



**Strategic Plan  
for Continuation  
Period  
2018 - 2024**



## Executive Summary

**Ahti (the Amsterdam health & technology institute) started in 2014 with a small team and the twin ambitions of improving the quality of delivered care and reducing pressure on the Amsterdam health sector. At the time of its inception four significant trends could be observed in the health sector:**

- 1** The cost of healthcare in the Netherlands is rising more rapidly than the Dutch gross domestic product.
- 2** The explosive growth of available data is scarcely being put to use to support (policy) interventions and healthcare solutions.
- 3** Investments in healthtech are escalating.
- 4** Scale-up of technological innovations in the health system is lagging behind.

These trends are still significant in 2017. They provide corroboration that the road ahti has chosen, to integrate people, technology and information, and combine that with entrepreneurship and financing, is the key to adding value to and improving the health system in Amsterdam and the rest of the world. Ahti adheres to the Triple Aim principle, which states the perceived quality of care, the health outcome, and the cost of care as the three basic starting points.

Ahti has participated in more than 80 projects and proposals with a wide range of partners, all geared towards encouraging entrepreneurship, initiating innovative training programs and collaborations, and facilitating the development, implementation and monitoring of the effect of targeted (policy) interventions and care solutions. The anticipated results of the start-up stage have been achieved, quadrupling the initial investment from the City of Amsterdam.



### Ahti's unique position and added value

The essence of our added value is that we provide an interface between innovation and entrepreneurship. By creating access to data – and visualizing, interpreting and converting it into specific recommendations, prevention plans and health solutions – we are creating unique opportunities. Delivering healthcare can be done more successfully through combining medical knowledge, the use of technology (including data) and encouraging the “right” behavior. Ahti is working together with knowledge institutions and entrepreneurs to deploy all of the knowledge they have developed and sector-specific (digital) methods in practice. The successful creation of the Amsterdam Health & Technology Centre (AHTC) is a powerful catalyst for new industry.

Value creation is done by brokering and facilitating relationships between a plethora of stakeholders in healthcare, including the patient, healthcare providers and healthcare payers (insurers, city councils, and government). Ahti's Living Labs is a unique model in the world today. A Living Lab is a cooperation between public and private organizations that makes it possible to test and implement policy and innovations in actual practice. By measuring the effects on care outcomes and related costs in a real uncontrolled situation, with civilians and patients, real world evidence (RWE) is generated. The international network of Living Labs is what makes ahti exceptional as it offers a “one-stop-shop” for realizing and validating care innovations in Amsterdam (NL), Durham (USA), Nairobi (Kenya), and Chongqing (China). The subjects we are currently focusing on are healthcare issues that are relevant across the whole world.

### The strategic plan

The Amsterdam Economic Board has set itself the goal to extend the healthy life expectancy of the residents of Amsterdam by two years by 2025. What's needed to achieve this is a continuous optimization of healthcare policy and services as well as of health management (prevention). The Board aims to create more effective and more differentiated policies, specifically designed to suit each district, neighborhood, and person. Ahti will support this goal by in the first place directing its energies to three areas which are important to Amsterdam and its residents: **1** behavior/vitality (prevention); **2** chronic disease (non-invasive long-term care); and, **3** a population-driven approach to reach vulnerable groups. The Living Lab approach employed by ahti is eminently suitable as it treats lifestyle, environment and socio-economic factors as of equal importance as medical factors.

In the Continuation Period, ahti is going to target Innovation and Entrepreneurship within Healthtech. This is where we can play a distinguishing role in improving the quality of care for the residents of Amsterdam. We will continue our work, with our usual vigor, undiminished determination and groundbreaking methods, to achieve the following objectives:

- 1** Facilitating targeted (policy) interventions and healthcare services in the international network of living labs.
- 2** Stimulating economic activity (start-up & scale-up) within the Amsterdam healthtech sector.

Our central focus is obtaining and putting to use real world evidence (RWE) to couple innovation to financing in a way that can be measured. RWE can answer questions about what results are actually achieved by prevention policies, medical treatments, health services and care models in real life practice. By combining these results with data from a wide range of sources, RWE can provide a clearer image of what exactly is happening among users, encompassing patients, physicians as well as policy makers. This creates the opportunity to produce tailor-made (policy) interventions and care solutions, and to scale up through the introduction of new forms of organization and financing.

By combining the effects on actual health of residents with the perceived health and the related costs, we will be contributing to a more result-driven financing of care. In pursuit of this goal, we will begin by quantifying healthcare issues (actionable data generator) and identifying available solutions (healthtech accelerator), based on which results we will connect various stakeholders (healthtech connector) so as to achieve the most effective healthcare delivery. The effects will be measured in practice (triple aim monitor) which will help guide efforts to achieve a successful and cost-effective prevention and health management policy for the City of Amsterdam and beyond.

As part of this process ahti seeks out collaborations with academic partners for research and education, policy-implementing organizations (such as the GGD) and care payers (such as the City and insurers). Ahti, as an initiator and catalyst for policy development and innovation within healthcare, has a more independent role. Based on the three aforementioned areas of interest, ahti will initiate programs, in collaboration with partners and stakeholders, to specifically promote people's vitality and a more efficient delivery of care.

First and foremost this will cover:

- I Anxiety and Depression: A systematic neighborhood-based approach that improves efficiency of healthcare delivery in cooperation with entrepreneurs.
- II (Childhood) Obesity: Differentiated policies, based on up-to-date situations in Amsterdam neighborhoods, to promote a more effective deployment of government means.
- III Cardiovascular care: Taking new digital care services based on more result-driven financing of care to the market.

### **Results and impact**

Starting with a stronger focus on innovation and entrepreneurship, ahti will provide direction for health management and healthcare in Amsterdam and in all connected Living Labs. This will bring about the impact by the year 2024 as promised in the original contract.

### **Partners and organization**

Ahti has shown that a multidisciplinary approach is possible and can be successful. Various new strategic partners have joined forces over the years, including data science experts such as the Dutch national research institute for mathematics and computer science (Centrum Wiskunde & Informatica). Effective management and a result-driven team are ensuring that set goals are being reached and ahti is becoming firmly ensconced in the healthcare field in Amsterdam and internationally.

### **The financial picture**

For the Continuation Period (2018-2024) an investment of € 6m is anticipated from the City of Amsterdam. A contractual agreement has been reached that the entire investment from the city must lead to a total impact of at least four times this investment (1:4).

To secure continuity of ahti we are developing a service portfolio that creates value within the healthcare system and generates social, scientific, and financial profit for ahti, its partners and the City.

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# 01

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## Retrospective of three years of ahti

### The starting points

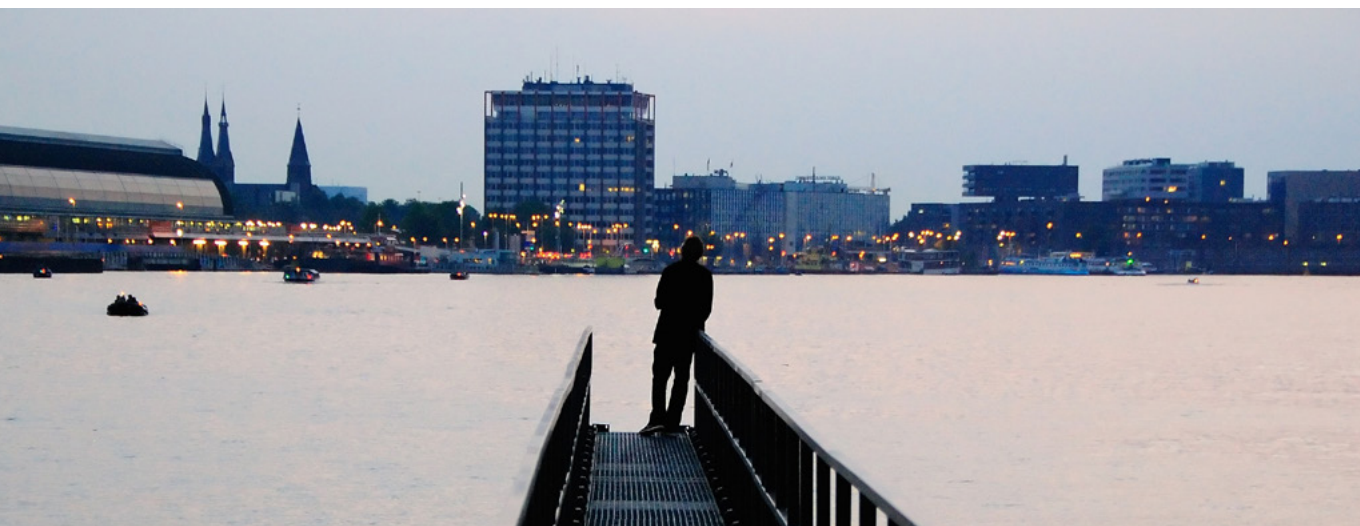
When in 2014 the Amsterdam health & technology institute (henceforth to be called ahti) was founded, four significant trends could be observed within the healthcare sector:

- 1** Healthcare costs are continuing to increase more quickly than the GDP, partly owing to the influence of demographics and lifestyles.
- 2** There is an explosive growth in data relating to care costs and individual health, which is barely being used to inform (policy) interventions and care solutions.
- 3** Investment levels in healthtech are rising.
- 4** Scale-up of technological innovations within the healthcare system is lagging behind, however, even through these innovations have proved their value on a small scale.

These trends have led to the ahti vision:

- Connecting people, technology and information and then blending it with entrepreneurship and financing so that the value of healthcare can be increased in Amsterdam and all over the world.

Ahti uses the Triple Aim principle, targeting **1** perceived quality of care; **2** healthcare outcome; and, **3** the costs of care. In many healthcare reform proposals the third target is not included in an automatic and measurable way, which has led to the scalability of innovations remaining limited up to now.



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<sup>1</sup>HealthCare expenditures as % of GDP” from the OECD (EIU May 2014, OECD)

### **Kickstart – results in brief**

Ahti started with a small team whose ambition it is to improve the value of delivered healthcare and increase the effectiveness of the available resources. We have invested in conducive parameters for value creation in care by attracting talent, supporting research and innovation, and stimulating entrepreneurship. More than 80 projects and proposals are being generated within the ahti portfolio, in collaboration with a wide range of partners. Here are a few key examples:

## **1 Talent case**

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### **Increasing the multidisciplinary character of education to attract and retain talent:**

- Doctorate program **“Healthcare Design”** in collaboration with the University of Twente. This program is geared towards professionals in design and technology and builds a bridge to enable effective application of these disciplines in healthcare practice.
  
