

Mobile Technologies & Wearable Devices for Healthcare and Clinical Research

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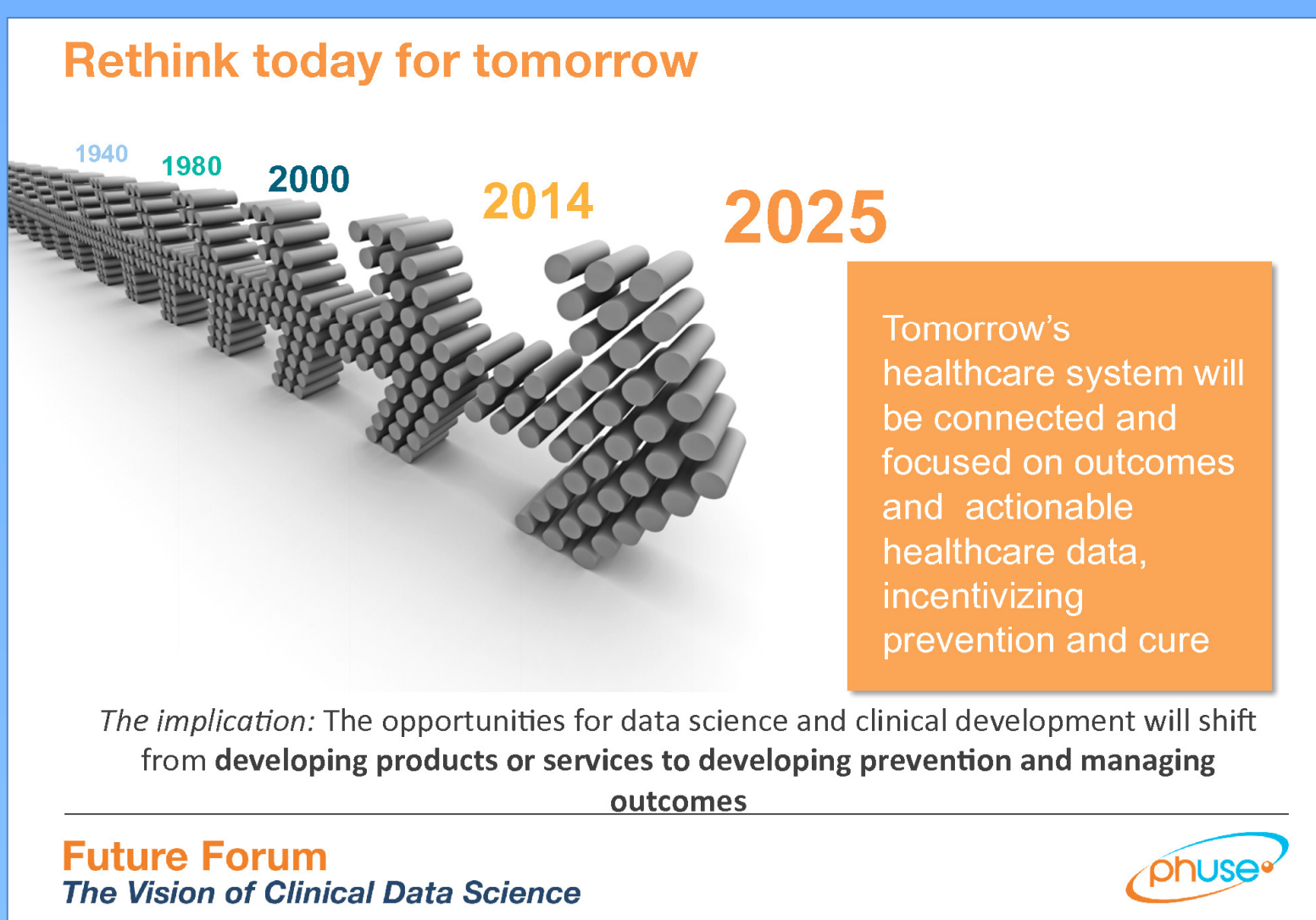
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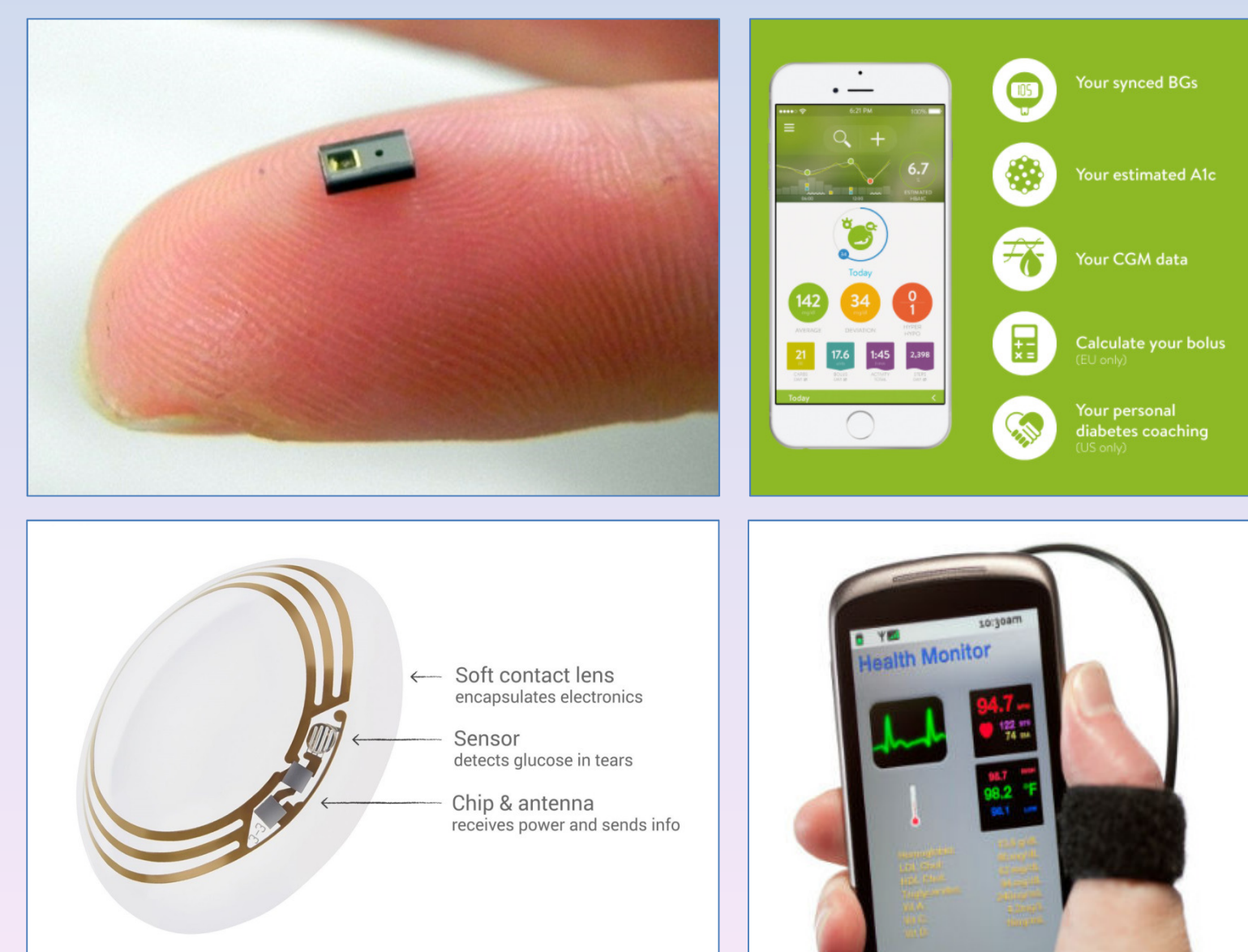
Definition of mHealth

