

Lessons learned in scaling up telemedicine and integrated care programs

"The asthma and COPD telehealth service"

Maarten M.H. Lahr, Ph.D., Department of Epidemiology, UMC Groningen

Inhoud

- Introduction and background (ACT@Scale project)
- Asthma and COPD telehealth service
- From pilot to scaling up
- Discussion and future perspective

KWALITEIT

Wim Schellekens

voormalig huisarts, ziekenhuis-
bestuurder, directeur CBO en
hoofdinspecteur

Guus Schrijvers

econoom, voormalig hoogleraar
public health

LANDELIJKE AANPAK VOOR OPSCHALING VAN BEST PRACTICES

Meer kwaliteit, maar minder kosten? Het kan!

Conditions (“randvoorwaarden”)

- Outline agreement healthcare: restrict growth in healthcare expenditure/procedures = incentive to promote care at a distance.
- Financial model: bundled payment (i.e. Hartwacht), fixed payment per patient.
- Long-term contracts: >2 years

Casuistry

- Telemonitoring for heart failure
 - Hartwacht: CCN, Zilveren Kruis, FocusCura.
 - MOTIVA: Scheper ziekenhuis, Philips.
- Telemonitoring for asthma/COPD
 - COPD in beeld: Slingeland, Menzis, Sensire.
 - AC telehealth service: Certe, UMCG
- Coalition 'Vitaal thuis'.
 - Hospital@home

ACT@Scale



- **EC Gezondheid Programma (3rd health programme)**
- **Start:** Maa 1 2016
- **Duur:** 36 mths
- **Coordinator:** Philips Healthcare
- **15 partners:** European experts
- **7 healthcare regions:** Denmark, Catalonia, Northern Netherlands, Germany, Scotland, Basque Country & Northern Ireland.
- **Keywords:**
 - Care coordination and telehealth
 - Scale up good practices
 - Chronic patients and elderly
- **Indicators:** stakeholder management, service selection, financial models, citizen engagement.
- **https://www.act-at-scale.eu/**

ACT@Scale

- Coordinated Care & Telehealth deployment at scale
- 14 programs on chronic conditions, independent living and/or physical activity
- From small pilots to routine practice at large scale (32k → 75k people)
- Topics: stakeholder management, service selection, citizen engagement and sustainability and business models



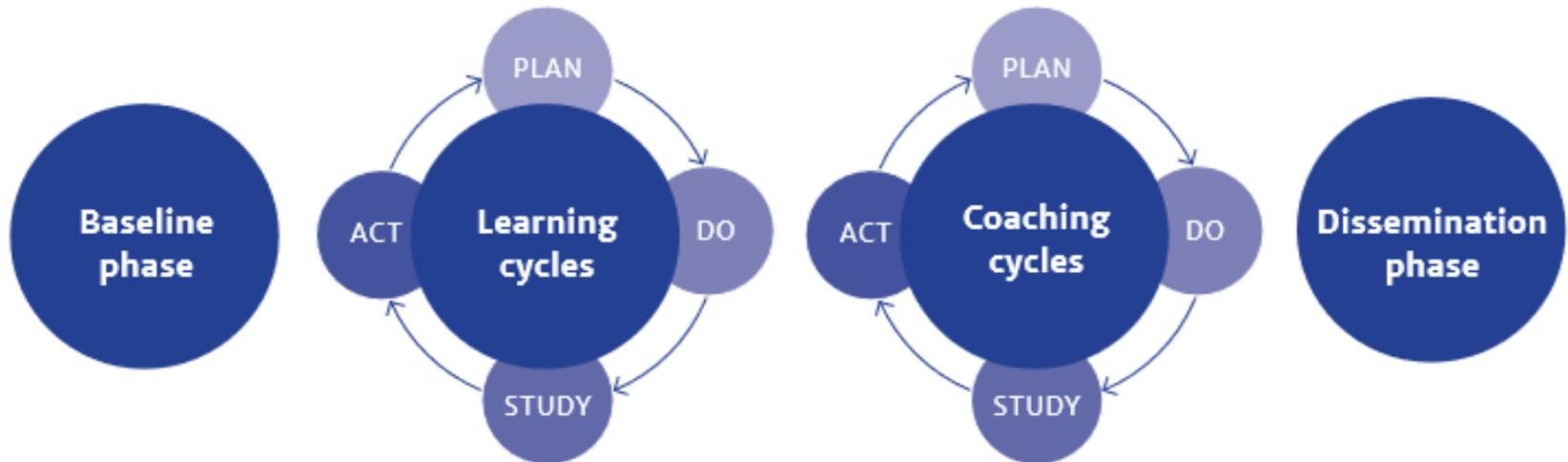


Methodology

- Collaborative methodology based on Breakthrough Series (BTS)
- 2 PDSA-cycles for iterative assessment of change
- Structure-process-outcome evaluation framework

Collaborative methodology

The collaborative methodology follows 4 phases: Plan-Do-Study-Act (PDSA)



Tips for implementing a collaborative methodology

- Select a program with convincing evidence.
- The maturity level of the service and management engagement is key.
- Ensure you have ambassadors to promote the program.
- Build a collaborative team representative of all stakeholders.
- Implement the program into the existing care model using substitution of pathway elements.

Lessons learned

What works

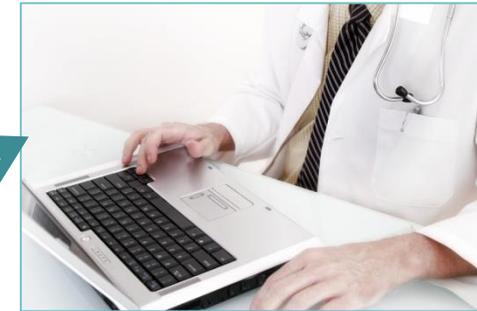
- Early engagement professional
- Focus on needs and competences end user
- Population stratification
- Satisfaction end user
- Evaluation, minimal data set

What doesn't work

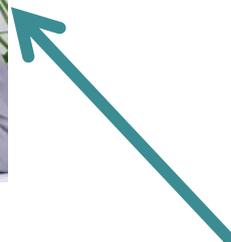
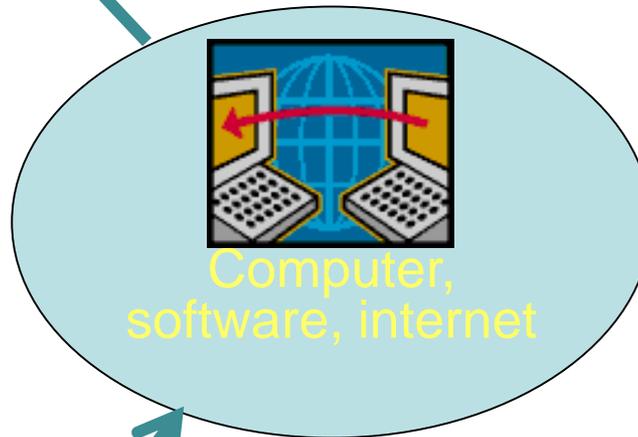
- Top-down implementation ICT systems
- Patient/end user not involved from the start
- Intervention does not match needs and abilities end user

