

Do we need a decision framework for integrated digital health to ensure sustainable healthcare?

Under submission

Authors:

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Bakgrund till arbete

Webinar: Utilizing digital health to address COVID-19 – European expert discussion

April 16th, 13:30 CET

The aim is to bring together Digital Health experts to discuss:

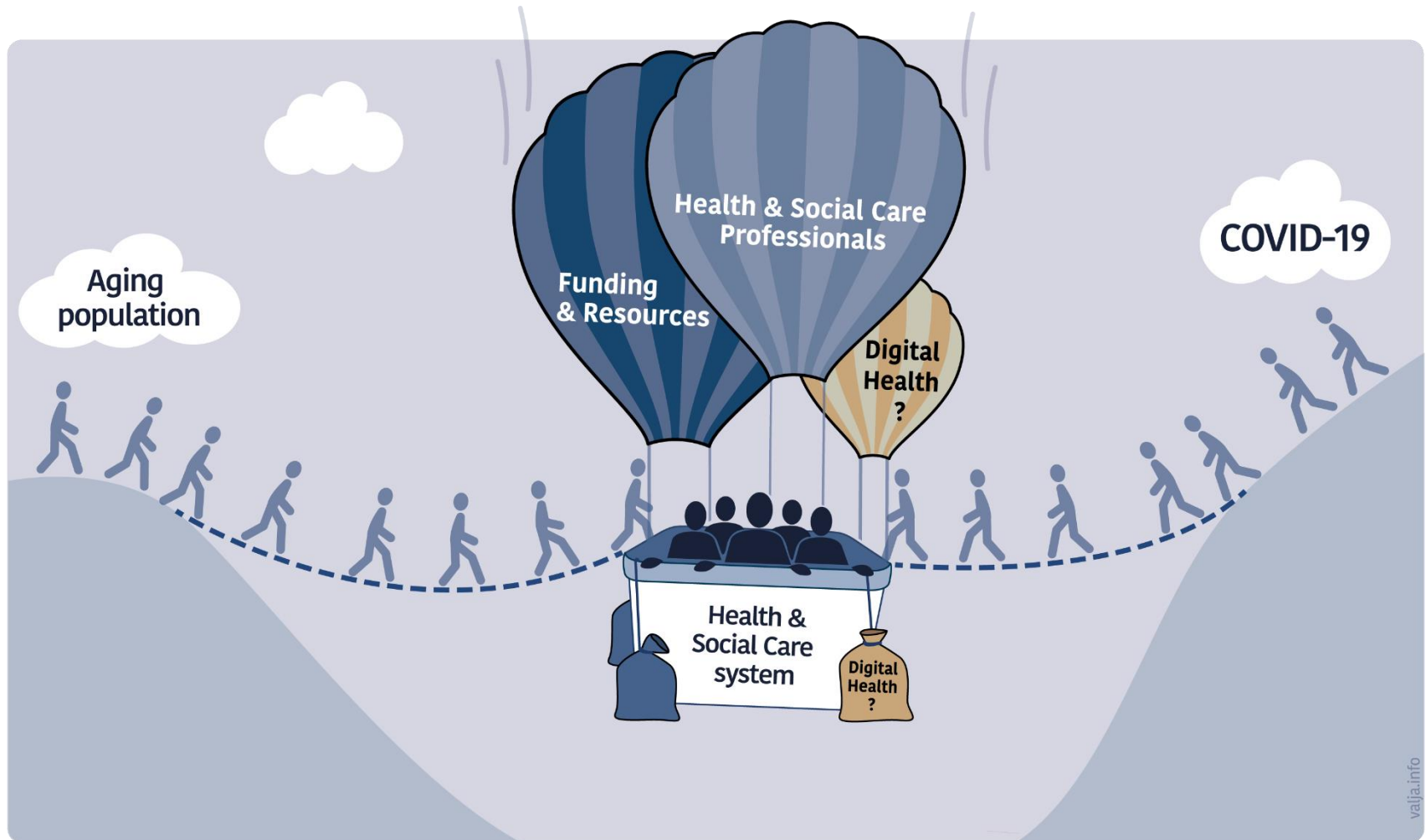
- What are the problems we can address with DHS?
- What are the most important solutions to implement?
- How do we ensure safe and effective use of the solutions and how can we leverage the frameworks developed for digital health to support in this process?
- How can we monitor the effectiveness of the measures?

