

Final Deliverable



Project:

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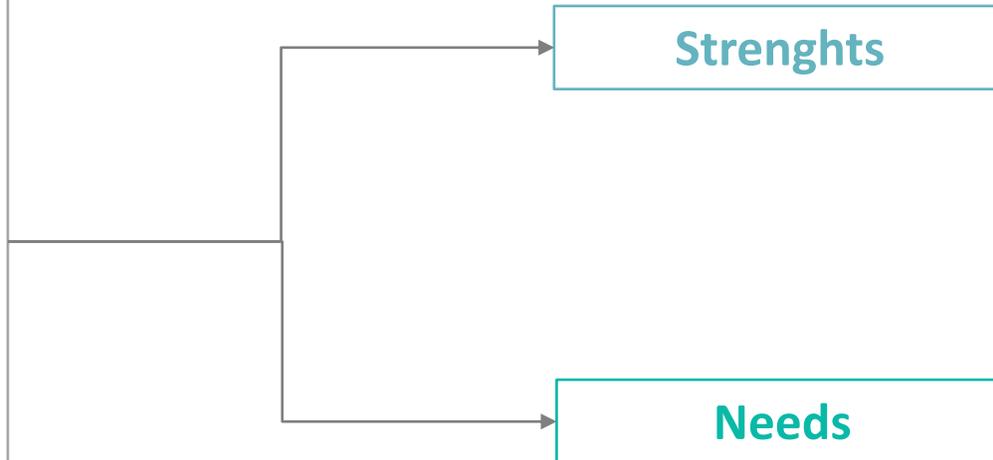
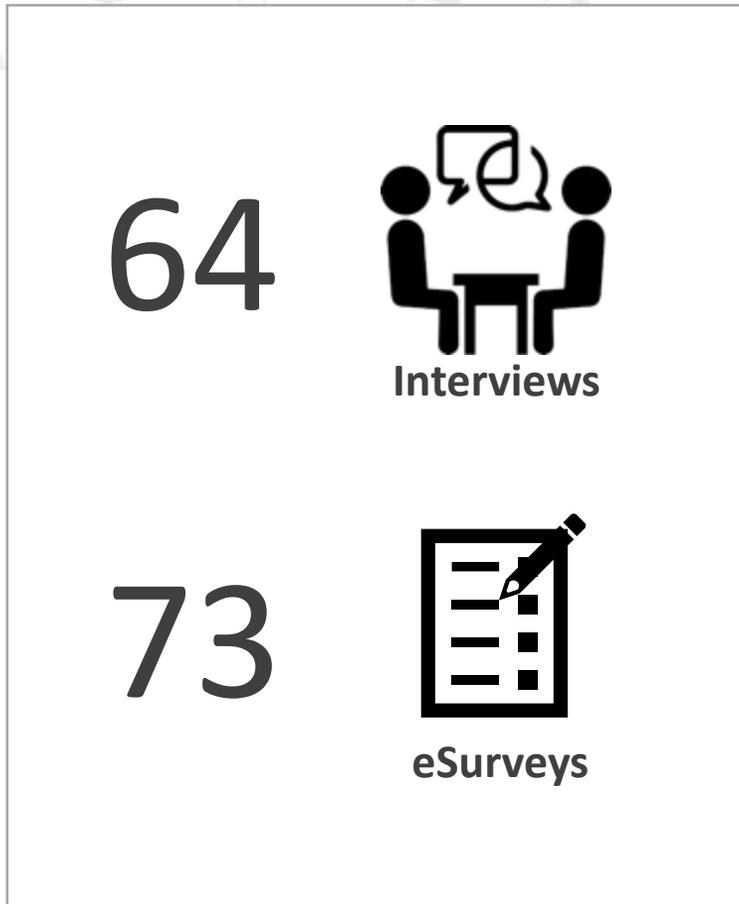
Doelgroepbevraging en gap-analyse

Vlaams Beleidsplan Gepersonaliseerde Geneeskunde

March, 2020

Flanders Health & PersoMed needs inventory

Based on interviews and eSurvey, strengths, needs in Flanders and what the cluster must do has been collected



- Strengths of the Flanders' ecosystem
- Outlined on page 14-20
- Inventory of needs of the Flanders' ecosystem stakeholders concerning the SPC Health
- Outlined on pages 21-40



Interviewees indicated that personalised medicine is currently the right topic, but it does not leverage all the strengths in Flanders

IV Feedback

- **Personalised medicine** is the right topic, however it **does not cover the whole spectrum**. It should be defined as **Personalised Health**.
- It's good that personalised medicine has been approached **from a broad perspective, including devices and not only treatments**
- However, the usual suspects (large companies) always submit files for these calls because they have the resources to write the submission file.