Method

Pulmonologist



Diagnosis and treatment
advise based on
questionnaires and
assessment



Patient visits his GP

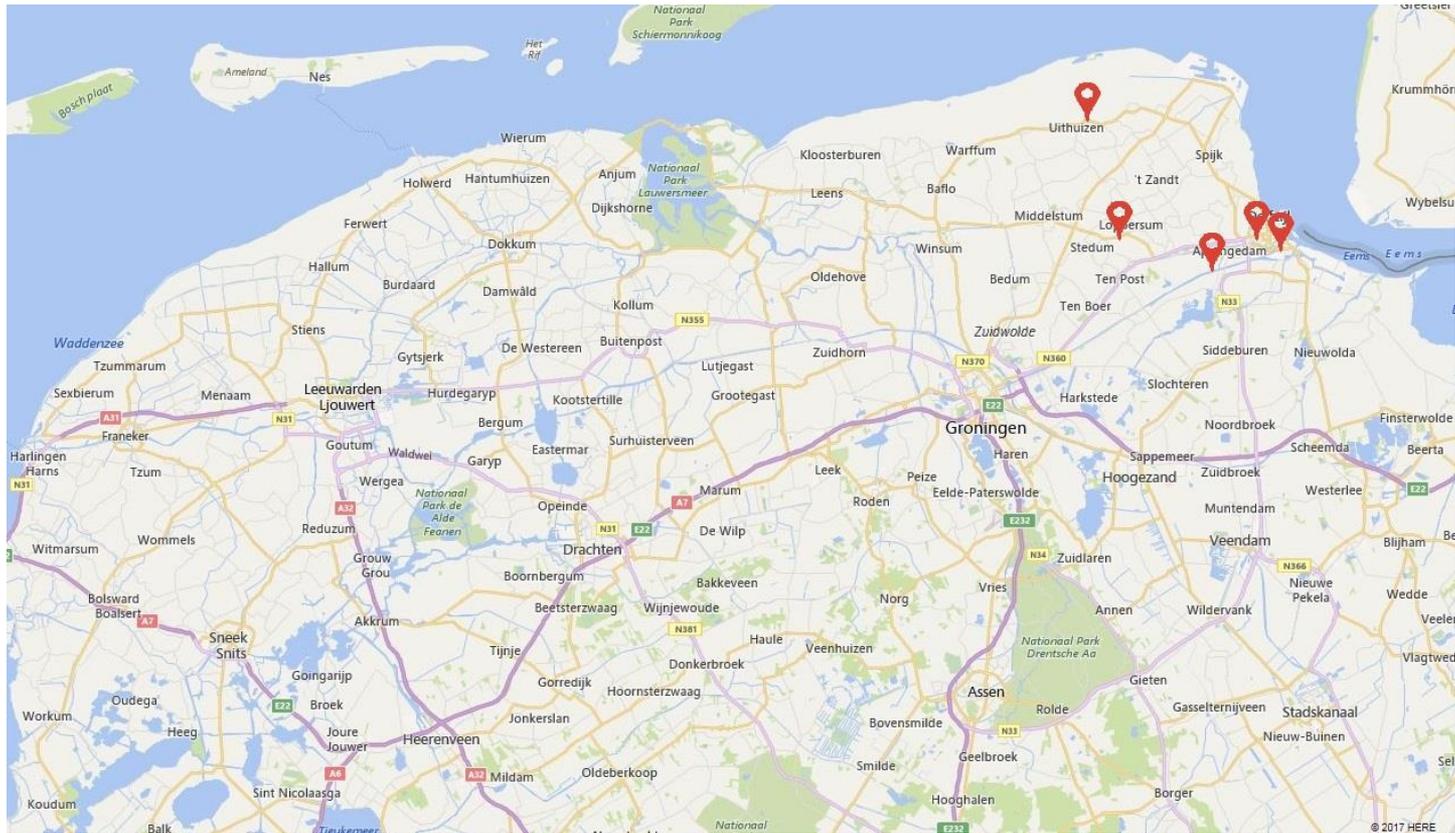


Patient fills in
questionnaires

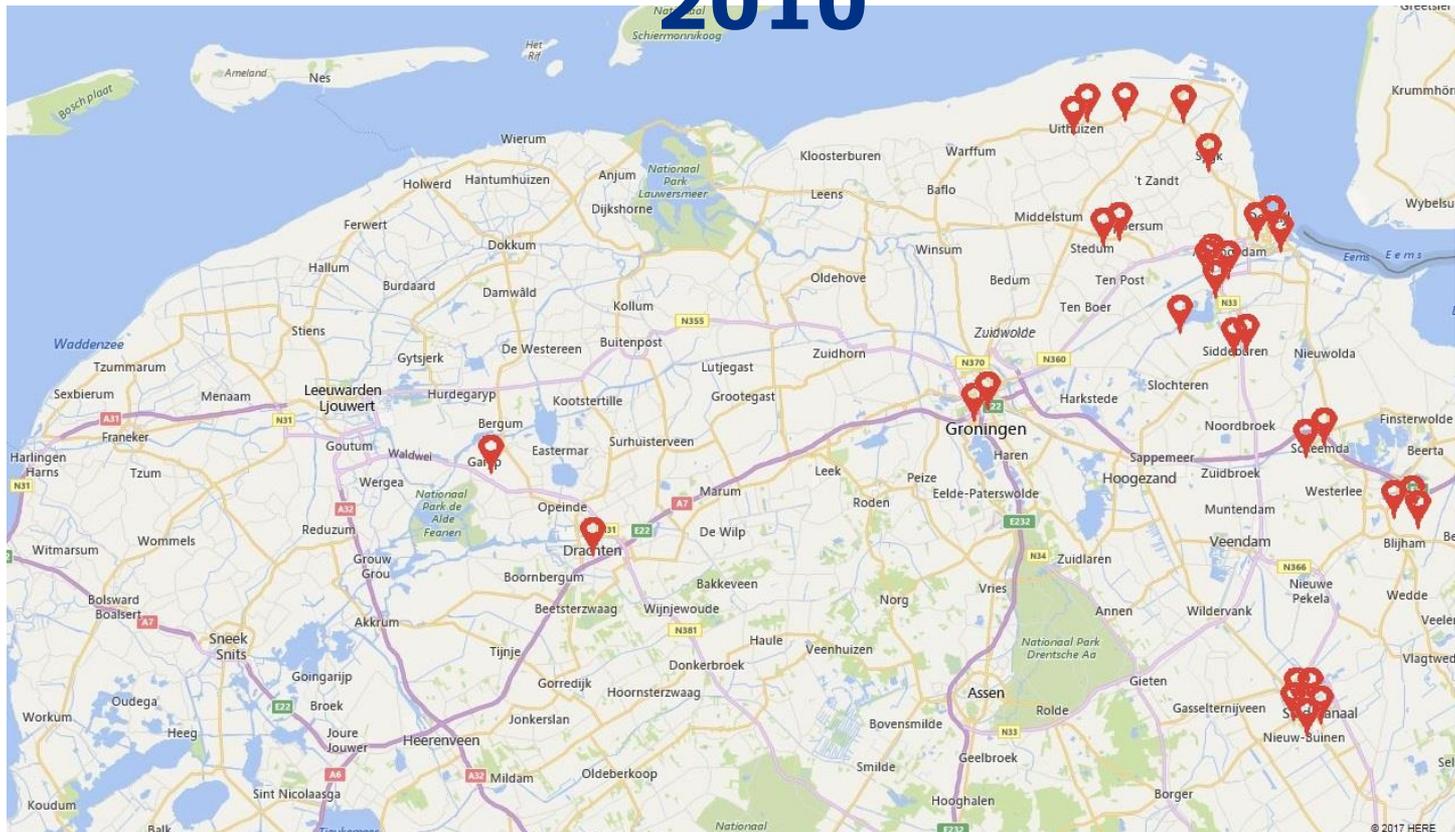


Assessment by the AC service

2006



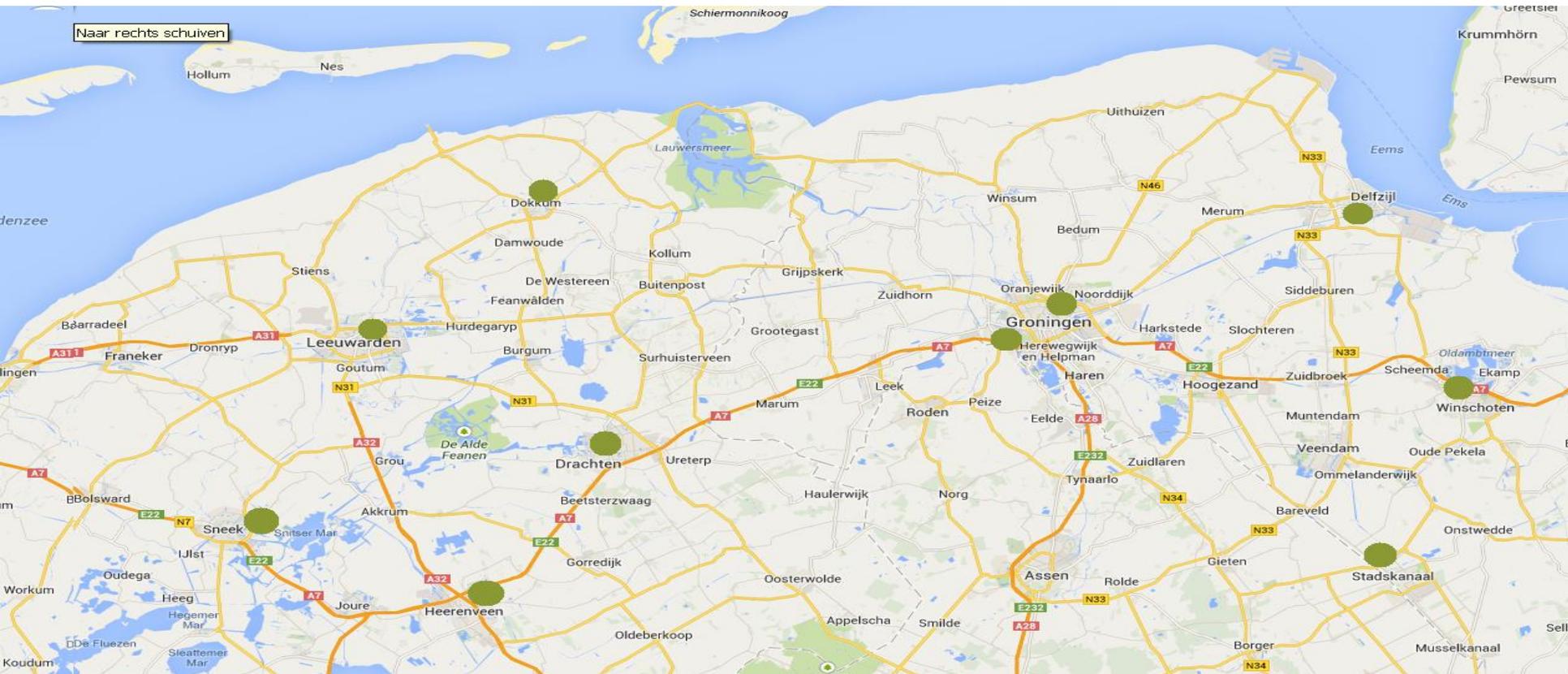
2010



2016



Assessment and advice by pulmonologists in the region (n=16)



Some numbers

- ❖ All 20 lung function specialist have received extensive training in spirometry and are IMIS trained
- ❖ ± 25 AC-consulting hours
- ❖ ± 18 assessors
- ❖ 93,7% of all spirometries are clinically useful
- ❖ Inhalation technique at first measurement: 36% correct, after 1 year moren than 50%
- ❖ Number of patients ≥ 1 exacerbation / year at first measurement = 34%, after 1 year 23%

En werkt het?

Een astma/COPD-dienst voor de huisartsenpraktijk*

ONDERZOEK NAAR HAALBAARHEID EN EFFECTIVITEIT

Esther I. Metting, Roland A. Riemersma, Jan-Willem H. Kocks, Margriet G. Piersma-Wichers, Robbert Sanderman en Thys van der Molen

ONDERZOEK

- DOEL** Het beschrijven van de effectiviteit en het functioneren van een astma/COPD-dienst (AC-dienst).
- OPZET** Observatieel onderzoek.
- METHODE** In Noord-Nederland kunnen huisartsen patiënten met luchtwegklachten voor onderzoek verwijzen naar de AC-dienst, die in 2007 werd ingericht door lokale longartsen, huisartsen en het huisartsenlaboratorium Certe. De patiënt vult

CONCLUSIE Ongeveer 60% van de patiënten in de regio is in de periode 2007-2014 ten minste eenmaal door de AC-dienst beoordeeld. De adviezen aan de huisartsen over diagnose en behandeling resulteerden in betere patiëntgerelateerde uitkomsten, zowel bij astma- als bij COPD-patiënten.