Confirmed speakers:

- Prof Kristian Kidholm, Odense University. (DK)
- Jan Brönneke, Director Law & Economics Health Technologies, Health Innovation Hub (DE)
- Rossella Di Bidino, HTA expert, Health Economist, Fondazione Policlinico Universitario Agostino Gemelli (IT)
- Frederic Llordachs i Marques, ofounder and partner at Doctoralia (ES)
- Evamaria Nerell, Program Manager, The National Board of Health and Welfare (SE)



Figure 1: Digital health: Real Support, Inflated Hope or Burden?



I-DHS demonstrate a potential but is there interest by decision makers?

Cost category	Mean costs (SE), £		Raw between-group difference (£)	P value for difference
	Telehealthcare solution (n=134)	Control group (n=140)		
Hospital contacts				
Hospitalisations	5055.13 (1027.31)	9063.65 (1217.95)	−4008.52	0.01
Outpatient contacts	3163.53 (264.85)	4191.29 (644.82)	−1027.76	0.15
Psychiatric outpatient contacts	13.72 (5.95)	62.46 (39.20)	−48.74	0.23
Primary care contacts	469.26 (44.37)	600.36 (40.43)	−131.10	0.03
Pharmacy purchases	972.25 (94.01)	1076.57 (81.31)	−104.32	0.40
Municipality costs (home care, rehabilitation, monitoring in relation to the telehealthcare solution, etc)	681.61 (137.16)	1246.88 (461.78)	−565.27	0.25
Healthcare costs, excluding costs of the telehealthcare solution	10355.50	16241.21	−5,885.71	0.01
Costs of the telehealthcare solution, excluding costs of monitoring:				
Software development and support*/†	0.27	0	0.27	
Basic operation: surveillance, support of health professionals, server licenses, etc‡	8.47	0	8.47	
Running development of apps, system updates, etc‡	1.76	0	1.76	
Education of healthcare professionals*/†	3.04	0	3.04	
Telekit, including initial delivery and patient education*	122.36	0	122.36	
Annual operational costs: licenses, sim card data, substitution of faulty equipment, etc	82.15	0	82.15	
Total costs (including costs of the telehealthcare solution)	10573.55	16241.21	−5,667.66	0.01

I-DHS demonstrate a potential but is there interest by decision makers?

DRG	2013	2014	2015	2016	2017
E47A Hjärtsvikt och chock, mycket komplicerat	3 204	2 537	2 532	2 646	2 720
E47C Hjärtsvikt och chock, komplicerat	21 348	21 638	22 476	21 549	21 162
E47E Hjärtsvikt och chock, ej komplicerat	4 686	4 381	3 224	3 151	3 190
E47A Hjärtsvikt och chock, mycket komplicerat	8,53	8,60	8,65	8,50	8,13
E47C Hjärtsvikt och chock, komplicerat	5,81	6,04	5,80	5,70	5,56
E47E Hjärtsvikt och chock, ej komplicerat	4,45	4,47	4,48	4,45	4,21
E47A Hjärtsvikt och chock, mycket komplicerat	6,35	6,74	6,84	7,06	7,17
E47C Hjärtsvikt och chock, komplicerat	5,55	5,65	5,65	5,83	5,88
E47E Hjärtsvikt och chock, ej komplicerat	3,05	3,05	2,54	2,59	2,50
E47A Hjärtsvikt och chock, mycket komplicerat	1,25	1,26	1,26	1,27	1,26
E47C Hjärtsvikt och chock, komplicerat	0,81	0,81	0,83	0,83	0,82
E47E Hjärtsvikt och chock, ej komplicerat	0,66	0,65	0,68	0,71	0,66
Kostnad E47A	251 934 918	201 338 276	200 145 347	211 320 012	215 245 922
Kostnad E47C	1 088 476 465	1 107 071 560	1 168 887 515	1 123 113 523	1 092 297 986
Kostnad E47E	194 016 575	180 286 893	137 255 945	140 053 070	133 119 999
Årlig kostnad för hjärtsviktsinläggningar	1 534 427 958	1 488 696 728	1 506 288 807	1 474 486 605	1 440 663 908

