



Koninkrijk der Nederlanden

The Digital Health market in the Netherlands and Switzerland

Opportunities for collaboration in digital health

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Colophon

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1. Summary – purpose and main conclusions of the report

This report has been commissioned by the Embassy of the Kingdom of the Netherlands in Berne in order to support its work promoting Dutch – Swiss public and private collaboration in the area of e-health. For this purpose, the report gives a brief analysis of the Swiss and Dutch healthcare systems, focusing on developments related to digital health. It will give an overview of health policies in both countries and, in particular, of developments concerning e-health. The major stakeholders in e-health in both countries will be identified.

On this basis, the report will finally identify opportunities for increased public and private sector collaboration between the Netherlands and Switzerland in the e-health sector.

The main conclusion of the report is that the combination of healthcare and technology creates opportunities for innovation. Since the Netherlands and Switzerland are both important players in ICT and healthcare, there are good opportunities for both (governmental) institutions and the private sector in the Netherlands and Switzerland to exchange experiences and to collaborate on the further development of e-health practices.

Opportunities for collaboration may be found in particular in the following areas:

- *Mobile Health*
- *Personalized medicine*
- *Home care*
- *Elderly care*
- *E-mental health*

Finally, both in the descriptive chapters of this report as well as in the 15 annexes to the report, the reader will find links to relevant websites and other sources of information that will allow obtaining further information on the topic of interest.

2. E-health – a brief description

This report focuses on the integration of information and communication technology (ICT) in healthcare: in short, “e-health”. The general aim of e-health is to provide the conditions to improve and enhance healthcare provision.

Digitalization has become more and more important in everyday life. This is also true for the health care sector, where innovation and digitalization play an increasingly important role. Digitalization for example can help to better integrate health systems. Modern technologies also aim at making healthcare increasingly independent of place and time. They can increase patient empowerment and be an important tool for better decision making. For example, e-consults instead of real consults, self-help via websites and online requests for repeat prescriptions at pharmacies. And finally, e-health can help to reduce administrative burdens and to achieve important cost-reductions in health care.

E-health plays a role in all areas of health care, from home care to the treatment of serious chronic diseases, but also in the area of pharmaceutical research and the development of new, targeted, medicines. The group of stakeholders in e-health is therefore very broad and involves many different players, including: hospitals, general practitioners, educational institutions, software developers, engineers, government, insurances companies, pharmaceutical companies, researchers and patients.

The successful development and use of e-health instruments depends to a large extent on the degree of collaboration and co-ordination between the various stakeholders in the e-health sector. In this context, the role of government and its policies to promote and co-ordinate such efforts is of particular importance.

3. Switzerland

3.1 Switzerland – a federal and decentralized state structure

Switzerland has a federal state structure. The powers of the state are divided between the confederation, 26 cantons and 2216 municipalities. Both the confederation and the cantons are responsible for the regulation of the healthcare system. The federal government provides a general framework on national level. The 26 relatively autonomous cantons implement specific policies. This results in differences per canton.¹ For example, the canton of Geneva is more advanced in digitalization than other cantons. Cantonal autonomy is good for competitiveness, but it can also be a hurdle. Compliance with the regulations in one canton, for instance, does not automatically mean that the same regulations are accepted in other cantons as well.

The main Swiss national bodies involved in health and e-health policies are:

- [eHealth Suisse](#): the competence- and coordination organization which streamlines e-health developments between the state and the cantons.
- [Swiss Conference of Cantonal Health Directors \(GDK\)](#): the coordinating body between the cantons for healthcare.

See also annex 2 for Swiss government institutions and governmental programs for the improvement of healthcare.

3.2 Swiss economics

Switzerland has a very strong economy, with generally high growth levels and low unemployment. Its political stability, predictable economic policies and efficient capital markets are an important factor in this. In addition, Switzerland has a flexible labor market and a highly educated work force. Universities and science institutes such as the ETH Zurich and EPFL in Lausanne rank among the world's best.

The health care sector (pharmaceutical industry) is a prominent part of the Swiss economy. Its center is Basel, where the Swiss pharmaceutical giants such as Roche and Novartis have their headquarters. Pharma is the export driver of the Swiss economy, covering 38% of the export volume. [In 2017 this market was estimated at 5.8 billion CHF](#). The pharmaceutical sector in Switzerland currently contributes 7,8% to Swiss BNP.

3.3 R&D and innovation

Switzerland is strong in research and innovation. According to the OECD the R&D expenditure is around 3,4% of the GDP, which lies above the average of 2.4% in OECD countries. [Funding](#) for R&D in Switzerland is mainly coming from the private sector (around 61%), followed by federal (15%) and cantonal governments (10%). 14% is coming from foreign investments. Switzerland is consistently ranked as one of the most innovative countries in the world according to the Global Innovation Index.

¹ <https://www.ncbi.nlm.nih.gov/books/NBK458747/>

The R&D expenditure of the Swiss pharmaceutical companies in 2017 was 6.8 billion CHF. That is 42% of all R&D expenditure in Switzerland.² See *annex 4 for Swiss universities and research institutions*.

3.4 Startup climate in Switzerland

Switzerland has a good start-up ecosystem. Setting up a business is relatively easy, much is done to facilitate administrative burdens. Often, it does not take more than two weeks to register a start-up. [Practical information for the foundation of companies](#) and on corporate structures like LLC (GmbH), Ltd (AG) or branch is given by Switzerland Global Enterprise. There are over 70 innovations parks and 150 organizations for startups in Switzerland. See *annex 5 for startup organizations*.

In January 2019, in total more than 5700 start-ups were registered by [startup.CH](#), of which:

- ICT start-ups: 2436
- LSH start-ups: 853, of which 54 startups are active in Digital Health

Most of Swiss start-ups in this area focus on information- and/or data sharing systems, 'sports & fitness' or medicine mentoring.

For more information: please have a look at the embassy report "[Het Zwitserse start-up ecosystem](#)" (in Dutch only).

- ➔ Please note that to have activities on the Swiss market it is an advantage to be established in Switzerland or at least to have a partnership with a Swiss company.

3.5 Healthcare in Switzerland

Overall, the Swiss healthcare system is of very high quality, thanks to high-class hospitals, medical institutes and highly-educated medical professionals. At the same time, it is very expensive. In 2017 12.3% of the Swiss GDP was spent on healthcare, in the Netherlands 10,1%.³ The costs for the Swiss healthcare system per citizen already has risen from CHF 6.274 in 2000 to CHF 8.768 in 2015.⁴ It is also relatively decentralized, with for example a relatively high number of hospitals per capita, which presumably adds to the high costs of the system. The biggest expenditure in Swiss healthcare is on the treatment of chronic diseases. Funding of healthcare is mainly provided by the cantons.

