

NEXTCARE: A JOURNEY TOWARD NOVEL HEALTH SERVICE ADOPTION

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AGENDA

- ✓ **NEXTCARE** - Scaling-up Personalized Care for Chronic Patients in an Integrated Care Framework (2017-2019)
- ✓ **Lessons & Challenges** in the process of consolidating a regional testbed for enhanced management of multimorbid patients

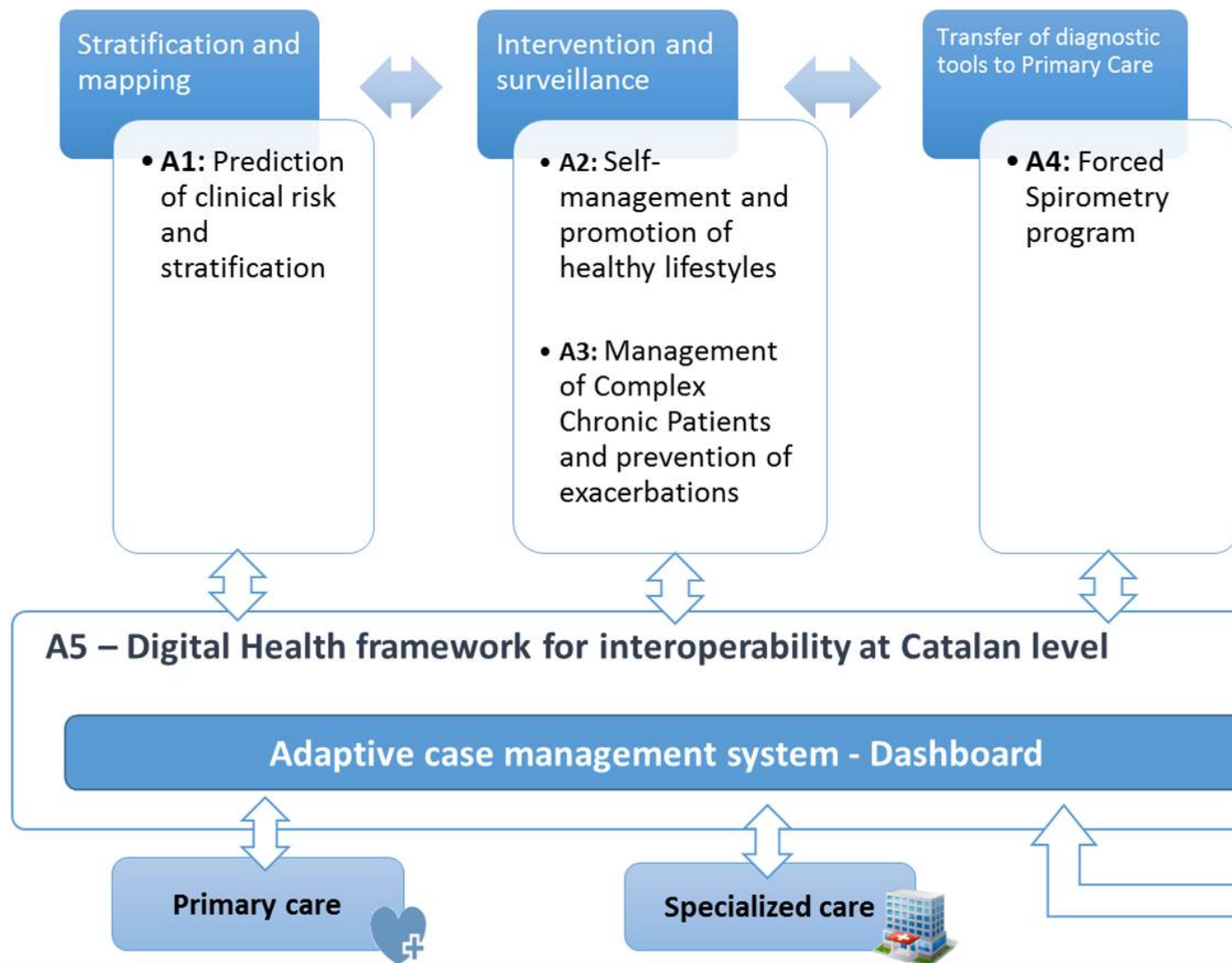


From current management of clinical episodes to collaborative & personalized management of patients through clinical processes with a preventive approach