- Master track **“Management of Innovative Technologies in Community Based Healthcare”** in collaboration with the VU University Amsterdam (~50 students). On the basis of specific case studies, students gain insight into the way technology can be deployed within healthcare and health management. The role of various stakeholders and their impact on the care system are also addressed.
  
- Educational youth program **“Youth4Health”** in collaboration with the Stichting Jong Ondernemen (entrepreneurial education platform) and GGD Amsterdam (Public Health Service of Amsterdam). The objective is to teach children aspects of health and health-positive behavior in a playful manner. For this program 1,500 primary school children in Amsterdam were asked to think of new technological concepts to help fight obesity. The winning concept was selected in an exciting final between five primary schools. This concept was then entered into the Hackathon **“Digital Reality”** where engineers, designers and ICT professionals join forces to make the Netherlands a more social, supportive and healthy place.



## 2 Innovation case

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### Amsterdam Living Lab serves as the basis for a wide portfolio of innovation projects and programs

- **City Dashboard:** In collaboration with the City of Amsterdam and the Zilveren Kruis ahti has developed this instrument, a City Dashboard, to help policy makers identify potential health-related problems in the city. Based on the results, priorities can be set per area and targeted policy interventions can be carried out. The first version includes an overview of data from WMO (Dutch Social Support Act; Wet Maatschappelijke Ondersteuning), Jeugdhulp (youth care) and demographics from 2015. These have been aggregated per neighborhood, age group and gender. Analogous data from 2016 is currently also being integrated. This aids a clear overview of the changes that occur and in the long term will be able to evaluate the effect of policy interventions.
- **HIV prevalence:** Ahti visualizes HIV trends in recent years for the H-TEAM (HIV Transmission Elimination AMsterdam), to support plans for interventions to prevent the occurrence of new infections. Visualizing newly diagnosed cases of HIV as well as the HIV prevalence in the city, combined with social-demographic data, has helped to gain a clearer map of high-risk areas.
- **Strategic planning in tertiary care:** Ahti in the past year has worked together with the strategic planning team and the cardiology department of the OLVG hospital to create a predictive model of their client streams. After its merger the OLVG is considering combining a number of its specializations at one of their two locations. Ahti used incidence rates of diseases and other hospital data to build predictive models that generate simulations of possible changes in hospitalizations. This approach, in combination with the visualization of our findings, enables strategic planning of operations and improves patient care in the future.
- **Personal CardioVascular Risk Management (CVRM):** Ahti in conjunction with the Joep Lange Institute and M2mobi has developed a patient application to shift the locus of high-blood-pressure monitoring and prevention of certain cardiovascular illnesses from general practitioner care to the personal environment of the individuals. This allows the patient to take control of their own care. The general practitioner watches remotely and intervenes when necessary.



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### 3 Health case

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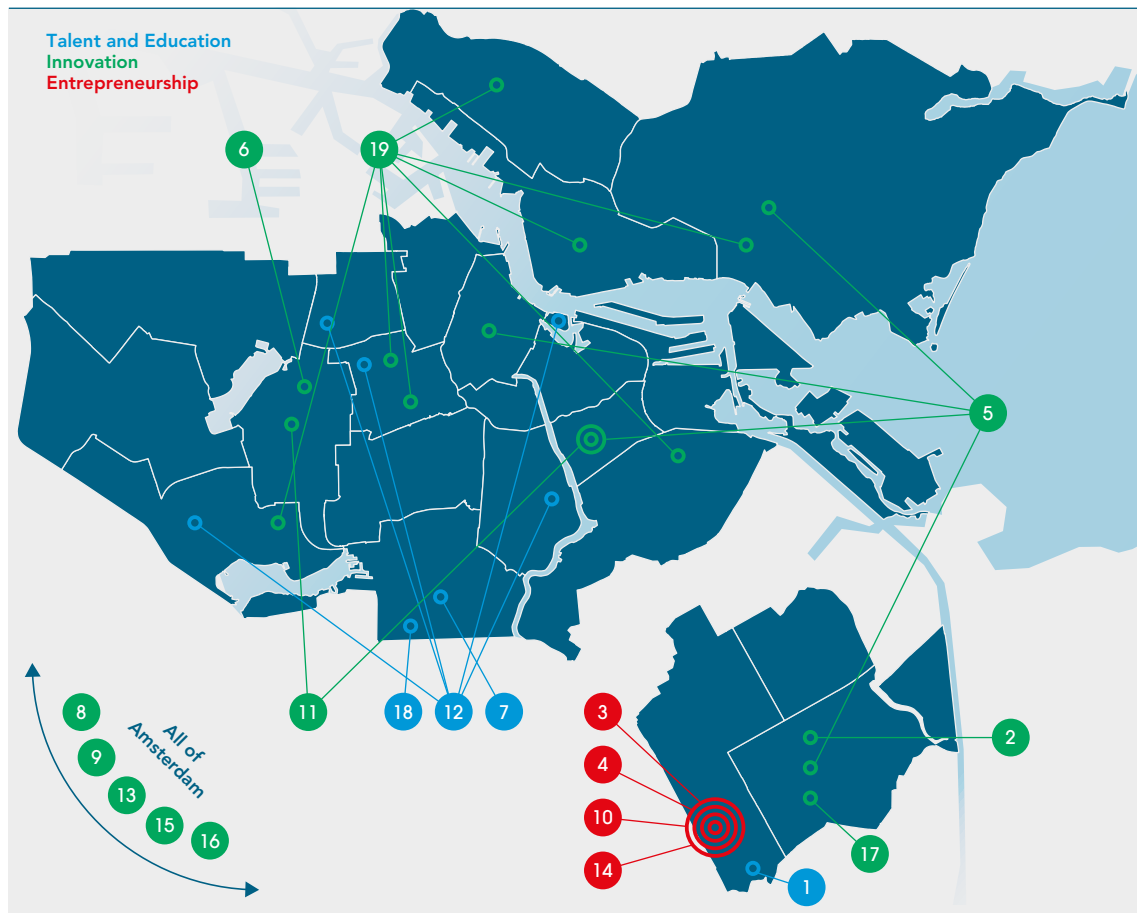
#### Access to facilities to stimulate innovation and promote valorization.

- **The Amsterdam Health & Technology Center (AHTC)** has been designed, financed and set up. Its goal is to create a meeting place and work space for start-ups, scale-ups and “already-ups” in the field of technology and healthcare. The first companies have already taken up residence in the building.
- **The Venture Mentoring Program** was set up in collaboration with the Duke Global Health Institute and the Nicolas School of Engineering. Its goal is to assist starting entrepreneurs in developing their health innovation and successfully bringing it to market. Additionally, the ahti accelerator HealthInc has been developed in collaboration with StartupBootcamp and will start in September 2017.
- An international **Network of Living Labs** has been established in which entrepreneurs, healthcare providers, policy makers and scientists are working together on addressing specific healthcare issues. In this network Amsterdam is connected to Durham (USA), Nairobi (KE), and Chongqing (CN).

#### Already visible impact

Ahti has been partnering with various organizations in Amsterdam in alternating roles, most often as initiator of concrete projects and proposals (see Figure 1). Partners include universities and medical centers, the University of Applied Sciences and ROC (regional training center), but also with an outspoken emphasis on private parties in the healthcare sector and beyond. With the successful opening of the AHTC, a physical site is now available to attract new healthtech business to Amsterdam.

Figure 1



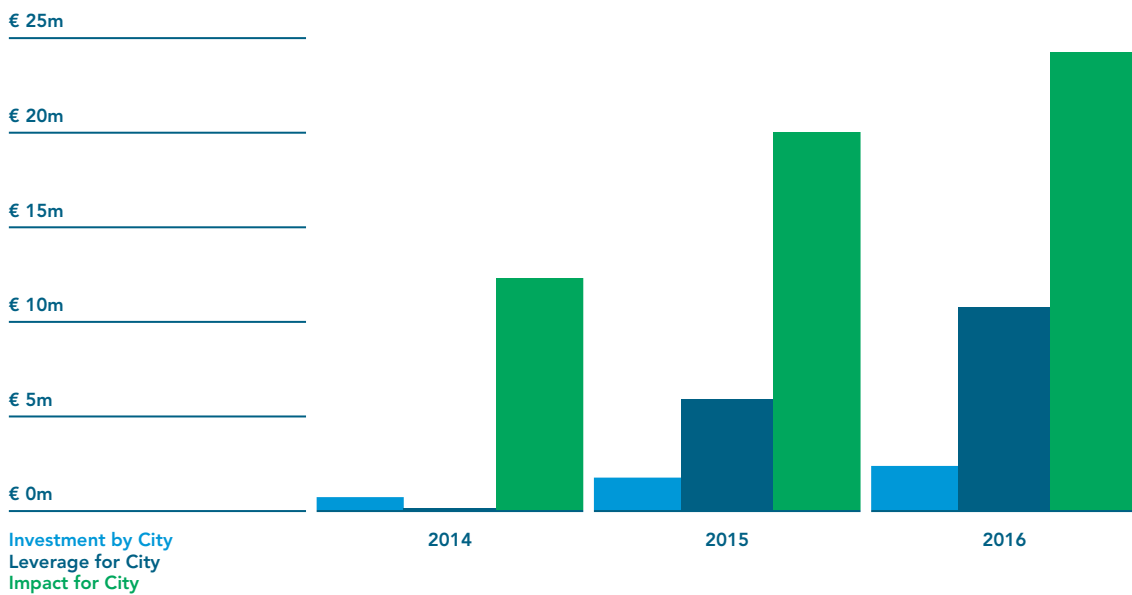
- 1 **Health Design**  
Doctorate program with the University of Twente
- 2 **Samen Zuidoost**  
Reinforcing cooperation care and wellbeing
- 3 **Amsterdam Health & Technology Center**
- 4 **Amsterdam Health and Technology Park**
- 5 **CVRM Digitale Service**  
Home management of chronic care (hypertension)
- 6 **GGZ Dashboard**  
Population Health Management for GGZ care
- 7 **Neighborhood based approach**  
Helping care professionals use data

- 8 **HIV Transmission Elimination Amsterdam Team**  
Population Health Management for HIV detection and prevention
- 9 **Obesity in Children**  
Supporting policymakers to prevent childhood obesity
- 10 **HealthInc accelerator**  
Healthtech accelerator
- 11 **OLVG**  
Strategic planning in tertiary care
- 12 **Youth4health**  
Raising awareness of care innovation in primary schools
- 13 **Analysis WMO expenditure**  
Support for policymakers in social domain

- 14 **Venture Mentoring Program**  
Training program for beginning entrepreneurs
- 15 **Project FIT**  
Living at home longer with dementia
- 16 **City Rhythm**  
Analysis of data patterns in the city
- 17 **Buurt Ziekenhuis**  
Transmural care innovation
- 18 **Management of Innovative Technologies in Community Based Healthcare**  
MSc Mastertrack with VU
- 19 **Healthy Counters Albert Heijn**  
Stimulating healthier purchases

This means ahti has achieved the results indicated for the initial stage (see Annex 1) and even exceeded the set financial impact by a generous margin. In the first three years, ahti has on the strength of the initial investment accomplished a validated direct leverage of 1:4 and an impact of 1:12 for the City of Amsterdam.