Switzerland is able to sustain this system due to its high income per capita, but it will probably be necessary to address the cost factor in the future. Any fundamental reform will probably be a complicated process, due inter alia to the decentralized nature of the Swiss political decision-making.

Further reading on the pharmaceutical sector in Switzerland:

- [Publikationen](#) Pharma-Markt Schweiz 2018
- [Swiss Healthcare and Pharmaceutical Market 2018](#)

² https://www.snb.ch/en/mmr/reference/Direktinvestitionen_2017/source/Direktinvestitionen_2017_12.en.pdf

³ <https://data.oecd.org/healthres/health-spending.htm>

⁴ https://www.obsan.admin.ch/de/_257

- [Government policy](#) to strengthen Switzerland's position on biomedical research and technology internationally.

LSH regions

The main LSH clusters are located in Northwest Switzerland, Zürich and Geneva/Lausanne. Some LSH initiatives:

- [Life Sciences Cluster Basel](#)
- [Campus Biotech Geneva](#)
- [Lausanne life science park Biopôle](#)
- [Center for Digital Health Interventions Zurich and St. Gallen](#) <https://www.c4dhi.org/>
- [Digital Health Alliance Zug](#)

Hospitals and private clinics

There are 281 hospitals: 5 university hospitals, 97 general hospitals and 179 special clinics. The Federal Office of Public Health provides [hospital statistics](#).

Different to the Netherlands, where private clinics (79) mainly provide cosmetic treatment, Switzerland's [private clinics](#) provide care in all medical fields: urgent / general care (38), rehab (23), psychiatry (17), other (6).

Health insurance companies

There are around 50 health insurance companies in Switzerland. For more information:

- General information about the [Swiss insurance system](#).
- An overview of the [insurance companies](#) in Switzerland.
- List of [supplemental insurances providers](#).

Patients

Swiss patient organizations:

- [Patientenplattform Schweiz](#)
- [Schweizerische Stiftung Patientenschutz](#)
- [European Patient's Academy on Therapeutic Innovation \(EUPATI CH\)](#)

Demographical trends

Some demographical developments will have their impact on the Swiss healthcare system:

- [Increasing life expectancy](#): average life expectancy is forecasted to increase from 81.8 years in the period 2005-2010 to 84.9 years in the period 2025-2030.
- [Increasing population](#): expected is that the population will increase with 0,45% by 2035 compared with 2020.
- [Increasing group of elderly persons](#): In 2017 18% of the Swiss citizens was above 65 years, which will increase to 25% in 2035. The group elderly in 2016 was around 1,5 million, and will increase to 2,2 million in 2030 and 2,7 million in 2045.
- [Increase of chronic diseases](#): 25% of the population has a chronic disease and this number is growing.

Demographic and economic developments are exerting pressure on the current health care system. Accessibility for everyone and funding of healthcare will become a challenge.

3.6 Digitalization in Switzerland

The federal government launched the program [Health2020 strategy](#) with measures on digitalization. Health2020 aims to improve all areas of the system to ensure that people suffering from illnesses and the consequences of accidents continue to receive high-quality care. A total of 36 measures across all areas of the health system aim to maintain quality of life, increase equal opportunities, raise the quality of care and improve transparency. Therefore self-competence in health issues in all sections of the population needs to be raised, unnecessary treatments and complications need to be avoided, and the current system made as efficient as possible by implementing transparent structures and introducing better and more clearly regulated controls. (Source: Federal Office of Public Health.)

However, integration of digitalization in healthcare is not common yet. The readiness for digitalization in healthcare appears to be relatively low (39%).⁵ There are several reasons for the relatively late developments of digital health in Switzerland:

1. Both the confederation and the cantons are competent in healthcare policy making, which leads to fragmentation of the system and different policies in one country.
2. There is no national approach for the implementation or upscaling of digital health.
3. Data security is an issue. The Swiss population and Swiss medical professionals are hesitant to trust data protection and security in healthcare. In 2018 only half of the Swiss doctors trusted digital data security.⁶
4. The potential of digital health is not broadly known by Swiss public.

Primary concerns therefore are data protection and security. Most Swiss care providers and patients have a rather critical attitude towards digital health. One third of the Swiss general practitioners still work with paper records, instead of digital records. The Swiss digital health market is therefore still small and the implementation of digital tools is not yet on track.⁷

Nevertheless, digitalization in healthcare is also developing in Switzerland. The potential of digital health is recognized:

- 68% of the Swiss healthcare providers are willing to invest in digital health tools.
- Increasing use of digital health products with [68 % since 2016](#).
- The Swiss federal government launched a national program: *Strategie eHealth Schweiz 2.0* which mainly focusses on the introduction of the electronic patient record (EPR) in hospitals, for independent general practitioners the use is not compulsory. *For further information see annex 2.*

See also:

- [Clarity on Healthcare](#) *Digitales Zeitalter – Die Spitallandschaft im Wandel*, KPMG 2018.

The [Swiss eHEALTH Barometer 2018](#) monitors the e-health developments in Switzerland.

- See also the [Swiss eHEALTH Barometer Opinion Survey 2018](#).

⁵ Digital Health

https://digitalcollection.zhaw.ch/bitstream/11475/1458/1/Digital%20Health%20Report_DC_2017_11_08.pdf

⁶ <https://www.gfsbern.ch/de-ch/Detail/die-digitale-welle-erfasst-das-gesundheitssystem>; <https://www.e-healthforum.ch/index.php?apid=1195790954&appid=5979492>

⁷ https://digitalcollection.zhaw.ch/bitstream/11475/1458/1/Digital%20Health%20Report_DC_2017_11_08.pdf

Insurance companies are encouraging digitalization both to reduce costs and in order to get more data. Data could be collected via wearables or applications. For example, the app [BENECURA](#) of insurance company Swica shows what could be done: it supports the medicine intake, has an alarm system, gives information for diseases, symptoms and more.

For an overview of Swiss initiatives for digital integration in healthcare, see Annex 3

4. The Netherlands

4.1 The Netherlands – centralized government and “polder model”

The Kingdom of the Netherlands is a parliamentary democracy with a King (or Queen) as Head of State. Its governmental structure is more centralized than in Switzerland, as it is not a federal country. However, politics in the Netherlands are traditionally based on a practice of coalition governments involving a large degree of compromise building (“polder model”).