NEXTCARE – Innovation in Integrated Care Services for Chronic Patients

Five strategic actions with a three stages lifecycle

Healthcare system



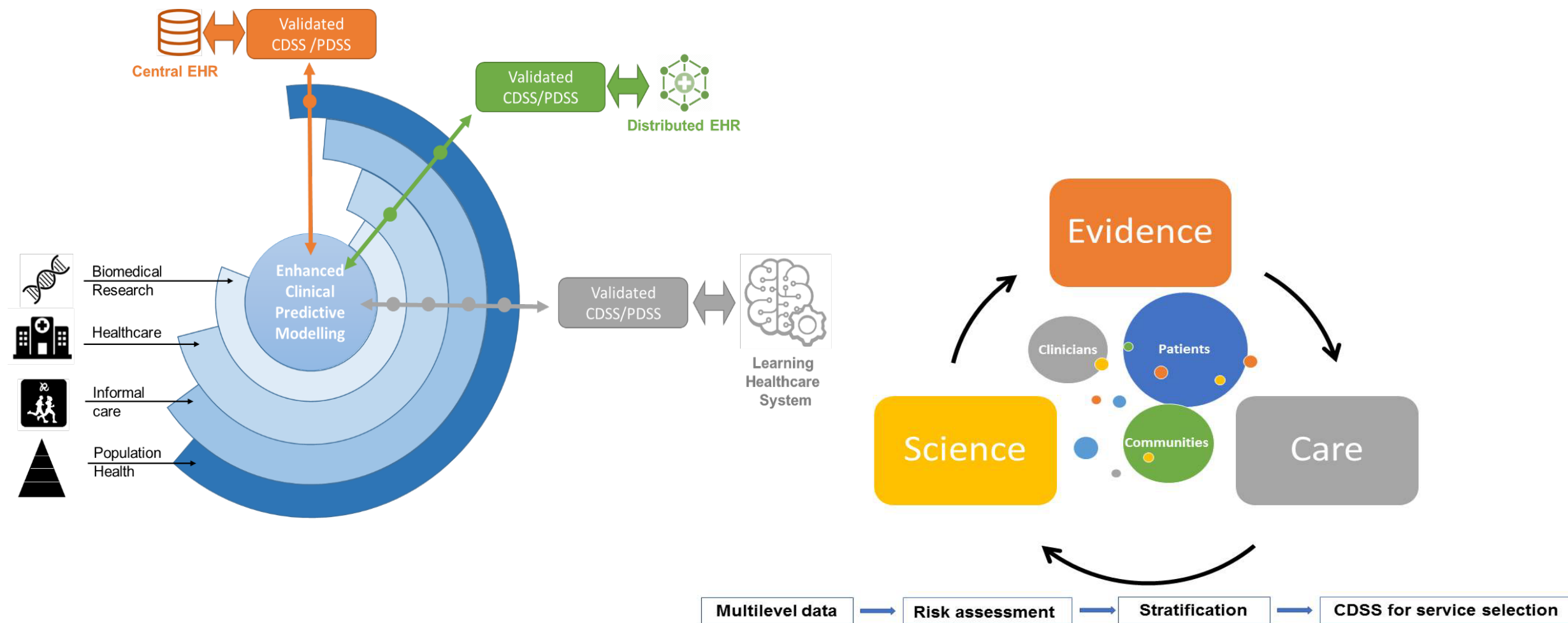
Self-management and monitoring

Informal care environment

Social care



A1 – HEALTH RISK PREDICTION & SERVICE SELECTION



*Dueñas-Espín, I. et al. Proposals for enhanced health risk assessment and stratification in an integrated care scenario
BMJ Open; May 2016. doi:10.1038/clpt.2013.24.52*