Figure 2 Financial impact



The **leverage** (direct investments in ahti and its programs) has been officially approved up to and including the year 2016, according to the definition as stated in the contract. The majority derives from private investments which are for a significant part related to the AHTC.

**Impact** comprises the private as well as public moneys catalyzed through ahti and also the new industry generated by healthcare innovations. Various examples include the ERDF contribution for AHTC, the budget collected by the Joep Lange Institute for health innovation, and the budgets of several research projects (H2020). The latter have been initiated with the aid of ahti but are often coordinated by third parties, such as the universities. The economic value generated for Amsterdam is hard to quantify in terms of money, but it encompasses, for example, investments surrounding AHTC real estate, property development and private entrepreneurs in healthtech. In addition, the whole area around the AHTC is developing further which is visible in spin-offs entailing facility services which in turn generate complementary employment opportunities.

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### Ahti's unique position and added value

#### **Value creation through healthcare services innovation**

In recent decades enormous progress has been made in improving health outcomes in terms of mortality and morbidity. The high rate at which new and increasingly effective treatments for health are being developed is, however, receiving insufficient follow-through when it comes to opportunities to change the site and method of healthcare delivery. This is one of the reasons why healthcare costs are growing twice as fast as the GDP. This not only seems unsustainable, it also is not always necessary.

As large programs rolled out by government and health insurers have not had the desired effect, it has become something of a mantra to say that healthcare services innovation will have to come from the sector itself. This may be with good reason, but that doesn't make it any easier. There are a great deal of divergent interests and these interests are informed by, among other things, the financing system. Often what results is a general impasse.

For healthcare professionals, researchers, and entrepreneurs, it is impossible to achieve value creation within the complex care sector unilaterally. Ahti aims to provide real support for this process and to bring innovations to market more speedily to improve healthcare and health of civilians in an affordable manner.

#### **Change through a locally driven approach**

A major slice of care is delivered locally (at a neighborhood and city level). What's more, the factors that support good health are also often specific to location (social and physical). Decentralization of the responsibility for and the financing of sizeable sections of healthcare has resulted in decisions being made on a city council level. This has also caused a shift in a large portion of the healthcare budget, from a national to a municipal level. In the City of Amsterdam alone € 4 billion per year is spent on healthcare and health<sup>2</sup>. This offers a perfect opportunity to develop concrete solutions for care services and health management on a local level.

By not only looking at improving care but also at maintaining affordable levels of expenditure Amsterdam can serve as an example to inspire other cities in the Netherlands and across the world. This approach involves brokering and facilitating relations between a multitude of stakeholders, including the patient, the care providers and the payers on a local level (insurers, city council) as well as on a national level (government).

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<sup>2</sup>Source: RIVM, CBS, Kosten van Ziekten, OIS Gemeente Amsterdam, Vektis Zorg Thermometer zorg in Regio's 2013

In the last three years ahti has been able to demonstrate its ability to get these stakeholders to sit down at the same table and address actual care and health issues in practice. Working with a shared vision and the Triple Aim Principle as our starting point we have been able to inspire change and learn important lessons.

### **What we have learned - a quickly changing and complex sector requires focus**

The health sector is the biggest economic sector worldwide and is good for approximately 14% of the GDP in the Netherlands<sup>3</sup>. This is leading to a rising interest in innovation in healthcare, also from the private sector (including social entrepreneurship). This is a very promising development and it seems merely a matter of time before the changes will have an effect on healthcare services. Still, from our activities in recent years we have garnered a number of valuable observations:

- Although there are an increasing number of activities, these are often small-scale experiments and real world implementation of innovations (on a larger scale) is still lagging behind.
- A great number of the new initiatives, including digital services and self-management facilities, only offer partial solutions or additional services. Not enough is changing at the core of healthcare services yet.
- The actual value improvements and cost reductions for the ecosystem as a whole are sometimes doubtful. Private enterprises can only be successful when they have a solid business case. In healthcare especially, where costs and benefits are often distributed amongst different partners, it is hard to achieve a balanced business case across the various financing flows. What's missing is central coordination from a broader social perspective (holistic).

Since ahti began, we have seen that multidisciplinary research (medical, economic, behavior sciences, technical) focusing on implementation of care services is increasingly of interest to a larger audience. Educational organizations are beginning to study care and health specifically. The link to technology is becoming increasingly evident. To be able to make a difference in this rapidly developing sector ahti must embrace its strengths and be aware of its limitations. Entrepreneurial zest, a commitment to swift actions and smart partnerships are vital for success – and this most definitely includes focus!

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<sup>3</sup>Care expenditures: figures by Statistics Netherlands (CBS)

### **What we learned - our distinguishing power**

The plan as it stands now was the result of the Amsterdam Metropolitan Solutions (AMS) proposal, based on a vision that had developed and ripened over thirty years. Talent development (education and training), research, innovation and entrepreneurship are all important. However, in a sector that is being watched by many interested parties right now, a great deal is happening. Therefore the current set-up of ahti is too broad. It will be important to carry out a critical evaluation of our activities and obtained results to date so that we can continue to distinguish ourselves in the coming period:

#### **Talent & Research**

- In collaboration with various partners ahti has developed successful training programs and met all of its objectives concerning participation. Our contribution is the addition of a multidisciplinary perspective to the content of the programs. The organization and incorporation of these programs into the current education curriculum is in better hands in Amsterdam knowledge institutions.
- Amsterdam has two universities and several universities of applied science that carry out successful research programs within their respective faculties. Conducting research in areas such as data analysis and behavioral sciences is relevant to the further development of ahti. However, the added value of ahti itself lies specifically in the successful realization of healthcare innovations with measurable effects in practice.
- Ahti has established a solid track record in connecting parties from healthcare, academia and business. Connecting parties and issuing recommendations may not always lead to financial remuneration but could prove valuable to the network, the ahti brand, and the city of Amsterdam. A suitable balance between various network activities must be established for the future, partly in consultation with the Amsterdam Economic Board.

#### **Innovation & Entrepreneurship**

- Ahti has carried out data analyses in various (pilot) projects. During these projects it became clear that integrating, visualizing and interpreting data is ahti's added value. It offers great opportunities to support targeted policy interventions and bring about improvements in healthcare.
- Not only the development of innovations, but also the actual acceptance and use of them in the market by professionals as well as consumers is imperative to achieve value creation in healthcare. The behavior of end users is an essential link in the chain. Integration of behavioral components in policy interventions and care solutions promotes self-management and

therapy adherence in patients and improves ease of use for the medical professional.

- With the successful opening of the AHTC, the set-up of the HealthInc accelerator and the joining together of programs that support start-ups, ahti has been able to show it can make a contribution to countering the fragmentation of the sector. Ahti has formed ties with a range of programs for starting businesses, from start-up to scale-up. At the AHTC/Healthtech park a comprehensive offering of healthtech will be realized.
- The four Living Labs of ahti is a unique model in the world. It gives ahti the distinction of offering a “one-stop-shop” where one can go for international realization and validation of innovations in practice. Using its neutral position ahti can build bridges between governments, (commercial) businesses and users, which is of great value considering the divergent interests of various parties within the care sector.

### **Our added value – the interface between innovation and entrepreneurship**

The essence of our added value is the interface we provide between innovation and entrepreneurship. These are the most important ingredients to achieve real improvement of the health system in Amsterdam and across the world. Research remains an important starting point, but does not on its own lead to scalable products or services. Starting with the primary healthcare interest areas – to live longer and healthier – ahti aims to support the introduction of scalable care innovations into the market and to evaluate these on the basis of the Triple Aim Principle.

With Living Labs ahti will enable the introduction of new forms of organization and financing in healthcare. A Living Lab is a collaboration between public and private organizations that makes it possible to test and implement policy and innovations in practice. Real world evidence (RWE) is generated by measuring the effects on health outcomes and the costs related to these outcomes among civilians and patients in a real and uncontrolled environment. This establishes the most important parameter for scale-up of policy interventions and solutions for healthcare services as well as for health management (prevention).



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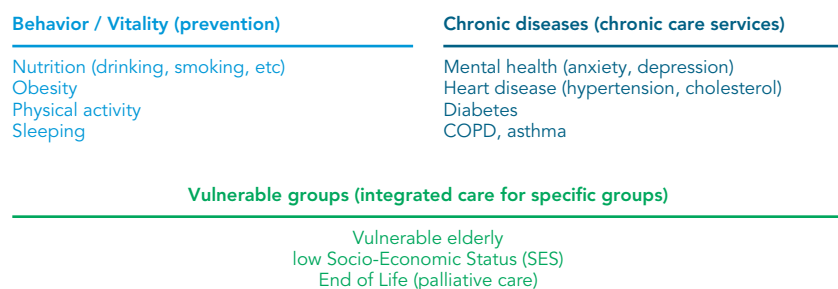
## The strategic plan

### Theme-based focus - a longer and healthier life

The City of Amsterdam (Amsterdam Economic Board) has set itself the goal to extend the healthy life expectancy of the residents of Amsterdam by two years by 2025. The biggest challenge inherent to this goal is to get a grasp on technological and social innovations that can actually improve the health and vitality of its citizens with equivalent or even reduced expenditure.

Continuous optimization of policy and services is required for care services and for health management (prevention). What the City sets out to do is to create a more effective and differentiated policy that is tailored to district, neighborhood, and person. Ahti will contribute to achieving this goal by initially targeting an important triumvirate for Amsterdam and its citizens: behavior/vitality (prevention); chronic illnesses (non-invasive long-term care); and, a population-based approach for vulnerable groups (see Figure 3). The Living Lab approach employed by ahti is perfectly suited for this objective as life style, environment and socio-economic factors are of equal important as the medical factors. The Living Lab is a collaboration between public and private organizations where, based on real-world data and evidence, policy and innovations can be really tested and implemented in practice, that is to say on residents and patients in a real and uncontrolled setting.

Figure 3 ahti focus areas



In view of its vision and ambitions the City of Amsterdam is a perfect partner for ahti. Amsterdam is one of the most attractive locations in the world for tech companies to settle. The city has high-powered dynamics and its technological infrastructure is internationally renowned. The city exerts a magnetic pull on talent from the Netherlands and from abroad, on starting entrepreneurs and fully established private companies alike.