Top strengths in Flanders mentioned by interviewees

| R&D | Healthcare ecosystem | Life science Ecosystem | Regional strengths |
|------------------------------|--|---|---|
| VIB-IMEC (bio- & nanotech) | Excellent & affordable healthcare & infrastructure | Pharma legacy and strong biotech sector | Digital government (eID, crypto-expertise) |
| Clinical studies | High concentration of hospitals | Microbiome, Cell & ATMP | International focus & central in EU (logistics) |
| Top basic science & research | Top notch medical education, training & expertise | Interactions between SOCs and industry | High density population, heterogeneous population |

(ICON call topics in red)

- Flanders has multiple strengths and accomplishments regarding healthcare and life science
- These **strengths are not being optimally leveraged to accelerate development of innovation in the region**
- Even in the ICON PersoMed call, only few of the strengths are being leveraged

For 23% of eSurvey respondents top research institutions and expertise is the most important strength in Flanders



Top strengths in Flanders, mentioned by eSurvey respondents

| R&D | Healthcare ecosystem | Life science Ecosystem | Regional strengths |
|------------------------------|--|---|---|
| VIB-IMEC (bio- & nanotech) | Excellent & affordable healthcare & infrastructure | Pharma legacy and strong biotech sector | Digital government (eID, crypto-expertise) |
| Clinical studies | High concentration of hospitals | Microbiome, Cell & ATMP | International focus & central in EU (logistics) |
| Top basic science & research | Top notch medical education, training & expertise | Interactions between SOCs and industry | High density population, heterogeneous population |

eSurvey Feedback

Personalised medicine is the right topic.

The eSurvey respondents identified the following top strengths:

1. Top research institutions and expertise (**23%**)
2. Co-location of top expertise in 3 domains (life science, healthcare and technology) (**22%**)
3. Access to scientific infrastructure (molecular, sequencing, phenotyping, computing/bioinformatics, translational research platform) (**11%**)
4. Clinical trial expertise (**9%**)

Other strengths that have been mentioned are :

- Digital health capabilities, ATMP, Access to patients/healthy individuals (7% for each category)
- Partnering capabilities (5%)
- Genomics expertise, Immunology (3% for each category)





For 13% of eSurvey respondents that work in companies presence of top research institutions and expertise is the most important strength in Flanders

Answers by Companies

Personalised medicine is the right topic.

1. Top research institutions and expertise (**13%**)
2. Co-location of top expertise in 3 domains (life science, healthcare and technology) (**10%**)
3. Access to scientific infrastructure (molecular, sequencing, phenotyping, computing/bioinformatics, translational research platform) (**7%**)
4. Partnering capabilities (**4%**)

Other strengths that have been mentioned are :

- Clinical trial expertise, ATMP, Access to patients/healthy individuals (3% for each category)
- Genomics expertise (2%)

Answers by Scholars and Research institutions

Personalised medicine is the right topic.

1. Co-location of top expertise in 3 domains (life science, healthcare and technology) (**11%**)
2. Top research institutions and expertise (**8%**)
3. Digital health capabilities (**5%**)
4. Clinical trial expertise and Access to scientific infrastructure (molecular, sequencing, phenotyping, computing/bioinformatics, translational research platform) (**4% for each category**)

Other strengths that have been mentioned are :

- ATMP, Access to patients/healthy individuals (3% for each category)
- Immunology (2%)





Top research institutions co-location is our main strength

Question: What are the strengths in Flanders that can be leveraged for the health cluster?