Population-based risk assessment for enhanced clinical predictive modelling

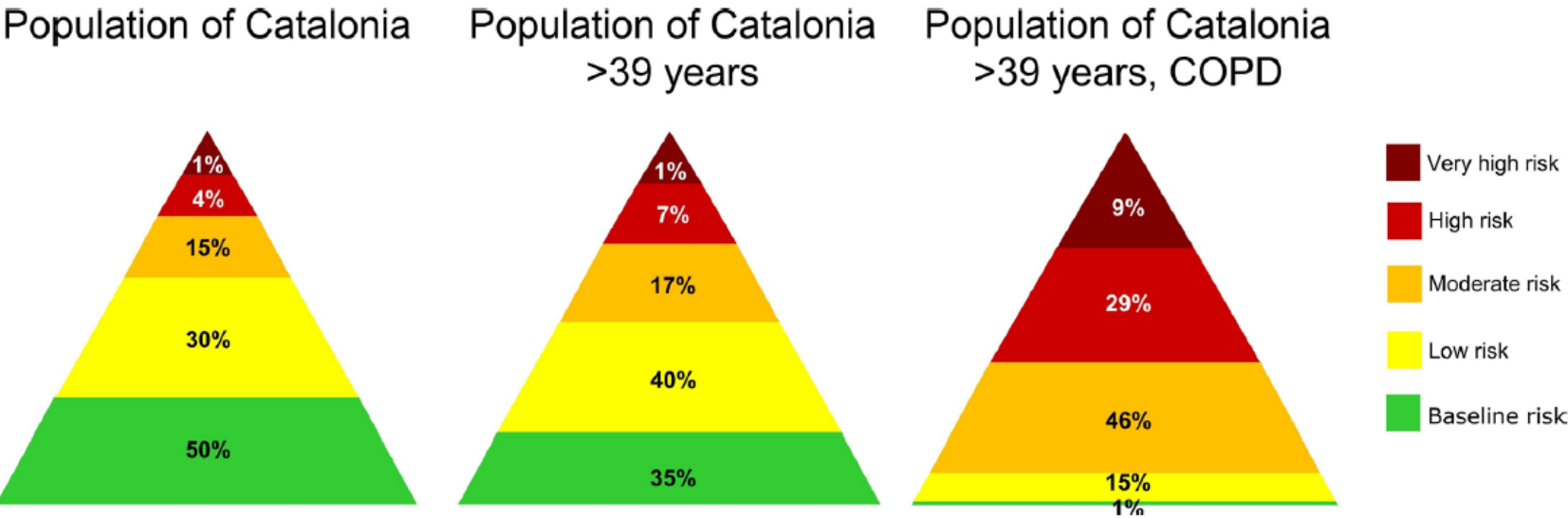


Table 2 Summary description of the six predictive models

	Mortality	Hospitalisations		Multiple hospitalisations		Users with high healthcare costs (PCT85)
		All causes	COPD related	All causes	COPD related	
C-statistics (AUC)	0.829	0.766	0.807	0.803	0.865	0.763

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Research

BMJ Open

Population-based analysis of patients with COPD in Catalonia: a cohort study with implications for clinical management

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ABSTRACT
Background Clinical management of patients with chronic obstructive pulmonary disease (COPD) shows potential for improvement provided that patients' heterogeneities are better understood. The study addresses the impact of comorbidities and its role in health risk assessment.
Objective To explore the potential of health registry information to enhance clinical risk assessment and stratification.
Design First cohort study including all registered patients with COPD in Catalonia (Spain) (7.5 million citizens) at 31 December 2014 with 1-year (2015) follow-up.
Methods A total of 26 430 patients with COPD diagnosis, based on the International Classification of Diseases (Ninth Revision) coding, were assessed. Performance of multiple logistic regression models for the six main dependent variables of the study: mortality, hospitalisations (patients with one or more admissions; all cases and COPD-related), multiple hospitalisations (patients with at least two admissions; all causes and COPD-related) and users with high healthcare costs. Neither clinical nor forced spirometry data were available.
Results Multimorbidity, assessed with the adjusted morbidity grouper, was the covariate with the highest impact in the predictive models, which in turn showed high performance measured by the C-statistics: (1) mortality (0.83), (2) and (3) hospitalisations (all causes: 0.77; COPD-related: 0.81), (4) and (5) multiple hospitalisations (all causes: 0.80; COPD-related: 0.87) and (6) users with high healthcare costs (0.76). Fifteen per cent of individuals with highest healthcare costs to year ratio represented 50% of the overall costs of patients with COPD.
Conclusions The results stress the impact of assessing multimorbidity with the adjusted morbidity grouper on considered health indicators, which has implications for enhanced COPD staging and clinical management.

Strengths and limitations of this study
► The main strength of the study is that it contributes to risk prediction of relevant clinical events in patients with chronic obstructive pulmonary disease (COPD).
► The study shows high potential to assess health risk factors at population level indicating the high impact of comorbidities. It can contribute to define innovative strategies aiming at reducing the healthcare impact of patients with COPD.
► Full potential of the approach should be proven by integrating registry information and electronic medical records.
► Lack of clinical information, spirometric data and history of tobacco smoking reduces the potential for standardised risk characterisation of patients with COPD.

INTRODUCTION
Chronic obstructive pulmonary disease (COPD) is one of the major disorders included in the WHO programme addressing non-communicable diseases.¹ It is estimated that COPD will become the third leading cause of death by 2020.² Moreover, projections on COPD prevalence and costs over the next 15 years indicate a rapidly escalating burden, mainly due to population ageing, on both health and social support systems.^{3,4} While acknowledging the progress made in terms of standard of care recommendations,⁵ it is accepted that a better understanding of patients' heterogeneities constitutes a key challenge to further enhance both prevention and management of patients with COPD aiming at healthcare value generation.^{6,7} Recent studies indicate a high impact of comorbidities on use of healthcare resources in patients with COPD prompting the need for assessing novel integrated care strategies with a patient-oriented approach.^{8,9} It is well accepted that several prevalent chronic conditions often occur as clusters of comorbidities in patients with COPD¹⁰⁻¹² and potential explanatory mechanisms for the phenomenon have been proposed.^{13,14} The current study addresses comorbidities in patients with COPD based on the