Constrained health care systems are exposed to undue risks with rapid introduction of I-DHS without relevant decision frameworks

Table II.2.15: Overview of scenario results - increase in public expenditure on health care over 2016-2070, as pps. of GDP

	AWG reference scenario	AWG risk scenario	Demographic scenario	High life expectancy scenario	Healthy ageing scenario	Death-related costs scenario	Income elasticity scenario	EU28 cost convergence scenario	Labour intensity scenario	Sector-specific composite indexation scenario	Non-demographic determinants scenario	TFP risk scenario	
BE	0.4	0.9	0.8	1.0	-0.2	0.6	1.0	1.0	1.3	2.4	2.1	0.4	BE
BG	0.3	1.3	0.4	0.4	-0.4	0.4	0.7	2.1	1.2	1.5	2.4	0.2	BG
CZ	1.1	1.9	1.4	1.6	0.4	1.0	1.7	1.8	2.5	2.7	3.2	1.0	CZ
DK	1.0	1.8	1.2	1.4	0.4	0.9	1.5	1.2	1.7	3.9	3.0	1.0	DK
DE	0.7	1.5	0.9	1.1	0.1	0.7	1.2	1.0	2.1	1.8	2.6	0.7	DE
EE	0.3	1.1	0.4	0.4	-0.3	:	0.6	1.2	1.0	1.4	2.1	0.2	EE
IE	1.0	1.7	1.1	1.2	0.6	:	1.3	2.2	1.2	1.5	2.4	1.0	IE
EL	1.2	2.0	1.3	1.5	0.7	:	1.5	2.4	0.5	2.6	3.0	1.1	EL
ES	0.5	1.2	0.6	0.7	0.1	0.5	0.8	1.1	0.6	2.2	2.0	0.5	ES
FR	0.5	1.2	0.7	0.8	-0.2	0.5	1.0	0.8	0.8	2.2	2.5	0.4	FR
HR	0.7	1.5	1.0	1.1	0.1	:	1.2	1.9	1.2	1.7	2.7	0.7	HR
IT	0.7	1.1	0.9	1.1	0.2	0.8	1.0	1.0	1.0	1.5	2.0	0.7	IT
CY	0.4	0.6	0.4	0.4	0.2	:	0.4	4.4	0.5	1.0	0.9	0.4	CY
LV	0.6	1.8	0.5	0.6	0.0	:	0.9	3.3	0.8	0.6	2.8	0.5	LV
LT	0.4	1.2	0.5	0.6	-0.1	:	0.8	2.8	0.6	0.7	2.2	0.3	LT
LU	1.2	1.7	1.4	1.5	0.7	:	1.5	2.8	2.1	2.1	2.4	1.1	LU
HU	0.8	1.8	1.1	1.2	0.1	0.8	1.4	2.1	1.5	1.3	3.0	0.8	HU
MT	2.7	4.3	2.8	3.2	1.7	:	3.3	3.5	3.0	4.3	5.9	2.6	MT
NL	0.8	1.4	1.0	1.2	0.3	0.7	1.2	1.1	1.3	2.8	2.4	0.8	NL
AT	1.3	2.1	1.6	1.8	0.6	1.4	1.8	1.6	2.8	2.7	3.3	1.3	AT
PL	0.8	1.7	1.0	1.1	0.3	0.7	1.3	2.5	2.3	1.4	2.7	0.8	PL
PT	2.4	3.3	2.7	3.1	1.5	:	3.0	3.4	3.4	4.7	4.8	2.3	PT
RO	0.9	2.1	0.9	1.1	0.3	:	1.3	2.6	1.8	1.6	3.3	0.9	RO
SI	1.0	2.0	1.1	1.3	0.4	1.0	1.4	1.4	1.7	2.1	3.1	1.0	SI
SK	1.2	2.6	1.5	1.7	0.0	1.3	2.0	2.0	2.4	2.5	4.3	1.1	SK
FI	0.8	1.4	1.1	1.3	0.2	0.9	1.3	1.3	1.3	2.6	2.5	0.7	FI
SE	0.7	1.5	0.9	1.1	0.2	0.6	1.2	1.0	1.6	1.9	2.6	0.7	SE
UK	1.4	2.4	1.7	2.0	0.7	1.4	2.0	1.7	2.3	4.2	3.8	1.4	UK
NO	1.2	2.1	1.5	1.7	0.5	:	1.8	1.6	2.7	4.1	3.5	1.2	NO
EA	0.7	1.4	0.9	1.1	0.1	:	1.1	1.1	1.3	2.1	2.5	0.6	EA
EU*	0.9	1.6	1.1	1.3	0.2	:	1.3	1.3	1.6	2.5	2.8	0.8	EU*
EU27	0.7	1.4	0.9	1.1	0.1	:	1.1	1.2	1.4	2.1	2.5	0.7	EU27
EA s	1.0	1.7	1.1	1.3	0.3	:	1.4	2.0	1.5	2.2	2.8	0.9	EA s
EU* s	0.9	1.8	1.1	1.3	0.3	:	1.4	2.0	1.6	2.2	2.9	0.9	EU* s