Top strengths in Flanders

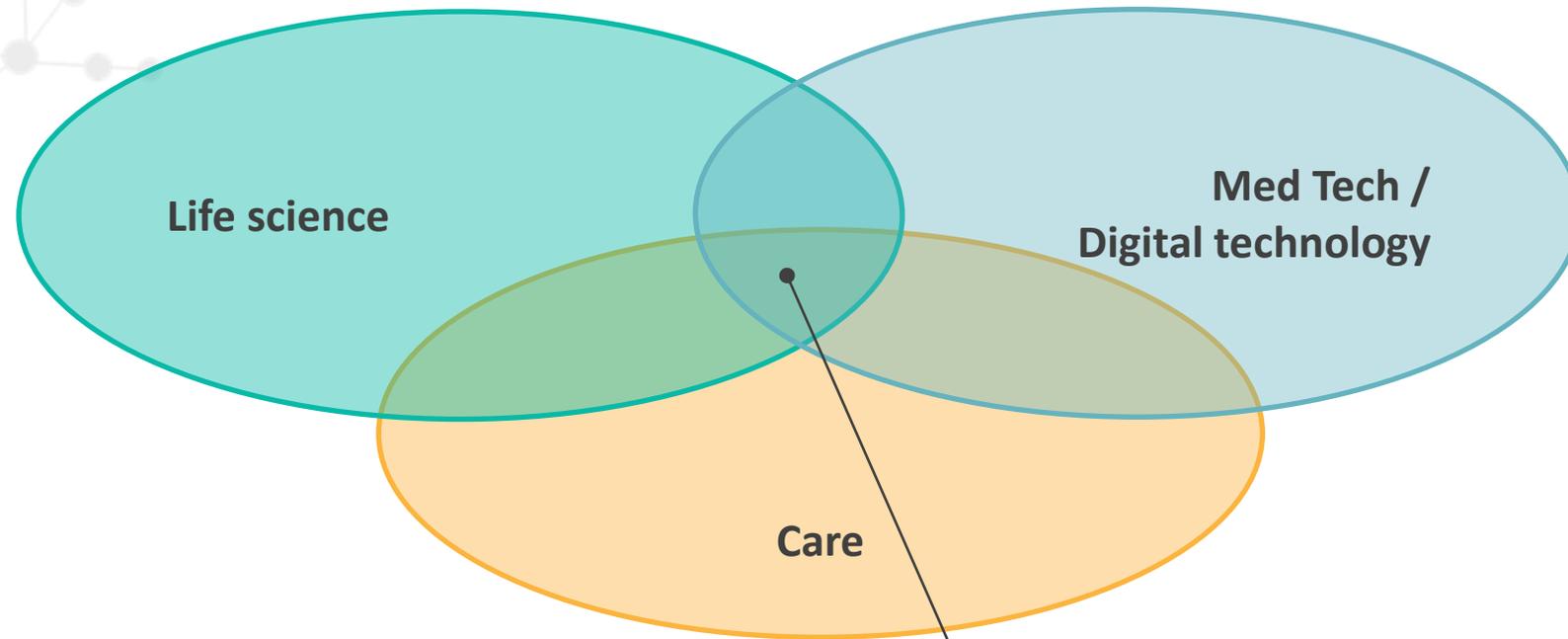
% of responses, each responded had to indicate a top 3





The USP of Flanders is the co-location of worldwide life science and micro-electronics market leaders for application in healthcare

Worldwide top expertise in the 3 sectors present in Flanders



Create innovation, accelerate development and scale worldwide



Flanders' 3 other strengths are presence of an excellent medical expertise, a good healthcare system and a rich ecosystem

Strengths

Stakeholder perspectives

Quotes

Excellent medical expertise and knowledge

- Flanders has a knowledge society with good Flemish universities that **deliver highly educated people**
- Presence of:
 - High-level scientific academics performing top research
 - Well educated HCPs providing excellent care to patients in hospitals & practices
 - Highly skilled & motivated workforce in the companies

We have a strong ecosystem in Flanders with a pharma legacy (Janssen) and strong biotech companies.
- Investor, Platform company

Good healthcare system that is accessible & affordable

- Flanders & Belgium have a very accessible & affordable healthcare system with **high quality care**
- **High density of good quality hospitals and large number of clinical trials performed**
- Flanders has a **high density of patients/healthy individuals** that are also heterogeneous

We have a good healthcare system with close proximity of high-quality hospitals and highly skilled workforce
- Pharmacos, medical device, digital health

We should be more proud about our current healthcare and ecosystem, and broad communication strategy is needed
- Pharmaco, Platform company