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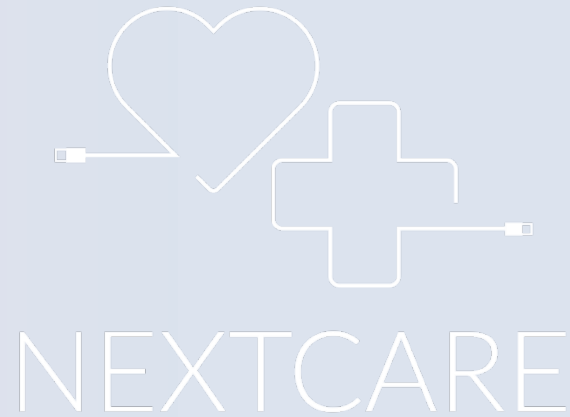
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Vela E, et al. BMJ Open 2018;0:e017283. doi:10.1136/bmjopen-2017-017283

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LESSONS & CHALLENGES

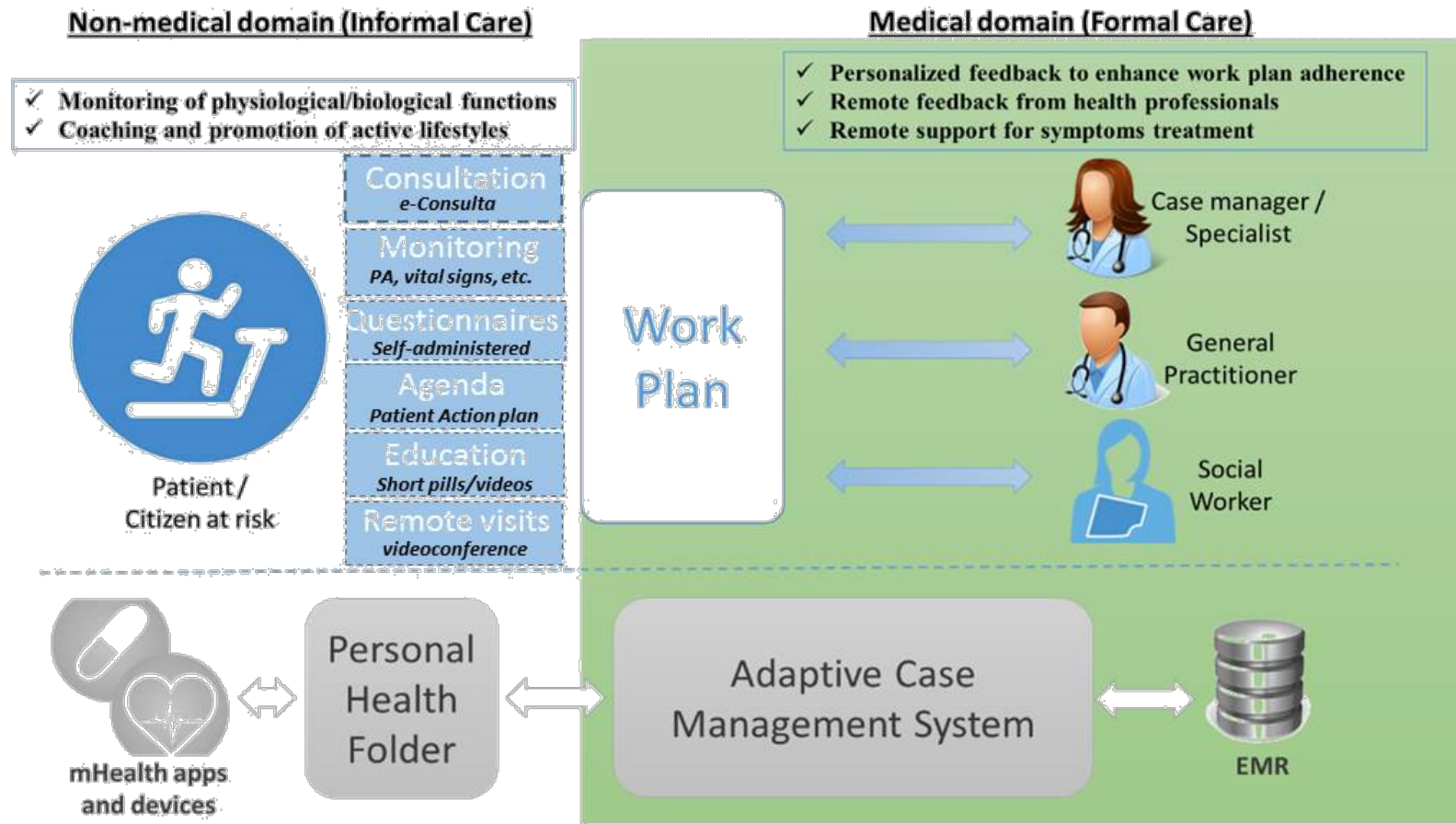


A1. Risk assessment & Service selection

- *Feasibility & High impact of the approach*
- *Need for addressing regulatory issues on data privacy*

A2 – PROMOTION OF HEALTHY LIFESTYLES

(Pre-habilitation of high risk surgical candidates/ Chronic patients/ Citizens at risk)



preHAB program

Objectives

- **Main:**
 - **Global optimization:**
 - Holistic characterization and risk stratification
 - Functional (aerobic capacity)
 - Nutritional (albumin), Hb optimization
 - Smoking and alcohol dishabituaton
 - Emotional support
- **Secondary:**
 - To provide information about surgical process
 - To solve problems
 - Promotion of healthy lifestyles (“*teachable moment*”)