Constrained health care systems are exposed to undue risks with rapid introduction of I-DHS without relevant decision frameworks

Digital triagering



Inbjudan
2018-06-14

Upphandlande organisation
Region Skåne, Koncerninköp
Erik Berséus

Upphandling
IT-baserat processtöd för dynamisk
anamnesupptagning och vägledning inom
primärvården
1801518
Sista ansökansdag: 2018-06-19 23:59



PROJEKTDIREKTIV
Anamnesupptagning
2020-05-27

Medicinsk Teknik och IT/Per Matsson, Måns Nyberg

tillgängligheten till landstingets verksamheter samt minska administration för medarbetarna.

Digitaliseringen ska gynna hela Dalarna. Digital teknik ska i första hand användas för att förebygga ohälsa, höja kvaliteten, öka tillgängligheten och förbättra arbetsmiljön för personalen. E-hälsa ska bli en naturlig del av vården.

2 Mål

2.1 Effektmål

Effektmålet tas fram i detalj under Etableringsfasen.

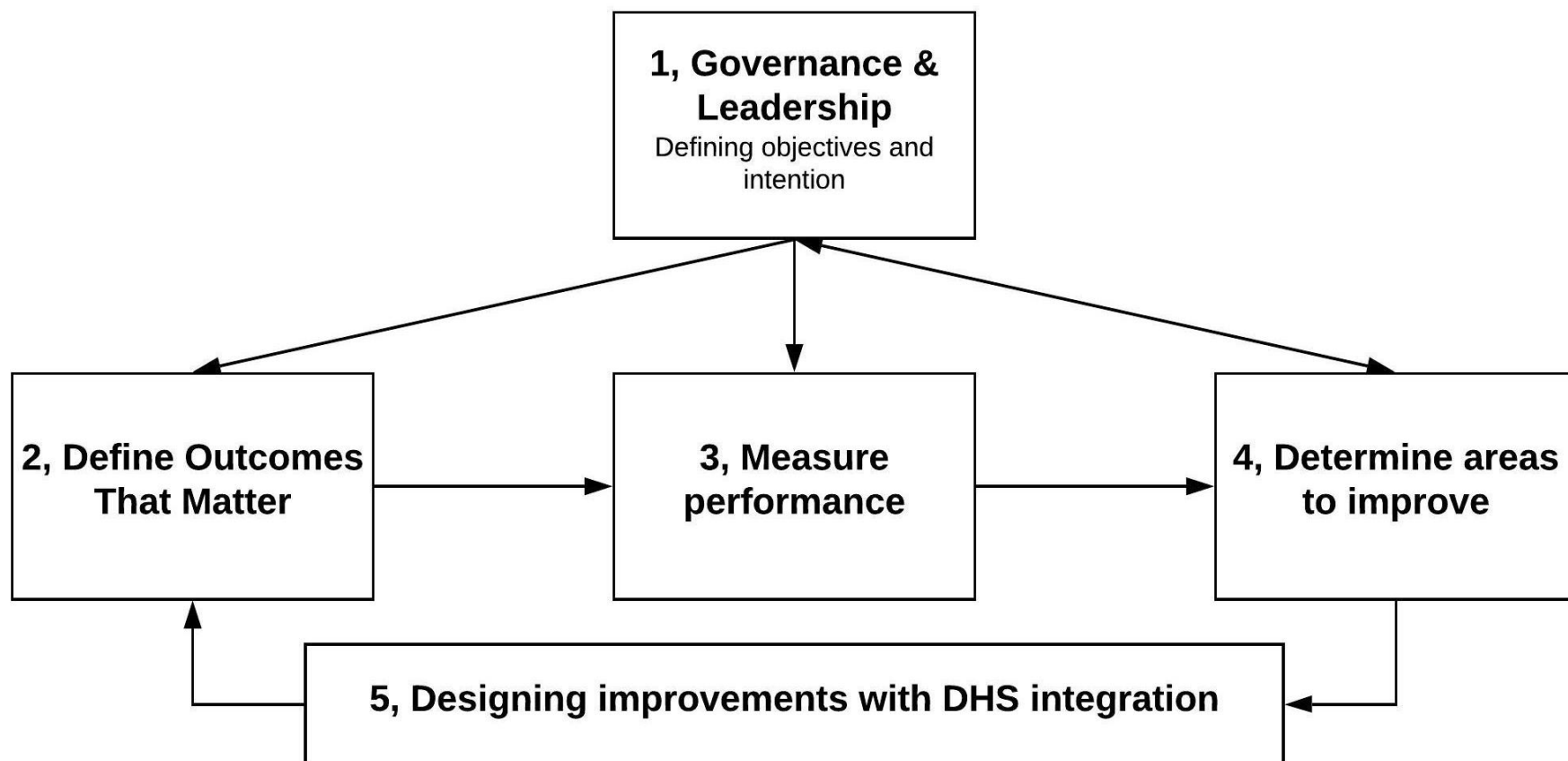
Exempel på tänkbare effektmål är:

- Minskad belastning på vårdcentral
- Fler ärenden som löses med egenvård än idag.
- Mindre tid för journalanteckningar.
- Effektivare vård

Analyzing of tender requirements for Heart Failure solutions in Sweden

Harmonized Requirement	NO requirement	Halland	Västra Götaland	Jämtland Härjedalen	Öster Götaland	Södermanland
01, Use case definition						
01.1, Patient use case						
01.1.1, Aid should be used by the patient at home for weight control, ...						
01.1.2, That the delivery contains information about home monitorin...						
01.1.3, The users of the solution can access a care plan that is accessi...						
01.1.4, The solution has a lock management functionality that can be...						