4.2 Dutch economics

The Netherlands is one of the twenty largest economies in the world and is a leading global knowledge economy. The Dutch economy, like the Swiss economy, is an open economy depending to a large extent on international trade and services. It also has a relatively flexible and well-educated labor market. The international approach, stable business relations, the strategic logistic position and the highly educated workforce makes the Dutch economy competitive. The Dutch economy is the sixth largest within the EU, and ranks globally 17th.

The Netherlands government focusses in its economic policies on promoting in particular innovative sectors of the Dutch economy (so-called “[top sectors](#)”), which include ICT, Life Science and Health, High Tech Systems and Materials and the Chemical Industry. In the context of this policy, the Dutch government supports companies that develop innovative products through tax benefits, innovation credit and grants.

(<https://www.government.nl/topics/enterprise-and-innovation/encouraging-innovation>)

The LSH sector includes 2.500 active companies, mainly SME’s, and 600 startups. LSH, Software and Cyber Security clusters are located in Amsterdam, Utrecht, Leiden, Rotterdam, Maastricht and Eindhoven. Nijmegen, Wageningen and Arnhem are strong in health and the Groningen region is specialized in Healthy Ageing.

See for further information about startups in the LSH sector the [Bidbook](#) of HealthHolland.

4.3 R&D and innovation

The Netherlands has a lot to offer as a R&D hub, with its many different industry clusters, major companies and well known research institutes, such as TNO Netherlands. In 2017, a total of €14.7 billion was spent on R&D in the Netherlands. The central government provides around 33% of the funding and 50% is provided by the private sector. *See annex 7 for funding in the Netherlands.*

In health research, the university medical centers (UMCs) are the most important research entities. The UMC’s work closely together and share research results within the Netherlands Federation of University Medical Centre’s (NFU). In 2018, the NFU focused on personalized medicine, prevention and regenerative medicine.

4.4 Start-up climate in the Netherlands

The Netherlands is a popular hub for start-ups. This has to do inter alia with its international business climate, creative and innovative environment and its strategic location in Europe. In the Netherlands, start-up hubs are generally locally organised. However, StartupDelta, an independent public-private partnership, strives to coordinate these efforts. Together with the main innovation hubs in the Netherlands, StartupDelta works with the ministries of Economic Affairs and Education Culture and Science, the startup community, and other partners. (See: Startupdelta.org)

The Netherlands has a good infrastructure for healthcare startups. Health Valley Netherlands is the biggest Life Sciences & Health innovation network in the Netherlands. The network unites companies, care organizations, knowledge institutes and authorities, and enables them to grow stronger together. (See: healthvalley.nl)

Start-ups in digital health care have recently gotten some specific attention in the Netherlands, In the spring of 2018 the [Dutch Digital Health Challenge](#) was organized, with participants in four categories: health provider, corporate, insurer, and health corporate. A number of these start-ups later on participated in the HIMSS Europe & Health 2.0 conference in Spain.

4.5 Healthcare in the Netherlands

Healthcare in the Netherlands is of high quality and constantly listed in the top-three of the Euro Health Consumer Index. Life expectation is high and healthcare is accessible and affordable. In 2018 the expenditure of care is around 70 billion euro, which is 10% of the GDP.

In the Dutch health-care system the general practitioners play a very important role. They are generally the first point of contact for patients. This ensures that specialist care is only provided when necessary.

Stakeholders

The Dutch healthcare system was decentralized in 2015. Since then the 380 municipalities are responsible for the implementation of health care policies. At the same time, it was recognized that for maximum effectiveness all stakeholders must be involved. In the new approach, therefore, patients and the patient organizations have become important partners, who are directly involved in the policy making process. But insurers as well are important actors in shaping the care-policies in the Netherlands, in view of their role as financiers. A good example of a stakeholder is [Patiëntenfederatie Nederland](#), representing 200 patient- and consumer organizations.

Hospitals

There are 91 general hospitals in the Netherlands (compare the 102 hospitals and 179 specialized clinics in Switzerland, for half the population).

LSH regions

The main LSH-regions are centred around the [University Medical Centre's \(UMC\)](#):

- University Medical Centre Utrecht
- Academic Medical Centre, University of Amsterdam
- University Medical Centre Groningen
- VU Medical Centre (Free University Amsterdam)
- Radboud University Nijmegen Medical Centre
- Erasmus MC University Medical Centre Rotterdam
- Leiden University Medical Centre
- Maastricht University Medical Center

Demographical developments in the Netherlands

Like in Switzerland, the Netherlands also deal with demographical changes with an impact on the healthcare system.

- [Increasing population](#): by 2060 the Dutch population is estimated to have grown to 18,4 million inhabitants.
- [Increasing age](#): it is expected that the amount of citizens with the age above 65 will increase from 19% to 26% by 2040.
- [Increasing falling accidents](#). Every 5th minute someone with the age above 65 years needs first aid treatment, with a total of 102.000 accidents in 2017. In this year 3.849 persons with the age above 65 years passed away after a falling accident.⁸
- [Increasing chronic diseases](#): In 2016 52% of the inhabitants were diagnosed with a chronic disease. It is expected to increase to around 55% by 2040. Multimorbidity is estimated to increase from 13,7% in 2015 to 18,3 in 2040. Diabetes, arthrosis and neck- and back complaints are expected to be the most common chronic diseases.

As a result there will be an increasing demand for healthcare in the coming years and the costs for health care are expected to rise. In order to keep the healthcare system affordable and accessible innovative digital health implementations are needed. Innovation, research and business could help to confront the challenges.

4.6 Digitalization in the Netherlands

The Dutch government has a strong focus on the upscaling of digitalization in health. [The Ministry of Health, Welfare and Sport \(VWS\) announced to set up a legal framework](#) for mid-2019 for the mandatory exchange of medical data between all care providers to improve sharing health related information. Reason for this mandatory measure is the slow development and improvement in the medical data exchange. It appeared that care providers use different wording and terms for the same concepts, which makes data exchange impossible. The aim of the initiated regulation is harmonizing terms and processes. The Ministry hopes to improve exchange of medical data quickly. See: <https://www.rijksoverheid.nl/ministeries/ministerie-van-volksgezondheid-welzijn-en-sport/documenten/kamerstukken/2018/12/20/kamerbrief-over-elektronische-gegevensuitwisseling-in-de-zorg>

⁸ Letsel Informatie Systeem 2008-2017, VeiligheidNL; Bevolkingsstatistiek 2008-2017, CBS; Doodsoorzakenstatistiek 2008-2017.

Another example of smart collaboration is [Mijn Zorg Log](#) (my care log). The Dutch government has been given legal certification for a digital ledger solution in the healthcare sector that would allow blockchain to be used for communications between the country's health institutions, including hospitals and government agencies. Mijn Zorg Log is a blockchain application for Zorginstituut, the Dutch government agency in charge of communications between the country's health institutions.

