Young Leaders for Health

Social Entrepreneurship Challenge on eHealth 2018:

NCDs in Urban Populations

"Health is created at the local level,
in the settings of everyday life."

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Shanghai Consensus on Healthy Cities, 2016

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1. <u>Welcome to the Challenge!</u>

Dear Participant,

The whole of the YLH Organising Committee would like to extend a very warm welcome to you, the participants of this year's Social Entrepreneurship Challenge on eHealth. We hope that in the next four days, you find the experience as enriching and challenging as it has been for us to organise it! Please take the time to get to know your fellow team members and don't be afraid to ask questions. We have put together the following information to guide you through some of the issues that you will be grappling with during the Challenge.

We at YLH are of the opinion that in a fun and creative setting, with other open-minded, interdisciplinary team players, students and young professionals have the ability to think beyond the current paradigm.

The Organising Committee selected the topic of NCDs in urban populations since we want to see the benefits of eHealth being harnessed at the population level. We want to see Smart Cities become healthier, and technology used to narrow the health inequality gap.

The development of eHealth solutions to public health issues, especially non-communicable diseases, is one of the most exciting - and hardly explored - topics of our times. We predict that the demand for eHealth elements in the Smart Cities of the future will continue to grow in the next 10 years. There is wide scope for development - and we hope that your proposals contribute to this exciting trend.

After months of preparation, we look forward to meeting all the participants, keynote speakers, mentors and jury members. Moreover, we are excited to see what innovative project ideas each team will develop over the course of this weekend in Berlin.

We appreciate everyone joining our collective effort in order to make way for crucial progress in the global health arena.

Yours,

the Organising Committee

2. The Programme

Social Entrepreneurship Challenge on eHealth 2018: Non-Communicable Diseases in Urban Populations

TIME	THURSDAY July 26th	FRIDAY July 27th	SATURDAY July 28th	SUNDAY July 29th
9:00 - 9:30		Keynote Speech II **Dr. Hartwig Jaeger MD**	Keynote Speech III **Clayton Hamilton**	**Project Submission Deadline**
9:30 - 10:00				**Breakfast**
10:00 - 10:30				
10:30 - 11:00		**Break**	**Break**	
11:00 - 11:30	**Registration**	Workshop II **Olaf Kelm** *How to Pitch your Project*	**Teamwork**	**Project Proposal Presentation**
11:30 - 12:00				
12:00 - 12:30	**Introduction**	**Lunch**		
12:30 - 13:00				
13:00 - 13:30	**Break**	**Teambuilding**	**Lunch**	**Jury Deliberation**
13:30 - 14:00	Keynote Speech I **Per Erland Hasvold**	**Teams Meet their Mentors**		
14:00 - 14:30			**Teams Work with their mentors**	**Award Ceremony**
14:30 - 15:00	**Break**			
15:00 - 15:30	Workshop I **WHO, Geneva** *Urban Health Initiative*	Workshop III **Aleksandra Kuzmanovic** *Breath Life Campaign*		
15:30 - 16:00				
16:00 - 16:30			**Teams work (with/out mentors)** Venue open till Midnight	
16:30 - 17:00	**Teams First Meeting**			
17:00 - 17:30				
17:30 - 18:00	**Social Event (until 22:00)**	**Teams Start working (with/out mentors)** Venue open till Midnight		
18:00 - 18:30				
18:30 - 19:00				

3. **Concepts & Definitions**

3.1. eHealth

Many of the terms that we will deal with here have no single, universally accepted or authoritative definition. eHealth is one of them. The development of sophisticated ways of communicating and storing large amounts of information (information and communications technology, or ICT) has led policymakers to ask how these technologies could be used to make healthcare, disease prevention, diagnosis, treatment, monitoring, conducting research and management more effective and efficient.

On the one hand, eHealth creates benefits for the healthcare system apparatus. In practice, this might mean that patients' health records are stored digitally, enabling them to be shared more easily among patients and health service providers, hospitals, health professionals and health information networks. ICT also contributes to data sharing among telemedicine services; portable patient-monitoring devices, operating room scheduling software, robotised surgery and basic "blue sky" research on the virtual physiological human. Individuals can be asked to fill in digital surveys that yield large volumes of useful and accessible health data.