Rich ecosystem with a strong pharma legacy and good biotech sector

- **Legacy of Janssen** in Flanders (and UCB, GSK in Wallonia) where people are trained and later leverage the knowledge in biotech companies
- Strong entrepreneurship present in Flanders
- Many companies **already collaborate ad-hoc** with stakeholders
- **Fast clinical trials approvals by authorities**

Belgium is often used as the test-market/pilotmarket for development, before commercialising internationally
- Medical device

Belgium (and Flanders) is the Silicon Valley of healthcare with an excellent healthcare system, high density of hospitals and HCPs available
- Platform company

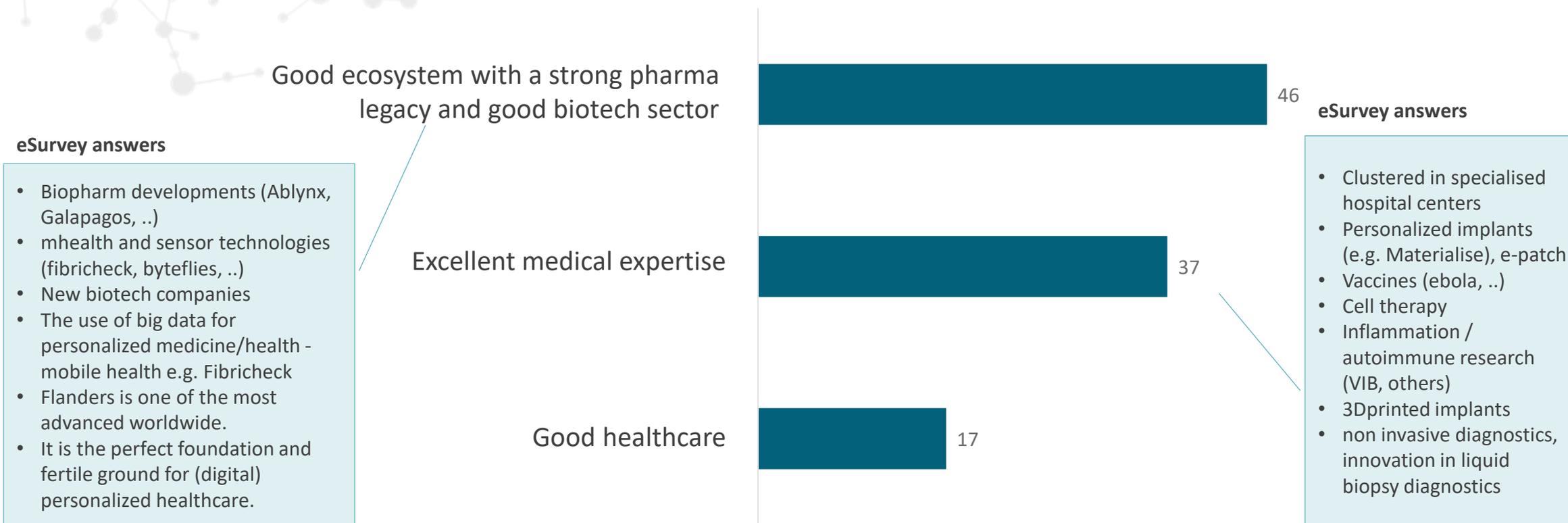


Our rich ecosystem with a strong pharma legacy is the biggest accomplishment in Flanders

Question: What do you see as the biggest accomplishments in health technology and personalised medicine in Flanders?

Top accomplishments in Flanders

% of responses, grouped answers of the respondents





Respondents indicated matchmaking and partnering as most important task for the cluster

Question: What should be the role and scope of a flanders.health cluster be for you

Top success factors for the health cluster

% of responses



eSurvey respondents specified this as:

- Attract and grow members
- Information/ education of patients and health providers
- Internationalization to succeed
- Help stakeholders/members to create a pipeline of innovative applications and bring to the market
- Advise on new developments and engage in strengthening person-centered, goal-oriented care
- Connect & support of stakeholders on a need-basis, leveraging support schemes and support initiatives

There is a clear consensus for the cluster to play a centralized role in the ecosystem

Key insights – quotes from interviewees

*Access to harmonised data is a large problem for companies. I see the Health Cluster take up a **role of trusted third party** and being the point of contact for companies*

- Digital Health, Medical device

Fragmentation of associations & initiatives is a huge issue in a small region as Flanders. I am in favour of bringing all the associations under the umbrella of the cluster. This way, there is 1 point-of-contact for all companies.