### **Our mission & goals**

It is our mission to establish an effervescent eco system for innovation and entrepreneurship in order to generate solutions for better care according to the Triple Aim principle. The following objectives have been set for the coming period:

- 1 Facilitating targeted policy interventions and care services within the international network of Living Labs.
- 2 Stimulating economic activity (start-up & scale-up) within the Amsterdam healthtech sector.

### **Our strategy**

To achieve the goals listed above ahti will continue its work with the same undiminished entrepreneurship, drive and creative zest as in the previous three years. Gathering and employing real world evidence (RWE) that connects innovation to financing in a measurable way is a central feature of our endeavors.

Real world evidence provides an answer to the question if prevention policies, treatments, services or care methods produce results in actual practice. Combined with data derived from a wide range of sources, RWE can provide a clear(er) picture of the processes taking place among users: patients, doctors, and policymakers alike. This in turn creates an opportunity to make tailored policy interventions and care solutions and scale them up through the introduction of new organizational and financing forms.

Close consultation between healthcare professionals, insurers, patients and entrepreneurs has proven essential in the creation and sustainable roll-out of innovative care solutions based on the Triple Aim principle. With the Living Labs, ahti offers the possibility to find out in practice if treatments, healthcare services and behavioral advice meet the needs of the professional and the patient. By linking the results of the care service and health management to expenditure, the care system can be designed to be futureproof. Our focus is the interface between innovation and entrepreneurship.

### **Innovation – focus on evidence-informed market introduction of new initiatives**

In terms of innovation we are focusing on the market development stage, at which point there already is a prototype of a certain product. The likelihood of realizing an actual care solution is optimized by cleverly combining medical knowledge, technology use (including data) and behavioral aspects (behavioral economy and psychology). To be successful ahti should be leading in:

- The access, visualization, and interpretation of data and then converting the results into targeted action (actionable data).
- Identification of important innovation actors within the various priority areas.
- Assistance in developing a feasible business case in the eco system that will benefit patients, entrepreneurs, care providers and payers, thereby serving the broader social good.
- Developing evaluation methodology for real world evidence (RWE) that is acceptable to all stakeholders by maintaining a strong link to academia – particularly health and big data specialists and methodologists.

### **Entrepreneurship – focus on attracting ideas and entrepreneurs in the field of healthtech**

In the field of entrepreneurship we are focusing on generating new activities in healthtech that will enable economic flow back to the city of Amsterdam.

The AHTC is a central feature in our plans and will function as a catalyst in developing the Zuidoost Zuid area of Amsterdam. The proximity of the Amsterdam Living Lab is very attractive for international start-ups and scale-ups. Technological and social innovations can be put to use and the effects on the daily lives and work of the many end users in the care sector can be made measurable. The international network of connected Living Labs, moreover, offers a natural view outwards. How are things done in other countries and cities? Which solutions are successful? Where are the best private players and how can we attract ideas and entrepreneurs to Amsterdam?

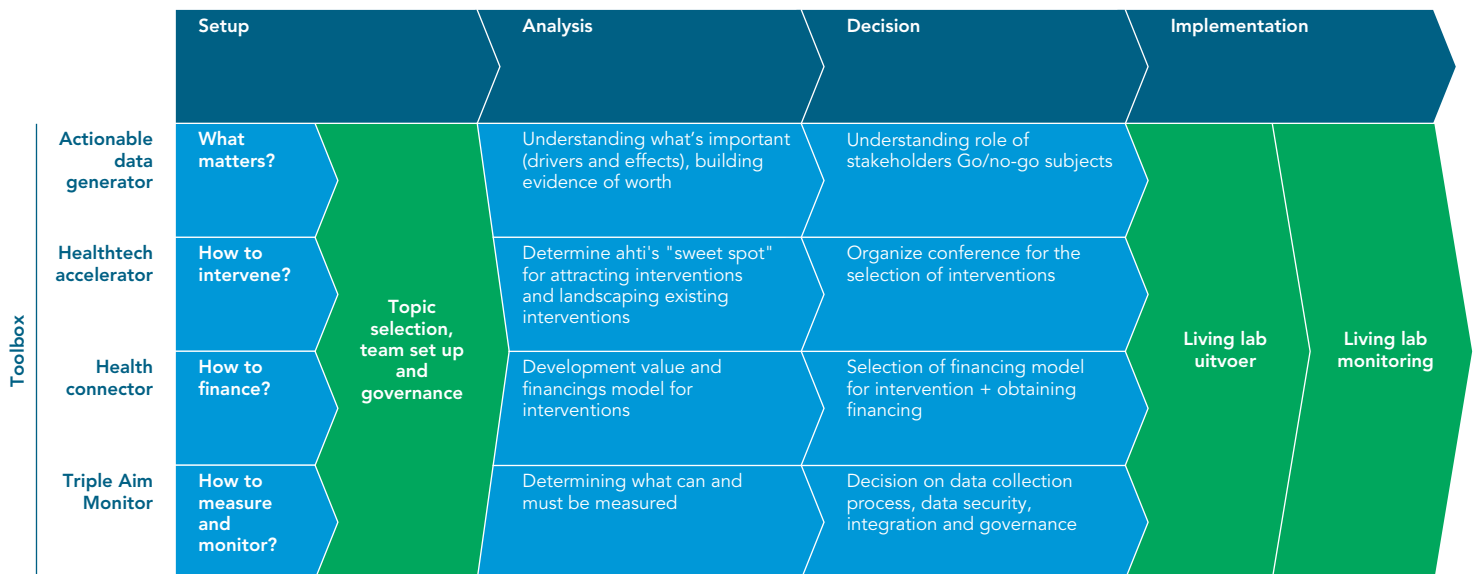
### **Harmonized working method**

In the field of innovation and entrepreneurship ahti will actively seek collaboration with academic partners for education and research, with policymakers (such as the GGD) and care payers (such as the City and health insurers). As an initiator and catalyst ahti has more independence in policy development and innovation within healthcare. We seek these collaborations to accomplish value creation in the health system inspired by our vision. To reach our goal we connect different parties through project management, generating insights into the current situation (actionable data), formulating a more differentiated policy and introducing the latest innovations for effective care services, and measurement of its impact (RWE).

New initiatives are expected to arise from the proactive matchmaking driven by the ahti vision. All of our activities encompass the triumvirate of: medical excellence; use of technology (including data); and, behavior. This prevents technology from being used as a standalone solution but instead helps it make the transition to a mature healthcare service with the end user in mind. Ahti does not conduct scientific research with hypotheses and trials. We are, however, working together with big data specialists and behavior experts from knowledge institutes, and entrepreneurs, to translate advancing insights from RWE data analyses; digital services; and, behavioral science, into more effective policy interventions and innovative care solutions.

The Triple Aim impact of these new initiatives will be made measurable by continual monitoring and evaluation. The results will guide innovations in health management and healthcare in Amsterdam and the associated Living Labs. We have established an integrated process to achieve a harmoniously aligned working process in all connected Living Labs (see Figure 4).

Figure 4 ahti integrated working method



### Focus programs

Ahti will be taking an inventory of healthcare issues in the three aforementioned focus areas, in cooperation with its partners and the stakeholders in Amsterdam. Consequently, targeted policy interventions and care solutions will be developed to promote the vitality of residents and a more efficient delivery of care. To start with ahti is initiating the following three programs in consultation with the most important stakeholders.

- I **Anxiety & Depression:** With Dienst Zorg (Health department), GGD (Public Health Service of Amsterdam), Academie and Zilveren Kruis we will be unfolding a systematic neighborhood-based approach, building on our earlier successes. This involves creating an inventory of hotspots, groups and costs within Amsterdam and identifying the available solutions around the world. By connecting stakeholders (representing all 4 Ps: Patient, Provider, Payer and Policy) with entrepreneurs these solutions will be brought to Amsterdam.
- II **Childhood (Obesity):** With local public health initiatives AAGG and Sarphati and other parties, offering tailor-made solutions for preventing and reducing obesity. By combining healthcare and non-care-related data in a smart way, the current situation in a neighborhood can be visualized and this will make a more differentiated policy possible. The impact of this policy will then be monitored by Sarphati which will make it possible to deploy government means in a more efficient manner.
- III **Cardiovascular care:** With ROHA (an Amsterdam regional organization with 180 general practitioners), Nivel (Netherlands institute for health services research), GGD, AMC, Zilveren Kruis Achmea and private parties we will be bringing new digital healthcare services to market. By linking and measuring the effect this has on care outcomes and on the related costs, it becomes possible to take a first step towards result-driven financing of care.

### Our toolbox

In the past years we have developed four tools that support the above working methods (see Figure 4) and facilitate the realization of impact of value creation within the Living Labs. These tools are:

- 1 Actionable Data Generator
- 2 Healthtech Accelerator
- 3 Health Connector
- 4 Triple Aim Impact monitor

**Actionable Data  
Generator**

Insights into concrete health and healthcare issues based on a wide range of data sources, which make it possible to identify priorities together with stakeholders and to arrive at actions that create neighborhood-specific interventions and care concepts.

To improve the health of the residents of Amsterdam, it is essential to obtain insights into concrete health and healthcare issues on a local level. Generating up-to-date information and converting it into actionable data is vital for the success of determining priorities and optimizing the healthcare services in the city. In addition, the data can help in formulating business cases for new healthcare and health concepts. Actionable data always incorporates insight into the scale of the problem, the costs of the problem, and the agreed-upon and accepted outcome quantifiers. This sometimes applies to the neighborhood level but can also be used for top clinical care on a national level. Generating actionable data in healthcare offers great opportunities but is also necessarily complex due to privacy issues.

Since the beginning ahti has been accessing and analyzing publicly available data from multiple sources to gain more insight into the healthcare issues of Amsterdam. This is where ahti can contribute added value to the data initiatives. The obtained insights are achieved in part through diligent visualizations that represent the current situation on multiple levels (care system, population, individuals). With help from new facilities such as the Amsterdam Urban Data Center, city data gathered from among others WMO and collaboration with the Zilveren Kruis / Vektis, tailor-made (integrated) data can be generated. This data can still then be used (semi)publicly and can be linked to less conventional data sources from for example companies (e.g., mobile telephony, retail) and the wider public domain (socioeconomic, climate, transportation, energy). Partnership with data science partners such as the Dutch research institute for mathematics and computer science (CWI) plays a vital role in achieving an intelligent connection.

Where permitted and possible ahti will make its analyses public with citation of sources. Ahti's work always partly incorporates public data and will take care in the Continuation Period that this will be communicated properly to a wider audience. This will be done via its website, city council publications, social media and traditional media.