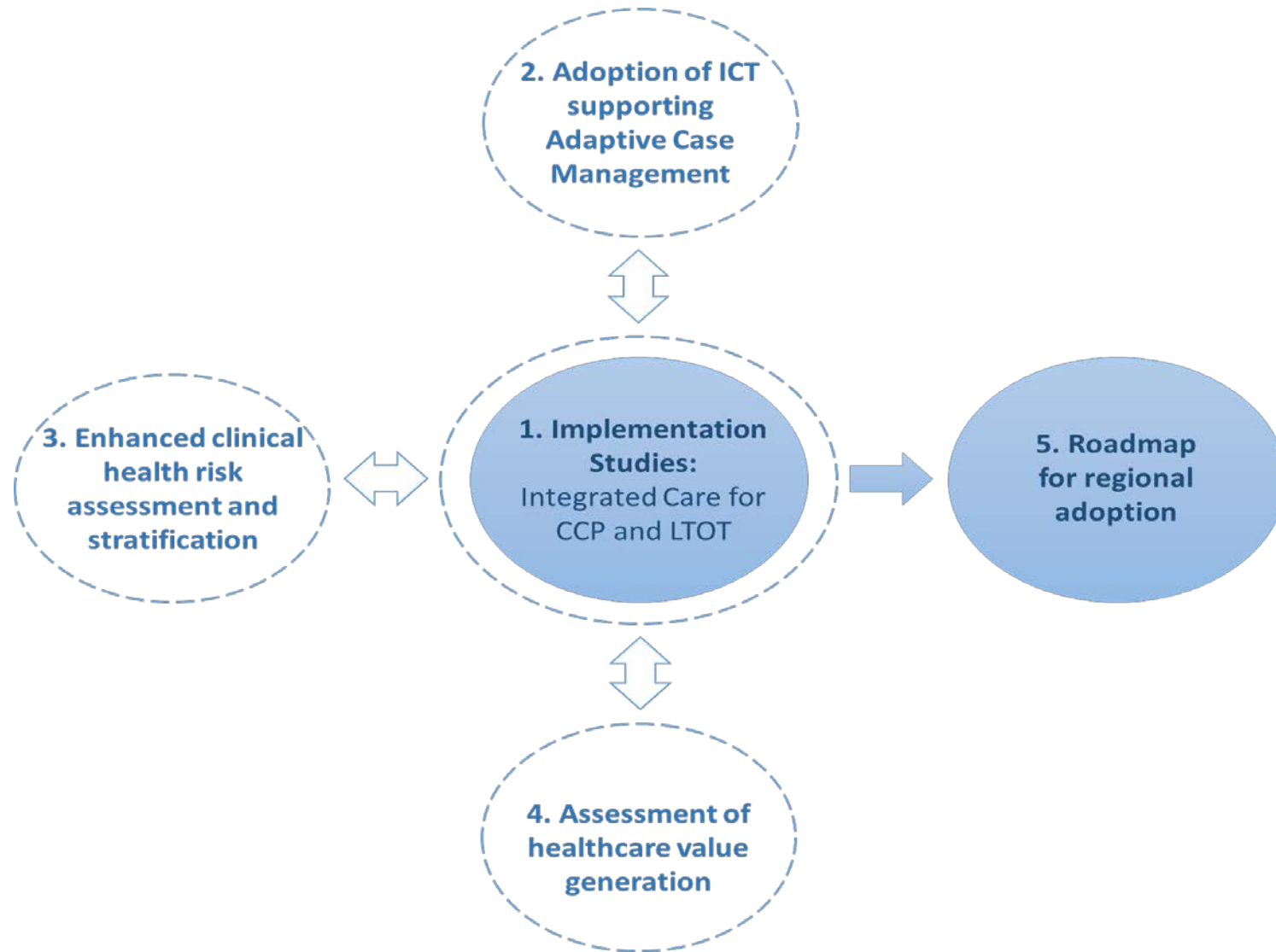


Decrease the incidence of postoperative complications

Enhance postsurgical recovery



A3 - HOME HOSPITALIZATION & TRANSITIONAL CARE



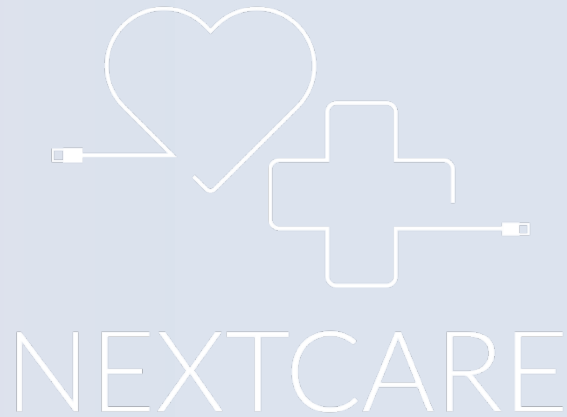
CHALLENGES IN SERVICE WORKFLOW DESIGN & IMPLEMENTATION

Program of Integrated Care for Patients with Chronic Obstructive Pulmonary Disease and Multiple Comorbidities (PIC COPD⁺): a randomised controlled trial

