Asia. From 2000 to 2017, Thailand's international medical tourism industry quadrupled in size, going from USD 2.4 billion to USD 11 billion in revenue. During the outbreak, many hospitals and healthcare facilities in Thailand applied more e-health technology such as medical robotics, software and telemedicine for their services. Lots of mobile apps were built to support Thai people accessing healthcare services and real-time health information. For instance, a private hospital developed a mobile app to connect with clients and patients regarding their health information, treatment, laboratory results, medication, online appointments, emergency calls and online payment. The Thai government has aimed to broaden the research activities in medical robotics and has positioned itself as a manufacturing hub of advanced medical equipment that includes robotics software and hardware. The medical device manufacturing sector is one of the Thai government's targeted industries, and this is being stimulated with tax incentives that include exemption from corporate income tax and import duty for foreign investment.

## Vietnam

Vietnam's medical device market is one of the fastest-growing in Asia. The best business opportunities for medical devices and equipment in Vietnam are those related to cardiovascular, cancer, diabetes, radiotherapy equipment, neurosurgical devices, operating theatre equipment, sterilising and infection control devices, imaging diagnostic devices (e.g. for viral infections and diabetes), orthopaedic implants and related devices, and lab instruments and devices. Using telecommunication and information technologies to provide clinical healthcare at a distance could also be an interesting area.

## Dutch interest in, activity and growth potential

Dutch interest in the ASEAN 5 countries is significant. In 2018-2019, RVO dealt with 508 ASEAN-related requests from Dutch organisations active in the LSH sector. Only China has received more requests (540). 362 of the ASEAN requests were related to general LSH industries, 70 to HTSM (medical equipment), 51 to pharmaceuticals and 25 to the biotech industry. During the ASEAN 4 (2019) market study, 132 Dutch organisations active or interested in one or more countries (Thailand, Malaysia, Singapore, Vietnam) were identified. Of these, 44 parties are active within e-health, 38 in medical devices and 23 in public health. Singapore is the most popular market: with 68 organisations being active and/or seeing opportunities for growth. The majority of Dutch organisations active in ASEAN 5 are small and medium-sized enterprises (SMEs).

Prominent multinationals active in the region are Philips, Elsevier and Danone-Nutricia. When looking at Dutch knowledge institutes, all university medical centres are collaborating on research and/or education with their counterparts in Indonesia and Singapore.

## Most prominent NL value chains

The most prominent value chains for the ASEAN 5 market are medical devices, e-health and infrastructure solutions that ensure more efficient and accessible care. The accessibility of care concerns both the provision of care solutions in rural areas and solutions that contribute to longer independent living of the elderly at home.

1. Value chain medical devices: Instruments, appliances and materials that impact the delivery of health services and processes within a healthcare provider.
  - Demonstrated (or expected) impact and activities:
    - > LifeSense Group (wearable technology to combat urinary incontinence) has signed contracts with partners in multiple ASEAN countries;
    - > Demcon, a supplier of contract research and advanced medical systems (including ventilation), established an Asian subsidiary in Singapore in 2019, focusing on supporting R&D for med-tech OEMs and contract manufacturers based in Singapore;
    - > Sioux Technologies supports high-tech medical OEMs with integration, assembly, testing and delivery of modules and applications from concept to market launch, data analysis and system engineering, established an Asian subsidiary in Singapore in 2019 to service the automotive, med-tech, semiconductor and agri-food sectors.
  - Potential opportunities: growing private sector, demand for quality brands and preference for quality over costs.
  - Barriers: lack of transparency (Indonesia), strong competition and small market (Singapore), low reimbursement public sector (Malaysia, Thailand and Vietnam, Indonesia) strengths of Dutch LSH sector not well known in Malaysia, Thailand and Vietnam.
  - Preferred region(s): Malaysia, Thailand, Indonesia, Singapore and Vietnam.
  
2. Value chain e-health (AI): The application of both digital information and communication solutions to support and/or improve health and healthcare processes.
  - Demonstrated (or expected) impact and activities:
    - > Philips' and Elsevier's tools to support clinical decision-making are used by high-end healthcare facilities;
    - > Delft Imaging is using its Computer-Aided Detection for Tuberculosis (CAD4TB) in the prisons of Jakarta, Indonesia.
  - Potential opportunities: Telemedicine is considered a promising solution to increase quality, efficiency, and effectiveness, improve healthcare access in rural areas, and facilitate elderly care and self-management at home.
  - Barriers: different stages of data maturity per country requires knowledge about the privacy and data protection laws and regulations.
  - Preferred region(s): Singapore, Malaysia, Thailand, Indonesia and Vietnam.
  
3. Value chain hospital construction: Products and services concerning the design, building, furnishing, equipping, operations and maintenance of hospitals, clinics and healthcare facilities.
  - Demonstrated (or expected) impact and activities:
    - > Hospitainer has signed a memorandum of understanding (MoU) with Desa Emas. Together they will work on a plan for 3 pilots in the coming two years. One clinic on the ground, one clinic on wheels and one clinic on a vessel;
    - > Telecom has implemented medical pneumatic tube systems in several Thai hospitals.
  - Potential opportunities: health infrastructure in remote areas and a cluster approach (including financing) to explore opportunities for hospital development under a PPP scheme.
  - Barriers: long and complex projects.
  - Preferred region(s): Malaysia, Thailand, Indonesia and Vietnam.

## Overview milestones & flagships

### Collective Trade Activities to ASEAN 5

2018

- Trade mission to Indonesia with Minister Sander Dekker
- MoU Healthcare signed on November 2018 in Bali. Implementation plan agreed on in April 2019 in Geneva. Last Joint Working Group in March 2020.

2019

- ASEAN Market Study covering Malaysia, Thailand, Singapore and Vietnam
- LSH mission to Thailand & Malaysia
- LSH Mission to Indonesia, Hospital Expo
- First Global Stars Call Singapore and EUREKA countries

2020

- Trade mission to Indonesia with the royal couple
- Second Global Stars Call Singapore and EUREKA countries

During the last five years, three large trade missions to Indonesia took place with Prime Minister Rutte, Minister Bruins, and the Dutch Royal Couple. In 2016 Singapore was visited too. Only smaller trade and/or innovation missions without government officials have been organised for the other countries.

### The way forward

- To keep: small scale trade and innovation missions.
- To strengthen and deepen:
  - > Trade missions with government officials (until now mainly focused on Indonesia);
  - > Enhance the positioning and visibility of the Dutch LSH sector;
  - > Strengthen the connections with key decision-makers;
  - > Provide the LSH stakeholders with more insight into connection with financing programmes for projects in the target market: both national (RVO) and international (ABD/WB);
  - > Gain more insight into the success and failure factors of Dutch LSH companies that are already active in the region;
  - > Collect more in-depth market entry knowledge for specific subsectors: e-health & medical devices;
  - > Strengthen collaborations between Dutch and ASEAN 5 universities;
  - > In Singapore, the focus will be on innovation within LSH. In Q1 an innovation mission will be organised by Innovation Attaché (IA) Singapore.
- (New) activities to be explored:
  - > Strategic Multiannual Approach (SMC) ASEAN 5 (with 2/3 focus markets);
  - > Targeted Market study Indonesia (specific focus to be decided).

<b>(Preferred) actions</b>	<b>Expertise/capacity/finance</b>
Set up (digital) trade missions, including matchmaking to facilitate connections with relevant public and private decision-makers	ASEAN 5 mission December 2020 SMM
Enhance the positioning and visibility of the Dutch LSH sector	SMM
Hire a liaison to collect and share existing and additional in-depth market entree knowledge on the opportunities in e-health and Medical Devices with Dutch LSH stakeholders	SMM
Conduct a (targeted) market study on Indonesia	
Identify the success and failure factors of Dutch LSH companies already active in the region and share the lessons learned	ASEAN 5 mission December 2020

# Belgium

As a neighbouring country, Belgium is a major trading partner of the Netherlands: around 10% of total Dutch exports go to Belgium. In the Life Sciences and Health (LSH) sector, Belgium is a convenient trading partner close to the Netherlands. In recent years, many activities have been organised to strengthen the relationship between the LSH sectors in both countries. Future activities will be aimed at further strengthening this relationship to facilitate multi-annual programming.

Belgium operates an advanced health system. Federal authorities and federated entities have different responsibilities. Federal authorities are responsible for regulating compulsory health insurance, the outpatient budget, hospital budget and programming standards, pharmaceuticals, their price control, and healthcare professions. The federated entities (regions and communities) are responsible for health promotion and disease prevention, the organisation of primary and palliative care, maternity and child healthcare, social services and community care, the financing of investments in hospitals (infrastructure and heavy medical equipment) and the determination of hospital licencing standards. Interministerial conferences are regularly organised to facilitate cooperation between the federal authorities, the regions and the communities. However, several health challenges are forcing the Belgium health system to adapt and improve. Major challenges include the consequences of an ageing society, chronic diseases and the resulting shift in healthcare demand. In recent years, Belgian health policy has focused on making health services more efficient. In the coming years, the Belgium government will focus on rationalising healthcare services by merging hospitals and health workforce planning (TFHC Market Overview 2018).

## Key indicators

	<b>GDP</b> (2019 in billion dollars) \$543		<b>Size of medical Device market</b> (2019) \$2.20 billion
	<b>Health Expenditure as % of GDP</b> (2018) 10.32		<b>Size of pharma market</b> (2018) \$6.5 billion
	<b>Ease of doing business</b> 46 (2020) 45 (2019), 52 (2018)		<b>Medical Device import from NL</b> (2019) \$2.37 billion
	<b>Health care finance system</b> Mandatory social health insurance, universal health coverage		<b>Medical Device export to NL</b> (2019) \$2.16 billion

## LSH trends & developments

From the perspective of the Netherlands, the following market trends in Belgium are of interest:

### Trade

#### **Ageing society**

Comparable to many West European countries, Belgium faces the consequences of an ageing population. In the coming 10-20 years, a significant proportion of the population will reach pensionable age. This will lead to increased demand for elderly care and assisted living facilities, while there is also a rise in chronic (non-communicable) diseases. Already 23% of total healthcare spending is on long-term care. To keep up with this development, the Belgium government is expanding capacity for eight thousand assisted living facilities for vulnerable groups in society.

#### **Prevention**

Besides an ageing population, the prevalence of inactive and unhealthy lifestyles is rising, resulting in chronic diseases. Belgium is seeking solutions that help prevent chronic diseases and help to maintain good health. Currently, only 2% of the total healthcare budget is spent on prevention, but it is expected that this will rise. Strengthening primary care and improving care coordination is part of this effort. To support this, a national 'integrated care for better health' plan was approved on federal level in 2015. In line with prevention, there is also more focus on mental health.

#### **Digital transformation of healthcare**

Building on a previous eHealth plan from 2013-2018, Belgium has adopted a new action plan eHealth plan for 2019-2021. This plan has and will facilitate the development and introduction of digital tools for patients and care providers. Sharing and digitalising information, between - and in - primary care and hospitals is a crucial part of this plan. The adoption of electronic medical records and e-prescriptions has risen tremendously, while a new secure online platform is also being developed.

### Innovate

#### **Pharmaceutical industry**

An above average number of drugs are being developed in Belgium, while the country also has prominent production and manufacturing capacity. This offers major potential for R&D partnerships with the Belgian private sector and research institutes (TFHC Market Overview 2018). Also, clinical trial speed and number of applications are among the highest in Europe.

#### **Personalised health & personalised medicine**

In 2018, the Flanders Department of Economy, Science and Innovation and the Dutch Ministry of Economic Affairs & Climate Policy signed a MoU on enhanced cooperation in the field of personalised medicine. Four subthemes are addressed: Regenerative Medicine, Cell-based technologies amongst others Organ-on-Chip, Prevention and Lifestyle medicine, and Personal data infrastructure and management. A bilateral R&D call between EWI/VLAIO and EZK/H-H/RVO is in the making for which matchmaking and expert round tables are foreseen. In addition to this, further thoughts on a concrete programme of cooperation are being discussed.

## Invest

Belgium is not a priority country for foreign direct investments, but we do see an increase in interesting projects. For this reason, we will follow the trade and innovation activities and decide every year if we will put more effort for active acquisition in Belgium. At this moment we are open to work on projects from Belgium that are in line with the Invest in Holland strategy 2020-2025.

## Regional priorities

### Brussels

Brussels is an important region because of the presence of the national government, ministries and innovation hubs. This makes the region unique compared to Flanders and Wallonia.

### Flanders

The Flanders region has been a natural trading partner for Dutch organisations, since they share a border and a language. In 2015, the Flanders region started a reform trajectory for their primary care system. This was aimed at more person-centred integrated care. Other initiatives consider regulations for the delivery of primary care, home care and elderly care.

### Wallonia

Wallonia has comparable attention for better integration of care. However, priority is given to promote access to care, which is supported by sending doctors to underserved areas<sup>1</sup>. Compared to Flanders, the biopharmaceutical industry and MedTech are key areas due to the presence of major companies in these fields.

## Dutch interest in, activity and growth potential

Overview of Dutch interest in Belgium per organisation type:

- Based on Achilles data, Belgium took up 1% of all incoming trade questions in 2018-2019.
  - Mission 2018: 37 participants
    - 32 private companies (SMEs, large firms)
    - 3 knowledge institutes
    - 2 health clusters
  - Mission 2019: 23 participants
    - 23 private companies (SMEs, large firms)

## Most prominent NL value chains

1. Value chain Healthy Living & Ageing ‘Research and solutions that contribute to maintaining (prevention), strengthening and recovering (rehabilitation) physical and mental wellbeing, by increasing people’s independency.’

Life expectancy in the Netherlands is one of the highest in the world and the Dutch therefore have considerable experience regarding healthy living and ageing. They know that a holistic approach and multidisciplinary collaboration are key pillars in achieving healthy living. They also acknowledge the important role of prevention and healthy lifestyles.

The Belgium elderly population demands both an expansion of existing (geriatric) healthcare services and adapting current health delivery models. In addition, there is a need in Belgium to accelerate the plans regarding prevention. By means of primary care

and care coordination (integrated care), Belgium strives to keep patients out of expensive hospitals. By making care more integrated and focused on home care, healthcare will become more efficient and patient-centred.

2. Value chain Connected Care: ‘connecting data, systems, information and persons in a convenient, safe and secure way’  
Dutch expertise in Connected Care facilitates anytime and anywhere access to healthcare. This makes healthcare available to everyone regardless of their socioeconomic background. Dutch eHealth solutions are renowned for their simplicity, consistency and flexibility. They are being developed through extensive collaboration and co-creation, involving government, research institutes, SMEs, multinationals and civil society. The small Dutch home market forces them to adapt solutions to international standards, cultures and ways of working.  
Sharing and digitalising information is crucial for facilitating the eHealth plan 2019-2021 from the Belgian government. With the rise of home care, there is an increasing need for enabling technologies in this field. These enabling technologies are necessary to assist the value chain of Healthy Living & Ageing.
3. Value Chain Digital Health ‘the use of data for clinical decision-making, diagnosis of disease, detection of acute and long-term risks, treatment plans and monitoring’  
Dutch research is focused around health data management and detection & screening tools, which can facilitate data analysis. Dutch solutions have a strong focus on improving efficiency and clinical decision support tools.  
Since more and more health-related data is being measured and collected in Belgium, the potential for analysing this data is increasing. Dutch organisations can support the transition of Belgian healthcare towards digitalisation. The Netherlands has considerable experience in digital healthcare, which it is ready to share with similar countries like Belgium.
4. Biopharmaceutical Developments/Personalised Medicine  
Considering the strengths of the Flanders and the Netherlands biotech ecosystems and joint ambitions in the field of personalised medicine, Biopharmaceutical Developments and Personalised Medicine is the fourth value chain on which sustainable bilateral cooperation is foreseen.

### Overview milestones & flagships

- G2G (MoU, state visits, thematic focus on prevention and digitalisation, for example)
- Trade (PIBs, Market study, missions, incoming delegations)
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)
- RegMedXB is a longer running, cross-border, strategic collaborative effort between Dutch clusters and the Leuven region

### 2018

- Economic mission to Belgium (Leuven). Led by Sigrid Kaag, Minister for Foreign Trade and Development Cooperation. Focus on digital health.
- Signing of MoU Netherlands & Flanders on Personalised Medicine

2019

- Healthcare mission to Belgium
- Thematic focus on eHealth with emphasis on elderly care.
- Incoming Belgian mission to the Netherlands as part of the Health-Holland Visitors Programme (HVP) and World of Healthcare.

2020

- Incoming Belgian mission to the Netherlands as part of the Health-Holland Visitors Programme (HVP) and World of Healthcare.

2021

- Life-on-Chip Conference 2021
- Knowledge seminar
- Health-Holland meet-up Belgium, to update LSH organisations on the latest developments in the Belgian healthcare market.

### The way forward

Several initiatives will be deployed from 2021 onwards to strengthen relations that have been built up in recent years:

- Facilitate matchmaking & getting in touch with key stakeholders  
COVID-19 has made it harder to get in contact with potential business partners, stakeholders and decision-makers. However, the need to do so still exists and will be facilitated through (digital) missions, which include dedicated matchmaking.
- Knowledge sharing  
Dutch and Belgian LSH organisations have considerable experience, which can benefit the internationalisation of other organisations. Efforts to facilitating knowledge sharing among stakeholders will therefore be stimulated.
- Bilateral R&D cooperation  
Within existing frameworks for bilateral research and innovation cooperation, like EUREKA, Eurostars and Horizon Europe many Belgian-Dutch collaborations have been supported over the years. These programmes and associated matchmaking and networking events can be used to strengthen the bilateral ambitions.
- Building sustainable relationships with Belgian counterparts  
Building long-lasting relationships is an integral part of the Health-Holland International Strategy 2020-2023. It is a requirement for the intended multi-annual programming in Belgium. Relationships built up in recent years will be strengthened. Intended broader collaborations are foreseen with In4Care, Agoria and Voka Health Community as well specific collaborations with EWI, VLAIO and FWO in line with the MoU. A bilateral R&D call between EWI/Vlaio and EZK/H-H/RVO is in the making for which matchmaking and expert round tables are foreseen. In addition to this, further thoughts on a concrete programme of cooperation are being discussed.

### (Preferred) actions

- Collective participation (mission or NL pavilion) at Health & Care 2022.

- Matchmaking and further deepening of collaboration on personalised health concerning the MoU with Flanders. A bilateral R&D call is in the making and further thoughts on concrete programme of cooperation are being discussed.
- Collaboration between Voka, Agoria, In4Care and TFHC to further connect the healthcare ecosystems.
- Follow-up on activities Artificial Intelligence and Health.