On the other hand, eHealth offers efficiency and convenience benefits to the individual. In the European Union, for example, EU citizens have the right to work and travel in different member states. If they need medical care in a member state different from the one in which they usually reside, then it is extremely useful if their medical records are accessible across borders. To this end, the EU has set up an eHealth network, which brings together the Ministries of Health from all EU member states to develop common goals for eHealth.

eHealth is not simply about individual healthcare provision, however. The proliferation of wearable devices, apps and consumer health products to measure health-related information shows how much the private sector moved into this market in recent years. A trip to a supermarket in a Western European country to see the array of fitness trackers on offers shows how this market has grown to meet consumer demand.

Regardless of their potential to improve health, such eHealth interventions often seem to widen already existing health gaps between populations that frequently use ICT and those who do not, instead of closing them. For example, "a wearable fitness band isn't much use if you're homeless and healthy eating apps aren't all that practical if you struggle to buy groceries". This is why we feel there is a need to look beyond individual healthcare approaches, and consider how eHealth and digital technologies can be harnessed for the sake of public policies in the fields of health promotion and urban planning. The technologies that make eHealth more efficient can also be used to drive forward health improvement at the population level, including in Smart Cities and Healthy Cities.

3.2. *Social Entrepreneurship*

The logical first step before addressing the question "what is social entrepreneurship?" is to consider the meaning of entrepreneurship per se. An entrepreneur, dissatisfied with the status quo ("suboptimal equilibrium"), possesses the drive, if not talent, for identifying and seizing opportunities for change. True entrepreneurship is therefore wrought with risk and requires the courage to introduce something entirely new that will destabilise the existing status quo, creating a new one. While an entrepreneur may be motivated by money, the setbacks and losses often encountered along the (long) path to success mean that, at the outset, there can be no guarantee that the venture will be profitable. If successful, however, an entrepreneur will replace the previous, unsatisfactory circumstances with a new, stable equilibrium. Here, one can think of the example of Pierre Omidyar who introduced eBay in 1995, making it the standard marketplace for distance transactions and replacing the previous, cumbersome approach, which had required telephone calls to track down (sometimes obscure) items.

With this in mind, what distinguishes social entrepreneurship from entrepreneurship in general? Perhaps most crucially, social entrepreneurs are driven to create a new product or service that will generate a high degree of social value - including for historically underserved and neglected populations that cannot afford to pay for the product or service itself. This social value may, however, sit alongside financial returns, in recognition of the fact that the two are not mutually exclusive. A social entrepreneur still needs to be ready to take a risk, and it may take a little longer for the new venture to establish a new paradigm. A few examples are illustrative. Mohammad Yunus famously developed the concept of microfinance to help poor women in Pakistan to become financially self-sufficient. In Berlin, two young Germans Vincent Zimmer and Markus Kressler, seeing that a large number of refugees were arriving in Europe in 2015, but were unable to go to university because they had been forced to leave behind their school leaving certificates, founded Kiron Open Higher Education, a social start-up which offers online learning to help refugees achieve academic credit and then pursue a degree.

Against this background, the challenge with which you, this year's participants, are faced, is to conceive of a new approach, product or service that will contribute to the social good, namely tackling non-communicable diseases in urban populations. The challenge of tackling problems in urban communities requires multilevel interventions. According to the WHO, cities continue to struggle to make implementations at the municipal level due to lack of procedures and capacity. It is important to consider and take into account complex underliers - which are often not visible at the surface level. These underliers can include informal leadership, uncertain resources/capacities and so forth. Can you think of a sustainable idea that will help not only those with the funds to buy new digital health products, but also the marginalised members of urban communities?