Louise Rose¹, Laura Istamboulian², Lise Carriere³, Anna Thomas³,
Han-Byul Lee², Shaghayegh Rezaie⁴, Roshan Shafai⁵ and Ian Fraser^{6,7}

Eur Respir J 2018;51:1701567

LESSONS & CHALLENGES



A2. Promotion of healthy life styles

A3. Management of complex chronic patients

- *High potential for health value generation & scalability*
- *Patient empowerment for self-management*
- *Service workflow design and implementation*
- *Innovative business models*

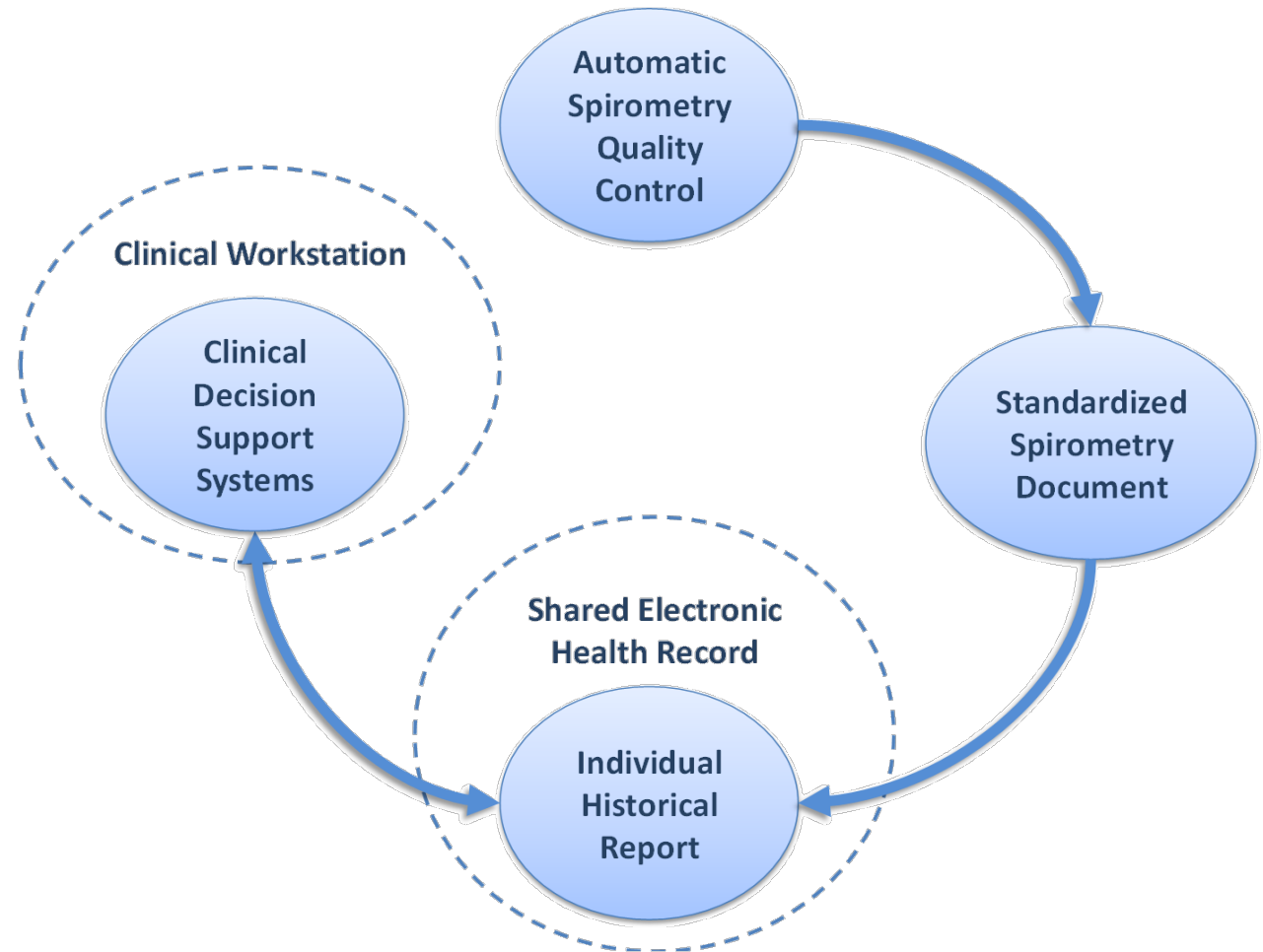
A4 –TRANSFER OF DIAGNOSTIC TOOLS TO PRIMARY CARE

The Forced Spirometry Program