# Brazil

Brazil has the 9th largest economy in the world, with a GDP of USD 1.86 trillion, of which USD 160 billion represents the health sector. The Brazilian government operates one of the largest universal health care systems to date, providing free services to over 210 million people through the Sistema Único de Saúde (SUS). It also has the world's second-largest private health sector, which includes some of the world's best-performing hospital groups. Furthermore, Brazil is the leading medical device market in Latin America and the second-largest pharmaceutical market in the world. The Brazilian economy, however, is also hit by a recession and, more recently, the COVID-19 pandemic. As health demands are growing and resources in the public sector become scarcer, Brazil's health system is transforming to become future-proof. This transformation leads to opportunities for Dutch healthcare solutions in areas such as health information management systems, telemedicine and high-tech equipment for which Brazil depends on imports. The large industries and excellent science, technology and innovation climate in Brazil also provide opportunities for the Dutch sector related to STI cooperation and investments.

## Key indicators

	<b>GDP (2019 in trillion euros)</b> 1.53		<b>Size of medical Device market (2018 in euros)</b> 10-11 billion
	<b>Health Expenditure as % of GDP (2017)</b> 9.5%		<b>Size of pharma market (2018 in euros)</b> 30.0 billion
	<b>Ease of doing business (2019)</b> 124		<b>Medical Device import from NL (2018 in euros)</b> 24.3 million
	<b>Health care finance system</b> Social Health Insurance and supplementary private insurance		<b>Medical Device export to NL (2018 in million euros)</b> n/a

## LSH trends & developments

From the perspective of the Netherlands, the following market trends (more information, see below) in Brazil are of interest:

### Trade

Brazil's major transformations in its health sector provide numerous trade opportunities for the Dutch LSH sector:

1. Public Health
2. Digital transformation of the health system
3. Ageing Society
4. Hospital Design and Construction

## Specific regional priorities

### State of Minas Gerais (NBSO Belo Horizonte)

Minas Gerais hosts the first industrial airport in Brazil, having LSH as one of its priority areas. Companies will have several benefits and tax advantages to produce goods for export in Latin American market. Also, in the Airport region, a Medical City is being built to concentrate all the components that make up the “Health Productive Chain of the XXI Century”

### Southern Brazil (NBSO Porto Alegre)

There are three Innovation Centres in South Brazil: health-tech ecosystem and brain research institute at Biohub PUCRS; the Atrion collaboration incubator at Hospital Moinhos de Vento HMV, 2nd best hospital in Brazil in 2021. The office subscribed a support letter with HMV for further collaboration with Dutch companies and institutions. University Medical Center Groningen signed an international partnership with the universities PUCRS and UFRGS.

## Science, Technology and Innovation diplomacy

Since the Brazilian and Dutch government signed a MoU on STI cooperation in 2011, many bilateral (bottom-up) contacts have been established and consortia built for calls for proposals. These include highly knowledge intensive companies, universities, Dutch university medical hospitals, tech institutes and government-related organisations. Priority areas for NL-BR collaboration include healthy ageing, digitalisation of health system, use of big data, artificial intelligence, medtech, FAIR data, advanced materials, diagnostics (kits), lifestyle & prevention (research and applications), infectious diseases, community & home care, gamification, bioinformatics, personalised and precision care. The follow-up G2G Programme of Cooperation on STI 2020-2023, signed at the end of 2019 in Brazil, also includes LSH as one of the priority areas and involvement of the Brazilian Ministry of Health in future activities.

## Dutch interest in, activity and growth potential

Overview of Dutch interest in Brazil per organisation type (based on international research, Achilles):

During a survey by the Dutch LSH alliance in 2019, 63 unique organisations with activity and/or interest in Brazil were identified (total of 81 respondents). The majority of organisations with activity or interest in Brazil include digital health companies (19), followed by healthcare equipment companies (18), public health & knowledge (10) and hospital construction (8).

In 2018-2019, Achilles registered 160 requests from LSH companies who actively looked for support from the Dutch government with doing business in Brazil.

## Most prominent NL value chains

1. Value chain Digital Health: Currently 19 known active organisations.
  - potential opportunities: The Brazilian Ministry of Health has prioritised digital transformation through DATASUS and the public and private sector are investing in HIMMS, EMRs and interoperability between hospitals. Furthermore, multiple, large-scale telemedicine initiatives have been deployed and are developing further. Lastly, Brazil needs human capital to implement and manage its growing electronic health infrastructure.

- barriers: Dutch companies encounter difficulties in managing their business in Brazil due to the distance, language barriers and long development time of projects. Due to the pandemic, many Dutch Digital Health-solutions are focusing more on the European market.
2. Value chain Healthcare Equipment and supplies: Currently 18 known active organisations
    - potential opportunities: Brazil is the leading medical device market in Latin America and houses a huge market. It is mainly private providers who seek to remain competitive and who are investing in their technology.
    - barriers: Regulatory affairs in Brazil are perceived as stricter compared to other Latin American countries. Many Dutch organisations experience Brazil's ANVISA as bureaucratic and time-consuming. Furthermore, Brazil's large developed LSH industry makes for a competitive local market. Dutch red ocean products therefore experience lower success rates on the Brazilian market. Solutions in higher price ranges might experience difficulty when entering Brazil's public sector market.
  3. Value chain Public Health: Currently 10 known active organisations
    - potential opportunities: Training & education of Brazil's workforce. Implementation of new models in nursing and long-term care, for example.
    - barriers: One of the biggest barriers encountered by Dutch organisations is related to difficulties in turning leads into projects. If the benefits of implementing new technologies and models are not apparent to Brazilian stakeholders, then they do not tend to see these as a priority.
  4. Value chain Hospital Design & Construction: Currently 8 known active organisations
    - potential opportunities: Brazil's large health infrastructure requires continuous upgrades. Therefore the private hospitals, in particular, attract many modular hospital builders.
    - barriers: Participation in tenders in the public sector.

### Overview milestones & flagships

- G2G (MoU STI, state and governmental visits)
- Trade (PIBs, market studies)
- Science, Technology & Innovation (G2G MoU on STI 2011, G2G Programme of Cooperation STI 2020-2023, including LSH, joint R&D projects, 2011-2021 bilateral collaboration agreements, calls for proposals NL-BR)
- Invest (significant investments in the Dutch LSH sector)

### Collective Trade and STI activities

2015

- Factfinding mission Task Force Health Care (TFHC) to Brazil (IA Brazil), including a roundtable discussion with Brazilian health leaders

2016

- Mission (lead by IA Brazil and NFIA) of Brazilian health leaders to the Netherlands
- Dutch Research Council (NWO)-FAPESP call for proposal 'Data-driven research on Sports & healthy living'; 3 joint NL-BR projects

2017

- Dutch high-level participation at AMR conference EU- South America in Brazil
- Dutch speakers at HiMSS@Hospitalar/Healthcare Information and Management Systems Society (e.g. health/ lifestyle applications, gamification, bioinformatics, personalised and precision care, healthy ageing)
- Economic Mission leads by Ministry of Health, Welfare and Sport (VWS) and Innovation Attache (IA), including the Netherlands as host country at Hospitalar, NL pavilion, publications, matchmaking, etc.

2018

- Brazilian high-level delegation World of Health Care Netherlands
- Dutch speakers at HiMSS@Hospitalar/Healthcare Information and Management Systems Society (e.g. health/ lifestyle applications, gamification, bioinformatics, personalised and precision care, healthy ageing)
- Visit of health care delegation from Rio Grande do Sul to University of Twente
- Publication IoT and Networking Technology in Brazil, opportunities in Health (IA Brazil)
- Innovation visit of State Secretary, Mona Keijzer, Ministry of Economic Affairs and Climate Policy (EZK) to São Paulo; meeting with, among others, board of the Einstein hospital

2019

- Netherlands Enterprise Agency (RVO) TFHC Market Study LSH
- Seminar in which opportunities, identified in the Market Study, were presented
- Brazilian high-level delegation World of Health Care Netherlands
- Dutch speakers at HiMSS@Hospitalar/Healthcare Information and Management Systems Society (e.g. health/ lifestyle applications, gamification, bioinformatics, personalised and precision care, healthy ageing)
- Pitches Dutch high-tech companies at Einstein private hospital
- Netherlands Round Table with Dutch speakers at CISS/Congress of health services
- Matchmaking event organised at Hospitalar by Netherlands Business Support Office Porto Alegre with companies from Rio Grande do Sul
- NWO-FAPESP joint Call for Proposals 'Healthy Ageing'; 4 joint NL-BR projects
- Innovation mission Big data in Health lead by IA, EZK and RVO: São Paulo, Porto Alegre and Rio de Janeiro
- Dutch pavilion at CONAHP, with Dutch keynote speaker Ernst Kuipers, Erasmus MC
- Signing of G2G Programme of Cooperation on STI 2020-2023, including LSH. Partners: the Brazilian Ministry of Science, Technology and Innovation and the Dutch Ministry of EZK and Ministry of Education, Culture and Science (OCW).

2020

- Brazilian high-level delegation (digital) World of Health Care Netherlands
- NBSO Market Study Minas Gerais
- Buurtzorg signs strategic collaboration agreement with Brazilian organisation Laços Saúde
- IA Brazil policy Intelligence for Dutch Ministries related to the COVID-19 pandemic and Economic & Knowledge Security
- Partnership Spectator and Elsevier on Telehealth solutions in Brazil

2021

- IA Brazil policy Intelligence for Dutch Ministries related to the COVID-19 pandemic and Economic and Knowledge Security
- IA Brazil 'Artificial Intelligence in Health special Brazil
- Cooperation between NBSO Porto Alegre and Hospital Moinhos de Vento
- LATAM Business Dialogue
- H-H Digital Meet-up

### The way forward

Brazil is a market which in the past showed a high attraction on the Dutch LSH sector due to its size and interesting developments. After some large-scale activities, a selection of Dutch organisations with strong propositions continues to grow their activity on the market while a group of more explorative companies shows a decreasing interest due to barriers posed in the Brazilian market.

From the innovation perspective, Brazil continues to be a priority country for NWO, leading to a high potential for international collaborations. Due to the economic recession and subsequent pandemic in Brazil, many Dutch organisations were disconnected from the Brazilian market. Therefore, the public-private partnership to grow the mutual value between the Brazilian and Dutch LSH-market aims to continue support to successful Dutch organisations on the Brazilian market and rekindle interest from Dutch organisations to explore the Brazilian market post the COVID-19 pandemic. The following activities will therefore be organised:

#### **Inform Dutch LSH sector on market opportunities in Brazil:**

- Marketing & Communication: showcasing Dutch-Brazilian success stories through articles, videos and by inviting Dutch companies at events so they can share success stories
- Cooperation with health care cluster in the southern state of Rio Grande do Sul
- NBSO Americas Dialogue webinar about LSH opportunities to Dutch companies, including matchmaking

#### **Intensive guidance/soft-landing of individual organisations in the Brazilian market:**

- Ad hoc guidance
- Reactive support
- Ad hoc assistance to interested Dutch organisations
- Pro-active matching of Dutch companies with business partners
- Positioning individual companies at congresses

#### **Collective support: if a group of organisations emerges, we will look to explore larger-scale activities:**

- Collective activities
- Explore thematic dialogues

**Ambition:**

- Economic Mission in 2022 (whole value chain)
- Follow-up Innovation Mission Big Data in Health 2019 (leading to mission to the Netherlands)
- Call for Proposals NWO-FAPESP Advanced Materials in Health 2022
- Continued assistance of bilateral contacts, e.g. in the area of healthy ageing, such as PPS VOILÀ

# China

China is the second-largest economy in the world, and the Netherlands is its third-largest European trading partner. When looking at the LSH sector, China and the Netherlands are also close trading partners. From the Netherlands, there is a strong interest in exporting innovative medical devices, e-health and Dutch expertise on elderly care to China. This is reflected by the large number of SMEs participating in trade missions in recent years, the Partners for International Business (PIB) on elderly care and joint research on non-communicable diseases.

## Key indicators

	<b>GDP (2019 in million euros)</b> 97,471,035		<b>Size of medical Device market</b> (2018 in millions of euros) 67,180
	<b>Health Expenditure as % of GDP (2017)</b> 5.15%		<b>Size of pharma market (2018 in millions of euros)</b> 109,030
	<b>Ease of doing business (2019)</b> 31		<b>Medical Device import from NL</b> (2018 in millions of euros) 877.96
	<b>Healthcare finance system</b> Universal basic healthcare		<b>Medical Device export to NL</b> (2018 in millions of euros) 354.47

## LSH trends & developments

China's rapid urbanisation, growth in income and ageing population have caused a rise of non-communicable diseases and resulted in a significant expansion of Chinese healthcare demand. The ageing of the population continues, from 160 million over 65 years in 2019 to an expected more than 250 million by 2030. The availability of universal health coverage has increased the pressure on the public healthcare system resulting in long waiting times and quality issues, particularly in the highest-level hospitals.

The Healthy China 2030 strategy focuses on the shift from treatment to prevention and improving the quality and efficiency of China's healthcare system. Health technology, including artificial intelligence (AI), is considered to be one of the key instruments to achieve this goal. The COVID-19 outbreak has accelerated the digital transformation of healthcare delivery models. China is becoming a frontrunner in innovative e-health solutions such as health monitoring and prevention, online consultations and health surveillance of elderly people. In addition, it is expected that COVID-19 will result in more public healthcare resource optimisation and setting up a disease prevention infrastructure.

From the perspective of the Netherlands, the following market trends in China are of interest:

## Trade

1. Health Technology:
  - medical diagnosis and treatment;
  - wearables and medical devices;
  - online patient and healthcare processes management (mobile healthcare apps).
2. From treatment to prevention:
  - support evidence-based health promotion programmes;
  - tailored disease prevention;
  - training of health professionals to support the implementation of these programmes.
3. Elderly care:
  - age-proof housing (including smart furniture & corresponding data infrastructure);
  - elderly care management models;
  - training and education of staff.

## Innovate

1. China's investments in biomedical R&D
2. China's research on geriatric diseases (Alzheimer)
3. China's research on non-communicable diseases

## Invest

NFIA has several offices within China (within the embassy and consulates), We have seen interesting companies in the area of biotech and medtech showing interest in Europe and specifically the Netherlands. Also Brexit and Covid-19 is a reason why Chinese companies are looking to expand into mainland Europe. With the EMA in The Netherlands and a strong medical technology cluster exporting throughout Europe we see a growth in this sectors in addition to traditional Chinese medicine related efforts.

1. The Dutch biopharmaceutical and med-tech sectors offers interesting investment opportunities for China;
2. The Chinese government supports foreign investment in the health sector. In 2019, subsectors of both the pharmaceutical and healthcare industries were added to the 2019 Foreign Investment National Encouraged Catalogue.
3. In 2021 we have been working together with our NFIA offices in China to organise webinars to showcase what the Netherlands has to offer in the field of medical technology. We are focusing on foreign direct investment and we will not support mergers & acquisitions.

## Regional priorities

Traditionally, the focus is on cities close to the coast, from Beijing in the north to Guangzhou in the south, including Shanghai. Second-tier cities are growing in importance. Eastern China occupies a significant part of high-quality medical resources (46%) to be compared with central & western areas of China. From the perspective of the Netherlands, the following market trends are of interest:

## Dutch interest in, activity and growth potential

The Dutch interest in China is high. Each year multiple trade missions from the Netherlands to China have been organised. In 2018-2019, RVO dealt with 423 China-related requests from Dutch organisations active in the LSH sector. Prominent multinationals that active in China include Philips, Elsevier and Danone-Nutricia. Among the Dutch knowledge institutes, UMC Groningen, Maastricht UMC+, Erasmus MC, Eindhoven University of Technology and Zuyd University of Applied Sciences are active in China. Most Dutch companies active in China are SMEs.

### Most prominent NL value chains

1. Value chain mobility & vitality: Research and solutions that contribute to maintaining (prevention), strengthening and recovering (rehabilitation) physical and mental wellbeing by increasing people's independence.
  - Demonstrated (or expected) impact and activities:
    - > ChangZheng Hospital, located in Shanghai is working with UMC Groningen on research on prevention and treatment of lung cancer, COPD and cardiovascular diseases;
    - > The Sino-Dutch geriatrics programme between the University of Chengdu and Zuyd University of Applied Sciences;
    - > Buurtzorg in China;
    - > Jan Booij & Suzhou Social Welfare Institute;
    - > Age-proof housing projects of Hans Bekker.
  - Potential opportunities: Innovative products for elderly use, e.g. products which help senior people to live a mobile and independent life.
  - Barriers: Long and complex decision-making processes.
  - Preferred regions: regions with advanced ageing population and/or regions with Chinese pilot elderly (policy) projects.
2. Value chain e-health (AI): The application of both digital information and communication to support and/or improve health and healthcare processes:
  - Demonstrated (or expected) impact and activities:
    - > ZiuZ uses near-infrared (NIR) image analysis technologies to check the packaging of medicine bags or pouches.
  - Potential opportunities: growing importance of smart technologies to improve the quality and efficiency of China's healthcare such as medical robots and remote medical technology.
  - Barriers:
    - > Chinese competitors, China is a frontrunner, and the main challenge is to have a new or complementary solution in this field;
    - > complex tender projects;
    - > long decision-making processes;
    - > copyright-related issues.

### Overview milestones & flagships

- G2G (MoU, state visits)
- Trade (PIBs, market study e-health (2019))
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)

## Collective Trade Activities to China

2018

- Economic Mission with Dutch PM Mark Rutte and Minister Bruno Bruins
- Signing PIB Elderly Care China

2019

- Elderly Care Mission China led by Minister Hugo de Jonge
- MoU between Dutch Ministry of Health Welfare and Sports (VWS) and China's National Development and Reform Commission (NDRC)

2020

- Virtual mission to China BioMed Innovation and Investment Conference
- Trade mission to Hainan for Dutch companies based in China

<b>(Preferred) actions</b>	<b>Expertise/Capacity/Finance</b>
Market study in region X on theme Y	As part of the PIB an inventory will be made of relevant (pilot) projects in elderly care that provide opportunities for Dutch parties
Market access in specific regions	The Dutch Embassy in Beijing is now exploring the channel of Hainan Free Trade Port Hope City (Lecheng Pilot Zone) for Chinese Market access
Strengthening the opportunities for Sino-Dutch cooperation in the field of elderly care	Multiannual project on elderly care between VWS and China's National Development and Reform Commission (TFHC implementing agency)
Further support on the registration of medical devices and medical software, how to speed up etc. in China, what are the specific requirements of the Chinese market?	Possible appointment of liaison for PIB on elderly care may also provide advice on these kinds of questions
Further support on how to manage your network of Chinese distributors	
(Digital) mission in region X on theme Y	Possible PIB mission in 2021 as follow-up to inventory of relevant pilot projects in elderly care
Dutch representation in China Cooperation between Dutch stakeholders	Participation in the China BioMed Innovation and Investment Conference

# Colombia

Colombia is Latin America’s fastest-growing and most stable economy; COVID-19 has had a huge impact, but not as much as on other countries in the region. The Colombian health system has been named the best in Latin America and is ranked 22nd worldwide by the World Health Organization (WHO). Colombia is a country of contrasts, while in the largest cities, one can receive a very high standard of care, in rural and remote areas, the provision of quality healthcare is lagging. The country is working on strategies to close the gap, facing challenges such as efficiency, financial sustainability and addressing factors that cause pressure within the system. The impact of an ageing society and the subsequent increase in non-communicable diseases are examples of some of the pressures. 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 one of the top reference countries. This combination leads to opportunities to provide highly innovative healthcare solutions and develop initiatives that could contribute to improving basic healthcare provision.