01.1.5, Patient can perform self-measurement himself to make his o...						
01.1.6, Solution is intended for people above 18 years old						
01.1.7, Solution is used by adult patients with heart failure and/or m...						
01.2, Health Care Professional Use Case						
01.2.1, Doctor use case						
01.2.1.1, Solution is prescribed by heart failure teams at the REGION...						
01.2.1.2, The healthcare can formulate a care plan in the solution.						
01.2.1.3, The care provider / care staff receives feedback from suppli...						
01.2.2, Nurse use case						
01.2.2.1, Solution is prescribed by heart failure teams at the REGION...						
01.2.2.2, The healthcare can formulate a care plan in the solution.						
01.2.2.3, The solution has a function of active choice for accessing pa...						
01.2.2.4, The care provider / care staff receives feedback from suppli...						
01.3, Informal care giver use case						
01.3.1, Relatives can access measurement values, for example via a r...						
01.4, Governance and leadership use case						
01.4.1, That different parties involved in the process (eg REGION, mu...						
01.4.2, The supplier shall submit statistics on a monthly basis and at...						
02, Functional performance						
02.1, The solution must have been tested in Sweden with the above p...						
02.2, 03, Modular functional performance						
02.2.1, Patient interface performance						
02.2.2, Signal processing performance						
02.2.3, Health care interface performance						
02.3, 02, Stakeholder performance						
02.3.1, Patient performance						
02.3.2, Informal caregiver performance						
02.3.3, Health Care Professional Performance						
02.3.3.1, Nurse performance						