- Pharmaco

*The cluster should **mutualise the long-term perspective for small companies, who lack the resources to do it on their own***

- Medical device, Digital health

*The cluster should be able to represent the Flemish companies by **proactively voicing the common interest** and should play a role in solving the data issue*

- SOC, Pharmaco, Medical device



Key stakeholder interviewees

*Flanders (Belgium) can be the **pilot country for a data ecosystem** which will advance the research & development of innovation in this region. I think the cluster can take up a facilitating role in this.*

- Medical device, Digital health



Most important needs identified by the stakeholders are R&D, data, business & entrepreneurship, expertise & talent

Question: Wich needs do you consider as the most important for the health cluster to address?

Top needs in Flanders for the health cluster to address

% of responses

eSurvey respondents specified data as follow

- Data cleaning & standardization (25%)
- Sample, data logistics & storage (25%)
- Data access management (20%)
- Data repository (15%)
- Other (15%)



eSurvey respondents specified R&D as follow

- Collaborative research models (35%)
- Concept testing (33%)
- Access to basic research (17%)
- Access to research infrastructure (11%)
- Other (4%)

Business and entrepreneurship is for companies the most important need whereas this is R&D for scholars and research institutions



Answers by Companies

Top needs in Flanders for the health cluster to address

1. Business and entrepreneurship (9%)
2. Expertise / Talent (8%)
3. Research and Development and Engagement (7% for each category)
4. Data (6%)

Other needs that have been mentioned are :

- Communication and awareness , Digital, Health system (4% for each category)
- Infrastructure (3%)

Answers by Scholars and Research institutions

Top needs in Flanders for the health cluster to address

1. Research and Development (9%)
2. Data (7%)
3. Expertise / Talent and Business and entrepreneurship (5% for each category)
4. Communication and awareness , Health system (4% for each category)

Other needs that have been mentioned are :

- Infrastructure (3%)
- Digital and Engagement (2% for each category)





Respondents indicated matchmaking and partnering as most important task for the cluster

Question: What should be the role and scope of a flanders.health cluster be for you

Top success factors for the health cluster

% of responses



eSurvey respondents specified this as:

- Attract and grow members
- Information/ education of patients and health providers
- Internationalization to succeed
- Help stakeholders/members to create a pipeline of innovative applications and bring to the market
- Advise on new developments and engage in strengthening person-centered, goal-oriented care
- Connect & support of stakeholders on a need-basis, leveraging support schemes and support initiatives

Respondents from both categories indicated matchmaking and partnering as most important task for the cluster



Answers by Companies

Top success factors for the health cluster (Scope)

1. Matchmaking and partnering (**15%**)
2. Grant & subsidies coordination (**13%**)
3. Policy making (**13%**)
4. Marketing, branding and awareness of the cluster (**7%**)
5. Other (**2%**)

Answers by Scholars and Research institutions

Top success factors for the health cluster (Scope)

1. Matchmaking and partnering (**13%**)
2. Policy making (**10%**)
3. Grant & subsidies coordination (**9%**)
4. Marketing, branding and awareness of the cluster (**7%**)
5. Other (**2%**)





Majority of the respondents indicated collaboration with a common goal as a key element for the health cluster

Question: What would you say are the key elements that a health cluster must have?

Top success factors for the health cluster

% of responses

Group of agencies/organisations/institutions working together with a common goal

29

Sharing of knowledge and experience

25

Access to funding (grants or equity investment)

23

Other roles

5

eSurvey respondents specified this as:

- Forming a virtuous ecosystem
- Opportunities to bring people together

Majority of the respondents from both categories indicated collaboration with a common goal as a key element for the health cluster



Answers by Companies

Top success factors for the health cluster (Key elements)

1. Group of agencies/organisations/institutions working together with a common goal (**15%**)
2. Sharing of knowledge and experience (**14%**)
3. Access to funding (grants or equity investment) (**11%**)
4. Geographic proximity (**7%**)
5. Membership of all participating organizations (**5%**)

Answers by Scholars and Research institutions

Top success factors for the health cluster (Key elements)