## Key indicators

	<b>GDP</b> (2019 in millions of euros) 252,365		<b>Size of medical Device market</b> (in millions of euros) 3,000 – 4,000
	<b>Health Expenditure as % of GDP</b> (2017) 7.2%		<b>Size of pharma market</b> (in millions of euros) 3,230
	<b>Ease of doing business</b> (2019) 65		<b>Medical Device import from NL</b> (in millions of euros) 10.3
	<b>Healthcare finance system</b> Social Health Insurance and supplementary private insurance		<b>Medical Device export to NL</b> n/a

## LSH trends & developments

Considering its contrasts, Colombia welcomes highly innovative healthcare solutions and the development of projects that could address the main challenges within the health system. From the perspective of the Netherlands, the following market trends are of interest:

### Trade

Colombia’s major investments in its health sector provide numerous opportunities for the Dutch LSH sector. Prominent investment schemes include the End-Point Agreement (to provide liquidity within the system) and the National Rural Health Plan (PSNR) that aims to improve the sustainability and quality of health services and close the gaps between urban and rural areas. This investment may result in increased purchasing of innovative medical solutions in the public sector in the coming years:

1. **Public Health:** The Ministry of Health has prioritised non-communicable diseases, human talent and increasing quality and cost-effectiveness as key issues for the coming years. Colombia is looking abroad for solutions related to prevention, screening, treatment, remote training and education.
2. **Digital transformation of the health system:** The use of digital solutions, such as telemedicine, e-health, big data and value-based healthcare, are becoming more prevalent in Colombia. Two main trends can be distinguished: 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”.
3. **Ageing Society:** Colombia’s population has been steadily ageing for several decades. The percentage of Colombians over 60 will rise to 20.9% by 2050. Currently, home care, daycare and residential care are fragmented, and there is room for development. The national government has set priorities that include strengthening the quality of life and improving health status in the course of life, especially at high age, and increasing the quality and infrastructure of care provided to the elderly. Colombia seeks knowledge from experienced countries in terms of policymaking and different forms of care provision to deal with the challenges of a rapidly ageing population.

### Innovate

Currently, R&D collaborations between the Netherlands and Colombia have yet to be identified. Nevertheless, the 2020 emergency has led to several additions at the top of the Colombian agenda: pharmaceutical security, advanced therapies (drugs and medical devices) and bioproducts, which could offer opportunities for collaboration.

- The sustained growth of the Colombian pharmaceutical industry with a compound annual growth rate (CAGR) of 7% in local currency offers potential opportunities for R&D collaboration.

### Invest

LSH is not a proactive focus sector in Colombia for acquisition. Reactively NFIA is open to any LSH opportunity that presents itself. The Invest in Holland Life Sciences & Health team is also working on global lead lists if these lists include companies in Colombia, a proactive approach with the local economic network will start.

### Regional priorities

#### Urban

20% of the healthcare system affiliates are located in the Bogotá region, followed by the states of Antioquia with 13% and Valle with 9%. Bogotá represents 75% of the sales of medical devices. Also, the quality of the institutions in Bogotá stands out: 8 of the top 63 hospitals in Latin America are located in the city, according to America Economía’s 2020 ranking. Colombia is well-positioned in this list as well, with 26 institutions overall. Furthermore, Colombia is the reference country to provide complex treatments to patients from the Caribbean parts of the Kingdom of the Netherlands.

The pharmaceutical market is also concentrated in Bogotá, where 66% of the manufacturers and 65% of the wholesalers are located, representing 49% of the sector’s jobs. It is also the main commercial hub of the industry, with 47% of the exports and 82% of the imports. Urban centres such as Medellín, Barrquilla, Calí and Bucaramanga have a similar healthcare landscape as Bogotá.

## Rural

Health services in rural areas in Colombia are developing fast because the Colombian government designed the National Rural Health Plan (PSNR) after signing the Peace Treaty with the FARC in 2016. The PNSR stretches over 15 years and is financed by both the Colombian government and foreign donors.

### Overview milestones & flagships

- G2G (MoU, state visit)
- Trade (PIBs, Market studies)
- Innovate not applicable
- Invest not applicable

### Collective Trade Activities to Colombia 2016 – 2019

2015

- Visit Minister Edith Schippers: Signing of MoU and work plan

2016

- Holland Pavilion at Meditech trade fair in Bogotá – 16 Dutch companies and organisations of which 60% still active (through distributors or projects) in Colombia
- RVO and TFHC market exploration LSH Colombia

2017

- Life Sciences & Health Roadshow through Colombia (Bogotá, Medellín, Bucaramanga, 10 participants), of which the workplace pilot project with “Healthy Villages” is a direct result, as well as the telemedicine projects of Spectator and pneumatic tube system projects in hospitals of Telecom Tube Systems

2018

- Economic mission led by Prime Minister Rutte and Secretary-General Gerritsen (Bogotá & Cali) with 26 Dutch LSH companies

2019

- Signing Renewal of work plan by Dutch & Colombian Ministries of Health
- RVO TFHC Market Study LSH Colombia
- Oncology and Palliative Care Missions
- “Healthy Villages” pilot in the remote area of Guainía

2020

- PIB WeCareColombia (in development)
- Knowledge exchange Human Talent – Nurses

### The way forward

The ambition has been set to maintain and further grow the role of the Netherlands as one of the top reference countries to Colombia and grow the already sizeable number of concrete collaborations. To make progress, we suggest performing actions on several high-potential themes:

### **(Preferred) actions**

- **Build on long-term collaborations:** The Colombian and Dutch Ministries of Health signed a Complementary Health Cooperation Agreement in 2018, spurring collaborations in healthcare. As a consequence of the COVID-19 pandemic, cooperation and communication slowed down. The Netherlands should look to re-establish and intensify collaborations in healthcare;
- **Position the Netherlands in Colombia:** The Netherlands LSH sector is positioned as a key partner in those areas of interest for both countries via initiatives such as the Healthy Villages Consortium and the PIB cluster WeCareColombia;
- **Explore and grow collaborations:** There are great challenges within the Colombian health system to respond to the emerging needs in cancer and palliative care. The challenge for the country is focusing on integral attention and quality. The concentration of services is within the main cities with great needs within the territories;
- **Market information:** Keep the Dutch LSH sector updated on developments in the Colombian health system via webinars and specific thematic seminars;
- **Collective activities:** Maintain relations with the Colombian health sector through the Health-Holland Visitors Programme, incoming and outgoing missions, thematic dialogues and webinars.

# East Africa

In the scope of this factsheet, East Africa refers to the East African nations of Ethiopia, Kenya, Tanzania, and Uganda. These four countries show strong economic growth and have strong commitments to achieve and strengthen universal health coverage.

## Key indicators

		Ethiopia	Kenya	Tanzania	Uganda
	<b>GDP<sup>6</sup></b> 2019, in millions of USD	95,912	95,503	63,177	35,165
	<b>Health Expenditure as % of GDP<sup>7</sup></b> 2018	3.3	5.2	3.6	6.5
	<b>Ease of doing business<sup>8</sup></b> 2019	159	56	141	116
	<b>Size of medical device market<sup>9</sup></b> in millions of USD, 2019	not yet known	150	not yet known	not yet known
	<b>Medical Device import from NL</b> 2018, in millions of USD <sup>10</sup>	133.5	16.4	16.6	4.9
	<b>Medical Device export to NL</b> 2018, in millions of USD	n/a	n/a	n/a	n/a
	<b>Size of pharma market<sup>11</sup></b> 2018, in millions of USD	648	750	538	450
	<b>Healthcare finance system</b>	Government budget, off-budget donor assistance, and private out-of-pocket expenditures.	Government budget, off-budget donor assistance, and private out-of-pocket expenditures.	Limited government budget, off-budget donor assistance, and private out-of-pocket expenditures.	Limited government budget, off-budget donor assistance and private out-of-pocket expenditures.

<sup>6</sup> Source: World Bank; [www.data.worldbank.org/indicator/NY.GDP.MKTP.CD](http://www.data.worldbank.org/indicator/NY.GDP.MKTP.CD)

<sup>7</sup> Source: World Bank; [www.data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS](http://www.data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS)

<sup>8</sup> Source: World Bank; 1 = most business friendly regulations. [www.data.worldbank.org/indicator/IC.BUS.EASE.XQ](http://www.data.worldbank.org/indicator/IC.BUS.EASE.XQ)

<sup>9</sup> US International Trade Administration; Kenya, Country Commercial Guide

<sup>10</sup> UN Comtrade Database; [www.comtrade.un.org/](http://www.comtrade.un.org/) Commodity Codes: 3001,3002,3003,3004,3005,3006, 9018, 9019, 9020, 9021, 9022, 9402

<sup>11</sup> Medic East Africa, East Africa Market Insights 2019.

## LSH trends & developments

All East African countries face a triple burden of disease, consisting of communicable diseases (like HIV/AIDS, tuberculosis (TB) and malaria), reproductive health-related diseases, and a growing prevalence of non-communicable, lifestyle-related diseases typically associated with a growing middle class. The health systems are characterised by a historically underfunded public sector, growing private sector operators, a faith-based health sector, and large differences between healthcare provision in urban and rural areas. Shared challenges relate to inadequate resource availability and public financing, insufficient health infrastructures and outreach to rural communities, limited medical supplies, and shortages of skilled health professionals. Shared opportunities relate to public policies and investments to address these changes and work towards universal health coverage, including a focus on digitalisation, a growing private sector and commitments to Official Development Assistance (ODA). Roughly 30% of health financing stems from ODA (Kenya: 21%, Ethiopia: 25%, Tanzania: 41%, Uganda: 41%). The current COVID-19 pandemic has exposed and reaffirmed the historical gaps that exist in the health sector. This has resulted in some level of increased focus and investment in the sector by the governments.

### Regional priorities

#### Kenya<sup>12,13</sup>

Kenya is widely regarded as the economic and innovation hub of East Africa. Kenya's health sector value is USD 4.5 billion and contributes approximately 6% to the country's GDP. The sector faces enormous deficiencies in coverage and infrastructure. The government spending is below most of the other countries in the region, while cost per capita is above these countries. Private sector contribution is also below that of comparable economies. With the economy, Kenya's middle class is growing, and the demand for quality healthcare is rising. Kenya's healthcare faces a triple transition challenge. A demographic transition, where a large number of young people become adults with increased healthcare costs. An epidemic transition, with an acute increase in chronic care conditions such as cancers and cardiovascular diseases that are costly for the long-term to treat. And a financing transition, in particular, replacing donor funding with innovative financing as a result of being elevated to lower-middle-income status. In his 2017 inauguration speech, Kenyan President Uhuru Kenyatta defined a "Big Four Agenda", in which 100% universal healthcare by 2022 was cited as a key objective. This will require concerted efforts of multiple stakeholders, including the private sector, if it is to be realised. Currently, the public sector accounts for 52% of the healthcare provision, the commercial private sector for 37% and faith-based organisations for 11%.

#### Ethiopia<sup>14</sup>

With close to 100 million inhabitants, Ethiopia is the most populated country in East Africa. The population of Ethiopia is largely rural (79%) and impoverished, with limited access to healthcare and other social goods and services that impact health, such as housing, water, food and sanitation. System-wide reforms have been made in the health sector since 2004. As a result, the Ethiopian health sector has made significant progress to improve Ethiopia's health indicators, which has translated into saving millions of lives. Neonatal disorders and infectious diseases are still causing the most deaths. Although on the rise, the health

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<sup>12</sup> Embassy of the Kingdom of the Netherlands in Nairobi, 2020 November

<sup>13</sup> Africa Health Business Ltd., 2019, Kenya's Health Sector: Snapshot

<sup>14</sup> Africa Health Business Ltd., 2019, Ethiopia's Health Sector: Snapshot

expenditure per capita lags behind that of other East African countries. As required by the national policy on devolution, power is decentralised in the public health sector of Ethiopia. Estimates show that the public sector covers 80% and the private sector 20% of the health market. However, in capital Addis Ababa the private sector provides for 60%, of which 20% is taken by the faith-based organisations and 40% by the commercial private sector.

### **Tanzania<sup>15</sup>**

With the Health Sector Strategic Plan IV 2015-2020, the Tanzanian government is attempting to expand healthcare coverage to all regions of the country within a decentralised framework. Priority areas are HIV, TB and leprosy, maternal, neonatal and reproductive health, NCDs and mental health, and infrastructure. The total investments fall short of the estimated minimum financial requirements to provide basic health services to the population. However, health outcomes in Tanzania are better than might be expected given the low expenditure on health, endemic diseases and a large rural population. Health services are provided through public (71%), private (15%) and faith-based (12%) services. There is limited local production of pharmaceuticals and medical devices, which means that the surplus is imported. The pharmaceutical market is growing, mainly generic medicines, and pharmaceutical imports are increasing. Tanzania's adoption of a Digital Health Investment Roadmap for 2017-2023 and a Digital Health Strategy for 2019-2024 indicate the focus on ICT in public health services delivery.

### **Uganda<sup>16, 17</sup>**

In Uganda, over half of the population is under the age of 18. This means the country has one of the youngest populations in the world. Across Uganda, both public and private sub-sector players provide health services to the people of Uganda. According to the Ministry of Health, the government contributes about 66% of the service delivery outlets. Private health providers comprise private not-for-profit organisations (PNFPs), private-for-profit healthcare providers (PFPs), also known as commercial healthcare providers, and traditional and complementary medicine practitioners (TCMPs). Nearly 70% of the facility-based PNFP organisations exist under faith-based umbrella organisations. Public expenditure on health is relatively low. Development partners (~40%) and household out-of-pocket spending (~40%) continue to contribute the largest share of health expenditure. The private sector is becoming more integrated in public policy, and it is envisioned that it should play an important role to achieve UHC in Uganda.

## **Dutch interest in, activity and growth potential**

Task Force Healthcare (TFHC) has identified 132 unique organisations that are active or interested in East Africa. This list includes 93 SMEs, 15 NGOs, 9 multinationals, 13 knowledge institutes, 1 development bank, and 1 health insurance company.

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<sup>15</sup> UNICEF, 2018, Tanzania: Health Budget Brief 2018. [www.unicef.org/esa/media/2331/file/UNICEF-Tanzania-Mainland-2018-Health-Budget-Brief-revised.pdf.pdf](http://www.unicef.org/esa/media/2331/file/UNICEF-Tanzania-Mainland-2018-Health-Budget-Brief-revised.pdf.pdf)

<sup>16</sup> [www.medicestafrica.com/content/dam/Informa/medicestafrica/2019/downloads/healthcare-market-insights-uganda.pdf](http://www.medicestafrica.com/content/dam/Informa/medicestafrica/2019/downloads/healthcare-market-insights-uganda.pdf)

<sup>17</sup> Global Financing Facility, 2017, Exploring Partnership Opportunities to achieve Universal Health Coverage. [www.globalfinancingfacility.org/sites/gff\\_new/files/Uganda-Private-Sector-Assessment-health.pdf](http://www.globalfinancingfacility.org/sites/gff_new/files/Uganda-Private-Sector-Assessment-health.pdf)

## Most prominent NL value chains

### Trade

1. Value chain medical devices & supplies: Dutch organisations that produce, assemble and deliver medical devices, supplies and/or supply packages (medical kits) for diagnostics, treatments and/or rehabilitation, either high-tech or specifically designed or tailored for low resources settings (point-of-care).
  - Opportunities: Growing private health sectors, which tend to source for quality (Western branded) and cost-efficient solutions for more advanced devices. Faith-based and public health sectors, which cater for a large part of the population.
  - Barriers: Price-based market. Lead times tend to be longer due to bureaucracy and non-transparent decision-making processes in the public sector. Difficult to reach key decision-makers. Weak(er) regulatory environment and institutions for justice.
  - Preferred countries by sector: Kenya, Ethiopia, Tanzania, Uganda.
2. Value chain E-health: Dutch organisations that develop and deliver IT solutions for health information management systems, health financing, health behaviour, telehealth & mobile health (health from a distance), disease management platforms, electronic health records, training & education, and artificial intelligence to support medical decision-making.
  - Opportunities: Growing attention, policy initiatives and investments in digitalisation for improving quality and access to healthcare, and reaching out to more rural areas.
  - Barriers: Lack of legal frameworks for IT solutions, inadequate financial resources, lack of user acceptance, difficult to reach key decision-makers.
  - Preferred countries by sector: Kenya.
3. Value chain hospital design & construction: Dutch organisations that can develop and execute turn-key hospital and clinic projects that include project finance, build, equipment, train and operate. Both brownfield and greenfield projects.
  - Potential opportunities: General need for health infrastructure. Growing private health sector.
  - Barriers: International competition, including consortia from countries that can bring attractive financing solutions. Difficult to reach key decision-makers.
  - Preferred countries by sector: Kenya, Uganda, Tanzania, Ethiopia.
4. Value chain public health / health systems strengthening: Dutch organisations that have expertise and solutions for primary & community-level models and interventions (mother & child), sexual and reproductive health & rights (SRHR), health system data management (digital platforms for data collection, assimilation, interpretation), health policy, financing/payments, monitoring & evaluation, procurement & supply chain management, epidemiology/infectious diseases (prevention, screening, control programmes), and training & education (vocational, university, postdoc, including research education).
  - Opportunities: Under the umbrella of UHC, growing attention for primary & community-level models and interventions, international donor grants.
  - Barriers: International competition, including consortia from countries that can bring attractive financing solutions. Limited capabilities for PPP models. Difficult to reach key decision-makers.
  - Preferred countries by sector: Kenya (to be explored: Ethiopia, Tanzania, Uganda).

## Innovate

1. Biomedical & Epidemiological Research: Research on AMR, TB, HIV/AIDS, One Health, cardiovascular diseases, cancer, diabetes, lung, and neglected diseases.
2. Health System Management: Research towards health policy, laws & regulations, economics, financing & insurance, health technology assessment (HTA), and health service management & organisation.
3. Digital Health: Research & development for innovative health financing, health data management, and smart diagnostics.