More targeted interventions will be made possible by connecting individual data and aggregating it at a neighborhood level. Ahti will try to combine data from WMO and from general practitioners in a verified secure environment (in technical and procedural terms). By combining these data intelligently, a unique file is created that can

monitor the situation in neighborhoods on the first level. The information gathered therefore becomes more reliable, as it is not based on averages anymore. Ahti uses this to determine priorities in consultation with patients, care professionals, entrepreneurs, council and insurers, and to decide on targeted actions for neighborhood-specific interventions and healthcare concepts.

Analyses of “behavior” (of residents, patients, doctors, care payers, institutes) will also be included to increase acceptance and effectiveness of the intended and differentiated interventions and concepts.

### **Evidence-informed policy development—the case of the elderly**

To provide a more solid foundation for the development of specific interventions and healthcare concepts, ahti will work on creating a clear and up-to-date inventory of the situation in the city’s neighborhoods. Technically, it is already possible to collect and combine the relevant data (care, social, economic) at an individual level in an environment that guarantees privacy. Nivel and CBS have a verified secure environment available. To link up data in this environment and make it accessible, ahti will work together with the City of Amsterdam, the Zilveren Kruis, the Amsterdam GP healthcare group ROHA and the CWI.

A first step has already been made within geriatric care. With the detailed WMO-data of Amsterdam a clear inventory has been created of the care needs of vulnerable elderly people and the supply of services. To be able to zoom in more closely on certain target groups, and so better substantiate interventions, supplementary data remains to be generated by the Amsterdam Urban Data Center. It will not only be possible to document patient falls but also to see any relation these incidents may have to the calls for service from the WMO on a neighborhood level.

By integrating GP data as well it can become possible to take action quicker when the data show that GP visits are rising among the elderly. It will also make clear which class of incidents, including for example loneliness, or falls, occurs. The combination of data with the valuable practical experience of the involved health stakeholders will make it possible to develop targeted policies for the elderly.

#### **Healthtech Accelerator**

Incubator for new innovations geared towards evidence-informed interventions and care services attracting entrepreneurs with solutions for **1** Real World Data-analyses; **2** digital services; and, **3** behavioral sciences.

Due to the effects of the rapidly growing possibilities of new ICT applications and access to personal and socioeconomic data, parties from other industries are quickly gaining ground in the field of Life Sciences and Health. Responding to this new trend is offering great growth opportunities. New players, such as Apple and Google, but also many others, are taking a whole new approach to the market with a heavy emphasis on maintaining good health.

Using its widespread network ahti endeavors to identify international innovations that are suitable for local application within our associated Living Labs. Via project groups in the Living Labs we keep track of which innovations are doing the rounds in ahti's areas of interest and which are possibly of interest to the other labs. Our partners in academia have a good view of what is being valorized intramurally and our partners in healthcare services know which interventions/technologies are being tested in the field. Via embassies (for example in India) and bilateral country collaborations (e.g., Task Force HealthCare Kenya-NL) information on initiatives is being exchanged from both sides. Collaborative partnerships such as with Innovations in Healthcare (US), SEAD (Social Entrepreneurship Accelerator at Duke), the global Health 2.0 network and the HIMSS group, also allow ahti to keep an eye out to invite new initiatives and businesses to Amsterdam.

Amsterdam can be proud of its highly diverse innovation eco system with big players in the field of healthcare, fintech, data and software development, the creative sector and the social domain. Ahti has already started working with entrepreneurs and city district Zuidoost on the development and new positioning of the Zuidoost-Zuid area, to realize a physical environment in which innovation regarding healthtech is accelerated. Joining forces with our Venture Mentoring Program and the ahti accelerator HealthInc, starting healthtech entrepreneurs will be assisted with taking their innovations to market. With its partners ahti will explore the options for setting up a revolving investment fund. This type of fund can support healthtech entrepreneurs during future scale-ups. What's more, ahti will further intensify partnership with "class-leading", private health/care accelerator programs.



### Healthtech hotspot Amsterdam—new industry in Amsterdam and environs

The high quality, attractive and accessible hot spot for healthtech continues to be developed in Amsterdam ZuidOost-Zuid. Through the joint efforts of ahti, City Office Amsterdam Zuidoost, ZO!City, AIGHD and the AMC, the area will be transformed into a multifunctional residential and professional climate fitting the total property development ambitions of Amsterdam. The AHTC is the central feature and will serve as a catalyst.

The AHTC has room to house medtech and healthtech businesses. The proximity of the Amsterdam Living Lab exercises considerable pull on international start-ups and scale-ups. Recently, for example, a Canadian company expressed interest in establishing an office here. This company has developed an application for the implementation of a “virtual neighborhood”. Using this application a highly trained nurse or geriatrist is capable of providing remote support to complex care locally so that it can be carried out by less trained caregivers. At the moment ahti is working with the AMC to roll out this innovation within the Amsterdam Living Lab with the ambition to diminish complications among terminal patients.

Additionally our ahti accelerator HealthInc will offer a growth opportunity to successful alumni of the flourishing Amsterdam start-up community. Entrepreneurs who have developed a product or service with a clearly demonstrated proof-of-concept and a solid business plan, can bring their product to scale within the network of Living Labs and work towards their internationalization.

#### Health Connector

Stimulating initiatives to generate new partnerships, financing and interventions inspired by the conviction that delivering care can be made more successful by combining medical excellence, the use of technology (including data) and promoting the “right” behavior.

Ahti has been working from the very beginning with partners from the public and private domain. Each partner has its own agenda and the challenge lies in combining these diverse agendas into shared goals and initiatives. It is important to resolve any conflicts and for all partners to recognize the added value of working together.

Fueled by its vision of improving healthcare for Amsterdam and the world, ahti will continue to connect stakeholders in innovative partnership formats.

In the next period ahti's attention will focus primarily on:

- Scientific substantiation: Intelligent integration of data files in a secure environment, combining Living Lab and clinical health outcomes in an integrated Real World Data analysis, and consistently implementing a behavioral component in care solutions (see also Chapter 5 for information on our knowledge networks).
- Entrepreneurial skills: Identifying and offering smart data and healthtech solutions for the many challenges presented in prevention and care.
- Clinical embedding: Guaranteeing medical and appropriate integration in the performance of prevention and care solutions and integration in the care process of professionals so that actual lightening of burden and therefore reduction of costs occurs.
- Practical relevance: Active participation of patient organizations in our Living Labs to increase therapy adherence and raise awareness.
- Financial strategy: Attracting new investors to the care sector to realize innovative financing formats for care expenditures.

To achieve these goals ahti will strengthen its relationship with its current partners, attract new partners from relevant sectors such as healthtech and fintech, continue to expand its knowledge network, and stimulate active participation within its network of Living Labs. Moreover, ahti will be working on mobilizing public and private finance flows to enable testing of the interventions and care solutions in practice.

### **Collaboration born from the ahti vision - the GGZ case**

Anxiety, depression and loneliness are important priorities for the City of Amsterdam. A complex challenge to overcome in addressing these problems is the diverse nature of their causes and solutions. Loneliness in Nieuw-West often has other reasons and different solutions than in Oud-Zuid. In addition, the solution to these problems requires smooth cooperation between professionals from social work, GGZ (Dutch Association of Mental Health and Addiction Care) and district nurses. An extra challenge is that each of these domains is paid for from different sources, including the WMO (Social Support Act) and people's own health insurance.

With all this in mind, ahti has devised a holistic approach, geared towards supporting local professionals. In Nieuw-West this approach has led to a new and local effort that is targeting loneliness in the neighborhood. During the Continuation Period this will be elaborated further into a structured neighborhood approach. The starting point is the

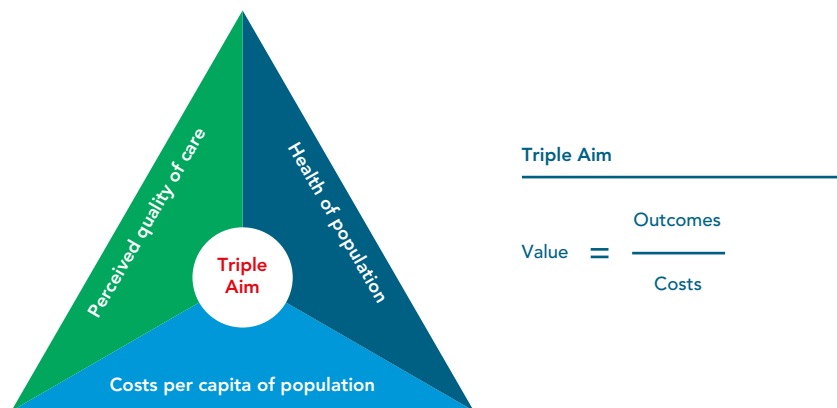
actual charting of the problems in the city: where are the hot spots and among which groups of the population. This information then forms the basis for producing and validating a tailormade policy. Based on the generated actionable data for each neighborhood, the various disciplines are engaged in workshops to achieve a broadly supported analysis and possible optimization of the total healthcare costs. Within this approach, local dashboards are giving the professionals the tools they need to implement local interventions tailored to suit the respective neighborhoods. The dashboards are not themselves leading but form the basis upon which a shared approach is built. Thanks to the involvement of the payers it is possible to design financial incentives that enable the implementation of the approach. As well as improving the quality this also results in optimization of costs through various provisions.

**Triple Aim  
Impact monitor**

Generating best practices by monitoring and evaluating the effectiveness of new partnership formats, finance mechanisms and interventions (policy and service) on the basis of real world evidence (RWE).

Triple Aim stands for better outcomes at an overall population level when better care is perceived (by patient and doctor) and lower costs per capita of the population. In other words, value equals healthcare outcomes divided by costs (see Figure 5).

Figure 5 Triple Aim in care



On the basis of innovative partnerships, targeted interventions will be implemented in the ahti Living Labs, where the effect and the impact of the Triple Aim principle can be measured in real life. Amsterdam will act as a unique testing ground for:

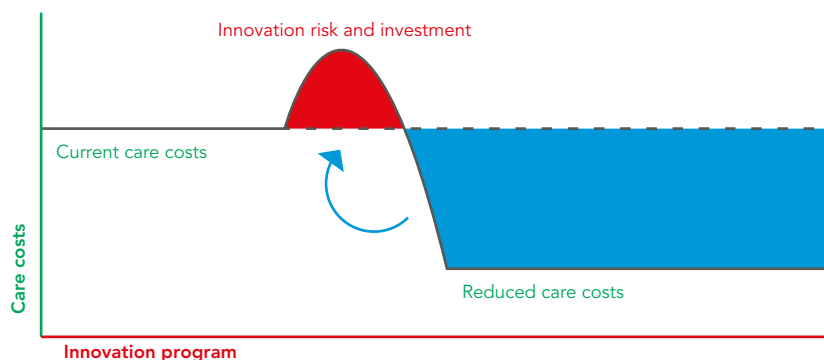
- 1 Implementation and evaluation of neighborhood-focused policy interventions within the districts of Amsterdam to increase accessibility and effectiveness of care for residents.
- 2 Introduction and validation of innovative healthcare services that improve the quality of care, increase ease of use, and save costs within the health system.