1. Group of agencies/organisations/institutions working together with a common goal (**11%**)
2. Access to funding (grants or equity investment) (**11%**)
3. Sharing of knowledge and experience (**10%**)
4. Sharing of facilities (**5%**)
5. Geographic proximity (**2%**)





It's clear from the interviews that stakeholders expect more from a Health cluster

Top areas mentioned by interviewees when asked for their views on the scope of the Flanders cluster

The Flanders Health Cluster should:

Be a central contact point for all stakeholders

- Proactively seek synergies and connect
- Be a **one-stop-shop** ("loket") and refer to the appropriate stakeholder/associations
- Would be particularly helpful for data sharing information

Bring stakeholders together

- Stimulate and coordinate collaborations and partnerships, between different stakeholders
- Create a stakeholder **collaboration framework including partnership models**, advise on successful partnering strategies and pitfalls, share success stories, best practices & key learnings

Raise the profile of Flanders

- Increase awareness of the Flanders ecosystem, in particular internationally (comms deck, connect with other clusters)
- Increase awareness of the public on various topics, including clinical trials, health literacy, proactive engagement
- **Advocate** for the common interest of all companies

Provide a data governance framework & plan

- Define **ambitious data vision and strategy** for Flanders
- Define a **framework** and action plan, that complies with all data regulations and defines a trusted third party

- There are many expectations from the stakeholders on what the Cluster should offer
- Cluster must act as a centralized organization that plays a role in **facilitating collaboration & providing a data governance structure**
- They are also seen as important in the **marketing of Flanders as "the Silicon Valley of Healthcare"**



Stakeholders expect the cluster to offer more than funding distribution, citing a broad range of activities to add value

Insight

The health cluster must provide added value beyond funding distribution

Stakeholder perspectives

- **Funding is not seen a major activity within the scope** of the cluster (mentioned by multiple interviewees)
- The Health Cluster **has to consolidate, drive (top-down) and simplify to realise value add**. Currently, there is too much fragmentation (initiatives and instruments) in the Flemish landscape.
- The Health cluster should **proactively support companies** along the entire value chain, through a broad scale of activities that focus on:
 - **Coordinating** based on societal / healthcare needs
 - **Connecting** companies/organisations **and patients/consumers** and apply new collaboration models (based on clear roles & responsibilities and ownership)
 - **Funding**
- **Create a trustworthy environment for cooperation** (between companies and other clusters), focused on added value, creating buy-in and involving all stakeholders

Implications for Cluster priorities and program

- Flanders.health Cluster will have to clearly **demonstrate what membership to the cluster provides** value beyond funding
- Flanders.health Cluster will need to offer more than just funding distribution; **at a minimum** they will need to address the top views from the stakeholders on scope, e.g.
 - Be a **central actor / contact point**
 - Play an **active role in bringing stakeholders together, including patient/consumers**
 - Increasing the **profile of Flanders internationally**

Quotes

*There is absolutely **no value-add** to setting up a **cluster focused on distributing government funding**.*

- Pharmacos

There is already sufficient capital (both governmental as private funds) present in Flanders for investment in biotech

- Investor



The Health Cluster should proactively seek synergies and facilitate partnerships between stakeholders

Insights

Need for a stakeholder engagement framework defining multiple models for partnering

Stakeholder perspectives

- Create a stakeholder **collaboration framework** including **partnership models** to guide companies through the partnership process
- Advise partnership initiatives on successful partnering strategies and pitfalls
- Collect and share success stories, best practices & key learnings

Implications

- Define **all possible stakeholder engagement models including partnering models and partnering scenarios** (draaiboek) considering the intended result and outcomes
- Build a **repository of success stories, best practices & key learnings**

Take up a centralised broker role for companies

- The Cluster should **proactively seek synergies** (multi-disciplinary and cross-sector) **and connect** companies and organisations
- The Cluster should be a **one-stop-shop** (“loket”) for all questions because the fragmentation in the Flemish ecosystem causes a lot of confusion
- Based on the question, the Cluster **should refer** to the appropriate stakeholder/associations

- Stakeholder **mapping with all the stakeholders and initiatives** including their expertise and capabilities
- **Proactively connect and coordinate** multi-disciplinary, cross-sector, multi-stakeholder partnerships
- **Infrastructure mapping** with all available infrastructure that could be shared between companies / organisations