## Invest

LSH East Africa is not a priority country for attracting investments.

## Overview milestones & flagships

- G2G (MoU, state visits)
- Trade (PIBs, Market studies)
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)

## Collective Trade Activities to East Africa

2016

- Market Study Kenya

2017

- Incoming delegation from Kenya (Feb)
- Incoming delegation from Kenya (Sep) for the Health-Holland Visitors Programme & World of Healthcare
- Economic Mission to Kenya with Minister Edith Schippers

2018

- Incoming delegation from Kenya for the Health-Holland Visitors Programme & World of Healthcare

2019

- Economic Mission to Kenya & Ethiopia with Erik Gerritsen, Secretary-General VWS
- Incoming delegation from Kenya for the Health-Holland Visitors Programme & World of Healthcare

2020

- Incoming delegates from Kenya & Ethiopia for the virtual edition of the Health-Holland Visitors Programme & World of Healthcare
- Update for Market Study Kenya focusing on Medical Devices & e-health (ongoing)

<b>(Preferred) actions</b>	<b>Expertise/Capacity/Finance</b>
SDG Hub Nairobi (brief explanation)	NL Embassy Nairobi
Kenya – Practical Guide for Opportunities, Challenges and Best Practices for Dutch LSH companies in medical devices & e-health who are willing to enter/expand their business in Kenya	Market study commissioned by RVO.nl
Kenya – Visit/activity for Dutch new entrants	Listed a potential follow-up activity
Ethiopia (1), Uganda (2), Tanzania (3) – Conducting market studies to increase the understanding of developments, opportunities and doing business for (various) Dutch LSH sub-sector(s)	
Ethiopia, Tanzania and Uganda – Follow-up opportunities w/ NL high-level officials and matchmaking with local stakeholders, based upon market studies	
Investigate and resolve the financial bottlenecks of Dutch entrepreneur in East Africa	
A sustainable programme or revolving fund to strengthen cooperation in digital transformations and position the Netherlands as a trusted and preferred partner	
Kenya – possible health journalists visit to profile the Dutch health sector	

# France

France is the fifth-largest economy worldwide and the second-largest economy in Europe. The health outcomes in France are ranked among the best in the European Union, with spending on healthcare being around 11.5% of GDP, higher than the EU average. French organisations are increasingly open to collaboration in research and development projects. However, these tend to be oriented towards Germany, the UK, Italy and the United States. A strong network of health innovation clusters (les pôles de compétitivité en santé) are present in the different regions of France. Their main aims are to: stimulate innovation, support the development of SMEs, grow internationally, and offer high-level infrastructures.

Furthermore, France is at the forefront of artificial intelligence (AI) in Europe and is seeking international cooperation. In March 2018, President Macron set out his plan to invest €1.5 billion in AI over the next five years, highlighting health as a priority area. Moreover, a strategy for a transformation in the healthcare system was launched: Ma Santé 2022. This strategy has a budget of €3.24 billion, of which €500 million is for digital transition. Further development of the digital transition in health was announced with the launch of the roadmap for digitalisation in health in 2019. The COVID-19 crisis has shown the importance of digital (tech) solutions, like AI. That is why the government launched the Ségur de Santé in 2020, with €2 billion dedicated to digitalisation in the healthcare system.

## Key indicators

	<b>GDP (2019)</b> \$2.78 trillion		<b>Size of medical Device market (in billions of USD)</b> 40.3
	<b>Health Expenditure as % of GDP (2017)</b> 11.2		<b>Size of pharma market (in billions of USD)</b> 55.9
	<b>Ease of doing business (2019)</b> 32		<b>Medical Device import from NL (2018 in millions of USD)</b> 1357
	<b>Healthcare finance system</b> Universal healthcare system mainly financed by government national health insurance.		<b>Medical Device export to NL (2018 in millions of USD)</b> 1717

## LSH trends & developments

From the perspective of the Netherlands, the following market trends are of interest:

### Trade

1. Digitalisation of healthcare:
  - Telehealth;

- Online patient and healthcare processes management (electronic health records (her), mobile healthcare apps);
  - Artificial Intelligence in health.
2. Biopharma
    - Non-communicable diseases, specifically diabetes and cardiovascular diseases;
    - Geriatric diseases (Alzheimer).
  3. Med-Tech
    - Wearables and medical devices;
    - Homecare – medical “home-use” disposables;
    - Imaging and radiotherapy.
  4. Hospital construction – hospital renovation and modernisation

### Innovate

- Development of key enabling technologies and med-tech applied in health & care;
- Data infrastructure and interoperability, including development of digital tools;
- R&D in the field of chronic diseases, specifically in the field of oncology, Alzheimer and diabetes, including in EU-context (e.g. Horizon Europe);
- R&D in the field of vaccines;
- R&D and innovative solutions in the field of healthy ageing;
- Innovation in environmental health;
- Innovative solutions in prevention, including the link with agri-food (e.g. Nutriscore);
- Strengthening strategic value chains, e.g. in the field of personal protective equipment and medicines (together with trade and possibly NFIA);
- One Health - further development of antimicrobial resistance (AMR), together with the agri-food team.

### Invest

- Since 2020 we have a NFIA office in Paris. Due to COVID19 the results were lower than expected in 2020. This is also related to the new strategy of the Invest in Holland network
- We have invested the time to set up the network in France and we have defined and selected specific conferences and webinars to attend for the future.
- We have defined BIOFIT and BIO Europe as interesting events to join in 2021.
- The Dutch biopharmaceutical and digital health sectors offer interesting investment opportunities for France;

### In general

- The French government has introduced reforms to promote the development of digital healthcare (telemedicine), including increased opportunities to use health data and the creation of a digital health space for each patient;
- Access to local healthcare needs to be improved, which includes the creation of regional professional health organisations (Communautés Professionnelles Territoriales de Santé). Existing CPTS solutions include multidisciplinary healthcare centres (Maisons de santé pluridisciplinaires);
- Empowering patients – the active role patients play in their own treatment needs to be reaffirmed. The National Health Strategy’s goal is to provide everyone with the means to find, assess and make use of available expertise to make informed decisions concerning their own health.

## Regional priorities

Pôle de compétitivité are regional and inter-regional clusters promoting the development of collaborative projects in research and development that are particularly innovative. They are active in most activity sectors, and seven of these Pôles are focusing on LSH:

1. Alsace Biovalley. Located in the Alsace region, this cluster is dedicated to therapeutic innovations, both in drug development and med-tech;
2. Atlanpole Biotherapies. Based in the Pays de la Loire – Brittany – Center Val de Loire regions, this cluster focuses on biotherapy;
3. Cancer-Bio-Santé. This bi-regional cluster (Midi-Pyrénées and Limousin) is dedicated to oncology and ageing;
4. Eurobiomed. Located in the Occitanie est and Provence-Alpes Côte d’Azur regions, Eurobiomed focuses on translational and clinical research, technological innovation and health sector startups;
5. Lyonbiopôle. This cluster, located in Lyon, aims to support the following strategic areas: human medicine, veterinary medicine, in-vitro diagnostics, medical devices and medical technologies;
6. Medicen Paris Region. This cluster, situated in Paris, focuses on five strategic areas: biological diagnostics, diagnostic and interventional imaging, regenerative medicine and biomaterials, digital health and translational medicine;
7. Nutrition-Santé-Longevity. NSL, located in Lille, focuses on two fast-growing markets: health nutrition and ageing.

## Dutch interest in, activity and growth potential

### Overview milestones & flagships

- G2G (MoU, state visits, thematic focus on, e.g. prevention, digitalisation)
- Trade (PIBs, Market study, missions, incoming delegations)
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)

### Collective Trade Activities to France

2018

- Launch & publication of Market Report on France
- French Delegation during the Health-Holland Visitors Programme

2019

- Economic Mission to the Paris Healthcare Week and Lyon with Minister Bruno Bruins (MoU Medicen & TFHC)
- Seminar on AI (during visit Bruno Bruins)
- Start-up mission to the AI for Health Conference
- AI for Health Conference
- French Delegation during the Health-Holland Visitors Programme

2020

- Launch and publication Market study e-health France
- Collective Holland Pavilion at SantExpo in Paris (cancelled)

2021

- Digital Trade/Innovate Mission
- Virtual AI Mission with State Secretary Mona Keijzer (25-27 January) and the NL AI Coalition with health & care being of the four priority themes
- AI & Health Innovation Mission (to be decided)

### The way forward

- To strengthen and deepen: application of AI and other key enabling technologies in health & care, digitalisation
- (New) activities to be explored: prevention, environmental health

### (Preferred) actions

- Collecting Market information: Due to a knowledge gap a market study is required in region X on theme Y
- Collective Holland Pavilion at SantExpo in Paris (2021)
- Digital Trade/Innovation Mission (in combination with Holland Pavilion)
- Further support on the registration of medical devices and medical software in France
- Further support on how to manage your network of French distributors
- Cooperation between Dutch stakeholders
- Dutch representation in France

# Germany

Germany is the largest trade partner of the Netherlands: over a fifth of Dutch exports are shipped to Germany. In the Life Sciences and Health (LSH) sector, Germany and the Netherlands are also close trading partners. From the Netherlands, there is a strong interest in providing LSH solutions in e-health, elderly care and medical technology to its eastern neighbour. This is reflected by the large number of SMEs participating in trade missions during the last years, the PIB on medical technology, and many Dutch-German contracts and joint projects. During visits from Germans to the Netherlands, visitors perceived the Dutch LSH sector as creative and innovative, resulting in projects and an open mind to find new ways for cooperation.

## Key indicators

	<b>GDP</b> (2019 in billion euros) 3,450		<b>Size of medical Device market</b> (2018 in billion euros) 36 – 40
	<b>Health Expenditure as % of GDP</b> (2017) 11.7%		<b>Size of pharma market</b> (in billions of euros) 41.5
	<b>Ease of doing business</b> (2019) 22		<b>Medical Device import from NL</b> (2018 in million of euros) 720
	<b>Healthcare finance system</b> Social health insurance & private insurance		<b>Medical Device export to NL</b> (2018 in million euros) 1,500

## LSH trends & developments

Germany has a highly developed LSH sector, which forms the biggest LSH market in Europe. From the perspective of the Netherlands, the following market trends are of interest:

### Trade

- Ageing society: Germany has the largest senior (65+ years old) population in Europe, which is growing fast. The German elderly care infrastructure has insufficient capacity to continue delivering quality services. To increase the capacity of the German health system, the government has increased investments in the building of nursing and residential care. Furthermore, multiple federal states, most notably Baden-Württemberg are experimenting with telemedicine to alleviate pressures on hospitals and nursing homes;

- Affordable and accessible quality healthcare: re-designing care, more care delivery at home, telehealth and efficiency improvements (digitalisation);
- New technology or transforming healthcare ecosystem: contribute to better care and/or better quality for the patient (e.g. AI, data-driven healthcare, outcome-based financing) mainly Southern Germany.

### Innovate

Health and care is a main pillar in Germany's High-Tech Strategy 2025. Compared to the middle of the last century, Germans have on average gained a decade of life expectancy. At the same time, both new and known diseases demand improved concepts for prevention, diagnostics and therapy. This is why Germany relies on high-performance health research, international research partnerships, and the use of digital innovations in medicine and healthcare. Key enabling technologies like AI, photonics and biotech are being promoted to open up new and disruptive innovation potential.

In addition, the Federal Government is realigning medical research with the Health Research Framework Programme. In this programme, the focus is being shifted to people. Digitisation and personalisation are used as keys to progress.

Germany is a frontrunner in personalised medicine. The universities of Cologne and Berlin cooperate with Radboud University on this topic.

### Invest

When looking at the foreign direct investment (FDI) trends, Germany houses many large medical technology clusters interested in investing in the Netherlands. A premier example is the Health Capital Berlin-Brandenburg that has invested 1 billion euros in Twente.

Other areas of investment include:

- AI and robotics in medical technology;
- pharmaceutical industry;
- e-health;
- medical logistics.

Since 2020 NFIA has an office in Munich that is supporting FDI together with the Invest in Holland LSH team in The Hague.

### Regional priorities

Within Germany, Baden-Württemberg and Bayern are the most interesting federal states from a medical technology and product development point of view. Its vicinity to the Dutch border and the large healthcare and pharma industry presence makes North-Rhine Westphalia an important strategic partner. In terms of e-health, Berlin (with all relevant health authorities, large hospitals, R&D hubs), Hamburg and Southern Germany are important areas. Based on previous activities, the Rhineland Palatinate and Saarland regions are important in e-health and elderly care.

There are strong research clusters throughout Germany. The Federal Ministry for Economic Affairs and Energy launched „go-cluster” – a cluster excellence programme combining the most efficient national cluster management organisations. There are 25 med-tech go-clusters, 12 of which are in Bavaria and Baden-Württemberg. Other strong regions are Berlin-Brandenburg, Saxony and Hamburg.

## Dutch interest in, activity and growth potential

Overview of Dutch interest in Germany per organisation type:

(based on *onderzoek internationaal, achilles*)

60 - 120 SMEs

3 multinationals

>10 knowledge institutes

### Most prominent NL value chains

1. Value chain E-health/digitalisation: E-health has been an area where Germany has lagged in recent decades. In the past few years, however, rising healthcare costs, a lack of healthcare professionals, public pressure, new leaderships and laws have led to an opening up of the e-health market and its uptake by healthcare providers and patients. This provides a great opportunity for the Dutch e-health sector to market existing, tried-and-tested e-health tools and applications in Germany. Demand is not necessarily regionally focused as the potential and need is German-wide. Nevertheless, more rural areas with lower access to healthcare and areas where the shortage of healthcare professionals is greatest could prove to be the lowest hanging fruit. Rhineland-Palatine, Saarland, Lower Saxony, Mecklenburg-Vorpommern and parts of Southern Germany could be such regions. What must be taken into account is the German rigour when it comes to privacy and data-security laws – these are strict and followed closely. Furthermore, though Dutch companies bring a host of validated e-health solutions, it is often mentioned that those solutions have not been used in use in Germany, and so their efficacy has not been tested in context. Activities focused on e-health and the overlapping field of elderly care have proven fruitful in expanding the network and have led to initial business successes. However, to be more successful, a PIB e-health is in the making, which will work towards a structural collaboration on e-health with Germany.
2. Value chain elderly care: Germany is dealing with a significant shortage in healthcare professionals, specifically with regards to nursing staff. This provides an opportunity for Dutch companies and organisations active in telemedicine and e-health, which provide tools to increase efficiency and work satisfaction and decrease the administrative burden. Secondly, (digital) solutions to promote social and mental engagement among the elderly are also seen as a key opportunity. Lastly, as Germany is moving slowly towards homecare from institutionalised care, there are also opportunities for novel management concepts and telemedicine solutions that can aid those changes. Achieving this requires a better overview of the elderly care system, its stakeholders and its financing. With that, a clear approach, set of objectives and activities can be developed. Potential activities under consideration are participation at the trade fairs Rehacare and Altenpflege as well as dedicated missions and roundtables. Eventually, the pursuit of an MoU and/or PIB are deemed worthwhile to promote collaboration.
3. Value chain product development: Product development is an example of a value chain with a lot of expected business impact. Even though Germany has the world's second-biggest medical device industry, the interest in Dutch product developers is moderate. Dutch contract manufacturers indicate regulatory barriers to be the cause of this lower level of interest in Germany. Dutch contract researchers, on the other hand, have successfully set up projects.

4. Value chain research and development: All value chains begin with research and innovation. For example, e-health solutions, or data-driven healthcare in the broad sense, are dependent on developments in key enabling technologies like AI and big data. It is therefore important to focus on the early technology readiness levels (TRLs) as much as on final product development. The Innovation Attaché Network Germany has set AI, regenerative medicine and oncology as priorities, based on the Top Sector's Internationalisation strategy. Within the Dutch government's strategic action plan AI and the kick-off of the Dutch AI coalition, the Netherlands has a strong position in artificial intelligence.

After the cooperation agreement with Flanders, RegMedXB also aims to build cooperation with Germany. Germany has a broad research field for regenerative medicine with clusters in Berlin, Hannover and Munich. By connecting these clusters to the RegMedXB moonshots, we can create a European cluster with RegMedXB as the centre in the Netherlands. Germany has declared a National Decade Against Cancer. Government, science, business, society and stakeholders in the health system will be working together to advance prevention, early detection, diagnosis and treatment of cancer. Here there are opportunities for strategic partnerships with Dutch organisations like the OncoCode Institute.

### Overview milestones & flagships

#### Collective Trade Activities to Germany

2016

- Economic mission to Southern Germany led by Minister Lilianne Ploumen parallel to the working visit of the Dutch Royal Couple, including a visit to Siemens Healthcare and Medical Valley Erlangen. An MoU between Brainport Industries and Medical Valley EMN e.V. was signed.
- Collective Holland Pavilion at trade fair MEDICA in Düsseldorf
- Collective Holland Pavilion at trade fair MedtechLIVE by Medizintechnik NL

2017

- Collective visit to e-health trade fair ConhIT in Berlin
- Dutch Digital Health Night at the Netherlands Embassy in Berlin
- Incoming visit German stakeholders in e-health (with a visit to World of Healthcare)
- Collective Holland Pavilion at MEDICA trade fair in Düsseldorf
- Collective Holland Pavilion at MedtechLIVE trade fair by Medizintechnik NL
- Personalised Medicine mission to Southern Germany led by Innovation Quarter

2018

- Incoming German Delegation as part of the Health-Holland Visitors Programme
- Economic Mission to Rhineland Palatinate and Saarland led by Deputy Prime Minister Hugo de Jonge and Minister Sigrid Kaag parallel to the working visit of the Dutch Royal Couple with a focus on e-health and elderly care
- Collective Holland Pavilion at MEDICA trade fair in Düsseldorf
- Collective Holland Pavilion at MedtechLIVE trade fair by Medizintechnik NL
- Collective Holland Pavilion at Medical Devices Meetings by WTC Twente
- Collective visit to e-health trade fair ConhIT in Berlin
- Dutch Digital Health Night at the Netherlands Embassy in Berlin

## 2019

- Market study German e-health sector: barriers and opportunities
- Collective visit to e-health trade fair DMEA in Berlin
- Dutch Digital Health Night at the Netherlands Embassy in Berlin
- Trade mission to Southern Germany focused on hospitals
- Incoming German Delegation as part of the Health-Holland Visitors Programme
- Incoming German Delegation with focus on e-health and elderly care as a follow-up to the economic visit in 2018
- Collective Holland Pavilion at MEDICA trade fair in Düsseldorf
- Collective Holland Pavilion at MedtechLIVE trade fair by Medizintechnik NL and finalisation of the PIB programme (2015-2019)

## 2020

- Digital NL Lounge at the e-health trade fair DMEA
- PIB e-health (in the making)
- Collective NL Pavilion at MEDICA in trade fair Düsseldorf (hybrid due to COVID-19 outbreak)
- A series of three webinars in the field of e-health by Netherlands Business Support Office (NBSO) in Stuttgart in cooperation with Trade & Innovate NL

## To Come

- Economic Mission to Berlin parallel to the state visit of the Dutch Royal Couple to Berlin – postponed due to COVID-19 pandemic
- Das Treffen Conference in Berlin - postponed due to COVID-19 pandemic
- Digital Event with Start-up/Scale-up by NBSO Stuttgart
- Follow-up e-health webinar series by NBSO Stuttgart and Trade & Innovate NL
- Digital Event: women in digital health by NBSO Stuttgart

## The way forward

We have set three ambitions for the future LSH collaboration between the Netherlands and Germany. Given the successful collaborations and the growing interest in e-health and medical technology, we recommend keeping e-health and elderly care as a structural collaboration area in the bilateral LSH activities and organising corresponding activities, specifically in Berlin/Hamburg and South and Southwest Germany. To maximise the potential in the domain of elderly care, we aim to strengthen and deepen the activities and capacity of the diplomatic network in this field in Southern Germany. There is still a lot of growth potential within product development, which has to be further explored by initiating activities that facilitate making new connections with stakeholders in the border area and the south.