WHO: mHealth involves the use of and capitalization on a mobile phone's core utility of voice and SMS as well as more complex functionalities and apps including GPRS, 3G and 4G systems, GPS, and Bluetooth technology"

US National Institutes of Health: the diverse application of wireless and mobile technologies designed to improve health research, health care services, and health outcomes

Interested to join?

The mHealth working group is keen to welcome new volunteers. If you are interested, please contact the leads or PhUSE office for more information.



mHealth working group

Mobile technology & wearable devices are becoming increasingly prominent in healthcare and clinical research, but we're only starting to understand this field.

This poster presents the work in progress of the PhUSE mHealth working group, which is a subteam of the Future Forum Interoperability & Technology working group.

PhUSE Future Forum

Future Forum is a strategic program to drive innovation within the PhUSE community, and to help shape the industry, using the collective intelligence and the collaborative power of PhUSE as a volunteer organization.

There are currently two Future Forum working groups: 'Process' and 'Interoperability & Technology'.

The mHealth working group is a subgroup of the 'Interoperability & Technology' working group

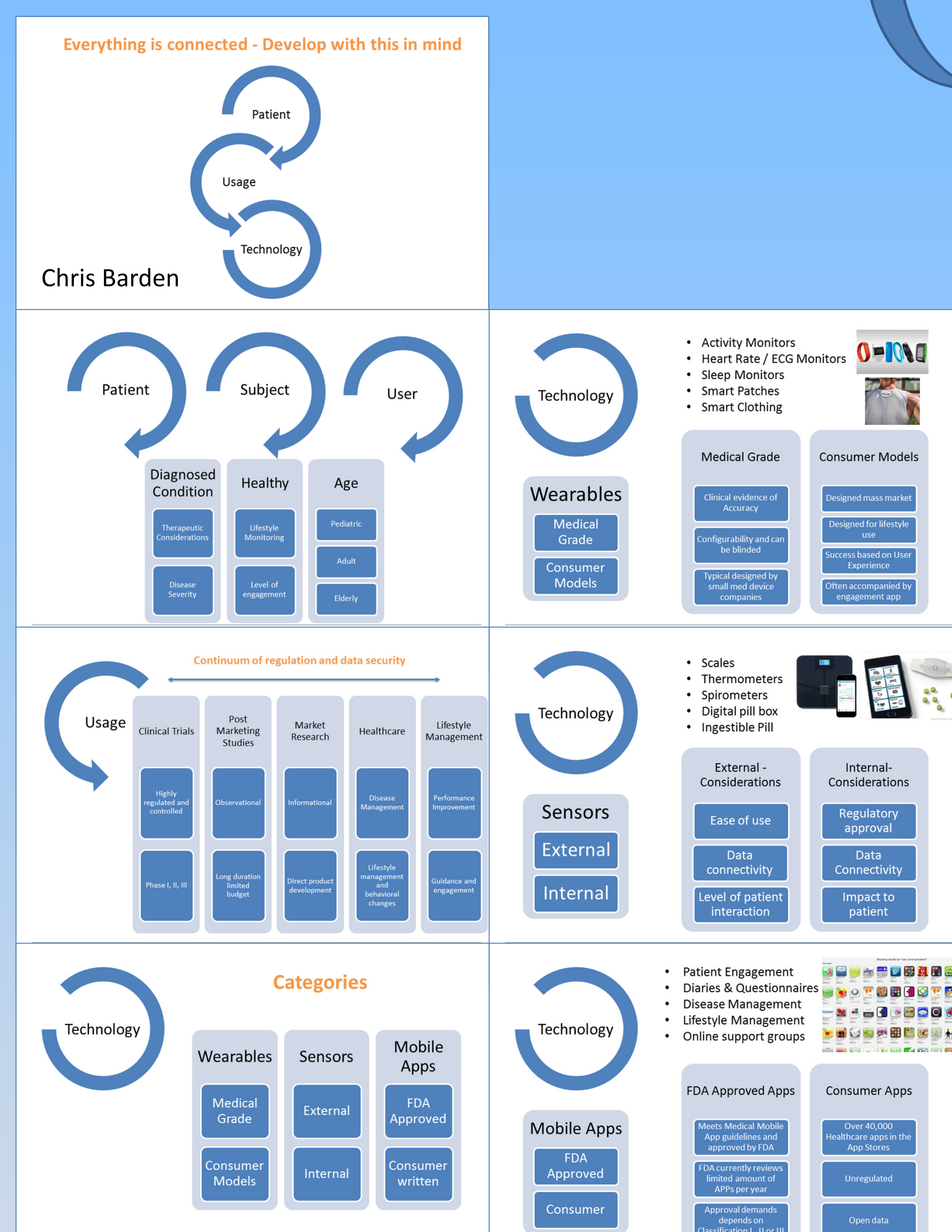
Conclusion & Next steps

The working group has mapped out the theme mHealth, and is researching and elaborating different perspectives on the subject. Aim is to work these out as a paper, or different ones, over the next months.