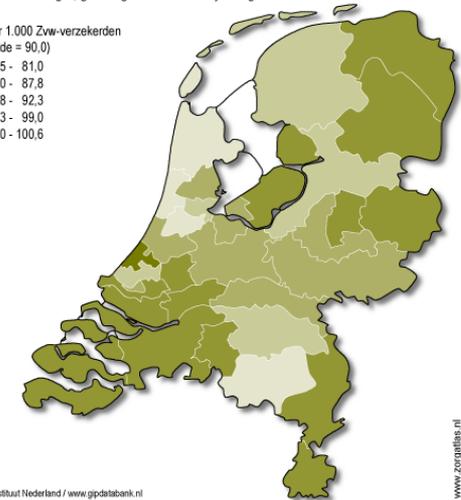
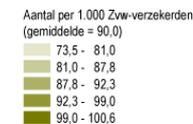
- RESULTATEN** sulten.
De longartsen diagnosticeerden 6201 patiënten (42%) met astma, 2728 (19%) met COPD en 1039 (7%) met de dubbel-diagnose 'astma/COPD'. De longarts adviseerde voor 940 patiënten (6%) een medicatieverandering en een vervolgsconsult na 3 maanden. In deze groep daalde het aantal instabiele COPD patiënten ($CCQ \geq 1$) van 134 (67%) naar 99 (50%). Het aantal patiënten met instabiel astma ($ACQ \geq 1,5$) daalde van 245 (43%) naar 137 (24%). Bij 1642 (11%) patiënten adviseerde de longarts geen medicatieverandering en verzocht de huisarts om een vervolgsconsult na 12 maanden. Deze patiënten waren in het algemeen stabiel, met lichte verbeteringen in rookstatus, exacerbaties en inhalatietechniek.
- CONCLUSIE** Ongeveer 60% van de patiënten in de regio is in de periode 2007-2014 ten minste eenmaal door de AC-dienst beoordeeld. De adviezen aan de huisartsen over diagnose en behandeling resulteerden in betere patiëntgerelateerde uitkomsten, zowel bij astma- als bij COPD-patiënten.

NTvG juni 2016

Astma/COPD Telehealth Groningen

- General practice UMCG, clinical laboratory & pulmonologist communication
 - 2000 referrals/y
 - 30% reduction exacerbations
 - 66% patients severe disease improved management
- Challenges
 - IT and tele-service
 - Self management
 - Financing

Gebruikers astma- en COPD-middelen 2013
per zorgkantoorregio, gecorrigeerd voor leeftijd en geslacht



Bron: Zorginstituut Nederland / www.gpdatabank.nl

www.zorginstit.nl

Scaling up is a step wised process

- ***Opschaling 1: keten DBC 1e lijn COPD - zorggroep in prov. Groningen***
 - Education and training: prof.Thys vd Molen
 - Delfzicht hospital: start with one pulmonologist
 - Scaled up quickly, mainly by convincing colleagues

Scaling up is a step wised process

- ***Opschaling 2: kopie AC dienst naar **Rotterdam** – COPD.***
 - Without Certe, copying way of working and IT infrastructure
 - Collaboration in evaluation and science
 - Challenges:
 - Ambassadors!
 - Built regional networks of assessors, not one central group. All hospitals and pulmonologists need to collaborate



Scaling up is a step wised process

- ***Opschaling 3: uitbreiding AC dienst Certe naar verschillende zorggroepen in **Friesland**.***
 - One large care group as client, scale up to more clients
 - Solution for GPs that do not want to perform spirometry themselves

Scaling up is a step wised process

- ***Opschaling 4: uitbreiding naar 1e lijns keten DBC Astma in Groningen en Friesland.***
 - New DTC since 2018, less frequent face-to-face patient contact

Remarks by the program manager

- Content service: lung function testing, inhalation technique, questionnaires.
- Ambassadorship
- Regional collaboration: built out from secondary care
- Evaluation and science
- Relief GPs
- Start small with content experts and just do it!

Lessons learned thus far

Apr 02, 2019

Philips presents results from 3-year telehealth program impacting over 100,000 patients across Europe

- *Advancing Care Coordination & Telehealth Deployment at Scale (ACT@Scale) Handbook now available to implement and grow population health management to improve patient care and reduce costs in an aging society*
- *Analysis from three-year telehealth deployment in the UK, the Netherlands, Germany, Denmark, and Spain delivers best practice standards for deployment of digital care coordination at scale*
- Study alternative methods to support development and implementation of innovations (i.e. action-based and implementation research combining qualitative and quantitative research).

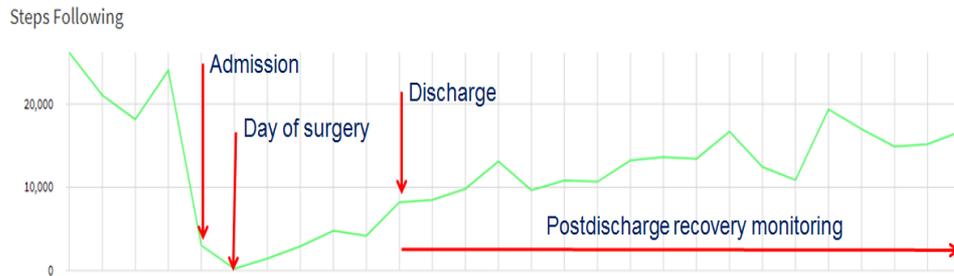
ABOUT CONNECARE

Seven out of 10 hospital beds across Europe are occupied by people with chronic long term conditions. By integrating our health and social welfare systems to provide long term care. That's where CONNECARE comes in.

THE AIM

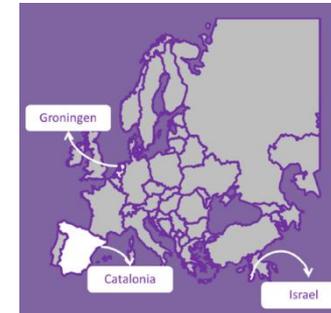
The CONNECARE consortium will co-design with patients, develop, deploy, and evaluate a novel smart, adaptive integrated care system to achieve this. The consortium contains all the necessary partners to ensure success.

EXAMPLE



Screenshot from the casemanager system

THE CONSORTIUM



Eurecat (ES)
Hospital Clinic Barcelona (ES)
Assuta Medical Centers (IS)
eWave (IS)
UMCG (NL)
University hospital Lleida (ES)
TUM (GER)
ADI (UK)
University Modena (IT)

PATIENT SYSTEM



CASEMANAGER SYSTEM



ICT management system asthma/COPD patients

- Clinical challenge: These patients often encounter difficulties in managing their disease, for example by exhibiting low levels of self-management skills and adherence to disease management protocols.
- Objective: to provide use-centered and ICT supported management systems allowing for monitoring disease management at a distance and avoiding exacerbations and ultimately care consumption.
- Intervention: smart phone application and mobile device (fitbit) was co-developed with the end-user and used by patients to monitor disease management and patterns in physical activity.