### **(Preferred) actions**

Market information: A market study on the elderly care developments, landscape and funding in Germany.

- Activities: Further research to consider participation in the Rehacare and Altenpflege trade fair based on multiple signals of interest from the sector.
- Activities: Organise tailor-made events aimed at finding distributors/agents, funding opportunities and partners for Dutch companies.

- Activities: Improve understanding and access to reimbursement in Germany for Dutch e-health/telemedicine solutions through G2G via PIB e-health. Lower barriers currently experienced by Dutch companies.
- Activities: Improve the position of the Netherlands as an innovative, high-quality and trustworthy partner via strategic communication (to reach key opinion leaders, healthcare management, and clusters/authorities), thematic missions (inbound and outbound), summits and targeted round tables.
- Activities: The Dutch target group of medical devices is too small to compete with German multinationals. PIB desired for joint brand positioning.
- Cooperation between Dutch stakeholders: strengthening the alignment, cooperation and goals of Dutch stakeholders who consider the German healthcare market to be a priority.
- Dutch representation in Germany: Focal contact NBSO Stuttgart.
- Innovate: Stimulate R&D cooperation between the Netherlands and Germany through innovation missions; Build successful Dutch-German consortia for bilateral and European innovation programmes.
- Invest: Prepare and publish propositions and articles linked to market drivers and Dutch strengths; Present to German companies in NL; Contact German medical clusters; make target list of German companies and approach with a tailored proposition; connect to mentors in Germany & link into Top Sector LSH strategy for Germany.

# Gulf region

The Gulf region in the scope of this factsheet refers to Qatar, Saudi Arabia and the United Arab Emirates (UAE). These three countries have been prioritising and heavily investing in the healthcare sector to meet the demands of a growing population and increase the health system's quality and cost-effectiveness.

## Key indicators

		Saudi Arabia	UAE	Qatar
	<b>GDP<sup>18</sup></b> 2019, in millions of USD	792,966.84	421,142.27	175,837.55
	<b>Health Expenditure as % of GDP<sup>19</sup></b> 2018	6.36	4.23	2.49
	<b>Ease of doing business<sup>20</sup></b> 2019	62	16	77
	<b>Size of medical device market<sup>21</sup></b> in millions of USD	2.000 (2015) <sup>23</sup>	967 (2015) <sup>24</sup>	661.1 (2014) <sup>25</sup>
	<b>Medical Device import from NL</b> 2018, USD <sup>22</sup>	15,325,490	9,749,634	2,849,033
	<b>Medical Device export to NL</b> 2018, USD	1,768,202	3,321,843	16,546
	<b>Size of pharma market<sup>26</sup></b> 2018, in millions of USD	7,160	2 200	490
	<b>Healthcare finance system</b>	Government-funded free health service with an upcoming private health sector	Government-funded health service with rapidly developing private health sector	Universal Coverage Scheme

<sup>18</sup> Source: World Bank; [www.data.worldbank.org/indicator/NY.GDP.MKTP.CD](http://www.data.worldbank.org/indicator/NY.GDP.MKTP.CD)

<sup>19</sup> Source: World Bank; [www.data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS](http://www.data.worldbank.org/indicator/SH.XPD.CHEX.GD.ZS)

<sup>20</sup> Source: World Bank; 1 = most business friendly regulations. [www.data.worldbank.org/indicator/IC.BUS.EASE.XQ](http://www.data.worldbank.org/indicator/IC.BUS.EASE.XQ)

<sup>21</sup> US International Trade Administration; Kenya, Country Commercial Guide

<sup>22</sup> UN Comtrade Database; [www.comtrade.un.org/](http://www.comtrade.un.org/) Commodity Codes: 3001,3002,3003,3004,3005,3006, 9018, 9019, 9020, 9021, 9022, 9402

<sup>23</sup> [www.us-sabc.org/wp-content/uploads/2018/02/HealthcareIndustryReport2017.pdf](http://www.us-sabc.org/wp-content/uploads/2018/02/HealthcareIndustryReport2017.pdf)

<sup>24</sup> [www.trade.gov/export-solutions](http://www.trade.gov/export-solutions)

<sup>25</sup> [www.reciprocus.com/sites/default/files/2017%20Medical%20Devices%20Market%20Snapshot.pdf](http://www.reciprocus.com/sites/default/files/2017%20Medical%20Devices%20Market%20Snapshot.pdf)

<sup>26</sup> Medic East Africa, East Africa Market Insights 2019.

## LSH trends & developments

The Gulf region healthcare sector is currently undergoing transformation at an unprecedented pace and scale. The ecosystem is moving from curative to preventive care and adopting a value-based and integrated delivery model. Supported by positive reforms from regional governments, the LSH sector remains a top priority for the public and private sector. As a result of this, the private sector is growing considerably. Despite the subsequent economic slowdown, regional governments continue to bear a sizeable part of the healthcare expenditure while encouraging private sector participation.

The Gulf region has been swift in its response to the COVID-19 pandemic with unprecedented measures to mitigate risks. Nevertheless, the crisis has caused considerable headwinds for the sector. At the same time, the pandemic has incentivised service providers to ramp up investments in digitisation in a bid to drive growth and improve operational efficiencies.

The Gulf regions healthcare services continue to be of high interest to investors due to reasonable returns and sustainable growth opportunities. Amid rising threat from communicable and NCDs, the need for further investments is imperative to bridge the demand-supply gap across the value chain.

### Trade

1. Hospital construction, design and equipment: Products and services concerning the design, building, furnishing, equipping, operations and maintenance of hospitals and clinics.
2. Digital transformation of the health sector: Products and services within the domains of information & communication technologies, which contribute to the efficiency, effectiveness and digitalisation of the healthcare sector. Telehealth, e-health, value-based healthcare, online patient and healthcare processes management (EHR, mobile healthcare apps), artificial intelligence in health
3. Public health: Products and services within the domains education, training, consultancy and advisory services to optimise care capacity.
4. Biopharma: The pharmaceutical market is heavily dependent on import. Up to 80% of all pharmaceuticals are imported.
5. Mobility & vitality: Products and services in the field of prevention, rehabilitation and home care.

### Innovate

- Digitalisation & health technologies
- Healthy Ageing
- Research on non-communicable diseases: e.g. cancer and diabetes

### Invest

LSH is not a proactive focus sector for foreign direct investment in the Gulf region. The Netherlands Foreign Investment Agency (NFIA) is reactively open to any LSH opportunity that presents itself.

## Regional priorities

### **Qatar**

**Demography and NCDs:** A growth in the population to 2.8 million by 2022 will stimulate demand for healthcare services in the country. Qatar citizens are overrepresented when it comes to diabetes, obesity, hypertension, cancer, heart conditions and cardiovascular diseases, and other lifestyle-related diseases. This, coupled with the size of the ageing population, will further increase the demand for healthcare services.

**Privatisation:** To meet the increasing demand for healthcare services and share the financial burden on state finances, Qatar is set to attract FDIs through PPP initiatives in the healthcare sector. By 2022, the country's Ministry of Public Health (MoPH) plans to increase the number of private hospital beds by 25%.

**Health Insurance:** the MoPH will introduce compulsory health insurance for residents, enabling them to access affordable services at private facilities as well. The MoPH is also in the midst of drafting a law on its new health insurance scheme, including those visiting the country. This is likely to attract foreign insurance players to establish their operations in the country, further aiding growth.

### **Saudi Arabia**

**Demography & NCDs:** Healthcare needs will continue to rise as the country's population aged over 65 will expand exponentially from 2030 onwards.<sup>27</sup> Moreover, NCDs account for ~73% of all mortality cases in the kingdom, with cardiovascular diseases being the leading cause. Saudi Arabia ranks seventh in the world for the age-adjusted prevalence of diabetes: ~18.3% of adults in Saudi Arabia suffer from diabetes and over 40% of the kingdom's citizens are considered obese. The rise in these lifestyle diseases will support the demand for highly specialised medical and surgical care services in the kingdom.

**Privatisation:** The government is encouraging private sector participation with the aim of increasing it to 35% by 2025. It further plans to privatise 295 hospitals and 2,259 healthcare centres by 2030. It is estimated that 20,000 additional beds would be required by 2035, further creating opportunities for private players to increase their investments in the sector. One remarkable aspect of the country's expenditure is the megaprojects initiated, such as the creation of a new smart cross-border city called Neom that provides opportunities in e-health.

**Mandatory health insurance:** Since the implementation of mandatory health insurance, expatriates are obliged to have insurance. Expansion of the coverage would increase the use of healthcare services at private facilities in the kingdom. Furthermore, all insurance companies in the kingdom covered treatment for suspected and confirmed COVID-19 patients.

### **The United Arab Emirates**

**Demography & NCDs:** The population is growing slightly (by 1.4% in 2019). Approximately 13% of the population will be over the age of 50 years by 2022, and high per capita income is fuelling demand for healthcare services. Moreover, a sedentary lifestyle has increased the prevalence of high-risk diseases like diabetes and obesity (~30% of adults in the UAE are

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<sup>27</sup> [www.population.un.org/wpp/Graphs/Probabilistic/PopPerc/65plus/682](http://www.population.un.org/wpp/Graphs/Probabilistic/PopPerc/65plus/682)

obese). High NCD mortality rate of ~77% indicates increased health expenditure on treatment of related diseases.

**Mandatory health insurance:** Following the phased implementation of compulsory medical insurance in Abu Dhabi and Dubai, the Dubai Health Authority (DHA) has enforced insurance companies to include COVID-19 treatment under their coverage. The DHA also adopted the “DRG” model (Diagnosis Related Group) that will help insurance companies categorise hospitalisation costs. This will improve business efficiency for healthcare providers.

**Medical tourism:** Dubai and Abu Dhabi were ranked as the sixth and ninth most popular medical tourism destinations in the world according to the Medical Tourism Index 2020-2021. Dubai hosted 350,118 medical tourists in 2019, an increase of 4.0% year-on-year, and expects the industry to contribute USD 708 million to the GDP by 2020 with 13.0% year-on-year revenue growth. Euromonitor forecasts the UAE’s medical tourism industry to reach AED 14 billion (USD 3.8 billion) by the end of 2020 and touch AED 19 billion (USD 5.2 billion) by 2023.

## Dutch interest in, activity and growth potential

Dutch SMEs’ interest in the Gulf region is moderate. In 2019, RVO received 83 trade questions regarding the Gulf region, which is 1% of all registered questions. During the Research International Opportunities & Challenges 2020, 39 individual companies indicated being active in the UAE, Saudi Arabia and Qatar. Prominent multinationals that are active in the Gulf are Philips, Elsevier and Danone-Nutricia. When looking at Dutch knowledge institutes, UMC Groningen, Maastricht UMC and Erasmus MC are active in the Gulf region.

### Most prominent NL value chains

The value chains of Dutch SMEs in the Gulf region are highly fragmented over various strengths. Numerous Dutch SMEs present in the region, mostly represented by distributors or local agencies.

1. Value chain e-health (AI): The application of both digital information and communication solutions to support and/or improve health and healthcare processes.
  - > Philips’ and Elsevier’s tools to support clinical decision-making are used by high-end healthcare facilities;
  - > Spectator Video Technology and CADD Emirates signed an MoU during the economic mission to the UAE with the intent to introduce telecare, teleconsult and other Telemedicine & e-health solutions on the UAE healthcare market.
  - Barriers: High prevalence of competition, rule & regulations. The high number of expat workers means systems must be in different languages. No information transfer between the countries in the Gulf.
  - Preferred region(s): UAE, Qatar and Saudi Arabia.
2. Value chain hospital construction: Products and services concerning the design, building, furnishing, equipping, operations and maintenance of hospitals, clinics and healthcare facilities.
  - Barriers: Long and complex projects. High cost of pre-investments, budgets that run out or projects that are frozen or delayed.
  - Preferred region(s): UAE, Qatar and Saudi Arabia

3. Value chain public health: Products and services within the domains education, training, consultancy and advisory services to optimise care capacity.
4. Value chain mobility & vitality: Products and services in prevention, rehabilitation and home care.
  - Barriers: Complex decision-making in the region.
  - Preferred region(s): UAE, Qatar and Saudi Arabia.

### Overview milestones & flagships

- G2G (MoU, state visits)
- Trade (PIBs, Market studies)
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)

### Collective Trade Activities to the Gulf region

2015

- PIB Middle East 12-2015 – 10-2020: TFHC goes Middle East

2016

- Holland Pavilion Arab Health, Dubai

2017

- MoU between UAE's Ministry of Economy and the Dutch Ministry of Economic Affairs and Climate Policy, on the topic of Innovation
- Healthcare Mission, Qatar & Kuwait
- Economic Mission, Dubai & Abu Dhabi
- Holland Pavilion Arab Health, Dubai
- Holland Lounge Saudi Health
- Report: Opportunities for Dutch Businesses in the Gulf region

2018

- Healthcare Mission incl. participation GHE, Saudi Arabia
- Holland Pavilion Arab Health, Dubai

2019

- Healthcare Mission, Qatar
- Holland Pavilion Arab Health, Dubai
- Healthcare Mission incl. participation GHE, Saudi Arabia

2020

- Holland Pavilion Arab Health, Dubai
- Market Study e-health

### The way forward

During the last five years, there have been numerous trade missions to Qatar, the UAE and Saudi Arabia. Now that the PIB has recently finished, it is important to keep building on the relationship and to reinvestigate the match between local demand and Dutch offerings.

#### Description of the activities:

- Build on long-term collaborations and relationships: The Netherlands has an excellent relationship with the local LSH stakeholders. However, due to COVID-19 the healthcare sector has temporarily shifted its focus with the result that many orders and contracts have been delayed. The Netherlands should look to re-establish and intensify collaborations in healthcare to support the Dutch SMEs.
- Strategy: Define a new strategy for the coming years, together with the Dutch LSH sector.
- Market information: Keep the Dutch LSH sector updated on developments in the different healthcare markets via webinars and specific thematic seminars.
- Collective activities: Maintain relations with the local health sector through the Health-Holland Visitors Programme, incoming and outgoing missions and webinars.
- Explore thematic dialogues: Explore possibilities to organise specific thematic sessions to engage with local stakeholders.
- Holland Branding: Enhance the positioning and visibility of the Dutch LSH sector.

#### **(Preferred) actions**

- Collecting Market information: The embassies are currently conducting a market research on the e-health sector.
- Expo 2020: Health mission during the Health week of the Expo 2020 led by Dutch Government officials.

# India

India has the fifth-largest economy in the world. The Netherlands is an important export partner for India (9<sup>th</sup> globally and 3<sup>rd</sup> in the EU) and the 5<sup>th</sup> import partner in the EU for India. Life sciences and health is a priority sector for strategic investment in both the Netherlands and India. Both nations have a strong interest in exchanging LSH-related solutions. This is reflected by the large number of Dutch and Indian SMEs participating in the LSH track of the trade missions during the last years. In addition, Indian and the Netherlands are already closely collaborating in joint projects on digital health, devices and diagnostics and One Health/AMR vaccines and therapeutics. These themes form two important pillars of the Top Sector LSH India strategy.

Growing market opportunities in India, combined with Dutch strengths in areas such as therapeutics & vaccines, diagnostics, med-tech and e-health create excellent opportunities for partnerships that address shared societal challenges with smart solutions.

## Key indicators

	<b>GDP</b> (2019 in millions of euros) 2,432,902		<b>Size of medical Device market</b> (2018 in millions of euros) 4,400
	<b>Health Expenditure as % of GDP</b> (2017) 1.3%		<b>Size of pharma market</b> (2018-2019 in millions of euros) <sup>28</sup> 34,690
	<b>Ease of doing business</b> (2019) 77		<b>Medical Device import from NL</b> (2018 in millions of USD) 335
	<b>Healthcare finance system</b> Universal Health Coverage & Private Insurance		<b>Medical Device export to NL</b> (2018 in millions of USD) 153

## LSH trends & developments

Health is a major issue in India. The COVID-19 pandemic made it clear that India's response capacity and capabilities to meet a growing more structural demand need a shot in the arm. The enormous economic impact of the pandemic confronts India with the need to deliver basic public health infrastructure for the poor. A fast-growing middle class is seeking care provision in the private domain.

Much is happening in India in the public and the private domain, in care provision, in financing, and in the demand for care. Increased government spending, the rollout of massive insurance schemes, and the implementation of fascinating digital platforms. Furthermore, in the private domain, the Indian healthcare provision is growing rapidly.

<sup>28</sup> [www.static.investindia.gov.in/2020-08/Invest%20India%20Pharma%20Report\\_SIRU.pdf](http://www.static.investindia.gov.in/2020-08/Invest%20India%20Pharma%20Report_SIRU.pdf)

India's health sector is highly fragmented in terms of financing, governance and healthcare provision but also in terms of alternative systems of medicine and quality of care standards. The Indian government is striving towards more integration/convergence, connecting the dots and building on data-driven continuity of care. To achieve this, the Indian government launched the National Digital Health Mission (NDHM). The vision of the National Digital Health Mission (NDHM) is to create a national digital health ecosystem, which provides timely and efficient access to inclusive, affordable, and safe healthcare to all citizens. NDHM will significantly improve the efficiency, effectiveness and transparency of health service delivery. It is envisioned to be a complete digital health ecosystem with four key features – National Health ID, personal health records, digi doctor and health facility registry. At a later stage, it will also include e-pharmacy and telemedicine services, regulatory guidelines for which are being framed. Implementation is, however, a Herculean task, and the market is not waiting for this gradual process to be completed. Therefore, for any market player, the ability to scale up, agility and an ambition to set the standard are important conditions for long-term survival in this turbulent market.