3.3. Non-Communicable Diseases

During the past two decades, the global disease burden has been shifting from infectious diseases to non-communicable diseases (NCDs). With an upward trajectory of prosperity in most countries of the world, the prevalence of NCDs continues to increase as well. The World Health Organization estimates that 70% of the 56.4 million global deaths in 2015 were attributable to NCDs. According to the World Health Organization, NCDs can be mainly classified as cardiovascular diseases, cancers, chronic respiratory diseases and diabetes. Risk factors for NCDs are classified into "modifiable behavioral risk factors" which include physical inactivity, unhealthy dietary habits, exposure to tobacco smoke or smoking, harmful use of alcohol and "metabolic risk factors" which include raised blood pressure, overweight/obesity, hyperglycemia and hyperlipidemia. Despite all of these individualised factors, the WHO also views the broader social determinants of health as highly significant to health outcomes and hence, NCDs:

"The social determinants of health (SDH) are the conditions in which people are born, grow, work, live, and age, and the wider set of forces and systems shaping the conditions of daily life. These forces and systems include economic policies and systems, development agendas, social norms, social policies and political systems."

What this means is that a myriad of physiological, environmental, genetic and behavioural factors contribute to the development of NCDs. Also known as chronic diseases, these diseases affect people of all age groups, irrespective of country or ethnic origin. Although the geriatric population is most commonly affected by NCDs, growing evidence points at NCD-attributable deaths in the middle-aged population as well. What's interesting is that around 80% of these premature deaths occur in low and middle-income countries. Therefore, it is almost impossible to adopt a one-size-fits-all approach to developing interventions and practices that deal with the global burden of NCDs.

Consider the following example to gain an idea on how eHealth strategies are being applied to combat NCDs in the real world - the International Telecommunication Union (ITU), in collaboration with the World Health Organization (WHO) and other health agencies, has come up with an initiative that focuses on the use of mobile technology to improve NCDs prevention and treatment. This new initiative has the objective of making the best mobile technology available and accessible to all countries to fight NCDs by delivering health promotion messages on the NCD risk factors, to survey the epidemic, to persuade users to change their unhealthy behaviors and to help countries implement national laws on NCDs. Mobile solutions will be SMS or apps-based and will cover a wide array of services including awareness, training, screening, surveillance, treatment and disease management. The initiative aims to scale up mobile technology in eight priority countries and these countries will choose best-fit interventions that caters to their individual needs. mCessation campaign for smokers in Costa Rica and mDiabetes management in Senegal to help diabetics during the month of Ramadan are examples of projects which are underway in this initiative. At

the global level, the next step is large scale dissemination of these results to ensure optimal NCD intervention everywhere.

Other contemporary public health solutions to combat NCDs target modifiable behavioural risk factors, such as trying to persuade people to eat a healthier diet, quit smoking or get more exercise. While these are lifestyle-based and person-specific, there are some other factors which affect communities and population subgroups as a whole; rapid, unplanned urbanisation, unhealthy lifestyles driven by globalisation and ageing populations constitute such examples.

Considering the magnitude of the threat posed by NCDs, we at Young Leaders for Health are on a quest for novel approaches to implement the principles of eHealth, creating sustainable solutions that tackle this global disease burden.

3.4. Smart Cities

Since the days of the industrial revolution, cities have been a magnet for job-seekers, immigrant communities and entrepreneurs. This is clearly shown by their continual growth: by 2008, more than half of the global population was living in an urban area. This proportion is expected to rise to 70% by 2050, with some "megacities" projected to grow to 20 million inhabitants and beyond.

While cities remain attractive destinations due to their abundance of social, economic and cultural opportunities, the bounty is not equally shared among residents. The lack of clean, piped water and proper sewerage and waste disposal for slum inhabitants means the standard of living for many in megacities is hardly any better than it was in Europe's unplanned and chaotic industrial centres in the 19th century. Air and noise pollution are increasing and cities are particularly vulnerable to natural and man-made disasters. The strain of urban growth on both the environment and public health makes the sustainable and efficient design of cities and infrastructure – in a way that reduces, rather than entrenches, urban social inequality – a matter of crucial public policy importance. The Member States of the United Nations have therefore decided to address urban areas in one of the Sustainable Development Goals and to "make cities and human settlements inclusive, safe, resilient and sustainable".

As cities are typically inefficient consumers of resources and require fairly sophisticated public service systems in order to serve the needs of their growing populations, policy makers and urban planners have increasingly turned to technological solutions in order to deliver services at scale. This is where the term "smart city" comes in.

But what is a smart city, and where does the concept come from?