E-health interventions

- ICT-system
 - Casemanager' s system
 - Patients' application

- Smart-devices
 - Activity tracker
 - Thermometer
 - Blood pressure monitor
 - Weight scale



- My Cases
- New Case
- Manage Users

Filter by patient

Notifications	Actions	Messages	Actions	Tasks	Actions
Physical Activity Groningen CS2 Connecare 019 (67) Lage compliantie voor een gegeven voorgeschreven p...	X Tu 08.01	No messages available		Set Evaluation Due Date Groningen CS2 Connecare 020 (78)	👁
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Physical Activity Groningen CS2 Connecare 011 (86) Lage compliantie voor een gegeven voorgeschreven p...	X Tu 08.01			Set Evaluation Due Date Groningen CS2 Connecare 018 (75)	👁
				Advice Groningen CS2 Connecare 024 (74)	👁
				Set Evaluation Due Date	👁



Home > My Cases > Connectcare 024

Groningen CS2 - Connectcare 024 Age: 74 Current Stage: Case Evaluation Case ID: 1a3i9vohyo2xu Case Actions

- Summary
- Process
- Data
- Team
- Notifications
- Messages
- Notes

Nutritional

Not available at current stage

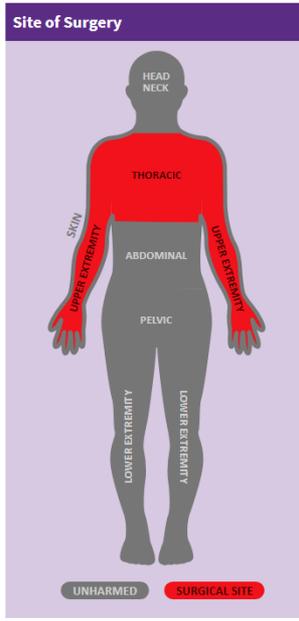
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Frailty

Not available at current stage

ASA	ASA 2
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Not available at current stage

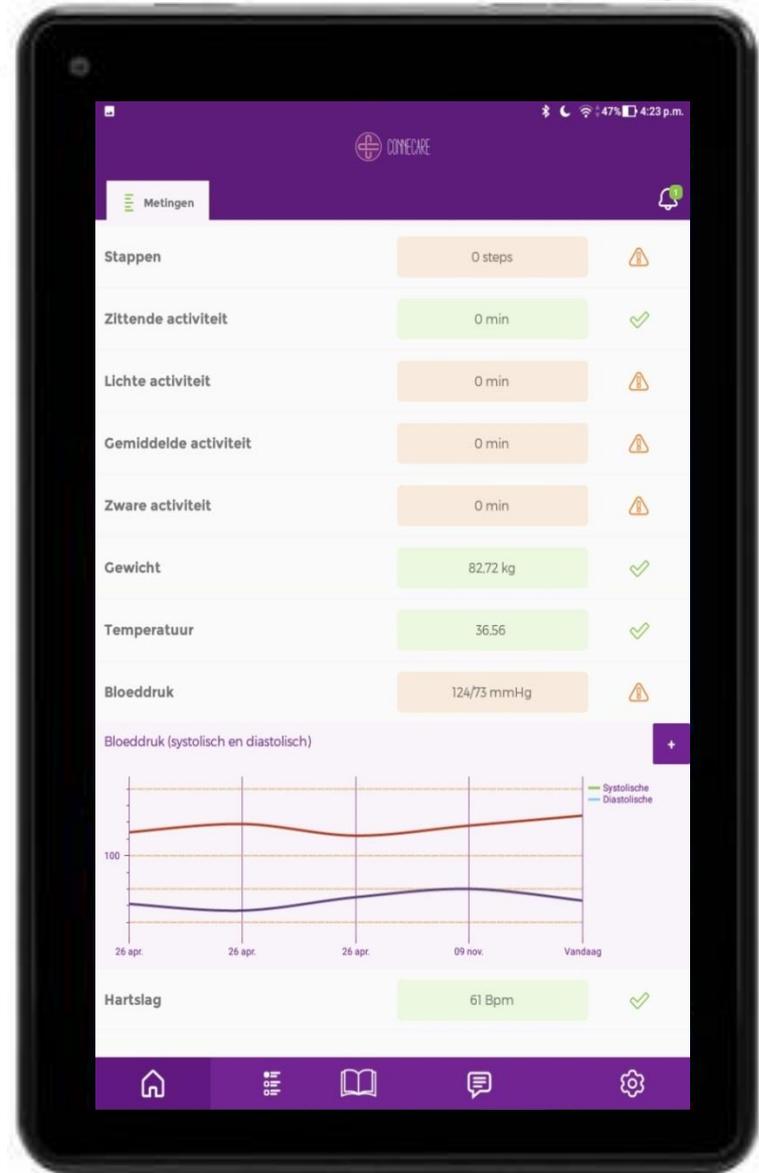
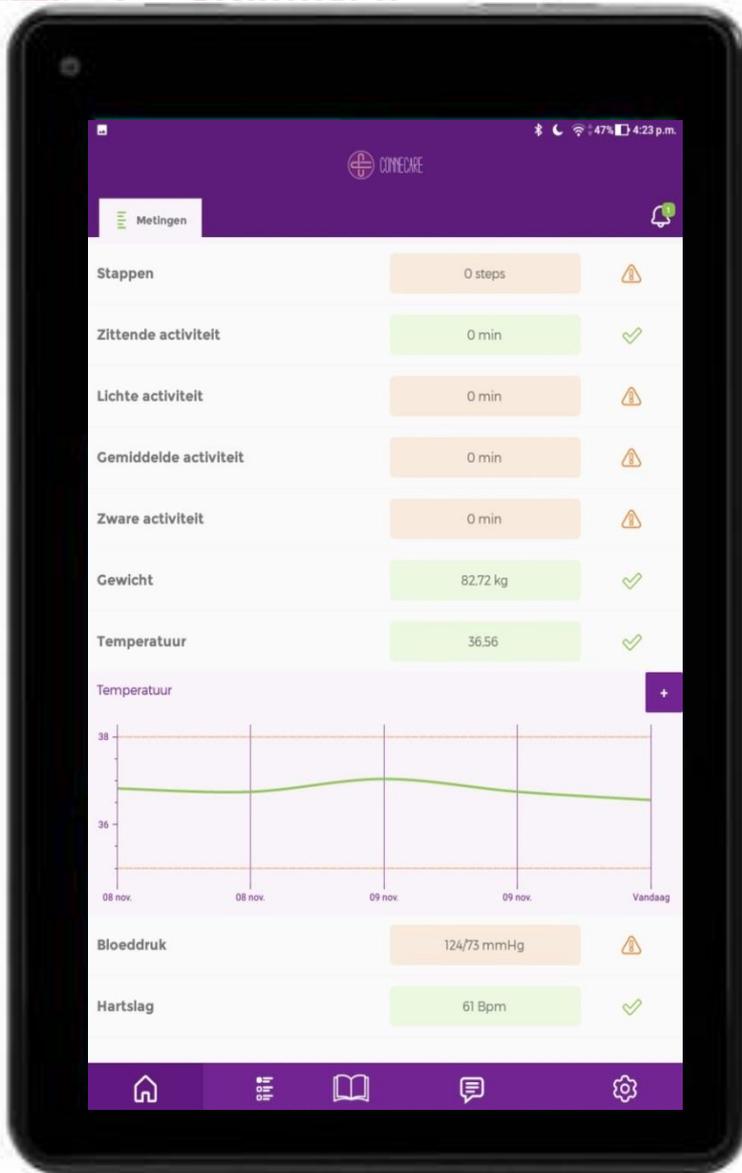