Flanders must raise their profile both domestically and internationally through a communication strategy

Insights

The Cluster should define a communication strategy to raise national awareness

Stakeholder perspectives

- **Create more awareness** at the Belgian/Flemish population about the health ecosystem and cluster by educating and informing the public and the HCPs. **Increase health literacy in the Flemish population.**
- Broadly **communicate the Flanders Health vision and action plan** (cfr. Flanders Technology International in the '80s)
- The cluster should **pro-actively stimulate stakeholder engagement** and represent the common interest of the stakeholders on national level, by connecting and co-shape with the regional & federal government.

The cluster should define an international communication strategy to position Flanders as a pilot market

- The health cluster should actively **promote** Flanders/Belgium as a **pilot/test market** for the specified focus areas
- The Health Cluster should carry out the Flanders Health vision to **inspire and attract foreign companies. Moreover, connect with other clusters and share international best practices with SPC stakeholders.**
- Companies must be provided with the **appropriate communication tools** to represent the region internationally (cfr. Silicon Valley companies)
- The health cluster should **advocate** for the common interest of all companies **internationally**

Quotes

Belgians are not aware that Belgium is the Silicon Valley of healthcare, with accessible, high-quality and affordable care
- Platform company

Awareness needs to be raised in society (incl. HCPs) about how innovation in healthcare is established and how participating to clinical trials are essential in this process
- Pharmaco

There is not enough pride at the Flemish companies about Flanders. There are no tools available (promo input) for the companies to systematically promote Flanders like it is the case for Silicon Valley companies.
- Pharmaco

A data governance framework to facilitate data aggregation, harmonisation & sharing will fill a major need in Flanders



Insight

The health cluster can address a major need by providing a data governance framework

Stakeholder perspectives

The Health Cluster should:

- **Facilitate access to linked data** (including cross-sector) including
 - Primary & secondary care data, PROMs, sensor data,...
 - Samples (biobank)
 - Patients/healthy individuals/**consumer engagement**
- Be/ appoint the **trusted third party** responsible for
 - data aggregation, harmonization, sharing and reuse
 - creating a trusted environment for data owners
- **Define standardized methods** that comply with regulations and **guide companies** in collecting, analysing, exchanging data, ...
- **Create buy-in of all stakeholders**, including hospitals
- Provide a **business model for data sharing** is needed to incentivize data-owners to share data
- **25%** of the eSurvey respondents chose “**Data cleaning & standardization**” and “**Sample and data logistics and storage**” as most important needs

Implications

Flanders.health cluster will have to define:

- an **ambitious data vision and strategy** for Flanders, to **create of a data-ecosystem** and **data exchange platform** with accessible aggregated data to accelerate innovation
- a **framework and action plan**, that complies with all data regulations (FAIR principles, GDPR) and defines a **trusted third party** that:
 - Breaks down data silos
 - Aggregates multiple types of data (omics, samples)
 - Harmonises and cleans the data
 - Grants access to anonymized data
 - Defines standardized methods for data collection & analysis to facilitate data aggregation
 - Attracts and builds up data science expertise in Flanders for analysis & interpretation
 - Implements a sustainable business model that incentivizes data sharing
- A **public-private initiative** will need to be defined to increase the buy-in of all stakeholders in healthcare for this data framework

Quotes

Data access and “data donator” engagement are critical for longitudinal data to support disease insights, and innovation validation
- Pharmaco, Investor

*We need a **data exchange platform** supporting data standards, data ownership models and data business models*
- Biotech, Pharmaco

Flanders might be a frontrunner for Europe in data, but should focus on a specific TA
- Pharmaco



Stakeholders want an ambitious vision and action plan for Flanders

Stakeholder perspectives on what the SPC should do

The Cluster should have ambitious vision for Flanders with an overall action plan