"Smart city" has become something of a buzzword in recent years. As with eHealth, there is no single agreed definition for the term, risking confusion among policymakers about how to actually create a smart city. What commentators broadly agree on is that smart cities share at least one trait: as with eHealth, smart cities try to leverage the power of ICT in ways that improve residents' lives. Importantly, a city does not become

smart by simply having high-tech cut and pasted onto it. The true measure of a smart city's success is not how much technology it uses or the "big data" it generates, but what kind of a positive impact it has on its citizens' safety, health and convenience.

An embryonic version of the smart city concept is thought to have emerged in California in the 1970s, when the little-known public agency, the Los Angeles Community Analysis Bureau, driven by faith in the ability of computers and data analysis to solve big problems, used cluster analysis, infrared aerial photography and computer databases to gather large amounts of neighbourhood data. Their aims were to better understand local poverty demographics and eventually to generate masses of data through an "urban information system". Likewise, modern smart cities rely on technology to gather large amounts of data that can then be converted into "actionable intelligence for the efficient and sustainable management of the city".

Contemporary Examples of Smart Cities

Barcelona is an example of a city that has pioneered the use of technology and the Internet of Things (IoT) to provide free WiFi via street lighting, while sensors obtain real- time information about parking spaces and air quality. Since it became clear that some projects have yielded unintended effects, the city has announced its attention to rethink its Smart City strategy in order to focus more on the needs of citizens by taking ownership of its own networks and platform and inviting residents to participate in planning policy-making both in person and through online consultations.

In response to the massive environmental burden created by van journeys delivering parcels to consumers and businesses - increasing due to the popularity of Amazon - the Mayor of London has pledged to reduce the number of large, polluting lorries on London's roads and phase in the use of zero-emission, electric freight vehicles. In addition, a power and heat project is currently underway which will harness the heat created by the London Underground (if you have ever been in London in the summer, you will know how uncomfortably hot and sticky the Underground gets) and use it to heat public swimming baths as well as people's homes.

Regularly hit by natural disasters such as flooding - deadly for the poorer residents of the city's hillside favelas - the city of Rio de Janeiro has had to develop ways to improve its emergency response system. As a result, the city has implemented a number of strategies. Waste removal trucks have been equipped with GPS, allowing for monitoring and coordination in emergencies when the trucks are required for other purposes. The city has established an Operations Centre which offers a setting for the city's emergency services, including the police and the health department, allowing for better coordination and faster responses to emergencies.

3.5. Healthy Cities

The World Health Organization's Healthy Cities movement began in 1988 with the aim of putting into practice the principles of the **Ottawa Charter for Health Promotion (1986).** Originally, just twelve European pilot cities took part. Like Smart Cities, Healthy

Cities share the goal of improving residents' wellbeing and quality of life. Becoming a Healthy City means that a city and its stakeholders proactively address the fact that the roots of (ill) health lie in a city's physical environment, culture and economy as well as in an individual's decisions regarding her lifestyle. In other words, again we must recognise that the **social determinants of health** – the conditions in which people are born, grow, work, live and age, and the wider set of forces and systems shaping daily life – all have an impact on an individual's health status. The complexity of the interplay of these factors means that becoming a Healthy City should really be understood more as a **long-term process, rather than a one-off event.** Currently, thousands of cities across all of the WHO's six regions are members of the Healthy Cities network.

Margaret Chan, the Director-General of the WHO, has explicitly recognised that public health was born in cities, and it will continue to develop in cities, particularly given the urban population explosion. A key milestone of recent years was the Healthy Cities Consensus - a pledge made by 100 mayors from around the world - to recognise that "health is created at the local level - in the settings of everyday life". While not binding on any particular city, the Consensus is an important statement of political will and opens the doors for a variety of strategies to put the pledge into practice.

What makes a Healthy City stand out from its not-so-healthy neighbours?

Probably the most celebrated example of a European Healthy City is now Copenhagen. The extensive network of cycle lanes means that 62% of the city's residents now cycle for convenience – not necessarily because they want to get fit. While the city has abandoned its taxes on fatty foods and sugary drinks and has shied away from a general ban on smoking in public places, it has pushed forward on initiatives such as requiring vegetation to be grown on flat roofs and high taxes on car purchases.