Amsterdam is the perfect city for this purpose as it has the economic and demographic properties of a metropolis but is still easy to oversee. The city has a human scale and a good social infrastructure, which makes it easier to test new tools and methods here than in other world cities. What's more the city has a great diversity of social classes, cultural backgrounds and economic positions—all three factors that play an important role in health and behavior. Additionally, the City of Amsterdam has indicated a willingness to explore new governance, organization and financing models to sustainably roll out Triple Aim innovations in the Amsterdam healthcare sector.

Ahti will take the lead in sparking fresh dialogue on designing innovative partnerships in healthcare. Together with the payer (city council/insurer), the care provider (doctor/nurse), and the innovator (developer) ahti will investigate how the roles and responsibilities of the various stakeholders can be secured or maybe sometimes redefined. Also, a clear picture of the effect of the innovations on the care outcomes and the costs will be obtained. By making these effects measurable and relating them to each other, a first step is taken towards developing result-driven financing of healthcare (Figure 6). This is a new trend that can be seen in Social Impact Bonds, like Health Impact Bonds. Socially engaged payers and innovators are sharing the financial risk involved in reaching a health goal (red area, Figure 6). The resulting costs savings at the client (government, council or insurer) then are returned to the investors/innovators (Shared Savings model; green and blue areas, Figure 6). This is not the only outcome, but by creating a measurable link between care outcomes and financing, and quantifying the outcomes and using them in a focused manner, we can innovate in an entrepreneurial way to improve healthcare outcomes for Amsterdammers.

Figure 6 Shared Savings as business model

Diverse parties in care (e.g., care providers, insurers, innovators) try to achieve cost saving by investing first and sharing the revenue later. This is contractually stipulated in advance. Part of the returns can again be invested jointly in new innovation projects.



Depending on the requirements within a specific area of interest, innovative financing scenarios such as reallocation of compensations, new funding mechanisms and possible supplementary income sources will be studied. The feasibility of innovations will be determined in consultation with the stakeholders. Transparency, open communications and the willingness of all parties involved are crucial to reach workable agreements.

### New business model for Digital Health Services – the CVRM case

Home monitoring management is a healthcare service that has been proven to be effective. The complexity of the field and the underlying compensation structure make it difficult to develop and roll out innovative digital healthcare services on a large scale, however. Cooperation between stakeholders is essential to provide good quality care in a more efficient manner, enable integration with the GP system and identify an integrated business case for new partnerships.

Ahti, in collaboration with GP group ROHA, will test a new Digital Health Service for first-level care of chronic diseases in the Netherlands in practice. This service, to start with, will target hypertension and is a combination of an existing home monitoring service for secondary care (CCN) and a new smartphone application (M2mobi) for first-level care patients developed in part by behavioral scientists (Duke University). It will be introduced in stages in Amsterdam to verify its ease of use, and to optimize the functionality to enable embedding in clinical practice. This will also create a clear picture of the actual impact on care outcomes, perceived quality of care, and cost savings.



To establish a basis for an innovative business model for first-level chronic care, various scenarios for financing will be explored in consultation with the City of Amsterdam, the Zilveren Kruis and potentially interesting investors, including banks, businesses and pension funds. The Triple Aim Impact Monitor will provide insight into the feasibility of these scenarios by coupling the healthcare outcomes to the associated costs. Following on these findings, agreements will be made between stakeholders to enable sustainable implementation of the CVRM Digital Health Service in Amsterdam. Through our international Living Labs network, this service can be scaled up further and brought to the international market.

### **Desired impact**

Maintaining its focus on innovation and entrepreneurship, ahti will find practical applications for current investments in research. It will use its instruments to facilitate evidence-informed policy and health services. This is expected to result in the following impact:

- Increased economic activity in and around Amsterdam (impact value 1:4).
- Policy interventions and healthcare services which are proven in practice to be effective and scalable.

# 04

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## Roadmap & results

The roadmap for reaching the desired impact in 2024 will pursue the same goals as outlined in the ahti contract of November 2014. In that case we achieved the desired results for all three cases during the three-year kickstart period (see Annex 1).

In the Continuation Period we will be heeding the lessons learned and opportunities identified so far, and shifting our focus to innovation and entrepreneurship. In accordance with this shift we will modify the agreed deliverables for 2024. In doing so we will not be continuing our activities related to the Talent case (Deliverables 1 to 4 in the original contract). We will continue to work (directly and indirectly) on education programs that support our goals for innovation and entrepreneurship. This includes an expansion of our training courses for entrepreneurs via our HealthInc accelerator and courses on Anxiety & Depression for care professionals in the Wijkbrede Aanpak program.

The modified deliverables for the Continuation Period are listed in Annex 2.

# 05

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## Our partners

Ahti has demonstrated that a multidisciplinary approach, encompassing a wide variety of players from the field of healthcare, is possible and can be successful. From its inception ahti has worked together with a wide range of partners, including international academic institutions such as the Duke Global Health Institute (US), all Amsterdam knowledge institutes and the University of Twente, companies such as Zilveren Kruis Achmea, Ahold and The Boston Consulting Group (BCG) and local healthcare organizations like the GGD and the Sarphati Institute.

The originally formed partnerships have been reinforced in recent years with new strategic partners. Also, ahti is part of a network comprising knowledge institutes with top level expertise. The knowledge network will be extended in the coming period and will begin to play a more structural role in achieving the impact sought on the basis of new scientific insights. Additionally, ahti will continue to flesh out its distinguishing role with regards to all stakeholders in the health system, also paying attention to actors in relevant contiguous sectors such as healthtech and fintech.

### New strategic partners

Ahti has collaborated with various partners focused on pursuing entrepreneurship, initiating innovative partnerships and facilitating the roll-out and monitoring of the impact of targeted interventions and care solutions. Per partner, the (intended) role / contribution within ahti for the coming period is shown here.

#### Entrepreneurship

[IXA](#): compiling the accelerator program IXA in AHTC.

[Start Up Bootcamp](#): develop development courses and services for healthtech entrepreneurs.

#### Innovation

[Ben Sajet](#): organization of events to assist agenda setting in the city and cooperation in Het Buurtziekenhuis ("the neighborhood hospital").

[ROC](#): moving district nursing training courses to the physical neighborhood with a focus on the use of new technologies.

[ROHA](#): validation of business case for first-level cardiology multidisciplinary care in collaboration with technology providers and insurer.

[Vivium](#): developing and implementing training geared towards shared decision making and use of technology related to dementia patients.



### **Knowledge networks**

In many of its projects ahti has proven itself as the player who brings innovations in care to practice. In order to have and integrate up-to-date knowledge into its toolbox, ahti maintains an extensive network of knowledge partners in various fields:

Real World Evidence: Amsterdam Data School, CWI, CBS, AMS institute, BCG.

In collaboration with Amsterdam Data Science and CWI, a first innovation agenda is being developed with attention for short-term solutions that are directly applicable in the toolbox of ahti (state-of-the-art tools, techniques and algorithms) as well as for the more long-term activity of analyzing and interpreting information from multiple data sources, measured effects within Living Labs and clinical outcomes, using an accepted methodology. Furthermore, existing partnerships with the AMS Institute and BCG will be continued

Behavioral sciences: Duke center for advanced hindsight, UvA, VU

In collaboration with leading scientists in Amsterdam (BE network VU / UVA) and beyond, the integration of the behavioral component into new care solutions will be realized. Ahti is working with Dan Ariely, UvA professor by special appointment, among others. Dan Ariely is a world-renowned behavior influencing expert. Partly on the basis of this relationship, ahti is busy identifying leading scientists in the Netherlands.

Healthtech Assessment: AMC, NLC, MedValue, IXA, ACE, VU

Together with its partners, ahti performs healthtech assessment. This examines the effect of care innovation on the health system with regards to the medical, social, ethical and finance side. This systematically determines the chances of success of each innovation as well as how it can best be positioned in the market.

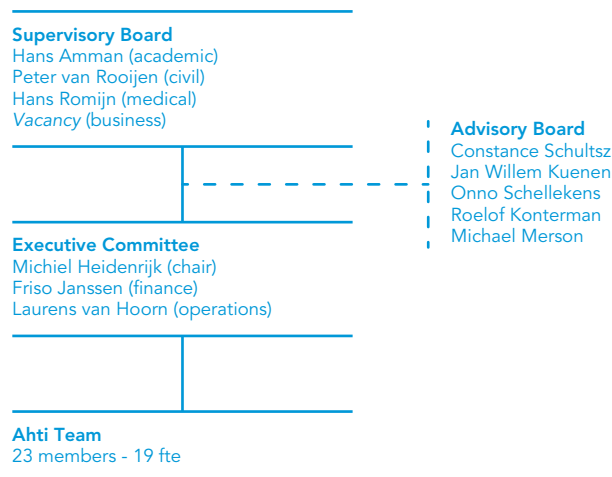
# 06

## The ahti organization

### Effective management

Ahti's strategy is devised by the Executive Committee. The Advisory Board offers advice pertaining to the chosen path. After approval from the Supervisory Board, the strategy is then implemented by the ahti team responsible for daily operations (see Figure 7). For scientific input advice and direction ahti relies on recommendations as needed per case from its existing knowledge networks.

Figure 7 ahti governance



In principle the Supervisory Board meets three times per year and the Advisory Board twice a year. Both boards are responsible for achieving set goals such as sustainable entrenchment of ahti in Amsterdam as well as internationally. On the Supervisory Board there currently is a vacancy (entrepreneurs perspective). Hans Romijn has taken the place of Marcel Levi (medical perspective). Mike Merson (Duke Global Health Institute) will be leaving the Advisory Board as he is going into retirement.

### A result-driven team

The ahti team has its offices in the AHTC, so that team members are in direct contact with the newest developments in the field of healthtech. The most important competencies in the team are: project and program management, business and program development (including acquisition), data analysis and visualizations, stakeholder management, and communication. These skills remain highly relevant for the achievement of the objectives in the Continuation Period and will as such be securely retained within the team.