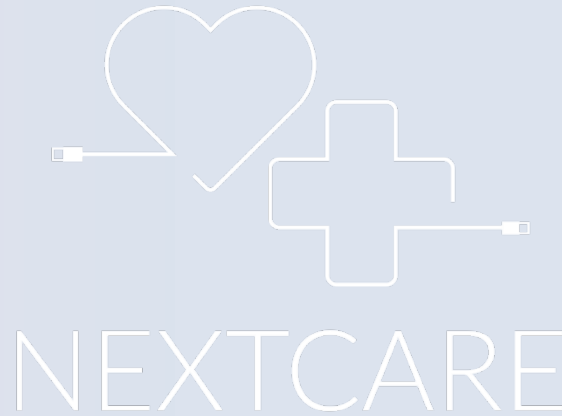
Aim: access to forced spirometry testing (raw data, clinical results, quality control and historical data) from any clinical work-station of any healthcare provider.

After the first year, transferability of the model to other healthcare environments and other diagnostic techniques will be analyzed.

The new system will allow the future implementation of "data analytics" with impact on case management.



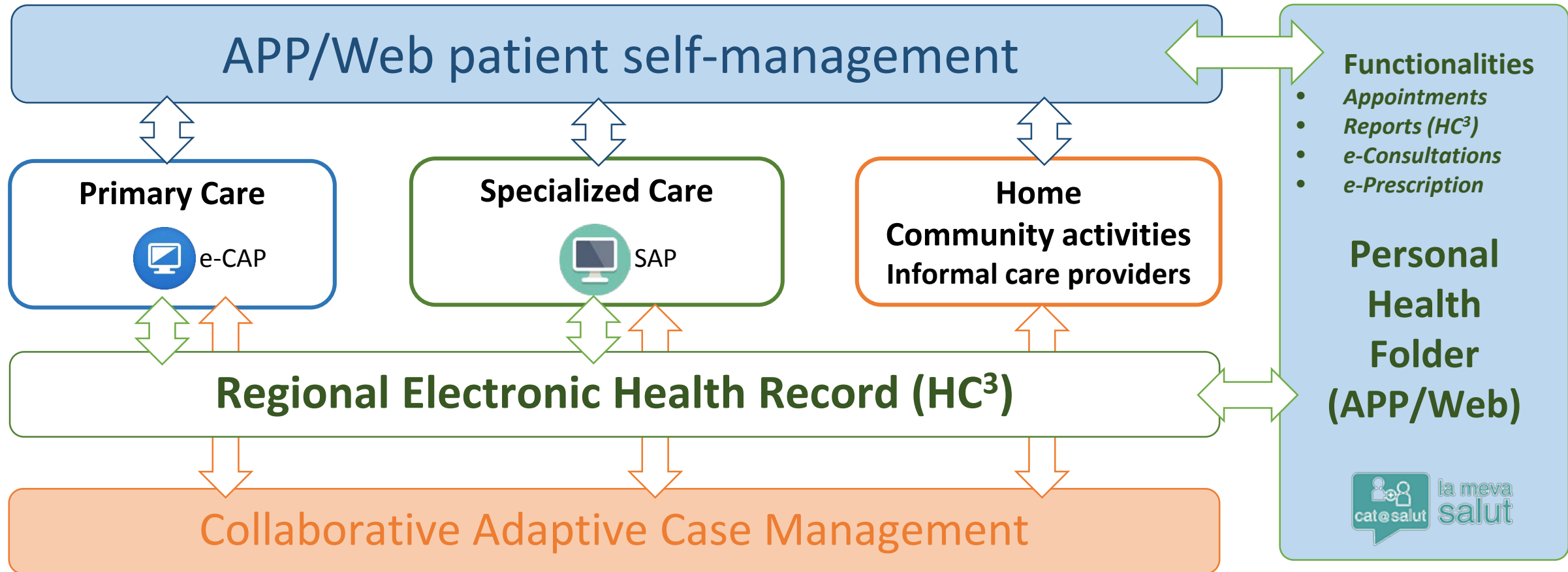
LESSONS & CHALLENGES



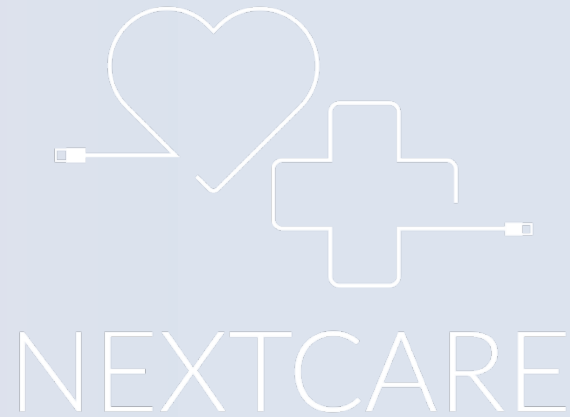
A4. Transfer of diagnostic testing to Primary Care