India aims to improve the access and quality of healthcare. The national government is implementing a health insurance scheme for 500 million people. Plans for logical and proportional care provision have been developed. In addition to a fast-growing national government spending, a World Bank loan of USD 1 billion was granted for a health-related response to the COVID-19 pandemic and structural investments in the provision of care in India. In addition to/as part of infrastructural investments, India is trying to leapfrog by bringing health to everyone through low cost-high impact digital solutions. In some areas, the pandemic has worked as an accelerator for e-health applications. As health is a state affair, these positive preconditions do not necessarily result in swift and smooth implementation at the state level. The main challenges continue to lie in having the right medical staff with the right qualifications at the right place.

India is the largest provider of generic medicines globally, occupying a 20% share in global supply by volume, and supplies 62% of global demand for vaccines. India ranks 3<sup>rd</sup> worldwide for production by volume. The Make in India motto of the Modi government, the tensions with China and the global call for decoupling will lead to tectonic shifts in the production and supply of pharmaceuticals worldwide. For the Netherlands (home for EMA), in particular, the stakes in this shift are high. With India's role as a global manufacturing hub for (bio)pharma and vaccines and its growing strength in innovation opportunities for partnerships surfacing, players from both countries can work together and leverage each other's strengths for new product development. Co-creation is essential for success. India's national biopharma mission will help drive partnership opportunities by stimulating the translation of research into viable products, supporting clinical validation, boosting collaboration between academia, and giving an impulse to the country's entrepreneurial ecosystem.

From the perspective of the Netherlands, the following market trends are of interest:

#### **e-health and data**

- Affordable mobile healthcare solutions; point-of-care diagnostics, remote monitoring;
- AI-based solutions to support medical decision-making and treatments;

- Health management systems/IT architecture: Interoperable digital platforms to exchange data, connecting the dots (continuity of care, but also relating to integrated disease surveillance, quality of data (including semantics) and bridging the gap between governmental architecture and business design.

### **Public health**

- Establishment of 150,000 primary healthcare and wellness centres (HWCs), including staffing;
- Hospital construction in the tier-II and III cities via the public-private-partnership (PPP);
- Skills development and training of medical staff;
- Child and maternity health;
- Digital infrastructure and applications.

### **Vaccines and therapeutics**

- National Bio Pharma Mission;
- Clinical trials & Contract research;
- Manufacturing & Development partnerships;
- Process optimisation and quality control, supervisory mechanisms.

### **India's National Action Plan on AMR (One Health)**

- At state level, action plans need to be formulated and implemented;
- With plans for bulk active pharmaceutical ingredient (API) and key starting materials (KSM) parks in India, clean production methodologies and processes need to be the standard. Stakeholders, such as Access to Medicine foundation and Centrient, are exploring international partnerships that address sustainable production of antibiotics.

For Indian vaccine and pharma companies, the Netherlands is the gateway to Europe. To expand their business in Europe, Sun Pharma has opened an office in Amsterdam. Bilthoven Biologicals was established by the Indian Cyrus Poonawalla Group. The company is the biggest vaccine producer in the world, will be a major player in the production of COVID-19 vaccines, and intends to move upwards in the value chain.

### **Regional priorities**

Life sciences and health-related R&D is concentrated in Delhi, Bangalore, Pune and Hyderabad.

### **Dutch interest in, activity and growth potential**

The Dutch interest in India is substantial. Each year, multiple trade missions from the Netherlands to India are organised. In 2018-2019, RVO dealt with 161 India-related requests from Dutch organisations active in the LSH sector. Prominent Dutch multinationals operating in India are Philips, Elsevier, DSM and Danone-Nutricia. When looking at Dutch knowledge institutes, Maastricht UMC, Erasmus MC, Leiden UMC, and Wageningen University & Research are active in India. The majority of Dutch companies active in India are SMEs.

## Most prominent NL value chains

These will be based on Dutch sub-strengths identified during earlier activities and a Health-Holland priority country session.

### 1. Value chain digital health industry and devices & diagnostics

Growing market opportunities in India, combined with the Netherlands' strengths in areas such as digital health, medical devices and diagnostics, create opportunities for partnerships that address shared societal challenges with smart solutions. India's growing focus on technology and entrepreneurship combined with its recent improvement in investment climate make it an increasingly attractive partner.

- Demonstrated (or expected) impact and activities:
  - > Philips Innovation Campus Bangalore (including Digital health platforms & AI) and Pune Healthcare Innovation Center (including made in India cathlab);
  - > 2010 & 2016, NWO – DST (5 projects) & NWO – DBT (3 projects) focused on affordable medical devices;
  - > 2018 NL-India GlobalStars call – Eindhoven Robotics, Radboud university medical center, CMC Vellore & IIT Madras partner on spine surgical systems;
  - > 2018 Imaging partnership MUMC+ and NCCS Pune;
  - > NWO – MEITY Calls – Bionic (2014) & Train (2019) projects – Big data approaches to cancer (including Maastricht, Tata Memorial, CDAC, Philips & HCG);
  - > Swymed & Piramal Swasthya – Digital Health Backpack and Platform partnership;
  - > MoU between Microsoft India, Apollo Hospitals, and Maastricht University will help expand an AI Network for research on cardiovascular diseases in the Netherlands and develop an India-specific heart risk score for better predicting cardiac diseases for the general population.
- Potential opportunities:
  - > The affordability and accessibility of healthcare is a theme where our countries have excellent opportunities for partnerships that address the unmet needs of patients and doctors, improve lives, and help open new markets together. Private hospital groups and innovative Indian companies have shown enthusiasm for partnering and governments are willing to stimulate new partnerships;
  - > Enhancing the underlying data infrastructure/governance to connect data, systems, information and persons in a convenient, safe and secure way, in private and the public domain.
- Barriers: Difficult to enter the market, not transparent, local competition, low prices/reimbursement, legal regulations, challenge to capitalise on the opportunities of the private market.
- Preferred region(s): Delhi, Bangalore, Hyderabad, Mumbai.

### 2. Value chain: One Health/AMR, Vaccines & Therapeutics

- Demonstrated (or expected) impact and activities:
  - > The HOOKVAC India Partnership (HIP) of AIGHD;
  - > One Health AMR project in Andhra Pradesh (Krishna district) under the MoU between India and the Netherlands: The project is in line with the objectives from the Indian National Action Plan: improving awareness and understanding of AMR through training (of professionals); strengthening knowledge and evidence through surveillance; reducing the incidence of infection through

- effective infection prevention and control; strengthening India's collaborations on antimicrobial resistance at international, national and sub-national levels;
- > 2018 NL-India GlobalStars call – Inpochlam (Biospark & Shuats) & Exoliv (Mantis therapeutics & Institute of Liver and Biliary Sciences);
  - > 2018 Serum Institute & Intravacc partnership to develop bioneedles and various other business partners between Dutch vaccine stakeholders such as Litevax and viroclinics and Indian vaccine companies;
  - > 2019 Partnership between C-CAMP & AMR-Global;
  - > 2020 EU-India Next Generation Flu Vaccines call: Start of 3 projects, Indigo (AIGHD, LiteVax BV, Viroclinics Biosciences BV), Endflu (Utrecht University, Curve Clinical BV), Incentive (Leiden University Medical Center, Stichting Human Vaccines Project Europe). Projects support the development of a next generation of influenza vaccines aiming at higher effectivity, lower costs and better accessibility;
  - > 2020 COVID-19 Vaccine Partnership Jansen & Biological E. Two cohort studies are being realised with India;
  - > Indo-Dutch collaborative programme on HIV/AIDS research: “Understanding Disease Dynamics Towards Effective Management of Prevention and Treatment of HIV/AIDS”. – executed by various partners in both India and the Netherlands, including Erasmus MC in Rotterdam, International AIDS Vaccine Initiative (IAVI), India, together with the other research institutions, with support from the Indian Department of Biotechnology (DBT);
  - > A population-based prospective cohort study ‘to Unravel the Causes of Stroke and Cognitive Decline: A cross-cultural perspective’ –AIIMS and Erasmus MC. A study that enhances the understanding of stroke and dementia in the Indian population and paves the way towards precision medicine (customisation of healthcare with medical decisions, practices, and/or products tailored to the individual patient). The aim is to move towards precision medicine in the field of stroke and dementia (“DNA to Dementia”).
- Potential opportunities:
    - > One Health and antimicrobial resistance (AMR) are a shared policy priority between the Netherlands and India. The rise of AMR is a global challenge, which threatens healthcare as we know it. The Netherlands and India take this global challenge seriously and are actively working together in an effort linked to India's National Action Plan on AMR. The bilateral pilot in AP is an initial start, and additional opportunities are being identified in poultry, aquaculture, the sustainable production of antibiotics, sensing & detection, and management & treatment of effluents. Stakeholders, such as Access to Medicine foundation and Centrient, are exploring international partnerships that address sustainable production of antibiotics. Other stakeholders, such as Dutch water institute KWR and various sensor companies, are focused on detection in food products, waste streams and the environment;
    - > The Netherlands and India have strong historical ties in the area of vaccines. The Netherlands has a strong footprint in vaccine research/development and a substantial biologicals manufacturing capability. India is a powerhouse of large-scale manufacturers of vaccines and pharmaceuticals and has a fast-growing pharma research capacity, moving increasingly from generics to new and complex therapeutics development. India and the Netherlands are the perfect partners for joint research and development with a high potential for bringing

- successful developments based upon previous experiences in the vaccine sphere, joint research and improving the supply chain for vaccines in India.
- Barriers: often long-term projects, many depending on external funding.
- Preferred region(s): Vaccines: Hyderabad & Delhi and Pune. Therapeutics: Bangalore.

### Overview milestones & flagships

- G2G (MoU, state visits)
- Trade (PIBs, Market study e-health (2019))
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)

### Collective Trade Activities to India

2017

- Visit of Indian Prime Minister Modi to the Netherlands

2018

- February, Innovation Mission to India: Vaccines
- March, e-health mission to the Netherlands, organised together with RVO, Nuffic Neso and Taskforce for Applied Research SIA
- May, Trade Mission to India (Delhi, Bangalore) with Minister Bruno Bruins
- July, India and Belgium (Flanders region), Netherlands, Spain and the United Kingdom launched a common Global Stars India call in the field of One Health
- September, incoming delegation Health-Holland Visitors Programme

2019:

- June, Innovation mission to India on Digital health (Delhi, Mumbai, Bangalore)
- July, Incoming delegation on vaccines
- October, State visit and Trade Mission to India (Delhi and Bangalore) with Minister Bruins

### The way forward

#### Description of the activities

- To keep
  - > The regular trade missions and smaller innovation missions.
- To strengthen and deepen
  - > Identify the business opportunities for Dutch companies in the Ayushman Bharat programme and with India's private sector.
- (New) activities to be explored
  - > Innovation mission on oncology, Innovation Mission One Health, Innovation Mission Digital Key Enabling Technologies for water, agriculture and health, BDC study on digital health.

#### (Preferred) actions

- LSH feasibility study on identifying the business opportunities in India's public and private sector in the field of digital health;
- Organisation of innovation mission on oncology;
- Organisation of incoming and outgoing trade and innovation missions, in combination with specific fairs/conferences;

- Further support on how to capitalise on the opportunities offered at the private market;
- Pre-PPS on reduction of antibiotics in wastewater from, among others, the pharmaceutical industry will be explored;
- Bilateral R&D call under the Knowledge & Innovation Covenant (KIC) Health & Care that will be explored together with NWO.

# The Nordics

## Key indicators

		Denmark	Norway	Sweden
	<b>GDP</b> 2019, millions of USD	350,104	403,336	530,883
	<b>Health Expenditure as % of GDP</b> 2017	10.07	10.05	10.9
	<b>Ease of doing business</b> 2019	4	9	10
	<b>Size of medical device market</b> in billions of USD	1.7 (2018)	1.2 (2016)	2.6 (2019)
	<b>Medical Device import from NL</b> 2019, in millions of USD	493	84	775
	<b>Medical Device export to NL</b> 2019, USD	177	88	367
	<b>Size of pharma market</b> 2018, billions of USD	3.7	3.4	5.5
	<b>Healthcare finance system</b>	Public decentralised universal health coverage (UHC) system with private options	Public decentralised UHC system with private options	Public decentralised UHC with private options

## LSH trends & developments

From the perspective of the Netherlands the following market trends are of interest:

### Trade

1. Digitalisation of healthcare (e-health)
2. Ageing Population
3. Decentralisation of healthcare (homecare)
4. Mental health & prevention
5. Value-based healthcare

## Invest

The NFIA has opened an office in Munich that is also tasked supporting the Nordics. LSH is not a proactive focus sector in the Nordics, but the markets are explored for future investments. Reactively, NFIA is open to any LSH opportunity that presents itself. The Invest in Holland Life Sciences & Health team is also working on global lead lists if these lists include companies in the Nordics, a proactive approach with the local economic network.

## Regional priorities

### Denmark

Not limited to a specific region. Copenhagen and surroundings (e.g. Swedish Malmö) as biggest urban area

### Norway

Not limited to a specific region. Oslo and surroundings is the biggest urban area

### Sweden

Not limited to a specific region. Stockholm and surroundings (e.g. Uppsala) as biggest urban area; Gothenburg

## Dutch interest in, activity and growth potential

### Most prominent NL value chains

1. Value chain digital health: Dutch organisations that develop and deliver IT solutions for health information management systems, resource and patient flow, health financing, health behaviour & prevention, telehealth & mobile health (health from a distance), disease management platforms, electronic health records, training & education, and artificial intelligence to support medical decision-making. The largest subsection of the Dutch healthcare sector is active in this value chain.
  - Potential opportunities: large commitment towards - and developments in - digital health in the Nordic region.
  - Barriers: finding a good distributor; language & cultural differences; knowledge on market entry; reaching key decision-makers.
  - Preferred region(s): not limited to specific regions, as certain solutions are meant for areas where healthcare is less easily accessible and others where healthcare delivery coalesces.
2. Value chain mobility and vitality: Products and services in healthy ageing, healthy living, prevention, elderly care, rehabilitation and home care.
  - Potential opportunities: As with most developed nations, the Nordic region has an increasingly ageing population. This brings about challenges for the healthcare system but also provides opportunities to work with novel and innovative solutions, systems and healthcare delivery models to improve prevention, keep people active and engaged as long as possible, and facilitate living at home for as long as possible.
  - Barriers: finding a good distributor; language & cultural differences; knowledge on market entry; reaching key decision-makers.

- Preferred region(s): not limited to specific regions as certain solutions are meant for urban environments, and others are designated for areas where the care is further removed from the people.
3. Value chain public health: new concept and models to change the paradigm of healthcare like value-based healthcare, prevention, and new concepts to improve the lives of seniors and promote healthy ageing. Furthermore, training and preparing both healthcare professionals as well as patients/citizens to use innovative tools and systems in a manner that unlocks their full potential.
    - Potential opportunities: see above for ageing community; increasing complexity in healthcare and the use of new and novel technology and tools.
    - Barriers: language & cultural differences; knowledge on market entry; reaching key decision-makers.
    - Preferred region(s): not limited to specific regions.
  4. Value chain medical devices: Dutch organisations that produce, assemble and deliver medical devices, supplies and/or supply packages (medical kits) for diagnostics, treatments and/or rehabilitation.
    - Potential opportunities: the Nordic region is highly reliable on medical device imports.
    - Barriers: finding a good distributor; knowledge about market entry.
    - Preferred region(s): larger urban areas where main industry is present.
  5. Value chain hospital design and construction: products and services concerning the design, building, furnishing, equipping, operations and maintenance of hospitals, clinics and healthcare facilities.
    - Potential opportunities: hospitals need to be made future-proof and need to be renovated as most were built in the late 20<sup>th</sup> century. Furthermore, timelines for greenfield hospitals and renovations run in the decades. With a rapidly changing healthcare system, there is a need to think about what the future function of a hospital is in the system and what kind of functionality is needed in that future. This requires a different way of looking at designing, building and outfitting hospitals - a process that has been going on in the Netherlands for some time and with considerable progress.
    - Barriers: local competition and lack of a wide and deep enough network.
    - Preferred region(s): not limited to specific regions, based on hospital (renovation) projects.

### Overview milestones & flagships

- G2G (MoU, state visits)
- Trade (PIBs, Market studies, missions, trade fairs)
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)

### Collective trade activities to the Nordics

2017

- Market Studies on Denmark, Norway and Sweden
- Launch event market studies

2018

- Roadshow mission to Denmark, Norway and Sweden
- Incoming delegation from Scandinavia during Health-Holland Visitors programme and World of Healthcare

2019

- Incoming delegation from Scandinavia during Health-Holland Visitors programme and World of Healthcare

2020

- (Cancelled) participation at Vitalis Trade Fair & Congress
- Incoming delegation from Scandinavia during Health-Holland Visitors programme and World of Healthcare

2021

- Update market studies on Denmark, Norway and Sweden
- Market studies for the Baltics + Finland
- Launch event for updated studies
- Launch event for market studies Baltics + Finland
- Trade mission to the Scandinavian region

### The way forward

The Nordic region has been designated a category 2 priority region in the Health-Holland International Strategy 2020-2023. This is indicative for the specific interests that exist for the Nordic region from the Dutch LSH sector. Based on this, the goal is to strengthen and deepen the relations with the Nordic region, explore new avenues for collaboration specifically focused on the themes mentioned above, and maintain the already present contacts and partners in this region. In concrete terms, this will require identifying potential collaboration partners in the region, which are open for long-term cooperation (potentially through MoUs), further clarification on the (business) opportunities in the Nordics and activities to facilitate and promote interaction on various levels and on differing themes. Furthermore, it will require improving the familiarity of Nordic healthcare stakeholders and leaders with the Dutch LSH ecosystem. Lastly, to promote long-term and sustainable relations with the Nordic region, the pool of Dutch organisations interested in the region should be further expanded.

### (Preferred) actions

- **Collecting market information:** By conducting and updating market studies, we expect to gain comprehensive insights into the healthcare systems in the region, trade and collaboration opportunities for the Dutch LSH sector, and funding opportunities and areas that are most fruitful for cooperation and deserving of continued attention. The need for these studies was validated by feedback from the sector, which mentioned market insight and updates as well as an overview of funding opportunities as a much-needed tool for them to be successful in the Nordic region.
- **Activities:** The Dutch LSH sector has mentioned finding suitable distributors as a barrier to doing business in the Nordics. Hence, matchmaking is considered a worthwhile activity to develop in order to promote trade.