With each future partner the team will endeavor to analyze possible ideas for new initiatives relevant to the current status of the idea or product, and look at the potential for a match with the vision and mission of ahti and the added value of the ahti toolbox. This strategy allows us to safeguard the position of ahti within Amsterdam at all times, prevent duplication and conflicts within the market, and guarantee a deepening of skills. This will also provide a healthy foundation for the development of the ahti service portfolio.

# 07

## The financial picture

### Budget 2018-2024

For the Continuation Period (2018-2024) an amount of €6m is anticipated as an investment coming from the City of Amsterdam. This investment will be put to use in the next 7 years to allow ahti to reach more maturity, as presented in the figure below.

	Year 4-5		Year 6-7		Year 8-10			Totaal
	2018	2019	2020	2021	2022	2023	2024	
Innovation case	448,000	427,200	581,200	473,100	319,100	155,900	38,000	<b>2,442,500</b>
Health case	672,000	640,800	387,500	315,400	212,700	103,900	25,400	<b>2,357,700</b>
General support**	280,000	267,000	242,175	197,125	132,950	64,950	15,850	<b>1,200,050</b>
<b>Subtotaal per jaar</b>	<b>1,400,000</b>	<b>1,335,000</b>	<b>1,210,875</b>	<b>985,625</b>	<b>664,750</b>	<b>324,750</b>	<b>79,250</b>	<b>6,000,250</b>
<b>Totaal per tranche</b>	<b>€ 2,735,000</b>		<b>€ 2,196,500</b>		<b>€ 1,068,750</b>			<b>€ 6,000,250</b>

\* any underspending in a specific year can be used for the following period(s)

\*\* including amongst other: finance and control, HR, legal, secretariat, rent, office supplies

### Payment schedule

Advance payment following year payable after approval previous year.

Example: upon delivery signed audited annual report 2016 (in 2017) tranche 2018 is payable

It has been agreed per contract that the city's entire investment must lead to a total impact of at least four times the value of the investment (1:4).

### Strategic investing

It is ahti's ambition to become financially independent over the course of the Continuation Period. With this in mind ahti is committed to developing a service portfolio that creates value within healthcare as well as social, academic, and financial profit for its partners by strategically investing in:

- Integrating the newest knowledge and methods in our working methods.
- Further expanding our toolbox.
- Accelerating the path to market for new initiatives.

This service portfolio will be developed in collaboration with the partners. The following questions are foremost:

- "What do we offer the market?"
- "What service are we offering our clients?"
- "To what extent is our offering distinctive with respect to the competition?"

Ahti will also further define its clientele on the basis of these questions: "For whom are we creating value?" Who are the most important clients (and who aren't)? What are their specific characteristics and needs? To start with, we are thinking of these groups:

- Entrepreneurs in healthtech (start-ups, scale-ups & already-ups)
- Care payers (Insurers/Council)
- Authorities (Government, Councils)

Based on the above, value propositions will be drawn up, which will be considering the interest that exists in use of these services, the associated costs, and feasibility for generating revenue.

# 08

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## Annexes

### **Annex 1**

Results kick start

### **Annex 2**

Deliverables Continuation Period

### **Annex 3**

Brochure ahti

Annex 1 Results kickstart periode

	Deliverables end of year 3	Year 1: Accomplishments (2015)	Year 2: Accomplishments (2016)
<b>Talent case</b>	New MSc 'Community Health & Technology' accredited by NVAO.	Partnered with UTwente and UvA to begin planning a new Professional Doctorate in Community Health & Technology (PDHealth) <ul style="list-style-type: none"> <li>Completed high level plan</li> <li>Completed draft curriculum design</li> </ul> This new doctorate will be the first in the Netherlands, and possibly in the EU, that is totally focused on education at the intersection of health, technology and business. Also partnering with VU, developed a plan for a new masters track in community health and technology <ul style="list-style-type: none"> <li>Developed and delivered first course at the VU as part of a new elective track – "Evaluating Health Technology"</li> </ul>	Continued our work with our partners UTwente and the AMC on the Professional Doctorate in Engineering, Healthcare design (PDHealth) <ul style="list-style-type: none"> <li>Completed the partner agreements, the detailed curriculum design and the first set of accreditation documents</li> <li>Continued to work with our partner the VU, and received approval for a new Masters track in Community Health and Technology</li> <li>Improved and offered for the second time the first course at the VU as part of a new elective track – "Evaluating Health Technology", and managed the delivery of this course a second time.</li> </ul>
	Blended Learning Environment to attract international students operational, 25-30 Students enrolled.	Began discussion with Amsterdam universities and online learning management system owners about the requirements for a blended learning educational program	Venture Mentoring Program (VMP) was developed and delivered in a blended learning format. VMP was delivered in Amsterdam in collaboration with Duke University. VMP is a 10 module program, most of the modules can be delivered independently as needed for future entrepreneurship programs and executive courses
	Five Executive Training Courses developed and offered. At least 50 participants enrolled.	Offered executive short-courses in entrepreneurship and the Dutch healthcare system. Coordinated a partnership with the HvA and Duke University Schools of Nursing to develop a population care coordination program (PCCP) – <ul style="list-style-type: none"> <li>As an executive course</li> <li>As part of a new track in the bachelor degree program</li> <li>As part of a new master degree program</li> </ul> Held introductory seminar on PCCP for over 20 care leaders from the City, Achmea and community care organizations	Offered separate executive short-courses in: <ul style="list-style-type: none"> <li>Guerilla Marketing, a workshop for new businesses, taught by Jesko von Windheim (Duke University), 15 participants.</li> </ul> Data-protection for businesses, with speakers from Axon, 30 participants. <ul style="list-style-type: none"> <li>Innovative health systems, for 21 German health management students and 17 Danish health tech students.</li> <li>Venture Mentoring program for starting entrepreneurs, with 8 participants.</li> </ul> We also conducted: <ul style="list-style-type: none"> <li>a workshop on populatiegerichte zorg during the "najaarsconferentie stadsdeel Zuid", 60 participants, and</li> <li>a 1/2-day program on Data &amp; Community Nursing for the HvA, 40 participants.</li> </ul> Finally, we continued development of the PCCP (Population Care Coordination Program) for the Dutch market (in partnership with HvA). <ul style="list-style-type: none"> <li>Met with community organizations and HvA to identify customers and build business plan.</li> <li>Program starts 31 January, 2017 in Zuid.</li> <li>Together with Stadsdeel Zuidoost (ZiZo), developed a participatory evaluation of Welzijn op recept.</li> </ul>
<b>Innovation case</b>	Fundament for living lab built in Amsterdam: health-dashboard operational. Health-dashboard integrated in >5 projects.	Developed a working prototype of a City Data Dashboard, and improved it, in close cooperation with leaders from the City, GGD, HvA, Achmea, as well as other private companies. Included potential government and private sector stakeholders in meetings to review prototype. <ul style="list-style-type: none"> <li>Developed specific prototype using mental health data and shared this with stakeholders in Nieuw West for review and discussion</li> <li>Hired a PhD econometrician to lead the development process</li> <li>Shared general prototype with key City stakeholders involved in population health management</li> </ul> Visualizations that combine publically available demographic data and protected health data, in ways that engage stakeholders who can make a difference in Amsterdam, have the potential to bring forward new ideas for how to improve the health of the citizens and how to best position new services	In 2016, ahti worked with City staff to create a prototype dashboard based on WMO data. We also worked extensively with City staff to develop clean WMO data that would be useful in their work. We also built the Value Proof Model in collaboration with BCG, an objective model for the evaluation of disease burden and the impact of health interventions. While targeted to payers, including the City, to inform their decision making in the current and future funding of interventions, it also has value as a model for healthtech start-ups to use to prove the value of what they are creating. Finally, our versions of our health dashboards and visualizations have been incorporated into 5 important projects in Amsterdam, including H-Team, OLVG, City Rhythm, WBA and Ahold.

Annex 1 ...continuation

Deliverables end of year 3	Year 1: Accomplishments (2015)	Year 2: Accomplishments (2016)
Projectportfolio developed by AHTI cumulatively worth ≥ 19 million EUR.	<p>Began coordination of H-Team activities aimed at developing a functional HIV cure</p> <ul style="list-style-type: none"> <li>• "Test &amp; Treat HIV" – H-Team awarded funding for program</li> </ul> <p>Began development of an extension of the work of the H-Team with a focus on eradicating HepC in Amsterdam</p> <p>Working with teams of Amsterdam academic partners, coordinated the submission of 8 proposals for funding to a number of funding groups, including ZonMw, AMC Innovatie Fonds, Innovatiefonds-Zorverzekeraars, Vriendenloterij and ClickNL/LSH/ZonMW</p> <p>Coordinated the development of a project with Ahold, Sarphati Amsterdam and Achmea to test the effectiveness of "healthy food counters" and health coaches in selected Albert Heijn stores.</p> <p>Began the work associated with the award of SPARKS –shared responsibility for the content of a pan-European program on health and technology</p> <p>Launched a major project focused on better self-management of high blood pressure using a combination of technology and behavioral incentives. This project is being launched in all 4 living labs, in partnership with Omron and others. This project has the potential to be a true "game changer" with respect to selfcare of chronic conditions, both in developing and developed countries.</p> <p>Partnered with UvA faculty to host global symposium on comparative analytics and population-based research</p>	<p>In 2016, our accomplishments in this area exceeded € 8M in value and included the following:</p> <p>We continued to work with the H-Team, playing a role in the management of the HIV epidemic.</p> <ul style="list-style-type: none"> <li>• We provided data-analytics and visualisations on HIV incidence and prevalence rates.</li> </ul> <p>We built the Value Proof Model in collaboration with BCG, an objective model for evaluation of disease burden and impact of health interventions.</p> <ul style="list-style-type: none"> <li>• This is targeted to the payers for their use in informed decision making regarding their current and future funding of interventions.</li> <li>• This will also be available to healthtech start-ups for proof of their overall value propositions.</li> </ul> <p>We worked with Sarphati Amsterdam to develop the research questions necessary to obtain the claims data from Achmea needed to evaluate the impact of a special program for obese children.</p> <p>We helped design the "Healthy Food Counters" intervention with Ahold and GGD, and analyzed the data generated to produce insights and data visualizations.</p> <p>We began collaboration with ENECO to build a business case and pilot study for new applications of their "smart Thermostat-Toon" in the homes of frail elderly.</p> <ul style="list-style-type: none"> <li>• We facilitated expert panel meetings which benefited Eneco in product development and pilot testing.</li> <li>• We helped connect HvA students in their health and technology track gain internships at Eneco to build their research and product development skills.</li> </ul> <p>We initiated a consortium with HvA that applied for and received an NWO grant to look at ways to assist dementia patients and their caregivers (the FIT project).</p> <ul style="list-style-type: none"> <li>• We actively participated in two work packages.</li> </ul> <ul style="list-style-type: none"> <li>• We submitted a review of technologies available for dementia patients and caregivers through a systematic review of research articles.</li> </ul> <p>We built a multi-national innovation program for the design and testing of home-based hypertension management services in all four ahti living labs. Launched IT, clinical and business development tracks. Total budget €1.3 million.</p>
Cooperation body with all health stakeholders in the Amsterdam region established.	<p>Rather than develop one cooperation body, ahti worked with key health leaders in the City and learned that it was important to first assist key stakeholders with their individual concerns. Therefore we spent the year working on the following:</p> <p>Started a project with key stakeholders in Zuidoost that will use data dashboards to better understand the patterns of health and wellbeing in the area, as well as identify opportunities for interventions.</p> <p>Launched work for Sarphati Amsterdam to assist in their selection of various technology-based research tools, including a video-based informed consent and various research apps based on the Apple ResearchKit.</p> <p>Working with OLVG, introduced OLVG cardiologists to new methods for caring for heart failure patients in a lounge setting instead of admitting them to the hospital.</p>	<p>In 2016, Ahti continued the approach of 2015, working with groups and individual stakeholders to address their needs and show them the potential of developing dashboards that integrate data from available public and private datasets.</p> <p>We helped build the business case for the OLVG Cardiology department for a "Heart Failure Lounge", a model of care adapted from the Duke Medical center.</p> <p>We initiated a collaboration with the OLVG Strategic Planning team to help in evaluating the need for andn propoer placement of new hospital care services.</p> <ul style="list-style-type: none"> <li>• Provided incidence rate visualizations and prediction models.</li> <li>• We assisted Sarphati Amsterdam in the assessment of potential partners to help develop their technology solution for video-based informed consent, conducting the research and connecting with the tech community.</li> <li>• 50+ technology providers were vetted to identify the top partner with whom Sarphati Amsterdam can now work with.</li> </ul>