Building on this knowledge base, further steps are envisioned, such as interviews with thought leaders, experts and vendors in the field, to be synthesized with research results and with further publications in mind.

The working group's research on different perspectives on mHealth

Patient, Usage, Technology

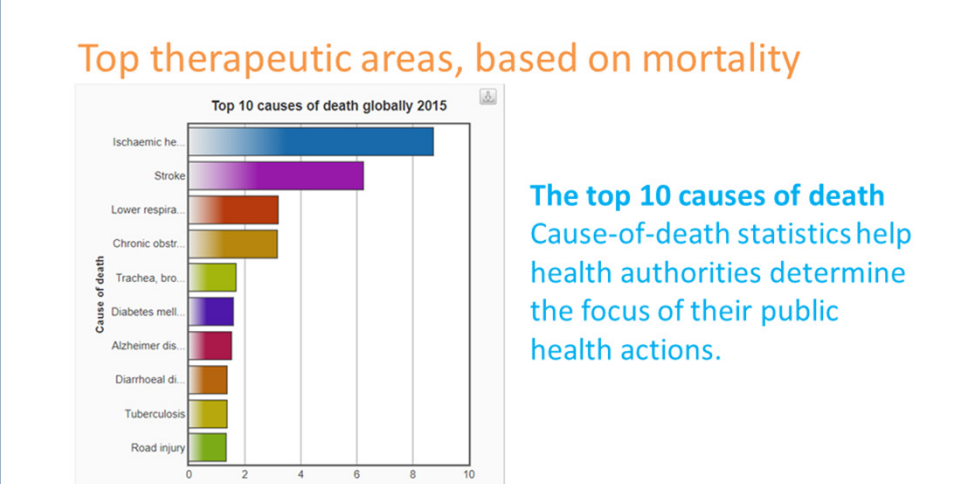
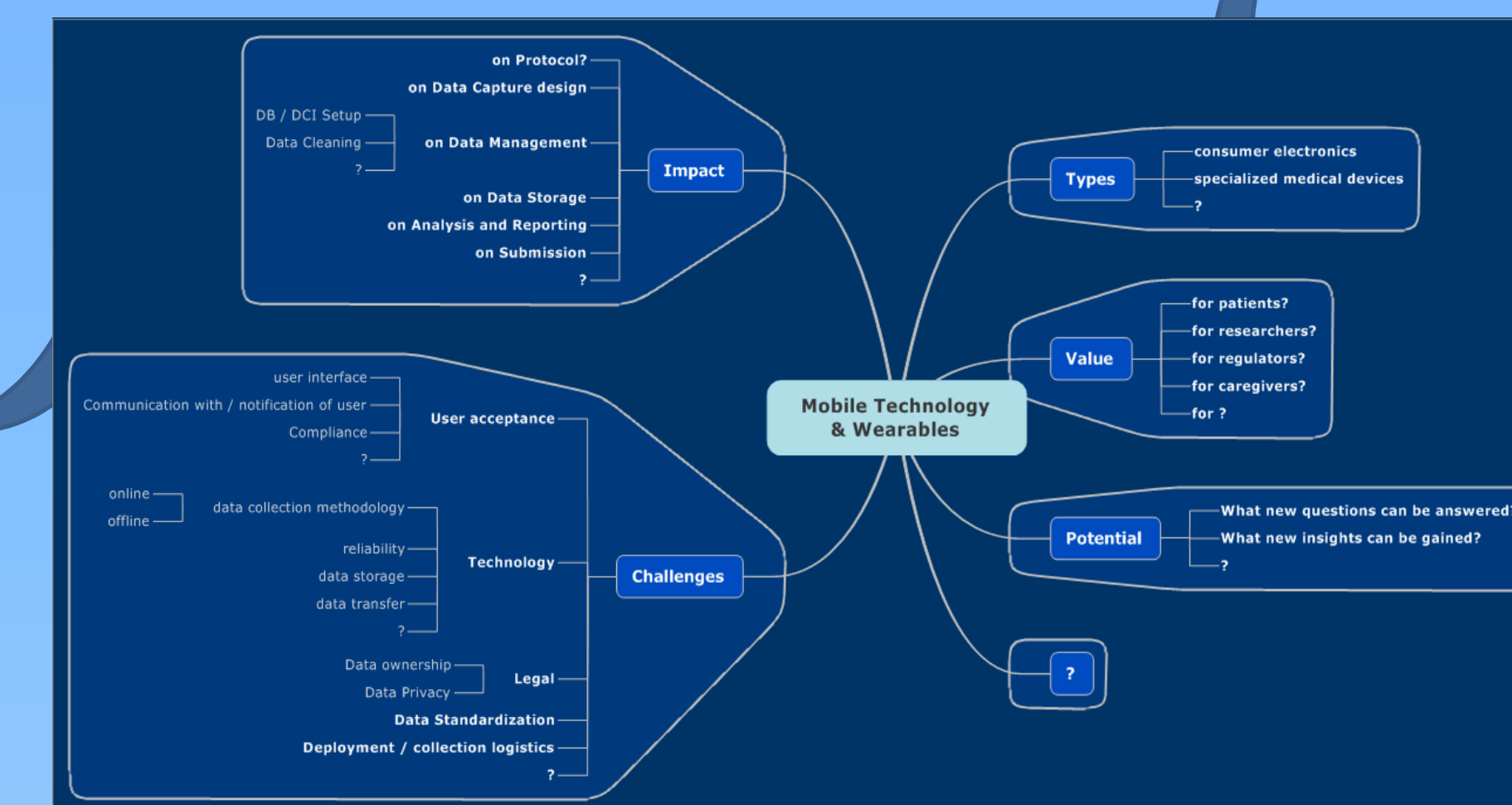