- Activities: The difficulty of getting in touch with key stakeholders was mentioned as an entry barrier for several companies. Therefore, a trade mission is seen as the right tool to increase exposure to such individuals.
- Activities: To increase awareness of the opportunities in the Nordic healthcare market among Dutch stakeholders, the market studies will be launched in publicly available (digital) sessions.
- Activities: Promote Nordic awareness of the innovative and high-quality Dutch LSH sector and system through incoming delegations to the Netherlands via events like the Health- Holland Visitors Programme and the World of Healthcare.
- Activities: To be confirmed: Vitalis e-health event in May in Gothenburg. This year Vitalis will be a hybrid version without a physical trade mission/stand at the fair.
- Cooperation between Dutch stakeholders: Segment the Dutch LSH sector into specific themes/USPs; companies can be distributed under these different segments. Per segment, a strategy is proposed that aims at gauging the potential interest in a (pre-)PIB/PPS among Dutch organisations.
- Dutch representation in the Nordics.

# Switzerland

Switzerland is located on the European continent and surrounded by countries that are a member of the European Union. Switzerland, however, is not a Member State and has bilateral agreements with the European Union instead. Swiss healthcare spending amounts to 11.88% of the GDP, which is the highest of all EU countries and the second highest in the world. Though costs may be high, the Swiss healthcare system delivers good health outcomes. However, it is highly decentralised and fragmented since it is influenced by the federal government and the 26 cantons.

A major reform in Swiss healthcare started with the Health2020 strategy, which included national health priorities, objectives and measures. Important areas within the Health2020 strategy were improving the use of information and eHealth, improving healthcare provision for people with specific needs, and improving outpatient (ambulatory) care planning<sup>1</sup>.

Building on the foundations of Health2020, the Health 2030 strategy was adopted. Its goal is to maintain the population’s very good health status and improve quality of life. People in Switzerland live in an environment that is conducive to health, regardless of their state of health and socioeconomic status. They benefit from a modern and high-quality and financially sustainable health system.

Health2030 focuses on the four most pressing challenges: technological and digital change; demographic and social trends; preserving high-quality and financially sustainable healthcare provision; and positively influencing the determinants of health.

The strategic relation between Switzerland and the Netherlands in the area of LSH is in a starting phase. In the coming years, this relationship will be structurally built up and strengthened. That will ultimately facilitate multi-annual programming.

## Key indicators

	<b>GDP (2018)</b> \$705 billion		<b>Size of medical Device market (2019)</b> \$4.0 billion
	<b>Health Expenditure as % of GDP (2018)</b> 11.88%		<b>Size of pharma market (2018)</b> \$6.6 billion
	<b>Ease of doing business</b> 36 (2020), 38 (2019), 33 (2018)		<b>Medical Device import from NL (2019)</b> \$718 million
	<b>Healthcare finance system</b> Mandatory private health insurance, universal health coverage		<b>Medical Device export to NL (2019)</b> \$2.71 billion

## LSH trends & developments



From the perspective of the Netherlands, the following market trends in Switzerland are of interest:

### Trade

#### Care coordination and integration

In recent years, Switzerland has taken measures to contain healthcare costs and combat the projected future shortage of health professionals. This must be achieved through better care coordination and more care integration. Development and introduction of tools that enable the interoperability of health (data) are required. The national Health2030 strategy focuses on integrated health care models. Furthermore, a national cost-containment programme was adopted in 2018, encompassing cost-control, pharmaceuticals, cost transparency and care coordination.

#### Digitalisation of healthcare

The digitalisation of Swiss healthcare is underdeveloped. Major concerns are related to data protection and security, since the Swiss population and medical professionals are critical<sup>3</sup>. Digitalisation is an important pillar in the Swiss national Health2030 strategy. The national programme 'Strategie eHealth Schweiz 2.0', rolled out a new electronic patient record system in 2020. This new system will enable improved care coordination, efficiency, quality and safety<sup>1</sup>. However, the adoption of this new system is still limited.

#### Ageing society

Like many other western countries, Switzerland faces the consequences of an ageing population. This includes a rising incidence of non-communicable diseases, more pressure on the healthcare system's resources and higher costs. The biggest expenditure of Swiss healthcare is on chronic diseases. Strengthening disease prevention and health promotion remains a national issue. Switzerland therefore started a National Strategy for Prevention of Non-communicable Diseases in 2018<sup>1</sup>. with the vision: "More people stay

healthy or enjoy a high quality of life despite chronic illness. Fewer people contract avoidable non-communicable diseases or die prematurely. Regardless of their socioeconomic status, people are empowered to foster a healthy lifestyle in a healthy environment.” The predecessors were the National dementia strategy, palliative care strategy and cancer strategy.

## Innovate

For the past ten years, Switzerland has ranked top of the Global Innovation Index. It is one of Netherland’s partners in life sciences & health research and innovation cooperation. Through diverse modalities (like Horizon Europe, EUREKA/Eurostars, AAL) R&D innovation and technology cooperation between Dutch and Swiss companies, knowledge institutions and governmental services is promoted. Important areas of research and innovation cooperation:

### **eHealth, health data and health data infrastructure collaborations**

Switzerland and the Netherlands see complementarities in the field of digital health and revealed opportunities for collaboration. Both countries invest in community-building and public-private collaborations. Dutch-Swiss collaboration exists on health data infrastructure between Health-RI and Swiss Personalised Health Network (SPHN), (disease area-)specific projects promoting the use of ‘real life’ data and digital technologies, bilateral collaboration on a joint digital health Eureka call (connected to the Dutch-Swiss long-term strategies in public health laid down in The Federal Council’s health policy strategy 2020–2030 and the Dutch Knowledge & Innovation Agenda (KIA) on Health and Care 2020-2023) and collaboration between Smart Health communities in Basel and Amsterdam.

### **Biotech pharma & preventative health**

Considering the strengths of the Swiss and Dutch biotech ecosystems both have joint ambitions in the field biotech and preventative health. The Netherlands has a dense concentration of biotech clusters, world-class universities and a long history of strategic partnerships between science, industry and government. In Switzerland, the Swiss biotech hub provides over 50,000 jobs and, together with the pharmaceutical and chemical industries, contributes to more than 40 percent of the Swiss exports. Local companies hold leading positions throughout many sectors and attract capital, partnerships and talents from all regions. The basis for this success is a close-knit network between research and development, driven by renowned universities, highly-specialised SMEs and strong multinational corporations. Areas of interest are cardiovascular, oncology, personalised medicine and regenerative medicine.

## Invest

According to S-GE, Switzerland is home to a globally unique life science cluster. In addition to chemical and pharmaceutical firms like Novartis, Roche, and Syngenta, this encompasses a dense network of medtech, biotech, and nanotech companies. The life sciences industry in Switzerland has a strong international bias, 98% of its turnover is made abroad. With a share of 33% of Swiss export goods, chemical-pharmaceutical products are the most important exported good in Switzerland. Many high-quality scientists are available in Switzerland thanks to leading universities and universities of applied sciences and financially sound and research-based pharmaceutical companies.

Switzerland is a very interesting market to look at in relation to their unique life science cluster. Many companies from the US has chosen Switzerland for their European Head Quarters and R&D related activities and has chosen the Netherlands for their logistics operations. We do see opportunities to attract more R&D activities in relation to pharma/biotech, data research and artificial intelligence from Swiss and this is the reason to jointly participate in activities related to this topic for innovation and trade.

The activities for Switzerland are coordinated from our NFIA office in Munchen and the Invest in Holland LSH team in The Hague.

### Regional priorities

<https://www.swisslifesciences.com/swiss/portal/index.php>

Major LSH clusters are located in Northwest Switzerland, Geneva (Lausanne) and Zurich<sup>3</sup>.

#### Northwest Switzerland

Basel is home to the Life Sciences Cluster Basel.

#### Geneva (Lausanne)

Geneva has a dedicated biotech campus (Campus Biotech Geneva) and the Lausanne life science park Biopôle.

#### Zurich

The Life Science Zurich Business Network promotes cooperation between the Life Sciences stakeholders in academia, industry and the public sector in the greater Zurich area as well as with other life sciences centres in Switzerland and across the world.

## Dutch interest in, activity and growth potential

Overview of Dutch interest in Switzerland per organisation type:

- Based on Achilles data, 17% of Dutch companies in Switzerland that are served by the Embassy in Bern are active in the industry Life Sciences & Health (2020), compared with 10% served by the Economic Network in Western Europe as a whole.
- In recent years no specific trade mission has been organised to Switzerland.

### Most prominent value chains

1. Value chain Healthy Living & Ageing ‘Research and solutions that contribute to maintaining (prevention), strengthening and recovering (rehabilitation) physical and mental wellbeing, by increasing people’s independency.’  
Like Switzerland, life expectancy in the Netherlands is very high while the population is also ageing. Switzerland is home to many hospitals, and patients are generally treated inside hospitals. The Dutch have considerable experience in delivering home care, meaning healthcare outside expensive hospitals. In Switzerland, home care is mostly limited to the elderly. However, in the Netherlands, home care is expanded to all people suffering chronic diseases, physiotherapy and oncological aftercare. The Dutch acknowledge the importance of prevention and healthy lifestyles, which Switzerland needs to combat the consequences of its ageing society. The Dutch achieve this by multidisciplinary collaboration between medical disciplines, thereby fostering integrated care which is a goal of Switzerland.

2. Value chain Connected Care: ‘connecting data, systems, information and persons in a convenient, safe and secure way’  
Switzerland is lagging behind when it comes to the digitalisation of healthcare. On the contrary, the Netherlands is a frontrunner considering the adoption of eHealth and IT in healthcare. Compared to Switzerland, the Netherlands has extensive experience in using electronic health records.  
The Netherlands develops solutions through extensive collaboration and co-creation between government, research institutes, SMEs, multinationals and civil society. One reason for this approach is to take away concerns about data security and privacy, because different stakeholders supervise the development instead of a single organisation. This approach seems suitable to take away the Swiss concerns.
3. Value chain Analytical & Artificial Intelligence: ‘the use of data for clinical decision-making, diagnosis of disease, detection of acute and long-term risks, treatment plans and monitoring’  
Since the Netherlands is a frontrunner in digitalisation of healthcare, there is plenty of experience and know-how on collecting, managing, and converting this data. Health data collection in Switzerland is rising since the introduction of the new electronic patient record system in 2020. Switzerland has prepared for this transition and opened a new centre for artificial intelligence in medicine in Bern in January 2021.
4. Value chain Biopharma  
Switzerland is home to several well-known big pharmaceutical companies like Roche and Novartis. The pharmaceutical sector is important for the Swiss economy and is developing fast. One major development is personalised medicine, which has drawn attention in both countries. Sophisticated data infrastructure is a requirement for personalised medicine, which is an expertise found in the Netherlands.
5. Value chain Hospital Design & Construction  
Switzerland is home to many hospitals. Despite the Swiss development towards more outpatient care, high-quality hospitals and infrastructure will be needed in the coming years. Merging single hospitals into larger hospitals is a trend seen since 2015, and at the same time, hospitals are becoming more specialised. Since 2013, there has been a strong growth of investments in large public hospitals and a tendency towards more ambulant treatments<sup>1</sup>. The Netherlands have fewer hospitals than Switzerland that serve a population twice as large. The Dutch have experience in creating specialised hospitals, which increase healthcare efficiency, an objective of Swiss health policy reforms.

### Overview milestones & flagships

- G2G (MoU, state visits, thematic focus on e.g. prevention, digitalisation)
  - o Trade (PIBs, Market study, missions, incoming delegations)
  - o Innovate (joint R&D projects, specific bilateral calls)
  - o Invest (significant investments in the Dutch LSH sector)

2019

- Market study eHealth: 'The Digital Health market in the Netherlands and Switzerland'
- 6 December: Healthcare opportunities in Switzerland, seminar in Utrecht
- Networking event with 60 NL-Swiss LSH experts at Roche, Switzerland.
- 3 December 2019: DayOne experts event with Top Sector LSH, Ministry of Health, Welfare and Sport (VWS) and NELL/Leiden University Medical Center.
- 3-4 December Fact finding mission from Top Sector LSH, NFIA, VWS to Novartis, Innovation Attaché, Basel area, University of Basel, University Hospital Basel, Innosuisse, Swiss Ministry of Health, Honorary Consul and Dutch Embassy in Bern.

## 2020

- 28 January: FutureHealth conference with Nico van Meeteren about the Knowledge and Innovation Agenda and the Electronic Patient Dossier.
- 22 June: Dutch-Swiss LSH virtual workshop about innovation and health data infrastructure, with amongst others, Health-RI, SPHN, University of Basel, Health clusters Basel and Amsterdam.
- July: Preparatory meeting of the visit of Innovation Lab of the University Hospital of Basel to NL.
- During the year: Preparation of Swiss-Dutch EUREKA call with Innosuisse, RVO, Health Holland, Swiss Ministry of Health, Dutch Embassy in Bern.
- 6 December: follow-up of Dutch-Swiss LSH virtual workshop about innovation and health data infrastructure by the Dutch Embassy in Bern.

## 2021

- 24 February: Information webinar Swiss-Dutch eHealth EUREKA Call.
- 10 March: Swiss HealthValley meets Health Valley NL, with Campus Biotech Geneva/Biopole Lausanne
- 30 March: Swiss-Dutch Learning Hour on Health Data Governance

## The way forward

Several initiatives will be deployed from 2021 onwards to initiate new relations between Switzerland and the Netherlands in the LSH area. Building a long-lasting relationship between both countries is needed for multi-annual programming.

- Facilitate matchmaking  
COVID-19 made it more difficult to get in contact with potential business partners, stakeholders and decision-makers. However, the need to do so still exists and should be facilitated.
- Knowledge sharing  
Many Dutch organisations are already active in Switzerland. Their experience can benefit the internationalisation of other organisations. Facilitating knowledge sharing among stakeholders will therefore be stimulated.
- Building sustainable relationships with Swiss counterparts  
Building long-lasting relationships is an integral part of the Health-Holland International Strategy 2020-2023. It is a requirement for the intended multi-annual programming in Switzerland.

<b>(Preferred) actions</b> To be discussed with stakeholders	<b>Expertise/capacity/finance</b>
Mission to Switzerland focused on digital health	Privately organised with support of NL Embassy or BDC mission in consultation with TFHC
Participation of Swiss delegation during Health-Holland Visitors Programme & World of Health Care	H-H, TFHC in cooperation with the Dutch Embassy

# United Kingdom

The United Kingdom (UK) is the second-largest trade partner of the Netherlands. The Netherlands' LSH sector specifically has a strong connection and interest with England, which houses one of the world's biggest health providers and buyers, the national health service (NHS). The NHS provides excellent health services but is now confronted with an increased strain on the health system by an increasing burden of non-communicable diseases and an ageing population. The UK has therefore announced major investments to upgrade and grow health infrastructure and services. The UK also houses a large innovative LSH industry, which offers many opportunities for international R&D collaborations. The main challenges for Dutch organisations to start collaborations with the UK include Brexit and more recently COVID-19. However, the prospect of engaging and doing business with the UK remains positive, as the UK depends on import and international collaborations to operate and develop its health systems.

## Key indicators

	<b>GDP (2019 in millions of euros)</b> 2,392,260		<b>Size of medical Device market (in millions of euros)</b> 9,000 – 10,000
	<b>Health Expenditure as % of GDP (2017)</b> 9.1%		<b>Size of pharma market (in millions of euros)</b> 37,300
	<b>Ease of doing business (2019)</b> 8		<b>Medical Device import from NL (in millions of euros)</b> 1,480
	<b>Healthcare finance system</b> e.g. government-sponsored universal healthcare system (Beveridge model)		<b>Medical Device export to NL (in millions of euros)</b> 445

## LSH trends & developments

The UK has a highly developed LSH sector, which forms the third LSH market in Europe. From the perspective of the Netherlands, the following market trends are of interest:

### Trade

The UK is investing heavily in upgrading its health system and infrastructure.

1. Integrating care locally: The NHS is working to integrate primary care, community services and hospital care in collaborative networks to provide personalised and coordinated health services.
2. Digitally transformation NHS: The Department of Health and Social Care is investing large amounts into digital transformation programmes to construct interoperable digital health information management systems across the UK.

3. Upgrading and growing health infrastructure: The UK government has invested major sums in the upgrade and build of NHS hospitals and GP facilities. The (independent) care home construction market in the UK is also growing.
4. Managing patient flow and providing health services outside of hospitals: The rising demand for health services in the UK has led to the so-called bed block crisis. In order to combat this crisis, the UK is investing in smoother patient flow and shorter hospital stays and stimulating homecare.
5. Addressing an increased burden of chronic diseases: Chronic diseases greatly impact the UK's health status and budget. The UK is therefore expanding rehabilitation services and has issued a national NHS health screening programme. The UK also actively pursues a prevention agenda.

### Innovate

The UK is one of the biggest investors in LSH worldwide (Wellcome Trust).

1. Chronic and debilitating diseases: The UK has issued so-called Grand Challenge Missions for healthcare to use data, artificial intelligence and innovation to transform the prevention, early diagnosis and treatment of chronic diseases. By 2030 the goal is to ensure that people can enjoy at least 5 extra healthy, independent years of life by 2035, while narrowing the gap between the experience of the richest and poorest.
2. Early disease detection and drug discovery/Pharma: through so-called Life Sciences Sector Deals, the UK government has invested in 10 companies to innovate. The UK has an impressive infrastructure, including the Medicines Manufacturing Innovation Centre and the Vaccines Development and Manufacturing Centre.
3. Regenerative medicine: Currently, a national programme on regenerative medicine is being organised in cooperation with Oxford, UCL, King's College, Imperial College and the Wellcome Trust.
4. Oncology: The UK is strongly developed in the field of oncology research. Strengths include the Francis Crick Institute and data science and genomics developed in the UK.
5. Digital Health Technology Catalyst: Through this programme, the NHS invests in developing digital interventions across the UK.

### Invest

Since EMA has moved from the UK and since Brexit. The UK is a country of high relevance for Foreign Direct Investment. We have been supporting and addressing companies in the UK in all subsectors within LSH with a major focus on biotech/farma and medtech since all those companies need to have a local presence in Europe to get their products distributed within Europe. The EMA has been a major trigger for many companies the setup a small office and/or Quality control laboratories within the Netherlands.