Functional

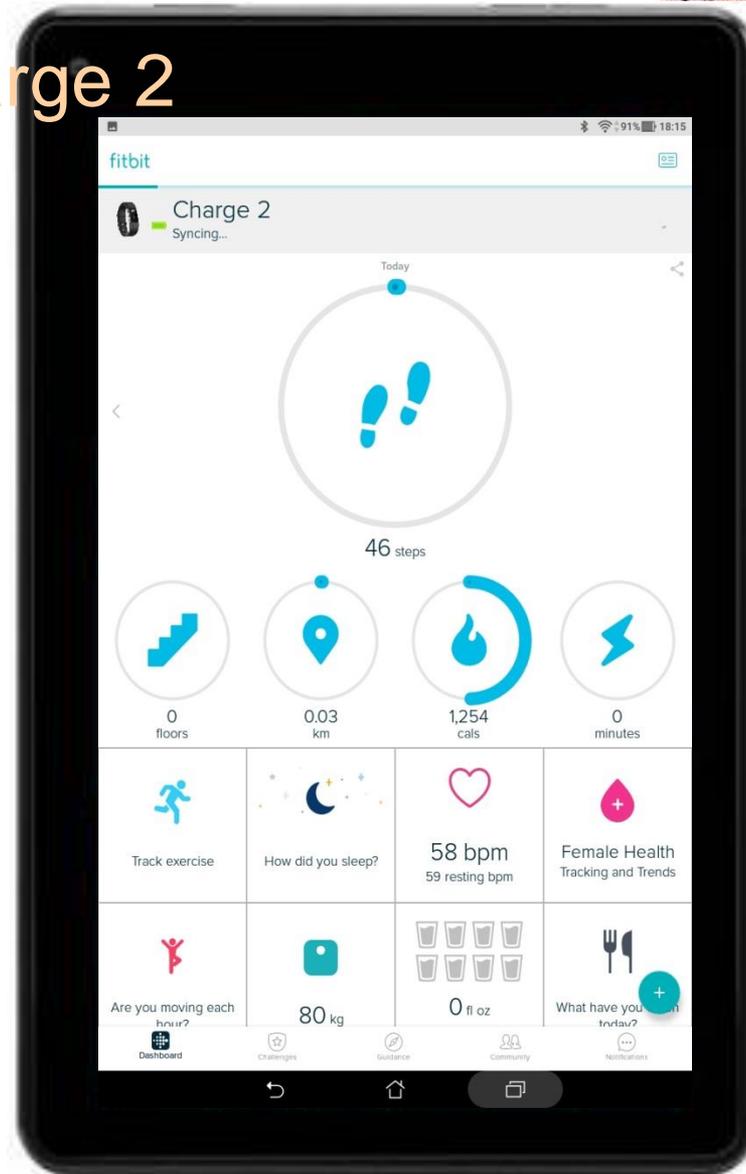
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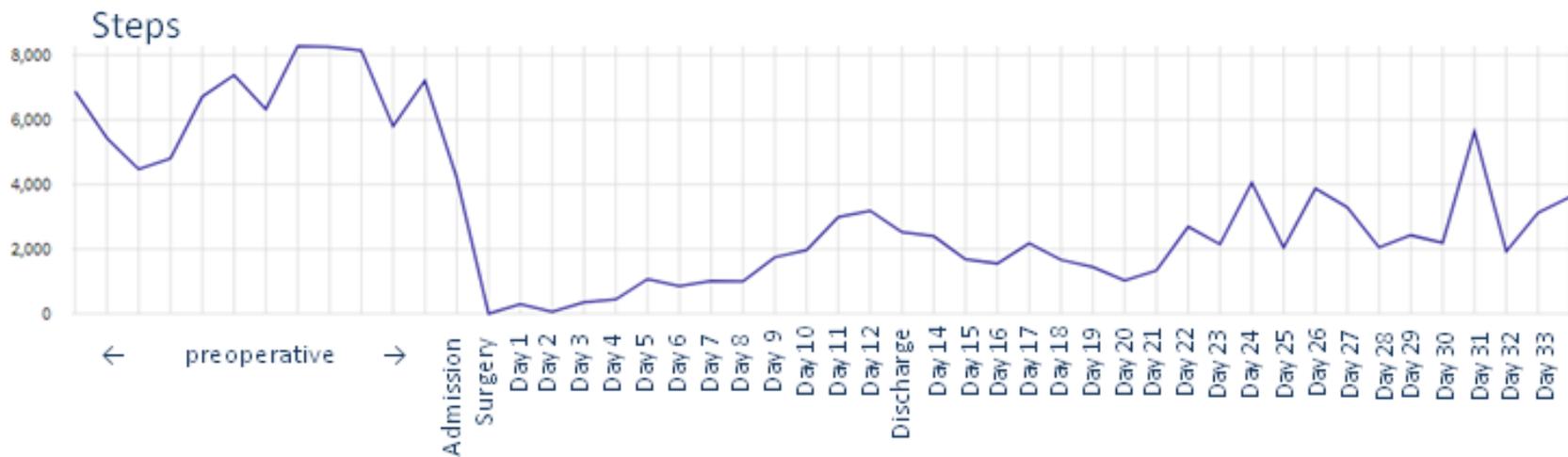