Annex 1 ...continuation

	Deliverables end of year 3	Year 1: Accomplishments (2015)	Year 2: Accomplishments (2016)
<b>Health case</b>	AHTI will establish contact with 50 domestic or foreign companies that can provide candidates for VMP and/or can participate in the Amsterdam Living Lab. AHTI will establish these contacts through e.g. participation in acquisition missions of the City and/or support incoming acquisitions by facilitating for instance trade missions. AHTI will collaborate with the City, Amsterdam Economic Board, Amsterdam Inbusiness and the borough of Zuidooost to improve the conditions for business inception in the area of health technology	<p>Completed and submitted a comprehensive proposal using EFRO funding to coordinate the development of the Amsterdam HealthTech Park in Zuidooost.</p> <p>Completed a landscape analysis and assessment for a potential endowment-model investment fund for tech startups.</p> <p>Completed substantive conversations with over 30 companies with interests in health tech and innovation, with a specific focus on potential partnerships and collaborations in Zuidooost.</p>	<p>The EFRO project was formally approved on the 14th of March 2016. The final “beschikking” was received later and the “startgesprek” was 24th August 2016. The total project size is valued at €3,781.222. Of this amount, €219.000 is projected rental income from the incubator space and €1.781.111 is from the EFRO grant.</p> <p>The primary focus of the project is the development of the area next to the AMC (Zuidooost Zuid), with the Amsterdam Health Technology Center (AHTC) at the core, as an innovation park for health technology companies. A cornerstone of this program is the development of an incubator program and subsidized rental space for healthtech start-ups. Ahti is also developing programs to attract (foreign) companies to Amsterdam and is organizing an active ecosystem in the area with companies, scientists and government.</p> <p>Not counting the contacts made with Sarphati Amsterdam as the partner, ahti had contact with more than 40 companies in 2016. These companies were from the following sectors:</p> <ul style="list-style-type: none"> <li>• 4 venture capitalists that have expressed interest to work with startup companies in health technology</li> <li>• 20 medical technology companies, contacts made partly through the medtechpartners network</li> <li>• 6 foreign companies that may have an interest in establishing a presence in Zuidooost Zuid</li> <li>• At a minimum, at least 10 additional companies contacted us as a result of different events we organized</li> </ul> <p>By the end of 2016, 5 companies have already expressed their serious intent to move into the AHTC.</p>
	Amsterdam Living lab has established a partner connection with at least 3 other Living Labs in the world.	<p>Completed the development of the living lab “platform” in China, Kenya and the USA.</p> <ul style="list-style-type: none"> <li>• Formalized arrangements in each area.</li> </ul> <p>This network was described in at least two international innovation conferences in 2015.</p> <p>Developed first draft of process and requirements to consider additional living lab sites.</p> <p>Developed specific project relationships in China (post-stroke rehab), Nairobi (indoor air pollution) and the USA (population health and VMP training)</p>	<p>Achieved</p> <p>Four Living Labs in a " " In 2016 we continued to manage and grow the relationship among the 4 official living labs and ahti, including shared faculty projects related to childhood obesity, elder care and other global health issues. We also built a strong and successful focus across the labs for the launch of the multi-site project for the home-based management of hypertension.</p> <p>We Initated contact with the Dutch Embassy in India for exploration of possibilities for a 5th living lab in India.</p> <p>We presented a lecture on the Global Network of Living Labs at the International Conference of Urban Health (Mark Geels, San Francisco). Finally, we presented a lecture on the ahti model for innovation at the Innovation to Application conference held at the University of British Columbia (Keerthi Prasad).</p>
	Venture Mentoring Program (VMP) with expertise from Duke Global Health Institute established. At least 10 entrepreneurs enrolled in VMP.	<p>Completed a high-level analysis of the Dutch venture landscape.</p> <p>Completed the transfer of the Duke University Venture Mentoring Program to ahti, in time for the start of the first class in the fall of 2016.</p>	<p>Ahead of schedule, the VMP program was offered in 2016 and 8 participants completed the course. Mentors for the program were recruited from Duke University and a leading law firm in Amsterdam, and also included a specialist in health education and training and a biomechanical engineer.</p>
<b>ahti TOTAL</b>	Funding Ratio of at least 2 over the first ten-year period realised for AHTI as a whole.		Achieved Funding ratio > 1:5

Annex 2 Deliverables Continuation Period

		Activity schedule			Original 10 year deliverables	
	Kickstart Deliverable	2019 (year 4-5)	2021 (year 6-7)	2024 (year 8-10)	Deliverables Continuation Plan (end of year 10)	Ambition Continuation Plan (end of year 10)
Innovation case	D6	<p>First version of Amsterdam HealthDatabase and dashboard operational which includes amongst others primary care data (Nivel), Municipal Health data and social-economic data. Database is supplemented with cost data (Vektis) and social-economic on focusarea topics.</p> <p>Governance proposed for public-private development of database</p> <p>Health-database integrated in at least &gt;3 projects on focusareas</p> <p>First Yearly reports on focusarea program</p>	<p>Amsterdam HealthDatabase and dashboard further operationalized with partners and expanded with consumer wearable data.</p> <p>Health-database integrated in at least &gt;10 projects on focusareas with public-private partners</p> <p>Yearly reports on focusarea programs</p>	<p>Fully functional Amsterdam HealthDatabase and dashboard with all available health data.</p> <p>First public-private innovation project started database</p> <p>Health-database integrated in at least 15 projects on focus areas with public-private partners</p> <p>Yearly reports on focusarea programs</p>	<p>Health-dashboards to reuse and analyse all available health data (e.g. payer, municipality, provider, user) in the Amsterdam regio established.</p> <p>Health-dashboards available which can structurally inform the City to establish evidence based policy in health.</p> <p>Health-dashboards integrated in at least 15 projects to test new (technical) innovations.</p>	<p>Real time -monitoring system on all available health data (e.g. payer, municipality, provider, user) in the Amsterdam regio established.</p> <p>Monitoring system available which can structurally inform the City to establish evidence based policy in health.</p> <p>Monitoring system integrated in at least 25 projects to test new (technical) innovations. At least 30% of projects initiated by private companies.</p> <p>3 new products launched based after succesfull testing and product development in living lab.</p>
	D7	<p>Yearly Strategic stakeholder meeting (ahiti - Municipality + invitees)</p> <p>Yearly seminars held ('18-'19) on relevant topics decided with Municipality, Sarphati Institute, Ben Sajet and/or other</p>	<p>Yearly Strategic stakeholder meeting (ahiti - Municipality + invitees)</p> <p>Yearly seminars held ('20-'21) on relevant topics decided with Municipality, Sarphati Institute, Ben Sajet and/or other</p>	<p>Yearly Strategic stakeholder meeting (ahiti - Municipality + invitees)</p> <p>Yearly seminars held ('22-'23-'24) on relevant topics decided with Municipality, Sarphati Institute, Ben Sajet and/or other</p>	<p>Cooperation body with relevant stakeholders established. Yearly seminars organised to discuss joint projects and priorities. At least 1 joint project implemented through cooperation body.</p>	<p>Cooperation body with relevant stakeholders established. At least 5 joint projects implemented through cooperation body. Community Health &amp; Wellness[e]Education courses made available for 80% of Amsterdam High Schools.</p>
	D8	<p>At least 3 spin-offs, start-ups, scale-ups or other ventures established in 2019.</p>	<p>At least 8 spin-offs, start-ups, scale-ups or other ventures established in 2021.</p>	<p>At least 15 spin-offs, start-ups, scale-ups or other ventures established in 2024.</p>	<p>At least 15 spin-off companies in 2023 established.</p>	<p>At least 30 spin-off companies in 2023 established.</p>
Health case	D9	<p>Business park established in cooperation with Amsterdam Zuid Oost by 2023 - 3 companies attracted to set up activities in business park.</p>	<p>Business park established in cooperation with Amsterdam Zuid Oost by 2023 - 6 companies attracted to set up activities in business park.</p>	<p>Business park established in cooperation with Amsterdam Zuid Oost by 2023 - 10 companies attracted to set up activities in business park.</p>	<p>Business park established in cooperation with Amsterdam Zuid Oost by 2023.</p>	<p>Business park established in cooperation with Amsterdam Zuid Oost by 2023 - 10 companies attracted to set up activities in business park.</p>
	D10	<p>Two externally funded, programs on focusarea topic in Global living lab network</p>	<p>Four, externally funded, program on focusarea topic in Global living lab network</p>	<p>Six externally funded, program on focusarea topic in Global living lab network</p>	<p>Global living lab network of 10 partner living labs established by 2023.</p>	<p>Global living lab network of 10 partner living labs established by 2023. Global network of living labs coordinated by Amsterdam to establish largest living lab in the world.</p>