1. In June 2016 the UK decided to leave the European Union and the preparations for Brexit were a fact.
2. In November 2020 the decision was made by the EU to relocate the EMA (European Medicines Agency) to the Netherlands.
3. Both Brexit as well as the relocation of the EMA were incentives to attract more Foreign Direct Investments to the Netherlands.
4. For this reason the NFIA, Innovation Quarter, the region of Utrecht and Amsterdam in Business have joined their forces and decided to set up a dedicated Invest in

Holland Life Sciences & Health team with more FTE's. In the beginning of 2021 the decision was made to support this team for another 3 years.

5. Factors that stimulate UK Life Sciences & Health companies to relocate or expand are, for example, replacement of Quality Control Labs and the need to appoint QA and QC staff in an EU country. Additional factors that might cause UK companies to rethink their company organization are IP, talent, EU funding and CE marking.
6. The team started with a strong focus on attracting biotech and pharmaceutical companies, but with new specific value propositions in place, the Invest in Holland Life Sciences & Health team is also reaching out to regenerative medicine, digital health and medical technology companies.

### Regional priorities

Two areas within the United Kingdom have been the focal point for Dutch engagement in trade, investment and innovation:

- Greater London has the highest health expenditure in the UK and houses the “Golden Triangle” of London School of Economics, Oxford and Cambridge, resulting in a high concentration of cutting-edge R&D and innovative trusted solutions.
- Northern Powerhouse region, including the Greater Manchester Area, is an attractive destination to enter the UK due to a high concentration of innovative health providers, the presence of MFT as the UK's biggest NHS trust and the Greater Manchester Health and Social Care Partnership.

### Dutch interest in, activity and growth potential

Overview of Dutch interest in the United Kingdom per organisation type: The Dutch interest in the UK is high and is relatively stable. Task Force Healthcare has identified 90 unique organisations to either be active or interested in the UK (UK LSH market study, 2019). This list includes 75 SMEs, 5 NGOs, 7 multinationals and 3 knowledge institutes. Furthermore, the UK scores in the top 10 in the achilles database of incoming trade questions taking up 3% of all requests in 2018-2019.

### Most prominent NL value chains

1. Value chain digital health: Currently 30 known active organisations. Dutch organisations deliver solutions in AI, patient flow management and scheduling, system integration and telemedicine/home monitoring.
  - Potential opportunities:
    - > Digital transformation of the health system is a high priority of the UK government, which assigns large investments to grow digital infrastructure, further develop electronic health records, enable connectivity between health providers and realise access to teleconsults for the entire population.
  - Barriers: Some highly competitive segments in, for example, scheduling and telemedicine. Difficulty to access innovation channels (National Institute for Health Care and Excellence (NICE) and (AHS) for less innovative solutions.
  - Preferred region(s): Greater Manchester Area & Greater London.
2. Value chain healthcare equipment and supplies: Currently 22 known active organisations. Dutch organisations deliver a broad selection of solutions in, for example, oncology treatment, general surgery, general diagnostics, etcetera and to a minor extent, occupational health & safety solutions.
  - Potential opportunities:

- > Increase in investment in both the public and private sector. Focus on high-quality solutions which improve quality of care and make health services more efficient (UK bed block crisis);
  - > NHS invests in health screening programmes and early detection of diseases.
  - Barriers:
    - > Regulatory affairs mainly related to Brexit, reimbursement through entering NHS, competition;
    - > To a lesser extent, it can be a challenge for Dutch organisations to find a business partner/local representative.
  - preferred region(s): Greater Manchester Area & Greater London
3. Value chain mobility & vitality: Currently 13 known active organisations. Dutch organisations deliver a broad selection of solutions, such as assisted living, dementia care, and home monitoring.
- Potential opportunities:
    - > Increased investment in prevention and rehabilitation programmes. Long-term care programmes are expanding, and the nursing home market is growing;
    - > The consumer market is also growing due to the introduction of personal health budgets.
  - Barriers:
    - > Regulatory affairs mainly related to Brexit, reimbursement through entering NHS, competition;
    - > Furthermore, it can be challenging to reach stakeholders in public social care and private health providers in long-term care;
    - > To a lesser extent, it can be a challenge for Dutch organisations to find a business partner/local representative. Some organisations therefore establish a UK limited company (Ltd).
  - Preferred region(s): Greater Manchester Area & Greater London
4. Value chain hospital design & construction: Currently 11 known active organisations. Dutch organisations deliver solutions mainly in sub-construction & (integrated) parts, furnishing, equipping & operations and, to a minor extent, design architecture and engineering.
- Potential opportunities
    - > Large investments in upgrading hospital facilities and general practice facilities;
    - > The care home construction market is also growing.
  - Barriers: Competition and entering public tenders e.g. through Procure22, which works with fixed contractors.
  - Preferred region(s): not applicable

### Overview milestones & flagships

- Trade (Market Study 2019)
- Innovate: (joint R&D projects, specific bilateral calls)
- Invest: (significant investments in the Dutch LSH sector)

### Collective Trade Activities to the UK

2015

- Holland Pavilion at NHS Expo

2018

- Sector report e-health by NSBO

2019

- UK LSH Market Study by NBSO & TFHC
- Dutch Digital Health Theatre at Health + Care

2020

- Digital LSH Mission & Matchmaking Manchester

### The way forward

As a prominent partner in healthcare for the Netherlands, the UK has been designated as a category I country in the International Strategy of the Top Sector Life Sciences & Health 2020-2023. To grow future LSH collaboration between the Netherlands and the United Kingdom, we will look to build upon our ranking as one of the biggest exporters of med-tech to the UK. We will also position the Netherlands as a primary partner to improve health and care within the United Kingdom, not just through technology but also through dissemination of knowledge and (R&D) collaborations with the UK LSH ecosystem and industry. We have set three ambitions to achieve our goal: i) further position the Dutch life sciences & health sector in the UK (specifically on the themes of digital health & AI, mobility & vitality and healthcare equipment & supplies), ii) build partnerships with key decision-makers and institutions in the UK and iii) provide guidance to the Dutch LSH sector to prepare for Brexit.

<b>(Preferred) actions</b>	<b>Expertise/Capacity/Finance</b>
Positioning the Netherlands in the UK: Building partnerships on AI in healthcare.)	
Market information: enriching the existing knowledge on market developments in the UK. E-health and med-tech will remain important sectors.	Netherlands Business Support Office (NBSO) Manchester is planning a market report on Long-Term Care for 2020, including residential care, domiciliary care and assisted living.
Preparing for and dealing with Brexit: Developments around Brexit will need to be carefully monitored to allow preparations for possible new trade regulations between the UK and Netherlands.	NBSO Manchester plans to organise a webinar on the topic in Q1 of 2021.
Trade agenda: From both the UK and Dutch sides, we signal high interest to continue contact In 2021. The starting point will be digital activities to build bridges in an appropriate manner. Matchmaking is a key element of these activities.	World of Healthcare will continue to host UK delegations. In 2021, we will work towards a hybrid physical/digital event. Furthermore, we will research participation in the Health & Care Expo.
Invest: EMA	

# United States

The United States is the largest economy in the world, and the Netherlands is its fifth-largest European trading partner. In the LSH sector, the United States and the Netherlands are close trading partners too. From the Netherlands, there is a strong interest in e-health solutions and solutions to help support the growing elderly population and the increasing prevalence of non-communicable diseases.

## Key indicators

	<b>GDP</b> (2019 in trillion USD) 21.43		<b>Size of medical Device market</b> (in billions of USD) 187.1
	<b>Health Expenditure as % of GDP</b> (2017) 17.1%		<b>Size of pharma market</b> (in billions of USD) 419.3
	<b>Ease of doing business</b> (2019) 8		<b>Medical Device import from NL</b> (2018 in millions of USD) 3654
	<b>Healthcare finance system</b> Combination of private health insurance and public health coverage (Medicare, Medicaid)		<b>Medical Device export to NL</b> (2018 in millions of USD) 10,712

## LSH trends & development

### Largest healthcare market in the world

The United States is the largest market in the world when it comes to healthcare, biotech, medical devices and the pharmaceutical industry. In 2018, the US spent USD 3.6 trillion on medical costs, making it one of the biggest healthcare markets in the world. This offers many opportunities for solutions to improve its health system. In recent years, the American healthcare system has undergone many developments and experienced great reform, as witnessed with the implementation of the Patient Protection and Affordable Care Act.

### Challenges within the United States

The United States faces similar healthcare challenges to the Netherlands: an ageing population and unhealthy lifestyles are leading to an increase in non-communicable diseases. This growing pressure on healthcare providers is emphasised even more due to the growing shortage of personnel and the fact that almost 46 million Americans (15% of the population) live in rural areas, making access to care an additional hurdle to overcome. In urban areas, on the other hand, there are public health concerns about the effects of pollution, the speed at which viruses spread in dense populations and the lack of adequate nutrition and physical activity.

Because the US health system is a mix of public and private healthcare, it is considered quite open for entrepreneurs and businesses to enter the market. Private insurance, the dominant form of coverage, is primarily provided by employers. The uninsured rate, 8.5% of the population, is down from 16% in 2010. Public and private insurers set their own benefit packages and cost-sharing structures within federal and state regulations.

## **Focus on the future**

In the coming years, it is expected that consumer demand will rapidly change the way healthcare is currently delivered in the US. The digital health services industry is growing fast, and more technology and consumer-focused companies are entering the healthcare market. In pharma and biotech, massive investments are being made in personalised medicine and DNA research. The COVID-19 crisis also pushed the agenda for the US to be less reliant on the external production of essential medicines and medical technology. Therefore, the US government has invested heavily in vaccine development and production capabilities in the US.

In brief, the US remains a leader in research & development, innovation and standardisation. Combined with the size of the market and the challenges the US healthcare system is facing, the United States is a highly promising market for Dutch companies that want to distribute, scale or innovate their products or services.

From the perspective of the Netherlands, the following market trends are of interest:

## **Trade**

### **The digital transformation of health and care**

North America is still the biggest digital health market in the world. The region's growth is mainly due to the increasing number of older citizens and the rising prevalence of chronic diseases across the region. The market is still expanding rapidly, with more consumer-focused companies entering the healthcare market and scale-ups expanding their activities across the US.

### **Growth of the market for accessible medical technology**

The medical device market in the US is expected to grow at a rate of 5.0% in the coming years. Personal medical devices (e.g. PPE, thermometers, pulse oximeter) grew very fast during the COVID-19 pandemic. The market for medical devices used in elective procedures is expected to bounce back in 2021 after a decline during the pandemic. A lot of attention is paid to invasive procedures and the use of robotics in a clinical setting.

### **Biopharmaceutical development / personalised medicine**

The US market for biopharmaceuticals and personalised medicines is one of the largest markets in the world and is expected to remain in a leading position. At present, the US market accounts for around half of the global market in terms of production. Thanks to the strong science infrastructure and the financial ecosystem, advanced products come to the market at short intervals, giving patient populations new medicines and enhanced products.

## **Innovate**

### **Patient-centred care**

The United States government is focusing on patient-centred care by increasing the transparency of healthcare quality and pricing and lowering the OOP costs for prescription drugs.

### **Quality & access in rural areas**

Research and implementation of measures to increase quality and access for rural health, such as telehealth.

### **Patient independence**

Promoting patient independence through the implementation of effective mobile health apps.

### **Invest**

North America is for many years in a row the largest economy to invest in LSH related Foreign Direct Investment in The Netherlands. A major part of the effort of the Invest in Holland LSH team will concentrate on the continuation of this investments. With the additional two colleagues working in LSH for as well the NFIA as the Innovation Attaché network in the east coast of the VS we expect more activities and support for the MOU between The Netherlands and Massachusetts.

Since the visit by the LSH delegation in 2018 the Invest in Holland network together with Health-Holland has invested strongly in a better positioning of the Netherlands. The result is the launch of the positioning of the Netherlands as Europe's connected Life Sciences & Health metropolis.

### **Med-tech & Pharma**

Several large US med-tech and pharma companies are present in the Netherlands, such as Medtronic, Boston Scientific, Johnson & Johnson, MSD, Alnylam, Styrer and Amgen. Overall, they are positive about the Netherlands as a business location and appreciate the efforts to foster the Netherlands as one large LSH hub and the host of the European Medicines Agency (EMA).

### **Financial possibilities & entrepreneurship**

US firms, in general, have more funds available (due to the large presence of venture capitals) and a more entrepreneurial mindset to become a global company. Most of the growth is expected in cell and gene therapy and vaccine-related activities. A good example is the new EU production facility of Kite Pharma in Hoofddorp and the activities of Janssen vaccines. The new EU Medical Device Regulation will slow down investments in European markets in the short term. Therefore the initial focus should be on existing med-tech companies and new digital health initiatives.

### **Brexit**

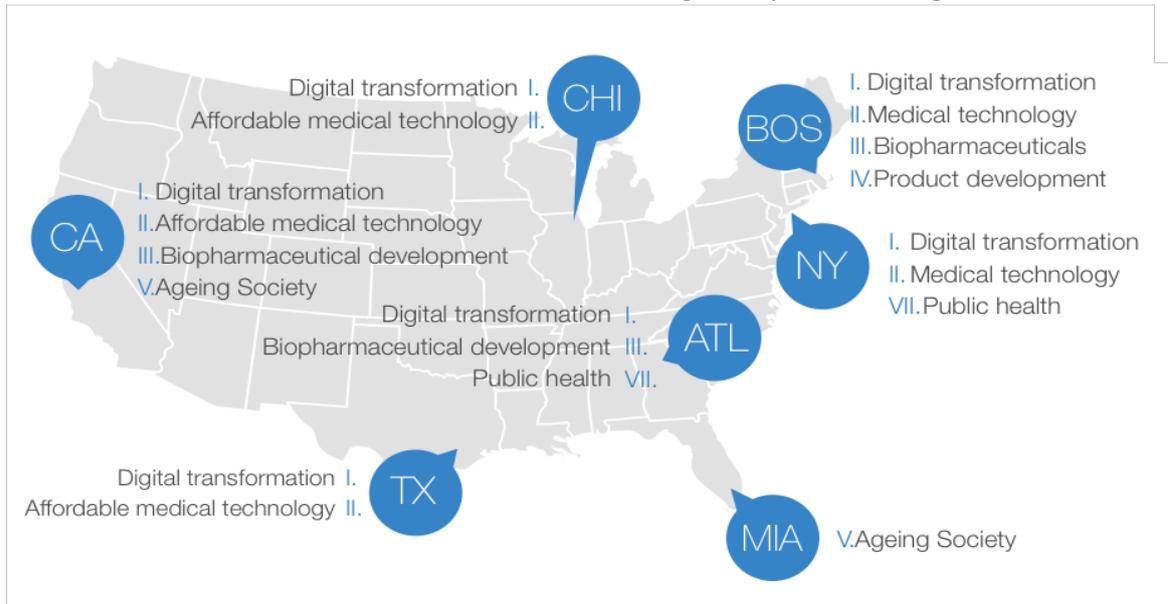
Brexit is a main reason not to locate in the UK for many US firms, and they consider the Netherlands as a possible alternative.

### **Regional priorities**

In size, numbers and capital, the United States is so big that a sole nation focus risks missing opportunities. The East Coast (NY and Massachusetts) is known for its expertise and innovation in biotech, pharma and medical devices, combined with strong opportunities for investors. The West Coast (San Diego and San Francisco Bay Area, California) is a priority region for its expertise on digital health and the strong presence of new tech companies. Texas houses the largest healthcare centre in the world, the Texas Medical Center in Houston, and has a very interesting position regarding telemedicine

given the vast distances between cities and towns. North Carolina has a strong drug development and logistics scene, while the region around Chicago brings opportunities regarding medical device manufacturing. Georgia houses the Center for Disease Control and Prevention (CDC) and is regarded as a key area in the global health field. Florida, given its population and location, has a strong focus on healthy ageing and sport-related activities.

In short, next to national health priorities, each region has its specific focus. These regional priorities will bring focus to the actions taken within those regions and build up expertise for the whole network. An overview of the selected regional priorities is given below.



### Overview milestones & flagships

- G2G (MoU, state visits)
- Trade (PIBs, Market study e-health (2019))
- Innovate (joint R&D projects, specific bilateral calls)
- Invest (significant investments in the Dutch LSH sector)

### Collective Trade Activities to the US

2015

- Economic Mission to Chicago, Illinois and Boston, Massachusetts
- Dutch delegation present at BIO International Convention in Philadelphia

2016

- Dutch delegation present at BIO International Convention in San Francisco

2017

- Digital Health Mission to San Francisco
- Netherlands Pavilion at the RSNA
- Dutch delegation present at BIO International Convention in San Diego

2018

- Publication of Market Report on Texas
- Dutch delegation present at BIO International Convention in Boston

2019

- Economic Mission to Texas with Secretary-General Erik Gerritsen
- Economic Mission to Boston Massachusetts with Prime Minister Mark Rutte and Minister Bruno Bruins
- Memorandum of Understanding (MoU) between Dutch Ministry of Economic Affairs and Climate Policy and the Massachusetts Office of International Trade and Investment: Netherlands Transatlantic Life Sciences Partnership
- Dutch delegation present at BIO International Convention in Philadelphia

2020

- Economic Mission to Texas with Prime Minister Mark Rutte and Minister Bruno Bruins (cancelled)
- Dutch delegation (Focco Vijselaar and Clémence Ross-van Dorp) present at the BIO International Convention (digital)

### The way forward

- To wrap up: explorative economic missions to one specific region on the abovementioned priorities.
- To keep: focused (multiregional) economic missions with the public and private sector.
- To strengthen and deepen: Strengthen ties with healthcare influencers in the different regions and priorities.
- (New) activities to be explored:
  - Multiyear programming and investment activities in LSH;
  - Different (pilot) activities that derive from the MoU between Massachusetts and the Netherlands.

<b>(Preferred) actions</b>	<b>Expertise/Capacity/Finance</b>
Develop specific expertise on FDA and registration processes.	RVO, EZK, LSH network US
Strengthen regional focus and have market scans done in all resorts with LSH representation.	RVO, LSH network US
Organise multiregional digital mission on the national priorities.	BZ, EZK, VWS, RVO, Health-Holland, TFHC, HollandBIO, LSH network US
Increase K2K and G2G cooperation on national and specific regional priorities (e.g. public health, healthy ageing, sport).	EZK, RVO, VWS, LSH network US
Implement actions MoU Massachusetts – the Netherlands, such as bilateral (virtual) conferences, inviting Venture Capitals from Massachusetts to the Netherlands and annual biotech awards in honour of Henri Termeer.	EZK, HollandBIO, Innovation Attaché network, Invest in Holland / NFIA, Verening Innovatieve Geneesmiddelen, Henri Termeer Foundation, Health-Holland
Formulate multi-year programming for LSH activities within the US.	BZ, EZK, NFIA, RVO, Health-Holland, TFHC, HollandBIO, NLinBusiness, LSH network US

# NL Health~Holland



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

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