3.6. *Killing two birds with one stone: can a city be both healthy and smart?*

At Young Leaders for Health, we believe that the technologies that enable a city to be smart must be harnessed to improve the health of all of its residents. At the political level, too little attention has been paid to this question so far. There is much scope and many possibilities for how this could be achieved - hence your participation in this year's Challenge!

Singapore recently came out on top as the healthiest city in the world, but it has also been labelled one of the smartest. In a culture that has long placed a high degree of importance of younger generations caring for their elders, the installation of remote monitoring systems enables families to keep an eye on their relatives and alerts them instantly if an incident is detected at home. Meanwhile, non-emergency healthcare can now be provided by video conferencing for those unable to attend hospital appointments. Similarly, the UK app Love Clean Streets enables residents to use the

GPS and camera on their smartphones to report any pressing environmental issues to their local authority.

What should also be borne in mind, however, when designing a Healthy City, is that interventions can have the effect of entrenching pre-existing social inequality and class divisions. For example, green spaces and efficient public transport systems may be introduced in already wealthy districts, leaving those on the periphery unable to share the benefits. A further challenge in designing a Healthy City using technology is the "digital divide". Despite the fact that internet access is stronger in urban environments than in rural ones, strong discrepancies between ethnic, income and age groups still persist across countries. Given that many healthcare systems now more than ever require individuals to take an active part in the management of their own health, this is problematic.

Key considerations when embedding public health strategies in Smart Cities

Reliable, high-quality **sensors** are key to the effective gathering of data in a city. As sensors have become more affordable and available to cities and towns, for example through public-private partnerships and social impact bonds, digital public health strategies have become more feasible. Having more data enables better, more informed decisions to be made and for a city or town's systems to become more responsive to real-time conditions. For example, more complete information about the noise or pollution levels in a district may influence the decision about where to build a new school or hospital. Sensors need not be fixed in one place, however (as in the case of Barcelona). Dublin, Ireland and Oslo, the capital of Norway, have shown that mobile sensors attached to buses and bicycles can be just as effective, and rely on fewer individual sensors than those in fixed networks.

4. **Keynote Speakers**

Clayton Hamilton

Unit Leader, eHealth & Innovation

Division of Information, Evidence, Research and Innovation

WHO Regional Office for Europe

Copenhagen, Denmark

Mr. Clayton Hamilton leads the eHealth and Innovation portfolio of the WHO European Region, providing support and strategic guidance to eHealth development and capacity building initiatives as a component of Health Information management in the region's 53 Member States. With a background in ICT development and business management within WHO that spans a 15 year period, Mr. Hamilton works on broadening the awareness and benefit of strategic implementation of eHealth in Europe, linking with major international partners to build capacity in low- and middle - income countries and as a contributor to major national eHealth strategy development initiatives.

Per Erlend Hasvold

Technical Officer,

Be Healthy - Be Mobile: mHealth for Non-Communicable Diseases,

WHO, Geneva, Switzerland

Dr. Hartwig Jaeger MD, PhD

CEO and Founder of the Digital Health Factory

Berlin, Germany

Dr. Jaeger is the founder and CEO of the Digital Health Factory in Berlin, Germany. Following his studies in medicine, he worked as a doctor in England and later as a Consultant at McKinsey. He has also gained experience in hospital management.

5. Mentors

Maike Henningsen MD PhD

Senior Medical Advisor

Natural Cycles

Berlin, Germany

Saskia Howe

Freelance - Business Development

Agile & Design Thinking Coach

Project Management

Berlin, Germany

Timm Witte

Head of Business Development

Mondosano GmbH

Hamburg, Germany

6. Workshop moderator

Olaf Kelm

External Relations Officer

International Agency for Research on Cancer

7. Communicate With Us - Social Media Platforms

Social media has become an important way of communication and raising awareness regarding Global Health issues. Therefore, we encourage our participants to follow our different platforms, engage, and comment. This will help you understand more about eHealth, smart cities and non-communicable diseases. We would appreciate if you share your impressions, link @YoungLeadersForHealth and use our Hashtags during the event: #YLHchallenge #ehealthchallenge

You can follow us on:

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www.youngleadersforhealth.org

Questions?

Email us via challenge@youngleadersforhealth.org