mHealth SDE Utrecht 2018

Preparations are being made for a Single Day Event in Utrecht, The Netherlands in February 2018. Like previous successful editions, this SDE will be chaired by Paul Vervuren and Jules van der Zalm. If you're interested to present a paper or to sponsor the SDE, please contact the organizers or PhUSE office.



Disease/Therapy areas, Patients, Value & Potential



Annemarie Lutz

Top therapeutic areas, based on disease burden

Global estimates of cause-specific disability-adjusted life year (DALYs) 2030 vs. 2015

Predicted rank in 2030	Cause	% deaths in 2015	Rank in 2015
1	Ischaemic heart disease	15.2	1
2	Stroke	12.2	2
3	Chronic obstructive pulmonary disease	6.5	4
4	Lower respiratory infections	5.8	3
5	Diabetes mellitus	5.3	8
6	Tuberculosis, including HIV-related	5.0	7
7	Pneumonia	2.8	9
8	Preterm	2.8	6
9	Charlton diseases	2.3	5
10	Ischaemic heart disease	2.1	10

Selection of statements on Global Health Development 2000-2015

Fact 1: Global average life expectancy increased by 5 years between 2000 and 2015, the fastest increase since the 1960s

Fact 7: Noncommunicable diseases (NCDs) caused 37% of deaths in low-income countries in 2015, up from 23% in 2000

Fact 8: Ischaemic heart disease and stroke killed 15 million people in 2015

Fact 9: Diabetes are among the 10 leading causes of deaths and disability worldwide

Insights on diseases and burden versus mobile health applications

A review was found considering studies published between 2015 and 2017 involving chronic conditions (6), rehabilitation (7), cardiovascular diseases (4), falls (2) and mental health (1).

Increase of chronic diseases, along with

- aging population
- the cost of hospitalization
- and the risk of medical errors

are being described as the biggest challenges for healthcare.

Insights on diseases and burden versus mobile health applications

mHealth is seen as a potential solution for addressing some of these challenges by enabling advanced sensors, wearable technology, and secure and effective communication platforms. However, most studies:

- focused on the system aspects of solutions
- are progressing with localized sensor-software integration to solve a specific use-case/health area
- are using non-scalable and 'silo' solutions.

There is further work required regarding interoperability and clinical acceptance challenges.

Successes and challenges

Successful applications of mHealth are found in specific health areas like DM and CVD. An example for heart disease management:

- A wearable or implantable monitor provides continuous recordings of pressure, rate and function of the heart
- This shows the response to medications, diet changes and any other interventions
- It is well demonstrated that the device provides accurate information
- However, this device has not been approved for general use