Fitbit Charge 2

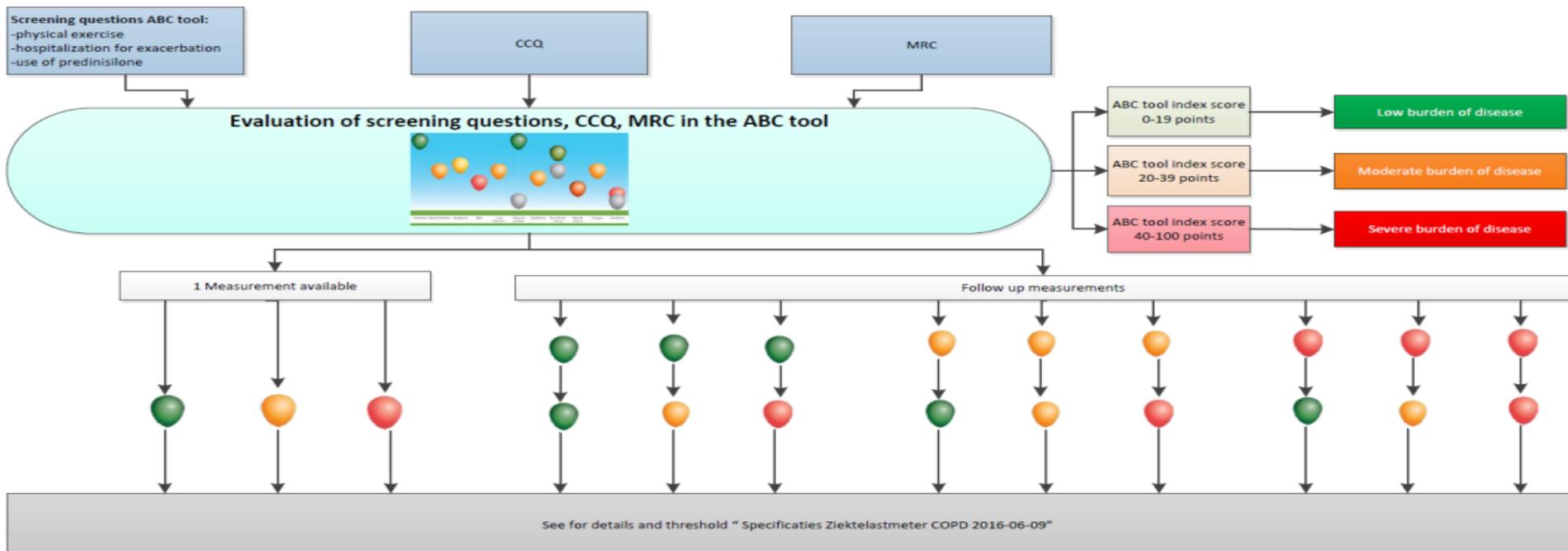


Physical Activity patient 008

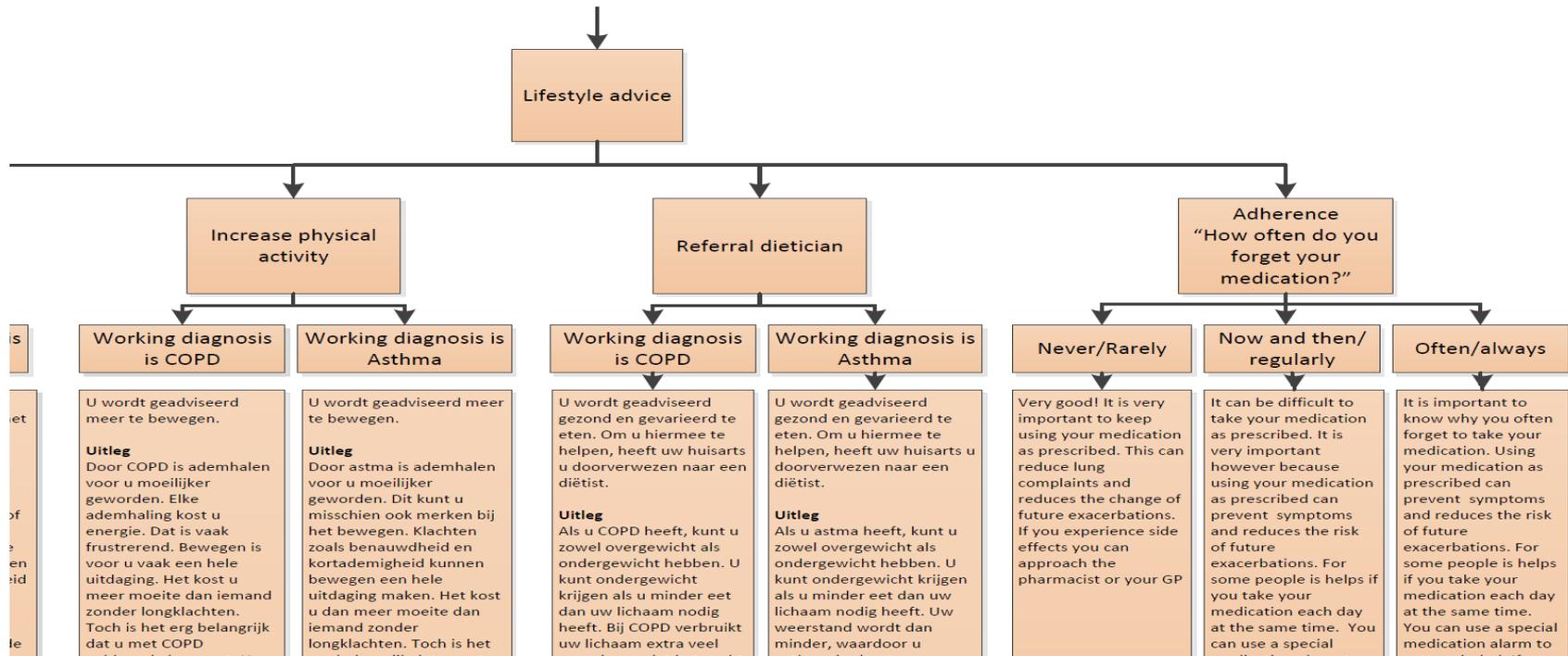


Case study asthma and COPD: decision support system

Disease monitoring COPD



Automated messaging



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Barriers for development and implementation

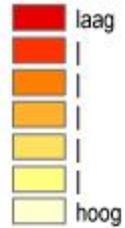
- The case manager had to wait until the functionalities of the app reached sufficient **maturity** that she felt confident enough to start clinical testing.
- Initially we considered one recruitment site for patients, however this yielded not enough potential patients for inclusion. As a mitigating action two more **recruitment sites** were added.
- The first versions of the app and its functionalities were considered a **burden for the patient**, and too time consuming.
- Patient expressed a **'what's in it for us'** notion regarding the CONNECARE system.
- **Feasibility studies** performed with a mock-up version of the CONNECARE system suggested important bottlenecks with the usability of the app, especially with the location of tabs and the font size of text.