There are many other initiatives for digital integration in healthcare:

- [“Informatieberaad Zorg”](#): administrative collective of actors active in healthcare which work together to set harmonized standards and agreements to improve the sustainable information infrastructure. Their main focuses: medication safety, patient empowerment, standardized information exchange and one system for data collection.
- [“Registratie aan de bron”](#): a programme which sets standards for better and easier registration of personal health data. In this collective Nictiz, NFU and other hospital associations participate.
- [Digital health policy of the Ministry of VWS](#): focuses on access to medical records and possibilities for online contact with care providers.
- [E-health monitor](#): annual monitor carried out by Nictiz, to keep track of e-health developments.
- [Knowledge and Innovation Agenda 2018 – 2021](#), commissioned by Top Sector LSH.
- [MedMij](#): harmonized national standards for personal information exchange systems. An initiative of Informatieberaad Zorg.
- [National Exchange Point](#) (Landelijk schakelpunt LSP): infrastructure for exchange of medical data between healthcare providers.
- [ZorgInnovatie](#): community for innovation in healthcare and wellbeing, providing a platform and database for more than 3300 communities and 700 innovations.

See annex 6 for Dutch governmental and non-governmental healthcare organization and startup organizations.

5. Opportunities for collaboration in digital health

When determining opportunities for collaboration in digital health it may first be useful to draw some conclusions on the similarities and difference between Switzerland and the Netherlands concerning healthcare developments (*as described more in detail above*):

Similarities:

- Switzerland and the Netherlands are faced with similar challenges concerning demographic trends and health care costs;
- Both countries are strong in promoting research and innovation and have policies in place to (further) support the development of e-health;⁹
- Both countries would like to strengthen the focus in health care on prevention and personalized medicine.

Differences:

- The Swiss political system is more decentralized than the Dutch system, leading to differences as to how the health care system is organized.
- Switzerland is home to leading pharmaceutical companies, which is an important factor for health care innovation.
- The Netherlands on the other hand appears more advanced in developing e-health. The Netherlands has the highest IT adoption in hospitals worldwide.¹⁰ One reason may be the relative high trust among Dutch citizens concerning data security and the capacity of the healthcare providers to protect health data, whereas in Switzerland concerns over privacy are relatively high.¹¹ The percentage of digitalized patient data: Switzerland 68,9%, the Netherlands 89,4%.¹² Switzerland is only starting with setting up the EPD whereas the Netherlands is upscaling the use of the EPD.¹³

5.1. Mobile Health

Mobile Health (mhealth, healthcare on smartphone) is expected to have a global market value of 60 billion dollar by 2020.¹⁴ Apps can be used in almost all facets of healthcare, like education, prevention, extramural care, disease management, warning systems, decision support etc. mHealth could be used for prevention, but also for promotion of healthy living and education. Examples of mHealth are apps that give patients a complete view over medication and medicine intake. Globally most mHealth apps are developed for diabetes, depression and obesity. The mHealth market in the Netherlands is one of the best regulated ones in Europe (4th).¹⁵ In regulation Switzerland is ranked 12th. In Switzerland the use of apps in healthcare is slightly behind the integration of applications in other sectors because of privacy concerns regarding health data.

⁹ <https://www.himss.eu/himss-analytics-annual-european-ehealth-survey-2018>

¹⁰ <https://www.himss.eu/himss-analytics-annual-european-ehealth-survey-2018>

¹¹ For example: In Switzerland only 29% of the population knows about the EPD according to the [SWISS eHEALTH Barometer opinion survey 2018](#).

¹² <https://www.himss.eu/himss-analytics-annual-european-ehealth-survey-2018>

¹³ <https://www.himss.eu/himss-analytics-annual-european-ehealth-survey>

¹⁴ <https://www.marketsandmarkets.com/Market-Reports/mhealth-apps-and-solutions-market-1232.html>

¹⁵ <https://research2guidance.com/the-5-countries-ranked-first-choice-for-starting-an-mhealth-business-in-the-eu/>

mHealth is effective for the collection of fast and reliable health data. Especially mHealth with wearables offers possibilities for collecting and analyzing big health data. Examples of wearables are heartbeat monitors and movement trackers. It is expected that in the Netherlands 9 million wearables will be used by 2020.¹⁶ In Switzerland wearables are not yet broadly used, but it is increasing.¹⁷ In particular, fitness and tracking apps are increasingly popular. However, the Swiss market for wearables is still [very consumer focused](#).

In 2018 there were around Swiss [39 startups](#) specializing in wearable technologies.

- ➔ There appear to be opportunities for the development and introduction of (new) mHealth devices that can help in the development of prevention and personalized medicine that both countries wish to develop further.

Further reading: mHealth – what opportunities are there for mobile apps in the healthcare system? <http://www.spectra-online.ch/en/spectra/topics/mhealth-n-what-opportunities-are-there-for-mobile-apps-in-the-healthcare-system-703-10.html>

5.2 Personalized medicine

Another trend in both countries is personalized healthcare and medicine. It is still a challenge to collect the personal health data which are needed for personalization. There are several incentives to create a better infrastructure for data exchange and to create standard digital forms.

Incentives for the optimal use of personal data in the Netherlands:

- Big Data register solutions: [FAIR](#) (Findable, Accessible, Interoperable, Reusable data) and the [Personal Health Train](#)
- [Data4lifesciences](#): integrated research infrastructure program of NFU, published the Handbook for Adequate Natural Data Stewardship (HANDS). This handbook provides guidelines on data stewardship.

Swiss initiatives to collect and exchange personal health data are the EPD and the [Swiss Personalized Health Network \(SPHN\)](#). SPHN aims to establish a nationally coordinated data infrastructure connecting the relevant institutions.

- ➔ There appear to be opportunities for the development and introduction of tools to improve the proper registration and the exchange (interoperability) of health care data.

See annex 12 for a list of Dutch and Swiss organizations and institutions in personalized healthcare.

¹⁶ <https://www.pwc.nl/nl/publicaties/wearables.html>

¹⁷ Digital Health

https://digitalcollection.zhaw.ch/bitstream/11475/1458/1/Digital%20Health%20Report_DC_2017_11_08.pdf

See annex 13 for further information about clinical trials and biobanks in Switzerland and the Netherlands.

5.3 Home care

In both countries there is a shift from intramural care to extramural care. In Switzerland hospitalization is however still relatively high, extramural care is almost exclusively connected to the elderly. In the Netherlands the group of patients receiving home care is much broader. Mental care, physiotherapy and oncological aftercare is mostly provided at home, often supported by digital tools. In both countries it is recognized that home care provides an important opportunity for cost reduction in the health sector.