- An **ambitious vision** for Flanders **that is inspiring and includes all aspects of Personalised Health**
- A **long-term plan** that includes:
 - specific **disease area** to focus all research and funding on in order to excel
 - **Expert support** for scale-ups to improve business plans and execution by attracting international serial entrepreneurs and Chief Execs
 - **strong tech transfer** to improve number and the quality of spin-offs
 - **creation of a data-ecosystem and data exchange platform** with accessible aggregated data to accelerate innovation development
- A **top-down program** to frame the various bottom-up initiatives. The Cluster should define a **top-down framework** with
 - an ambitious **vision** that differentiates on international level
 - clearly defined **health priorities** (e.g. achieve outstanding health outcomes)
 - an **ambitious strategy** that leverages the strengths and addresses the needs of the ecosystem
 - **clear action plan**
- **Priority technology and disease areas** will need to be defined, in order to maximise impact (e.g. brain health is a high medical need with expertise present in Flanders)

Quotes

The 4th digital industrial revolution (digitalisation) is ongoing but Flanders has no plan to facilitate it.
- Platform company

Flanders needs to define the role it wants to take up in research where data is increasingly important. If there is no clear vision around data, it will miss out for future research.
- Pharmaco

A long-term vision helps different partners to align and to have everyone on-board for a clear future.
- Survey

We have to define clear health objectives to be able to define the cluster strategy
- Biotech & MedTech companies



eSurvey participants identified patients as the most important stakeholder of the SPC

Top 3 most important stakeholders in health cluster

1



Patients & individuals

43 % of respondents

2



Research/
academic
institutions



Biopharma
companies

11 % of respondents
(for each stakeholder)

3



Pharmacos



Healthcare
providers

6 % of respondents
(for each stakeholder)

For 30% of eSurvey respondents that work in companies, patients are the most important stakeholders in the health cluster



Answers by Companies

Top 3 most important stakeholders in health cluster

1. Patients (**30%**)
2. Biopharmaceutical companies , Medical device companies, Pharmaceutical companies , Providers (**4% for each category**)
3. Diagnostic companies, Investors and Research / academic institutions (**2% for each category**)

Answers by Scholars and Research institutions

Top 3 most important stakeholders in health cluster

1. Patients (**13%**)
2. Research / academic institutions (**9%**)
3. Biopharmaceutical companies (**6%**)



The interviews and eSurvey have highlighted a broad range of needs that the Health cluster should help to address



Interviewees were asked to select their view of the biggest needs from a list of several categories

Mostly mentioned in interviews and eSurvey
Needs mostly mentioned in the eSurvey

Categories



Needs

| Skills & talent | Data access | Engagement | Testing & validation | Health system access | Matchmaking & Collaboration | Infrastructure | Focus areas |
|---|---|--|--|---|--|--|--|
| <ul style="list-style-type: none"> • Disease/clinical/medical • Data analytics • Technology expertise • Fundraising • Legal, policy, or governance • Specific functions/areas | <ul style="list-style-type: none"> • Data access/breakdown data silos • Data cleaning • Standardization • Supporting technologies • Data & citizen cohort • Storage | <ul style="list-style-type: none"> • Collaboration and support models • Access and engagement of individuals (as data donors) • Knowledge dissemination and best practice sharing | <ul style="list-style-type: none"> • Concept testing and validation | <ul style="list-style-type: none"> • Medical practice & workflows • Integration of testing & Dx in patient pathway • Protocols & ethics • Clinical decision support | <ul style="list-style-type: none"> • Partnering • Business models • Business development • Entrepreneurship • Collaborative research models | <ul style="list-style-type: none"> • Shared facilities & co-location • Research & infrastructure access • Centralised admin of infrastructure | <ul style="list-style-type: none"> • Personalised medicine • Cell & ATMP • Digital medicine • Brain health • Microbiome |

To be successful, SPC Health must also recognise the different needs of multiple stakeholder groups



Addressing the needs of specific stakeholder groups will ensure that the cluster is adding value and creating impact beyond funding

Based on the interviews and eSurvey, data access, collaboration, and talent are the biggest needs across all stakeholders

1

All
stakeholders

Top Needs

Data access

- The cluster should facilitate data access by providing:
 - Guidance on data sharing and data access mgt
 - Data exchange platforms and tools
 - Data cleaning and standardization
 - Sample, data logistics and storage

Collaboration

- More opportunities for collaboration by
 - Leveraging synergies
 - Providing **forums** and other ways to **connect**
 - **Actively bringing parties together**
 - Providing collaboration framework

Testing & validation

- The cluster should facilitate **concept testing and validation**

Large organizations need talent, while small businesses and scale-ups need investment and skills