Discussion

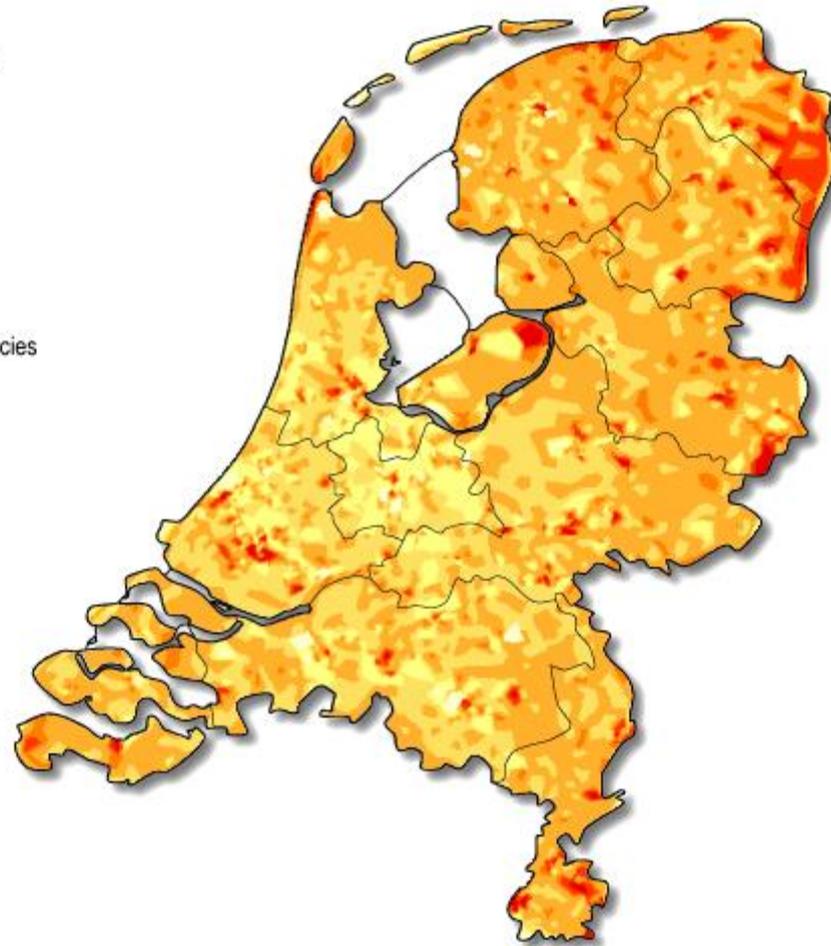
- Scaling up depends on regional and national funding models.
- IT operability
- Transferability of results and expertise
- User-centered e-health solutions for citizens with limited digital literacy



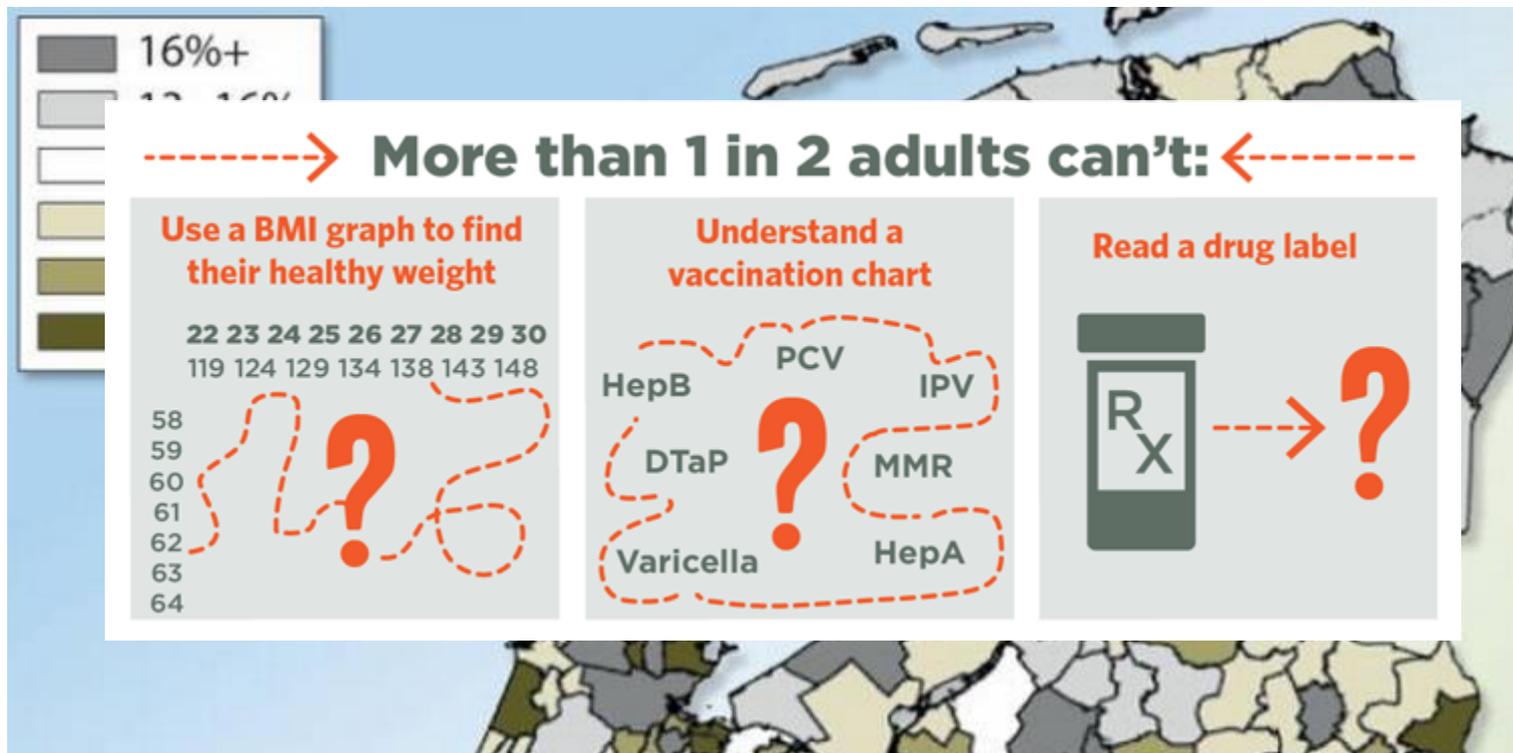
Statusscore



provincies



Low (e)health literacy in region Northern Netherlands



Future directions

- Personal health record: citizen owned digital record containing all relevant health information.
- Data driven decision support systems.
- Fast and secure mobile internet support care and decision making at distance: 5G.

Ontwikkelingen

ict > nieuws

nieuws

24 aug 2016 9762 1

Eerste virtuele ziekenhuis ter wereld succesvol

Het Mercy Virtual Care Center in Amerika heeft driehonderd werknemers maar geen patiënten. Dit concept van een virtueel ziekenhuis resulteert nu al in een lager sterftecijfer op de spoedeisende hulp afdelingen, eerdere ziekte opsporing en een besparing van veertig miljoen dollar. Steeds meer ziekenhuizen in Amerika sluiten contracten af met telegeneeskunde bedrijven om een 24/7 virtual ziekenhuis te worden.



Uit een [reportage van Mobile Doctors](#) blijkt dat het concept van een virtueel ziekenhuis met enkel econsults op afstand werkt. Het [Mercy Virtual](#), vorig najaar geopend, tilt het concept uit naar een heel ander niveau. Het ziekenhuis heeft een

Monitoring at a distance: no-brainer?

BUSINESS

D TRAFFIC JAMS ON NETHERLANDS ROADS INCREASE WITH MORE ELDERLY DRIVERS

News

Home

**More
when**

By Janene Pieters on April 3, 2017 - 15:35



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Future?



Thank you for your attention!

Questions?