- ➔ There appear to be opportunities for the development and introduction of (new) digital health tools which disconnect care from the hospital.

5.4 Elderly care

Care providers in the Netherlands are very positive about digital elderly care. The use of digital control systems went up from 53% in 2014 to 81% in 2018. The use of digital patient portals for nursing staff is also increased, with a rise of [38% in 2018 compared to 2014](#). There is a lot of room for upscaling e-health in elderly care. In Switzerland digital support in elderly care is still less often used. There are ethical and technical doubts about the techniques and the care network is small. However, the (selective) use of digital health is coming up, for example the use of online care plans.

- ➔ There appear to be opportunities for the development and introduction of (new) e-tools which can be used in elderly care.

5.5 E-mental health

The Netherlands are strong in digital mental health whereas in Switzerland there is a more reserved approach towards it because of privacy issues and sensitivity. However, in both countries there are initiatives for digital care in the treatment of mental health problems and addictions.

- ➔ There appear to be opportunities for the development and introduction of (new) e-tools which can be used in mental health care.

Annexes

Annex 1: The Netherlands and Switzerland compared

	The Netherlands	Switzerland
Size	42.508 km ²	41.285 km ²
Population	17,1 million	8,4 million
Canton/province	12 provinces	26 cantons
Municipalities	380	2212
Hospitals	91	283
Pharmacies per 100.000 citizens	12	22
General Practitioners	±5000	±14000

Annex 2: Swiss government institutions

Bundesamt für Gesundheit (BAG)	Federal Office of Public Health, division of the Federal Department of Home Affairs.
Innosuisse - Swiss Innovation Agency	Promotes science-based innovation in the interests of industry and society
Obsan	Swiss health Observatory. Themes: mental care, demographic developments, healthcare workforce, elderly care and costs and finances.
Schweizerische Konferenz der kantonalen Gesundheitsdirektorinnen und –direktoren (GDK)	Political coordination body. Its aim is to promote cooperation between the cantons and the confederation.
State Secretariat for Economic Affairs (SECO)	Provide information about investments and about doing business.

Swiss governmental programs for the improvement of healthcare and increase in use of digital health:

- [Strategie Digitale Schweiz](#)
- [Strategie Ehealth Schweiz 2.0.](#)
- [Gesundheit2020](#)
- [Federal healthcare policy](#)

Annex 3: Overview of Swiss initiatives for digital integration in healthcare

BaselArea.swiss	Office for promotion, innovation and inward investment for the Basel Area.
BioAlps	Network for research and academic institutions, startups and multinationals.
Center for Digital Health Interventions	Research lab for more effective and cost-efficient behavior-oriented, scalable and self-improving digital health. Main focus: empowerment.
eHealth Suisse	Competence- and coordination organization which streamlines e-health developments between the state and the cantons.
IG E-health	Collective of different branches, interested in ICT and healthcare. Strong focus on digital integration in healthcare.
Impuls	Digital health platform, provided by Migros.
Inartis	Life Science Community and network.
Innosuisse	Swiss Innovation Agency. Promotion of science-based innovation within economy and society.
KMU Portal für kleine und mittlere Unternehmen	Support for SME
Life Science Switzerland	Largest Life Sciences Society and Network in Switzerland.
Swiss Biotech association	Represents the biotech industry. Thematic platforms within this associations are drug development, industrial biotech.
Medtech plus	Platform to realize full potential of new technologies and solutions in medical technology.
Swiss Digital Health	Support for health professionals, startups and researchers who develop digital solutions for healthcare problems.
Swiss Medtech	Provides legal support and development information to more than 14.000 entrepreneurs.
Swiss National Science Foundation (SNSF)	Supports scientific research in all academic disciplines like medicine.
Venturlab	Support for start-ups in training and fundraising

Annex 4: Swiss universities and research institutions

Centre of the Bern University of Applied Sciences (BFH)	Technologies in Sports and Medicine and Digital Society.
Centre Suisse d'Electronique et de Microtechnique (CSEM)	Research center. Focus areas: healthcare, wellness & sport.
Federal Institutes of Technology Lausanne (EPFL)	University
Federal Institutes of Technology Zurich (ETHZ)	University
Paul Scherrer Institute (PSI)	Natural and engineering sciences; Matter and Material, Energy and the Environment and Human Health. https://www.psi.ch/
Swiss Federal Laboratories for Materials Science and Technology (Empa)	Materials sciences and technology, including biotechnology and medical technology.
University of Geneva (UNIGE)	University
University of Zurich (UZH)	University
Zürcher Hochschule für Angewandte Wissenschaften/Zurich University of Applied Sciences.	University

<https://swisshealthcarestartups.com/en/#about-us>

Annex 5: startup organizations

BaselArea.Swiss	Office for promotion innovation and inward investment for the Basel Area
Digitalswitzerland	Supports more than 130 leading companies and organizations with high-speed access to innovation
GENEUS.CH	Innovation initiator, supporting life science entrepreneurs
Impact Hub Basel	Impact Hub
KMU Portal für kleine und mittlere Unternehmen	Information and support to SMEs
Platform Swiss Healthcare Startups	Nonprofit organization supporting new startup ideas in the fields of novel healthcare models, digital health, medtech and patient driven medical services.
Swiss Academies of Arts and Sciences	Association for Swiss Academies
Swiss Startup Association	Association representing interest of Swiss startups.
Swisscubator	Accelerator program for insurtech and e-health.
Switzerland Global Enterprise (S-GE)	Promotes Swiss exports and investments worldwide.
Switzerland Innovation	Platform where universities and innovative companies collaborate and use their research results for the development of marketable products and services
Switzerland Innovation Park Network West EPFL	Focus: Health and Life Sciences
Switzerland Innovation Park Basel Area	Focus: precision medicine, HLS, biomedical engineering.
Switzerland Innovation Park Biel/Bienne	Hosts Swiss Medtech Center
Switzerland Innovation Park Innovaare	Focus: humans and health
Switzerland Innovation Park Zurich	Focus: digital technologies and communication, Life sciences and quality of life

List of investors, provided by Startup.CH:

<https://www.startup.ch/index.cfm?page=129590&profilesEntry=1&cfid=21318433&cftoken=2ab45ffdbcbeacc4-23CF94BB-CC7E-BFF6-2752BAE79EE9567F>

Annex 6: EPD and Strategie eHealth Schweiz 2.0.