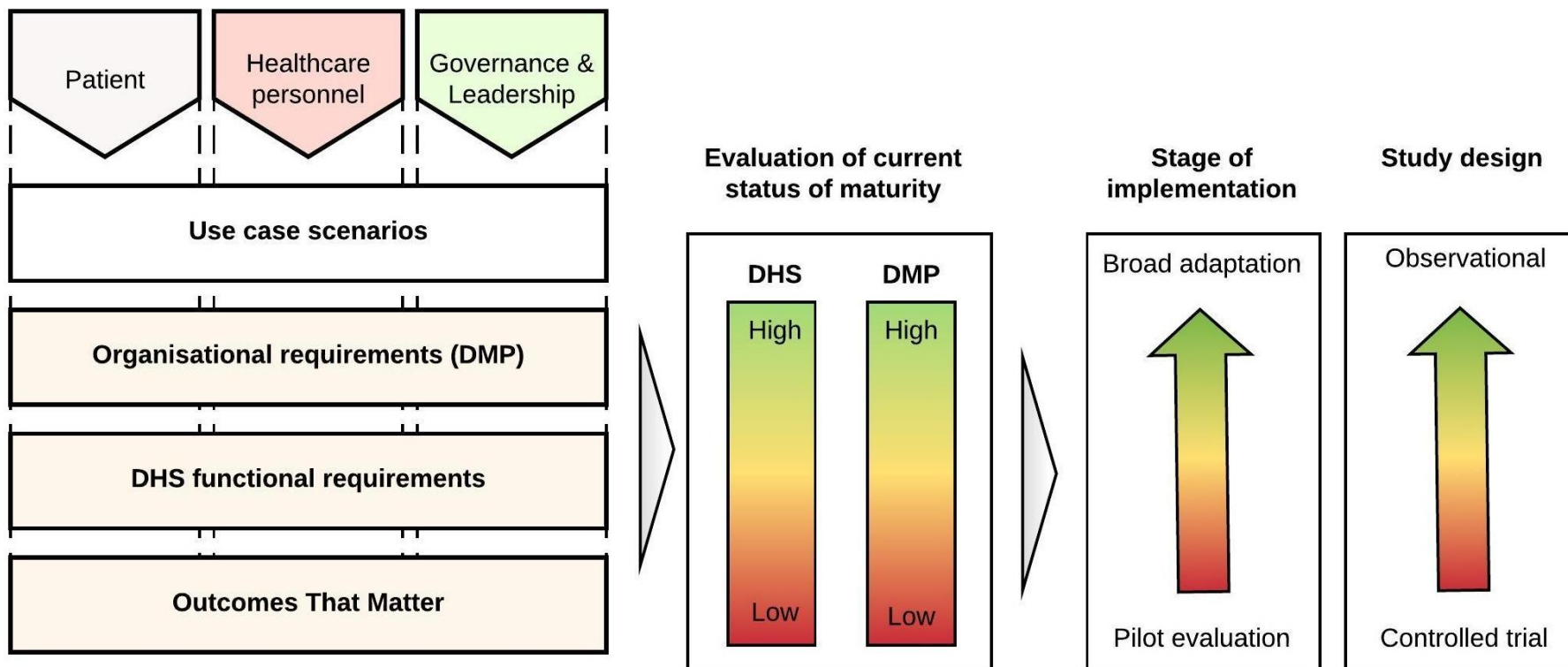
Figure 2: Decision maker framework for I-DHS



Summary of the outcomes from National Board of Health and Welfare

	Patient relevance disease development	Economic relevance total health care cost
COPD	Low	Low
Diabetes	Moderate	Low - Moderate
Dementia	Low	Low
Heart Failure	Low	Low
Hypertension	Absent	Absent

Figure 3 : Designing improvements



DHS = Digital Health Solution
DMP=Disease Management Program