Elektronische Patientendossier (EPD)

Based on the Federal Law on the electronic patients file ([Bundesgesetzes über das elektronische Patientendossier, EPDG](#)), a federal law adopted in 2015, Swiss hospitals have to provide patients access to their electronic file (EPD) in 2020. Nursing homes have to comply with this in 2022. The patient decides on the use of the EPD, it is fully patient owned and controlled. Pharmacies, insurance companies and other outpatient care providers are not obliged to offer the EPD. <https://www.patientendossier.ch/de>

Blog: The Digital Patient: Electronic patient records in Switzerland: A hurdle race on a tight schedule.

Strategie eHealth Schweiz 2.0: program which supports and coordinates the implementation of the EPD.

- <https://www.bag.admin.ch/bag/de/home/strategie-und-politik/nationale-gesundheitsstrategien/strategie-ehealth-schweiz.html>
- <https://www.e-health-suisse.ch/de/politik-recht/strategische-grundlagen/strategie-ehealth-schweiz.html>

Overview of the regional EPD initiatives: <https://www.e-health-suisse.ch/gemeinschaften-umsetzung/epd-gemeinschaften/gemeinschaften-im-aufbau.html>

Example of the EPD in Switzerland: [MonDossierMedical.ch](#). This is the first EPD, introduced in 2013 in the canton Genève. Now used by 40.000 patients and 380 physicians, it is growing with 1000 patients per month. This is the EPD in the Stammgemeinschaften (affinity domains) [Cara](#).

EPD software system providers:

- [Swisscom](#): ICT provider of eHealth integrated solutions in Swiss healthcare
- [Swiss Post](#): national postal service which also provides electronic data infrastructures. Swiss Post offers innovative solutions in e-health.

Technical requirements and standards of the EPD: <https://www.e-health-suisse.ch/technik-semantik/technische-interoperabilitaet/technische-standards.html>

- Document exchange: [IHE profiles](#). <https://www.ihe.net/>
- Document interoperability: [HL7 CDA](#)
- Semantic interoperability: [LOINC](#) and [SNOMED CT](#)
- Access management: [OASIS standards](#) SAML and XACML.

Annex 7: Funding in the Netherlands

Further reading: <https://www.rathenau.nl/en/science-figures/investments/how-much-does-netherlands-spend-rd/funding-and-performance-rd>

In 2019 the Dutch government [budget policy in healthcare](#) is 71 billion euro:

Public funds:

- Health Holland platform: <https://www.health-holland.com/portal/funding>
- ZonMw: <https://www.zonmw.nl/en/news-and-funding/>
- Wegwijzer bekostiging E-health: <https://www.rijksoverheid.nl/documenten/rapporten/2018/06/15/wegwijzer-bekostiging-e-health>
- Dutch government encouraging use of eHealth: <https://www.government.nl/topics/ehealth/government-encouraging-use-of-ehealth>

Private funds:

- Gilde Healthcare: <https://gildehealthcare.com/nl/>
- Lux Research: <http://www.luxresearchinc.com/>
- PHS fund: <http://www.phsfund.com/>
- Noaber Foundation: <https://www.noaber.com/en>
- KPN Ventures: <https://kpnventures.com/>

Annex 8: Dutch governmental and non-governmental healthcare organization.

Centre of Expertise Healthy Ageing (CoE HA)	Network for innovative elderly care https://www.healthyageing.net/nl/home
Ministry of Health, Welfare and Sport (WVS)	https://www.government.nl/ministries/ministry-of-health-welfare-and-sport
National HealthCare Institute Nederland (Zorginstituut Nederland)	Carries out tasks related to statutory health insurance schemes and ensures the quality, accessibility and affordability of the healthcare https://english.zorginstituutnederland.nl/
Nederlands Instituut voor Accreditatie in de Zorg NIAZ	Organization for accreditation in healthcare https://www.niaz.nl/
Nederlandse Zorgautoriteit (NZA)	National authority for healthcare https://www.nza.nl/
Netherlands Enterprise Agency (RVO)	Provides trade other information for Dutch entrepreneurs, including startups https://english.rvo.nl/
Netherlands institute for health services research Nivel	Provides knowledge to improve healthcare https://www.nivel.nl/
Netherlands organization for Scientific Research now	National organization supporting scientific research https://www.nwo.nl/en
Nictiz expertisecentrum e-health	Center of expertise for eHealth https://www.nictiz.nl/english/
Rijksinstituut voor Volksgezondheid en Milieu (RIVM)	National research organization for healthcare quality as well environmental issues. https://www.rivm.nl/en
Trimbos Instituut	Organization for mental healthcare, focusses on e-mental care https://www.trimbos.org/
ZonMw	Organization for health research and development https://www.zonmw.nl/en/

Annex 9: Startup organizations

Health Hub Utrecht	Regional center for efficient, effective and ethical care http://www.healthhubutrecht.nl/
Health Valley	Accelerator with 300 partners in the health sector. https://www.healthvalley.nl/
Health-Holland	Industry, academia and government partnership. Health-Holland facilitates funding, networking and business support. https://www.health-holland.com/
LifeScience@Work	Accelerator for high potential startups. https://www.lifesciencesatwork.nl/
Netherlands Enterprise Agency (RVO)	Provides information and support for Dutch entrepreneurs, including startups. https://english.rvo.nl/
Rockstart	Startup accelerator for funding, market access, knowledge and networking. https://www.rockstart.com/
Startup Delta	Startup support https://www.startupdelta.org/
Task Force Health Care	Organizes trade missions, Holland pavilions and meetings to strengthen development and collaboration on an international level. https://www.tfhc.nl/

Annex 10: Home care and elderly care.

The Netherlands

Program of the Dutch government to support care at home:

<https://www.rijksoverheid.nl/onderwerpen/zorg-en-ondersteuning-thuis/documenten/rapporten/2018/06/15/programma-langer-thuis>

Nursing homes and residential care:

<https://www.government.nl/topics/nursing-homes-and-residential-care>

Dutch organizations:

- Centre of Expertise Healthy Ageing (CoE HA): network for innovative elderly care <https://www.healthyageing.net/nl/home>
- Ouderen fonds: national charity and organization for elderly: <https://www.ouderenfonds.nl/>
- Overview of other organizations for elderly: <https://www.federatie.nl/fpvg-verenigingen/ouderen-organisaties/>

Switzerland

Swiss organizations:

- Spitex Schweiz: national non-profit organization for ambulant care and nursing, providing care to 350.218 clients per year. The 24 cantonal Spitex divisions are represented by Spitex Schweiz. <https://www.spitex.ch/> Since 2016 Spitex uses the internal database HomeCareData to improve their services. <https://homecaredata.memdoc.org/>
- CURAsolutions: technique supplier for elderly- and home care. CURAsolutions offers products which make living at home easier and which improve quality of life, for example products against falling accidents or special elderly tablets. <https://www.curasolutions.ch/>
- CURAVIVA Schweiz: Swiss association of institutions for people in need of support. This association supports children, youth, grownups with disabilities and elderly which need care and support. <https://www.curaviva.ch/Verband/Verband/P44z3/>
- Pro Senectute: national knowledge- and services providing organization for elderly care. Services are provided in finances, accommodation, legal and knowledge sharing. <https://www.pro-senectute.ch/>
- Altersforum Winterthur: association for the improvement of elderly care in the region of Winterthur. <https://www.altersforum.ch/Ueber-uns/PEY3X/>

Further information about digitalization in elderly care in Switzerland:

<https://www.curaviva.ch/Fachinformationen/Themendossiers/Assistierende-Technologie/oRenv2rN/PQBbv/>

Further reading:

- CURAVIVA Schweiz: Das Wohn- und Pflegemodell 2030 <https://www.curaviva.ch/Fachinformationen/Im-Fokus/Das-Wohn-Pflegemodell-2030/Pglxx/?keyword=2030>

- Swiss Federal Department of Home Affairs (FDHA): *Ambulant vor stationär* approach <https://www.admin.ch/gov/de/start/dokumentation/medienmitteilungen.msg-id-69835.html>
- Swiss Federal Social Insurance Office FSIO: elderly care policy <https://www.bsv.admin.ch/bsv/de/home/sozialpolitische-themen/alters-und-generationenpolitik/altersfragen.html>
- Swiss Federal Statistical Office: Ambulant and elderly care Switzerland: <https://www.bfs.admin.ch/bfs/de/home/aktuell/neue-veroeffentlichungen.assetdetail.6406792.html>
- Swiss Federal Statistical Office: Der ambulante Spitalbereich in der Schweiz legt zu: <https://www.bfs.admin.ch/bfs/de/home/aktuell/neue-veroeffentlichungen.assetdetail.3722884.html>

Active Assisted Living (AAL)

ALL is an EU wide funding program that aims to create better quality of life for older people and to strengthen industrial opportunities in the field of healthy ageing technology and innovation. The Netherlands and Switzerland are also participating in ALL. <http://www.aal-europe.eu/>

CURAVIVA Schweiz and the University of Applied Sciences St. Gallen collaborate in one of ALL's projects: GREAT <http://www.aal-europe.eu/projects/great/>

Annex 11: mobile Health

- mHealth provided by eHealth Suisse: <https://www.e-health-suisse.ch/gemeinschaften-umsetzung/ehealth-aktivitaeten/mhealth.html>
- Overview of mHealth projects from the Center for Digital Health Interventions: <https://www.c4dhi.org/projects/>

Swiss prevention and promotion policies:

- Prevention of fiver: *Nationale Strategie zur Prävention der Grippe (GRIPS)*. <https://www.bag.admin.ch/bag/de/home/strategie-und-politik/nationale-gesundheitsstrategien/nationale-strategie-praevention-der-saisonalen-grippe.html>
- Policy for vaccinations: *Nationale Strategie zu Impfungen (NSI)* <https://www.bag.admin.ch/bag/de/home/strategie-und-politik/nationale-gesundheitsstrategien/nationale-strategie-impfungen-nsi.html>
- Prevention of HIV and other sexual transmitted diseases: <https://www.bag.admin.ch/bag/de/home/strategie-und-politik/nationale-gesundheitsstrategien/nationales-programm-hiv-und-andere-sexuell-uebertragbare-infektionen.html>
- Nationale Strategie Sucht: <https://www.bag.admin.ch/bag/de/home/strategie-und-politik/nationale-gesundheitsstrategien/strategie-sucht.html>

Annex 12: Organizations and institutions in personalized healthcare

The Netherlands:

- Consortium Personalized Nutrition & Health: program of TNO and Wageningen University & Research for Personalized Nutrition & Health. <https://www.personalisednutritionandhealth.com/en/personalisednutritionandhealth.htm>
- Data4lifesciences: A shared data infrastructure for biomedical research, initiated by the NFU. <https://data4lifesciences.nl/>
- Dutch Techcentre for Life Science DTL: PPP of 50 Dutch LHS organizations. Strong focus on the promotion of FAIR data. DTL hosts the Dutch ELIXER. <https://www.dtls.nl/>
- ELIXIR Netherlands: aim is to build a professional national research data infrastructure, across Europe together with ELIXIR. <https://www.elixir-europe.org/about-us/who-we-are/nodes/netherlands>
- Health-RI: research infrastructure which connects biobanks, medical imaging and data collection to improve the Personalized medicine & health sector. <https://www.health-ri.org/>

Further reading on Dutch initiatives in personalized healthcare:

- ZonMw program: <https://www.zonmw.nl/nl/onderzoek-resultaten/geneesmiddelen/personalised-medicine/>
- Dutch National Research Agenda: route Personalised Medicine <https://wetenschapsagenda.nl/route/personalised-medicine-uitgaan-van-het-individu/> and https://www.nfu.nl/img/pdf/18.2847_NFU_Kennisagenda_Personalised_Medicine_def_online.pdf
- Report of the Ministry of VWS: Application of personalized medicine: Opportunities and challenges for policy, : https://www.rivm.nl/publicaties/application-of-personalized-medicine-opportunities-and-challenges-for-policy#abstract_en

Switzerland:

- DayOne – innovation hub for precision medicine. Through conferences, experts and labs DayOne has the vision to become the leading precision medicine hub. <https://www.dayone.swiss/dayone.html>
- ETH Domain – one of the focus areas of ETH Domain is Personalized Health and Related Technologies. There is an additional focus on data science. <https://www.ethrat.ch/en/eth-domain/sfa/personalized-health> <https://www.unibas.ch/en/Focal-areas/Personalized-Health-Basel/Personalized-Health-Alliance-Zurich-Basel.html>
- Personalized Health Alliance Zurich-Basel – Collaboration of regional research: Personalized Health Basel, University Hospital Zurich, ETH Zurich and the University of Zurich.
- Personalized Health Basel (PHB) – the research project of the University of Basel which develops personalized health. <https://www.unibas.ch/en/Focal-areas/Personalized-Health-Basel.html>

- Schweizerische Akademie der Medizinischen Wissenschaften (SAMW) – SAMW is a research funding institute, focusing on Medicine and Society and Medical Science and Practice. In these areas SAMW provides training, supports research and connects research and practice. Currently SAMW has a project on personalized health. <https://www.samw.ch/en/Projects/Personalized-Health.html>
- SPHN Data Coordination Centre (DCC) – DCC establishes mechanisms for nationwide interoperability of biomedical and clinical data to enable research in personalized health. DCC works in technical interoperability, defines national data standards and provides internal communication and training. DCC is managed by SIB. <https://www.sib.swiss/research-infrastructure/personalized-health-2/sphn-data-coordination-centre>
- State Secretariat for Education, Research and Innovation – specialized agency for national and international education, research and innovation policy, which set up a National Support Initiative Personalized Medicine. <https://www.sbf.admin.ch/sbf/en/home/research-and-innovation/research-and-innovation-in-switzerland/national-support-initiative--personalised-medicine-.html>
- Swiss Academy of Sciences (SCNAT) – a network of knowledge committed to science in relation to developments in society. The Academy is a facilitator between sciences, politics and society. <https://naturalsciences.ch/topics/personalizedhealth>
- Swiss Biobanking Platform (SBP) – a national coordination platform for human and non-human biobanks. SBP aims to respond to the increasing requests from biomedical researchers regarding the quality and the interconnectedness of biobanks for research purposes. SBP helps in biomedical research by facilitating access and optimal usage of its existing and future biobanked specimens. <https://swissbiobanking.ch/>
- Swiss Institute of Bioinformatics (SIB) – SIB is the nationwide institute in the field of bioinformatics. SIB supports hospitals, clinics, universities and research institutes in providing services and resources like databases, software and competence centers. <https://www.sib.swiss/>
- Swiss Personalized Health Network (SPHN) – network which promotes personalized medicine. SPHN is an initiative which aims at making Switzerland a forefront in personalized health research. This is done through a data infrastructure for data interoperability of biomedical information systems related to clinical data management. <https://www.sphn.ch/en.html>

Annex 13: Clinical trials and biobanks in Switzerland and the Netherlands

Clinical trials

The Netherlands is relatively advanced in clinical research. In 2017 there were 1.657 clinical trials in total. In Switzerland there were less clinical trials, 193 in 2017.

Clinical trials in the Netherlands:

- Centrale Commissie Mensgebonden Onderzoek jaarverslag: <http://2017.ccmo-jaarverslag.nl/de-cijfers-van-2017/>
- Netherlands Trial Register: <http://www.trialregister.nl/trialreg/index.asp>
- European Union Clinical Trials Register: <https://www.clinicaltrialsregister.eu/ctr-search/search>

Clinical trials in Switzerland

- Interpharma: Verband der forschenden pharmazeutischen Firmen der Schweiz. <https://www.interpharma.ch/>
- Statistics: <https://www.interpharma.ch/fakten-statistiken/4539-fewer-clinical-trials>
- Portal for human research with information on the regulation of human research <https://www.kofam.ch/en/home/>

Biobanks

The Netherlands is a frontrunner in sharing molecular data and has many biobanks. In Switzerland there are also many biobanks, but less are statewide organized.

Biobanks in the Netherlands:

- Biobanking and BioMolecular resources Research infrastructure The Netherlands (BBMRI.nl): <https://www.bbmri.nl/>
- Overview of Dutch biobanks: <http://www.biobanken.nl/over-biobanken/biobanken-in-nederland/>
- Specialized Personalized Health & Medicine Research Infrastructure Health-RI: <https://www.health-ri.org/>

Biobanks in Switzerland:

- Ressortforschungsprojekte Humanforschung, provided by BAG: <https://www.bag.admin.ch/bag/de/home/das-bag/ressortforschung-evaluation/forschung-im-bag/forschung-biomedizin/ressortforschungsprojekte-humanforschung.html>
- Swiss Biobanking Platform (SBP): national coordination platform for human and non-human biobanks. <https://swissbiobanking.ch/>. SBP is a member of the BBMRI-ERIC network <https://swissbiobanking.ch/bbmri/>
- Swiss Institute of Bioinformatics is a federation of bioinformatics research and service groups and the leading institute for biological information databases, software tools for modelling and comparing biological data. <https://www.sib.swiss/>

Annex 14: Swiss Mental care organizations

The Mental Health Network Switzerland (NPG) is national network concerning mental health, also in the field of e-health.

<https://www.npg-rsp.ch/de/metanav/english.html>

The Swiss Health Observatory Obsan provides a lot of detailed information about mental care.

<https://www.obsan.admin.ch/de/publikationen/psychische-gesundheit-der-schweiz-2>

Annex 15: Life Science and Health events in Switzerland and the Netherlands

Switzerland:

- Digital Health Connect event: 7 Juni 2019, Sierre
<https://www.digitalhealthconnect.ch/en/>
- Intelligent Health 2019: 11 & 12 September, Basel – AI in medicine Summit
<https://intelligenthealth.ai/>
- Overview of events hosted by Healthtech Cluster Switzerland:
<https://en.healthtech.ch/events.html>
- Overview of events for LSH & medical hosted by Swiss Conferences
<https://www.swiss-conferences.com/conferences/filter/category/22-life-sciences-health-care-&-medical/filterEvents/notpast>
- Overview of events hosted by BaselArea.swiss
<https://www.baselarea.swiss/de/baselarea-swiss/channels/innovation-events.html>
- Swiss E-health forum 2019: 7 & 8 March 2019, Bern – Digitales Gesundheitswesen, hope and reality
<https://www.ehealthforum.ch/index.php?apid=9054120&appid=13398472>
- Swiss Medtech Expo: 10 & 11 September 2019, Luzern - Medtech
<https://www.medtech-expo.ch/en/>
- Tech Tour Growth Summit: 28 & 29 March 2019, Geneva - Redefining Ambition
<https://www.techtour.com/events/2019/3/event-tech-tour-2019-growth-summit.html>

The Netherlands:

- E-healthweek 2019: 21/26 January 2019 <https://ehealthweek.net/>
- Health Valley Event 2019: 14 March 2019, Nijmegen – biggest care innovation congress <https://www.healthvalley.nl/events/health-valley-event-2019>
- INNOVATION FOR HEALTH: Shaping the future of healthcare: 14 February 2019, Rotterdam <https://www.innovationforhealth.nl/>
- Mobile Healthcare: 7 November 2019 <https://www.mobilehealthcare.nl/>
- Overview of events hosted by Health~Holland: <https://www.health-holland.com/events>
- Overview of events hosted by Task Force Health Care: <https://www.tfhc.nl/agenda/>
- Overview of events hosted in MedTech hub Amsterdam:
<https://www.iamsterdam.com/en/search-results/tagrepository/bizmedtech?id=66676d6a-b7f2-4f18-82a7-a6245c467974>
- World of Health Care 2019: 26 September 2019 <https://www.tfhc.nl/agenda/world-of-health-care-2019/>

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