- *Value generation & quality testing & risk assessment*
- *Implementation practicalities*

A5 –INTEROPERABILITY – DIGITAL HEALTH FRAMEWORK



LESSONS & CHALLENGES



A5. Digital Health Framework

- *Feasibility & High impact at pilot level*
- *Health professionals & Implementation practicalities*

NEXTCARE: Achievements 1st period (2017)

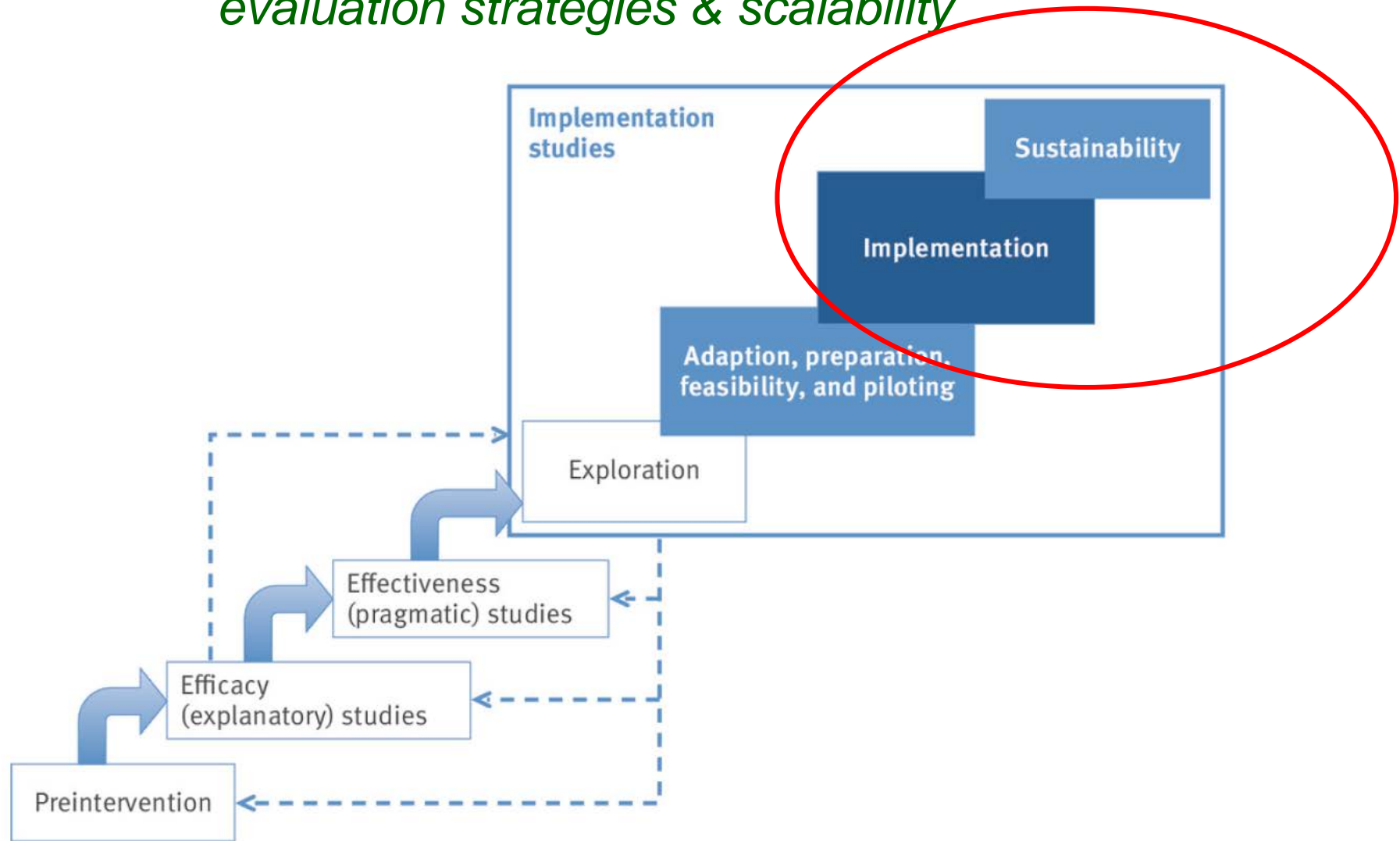
- A1** Population-health risk assessment (Adjusted Morbidity Groups, GMA) can enhance clinical risk assessment
- A2** Deployment of the pre-habilitation service at Hospital Clinic
- A3** Large scale deployment of home hospitalization & transitional care in AISBE
Innovative assessment of integrated care for complex chronic patients
- A4** Progress towards accomplishing all basic goals
- A5** Progress towards formulation of the technological program

Main goals for 2018

- A1** Complete predictive modelling of home hospitalization
Launch multimorbidity program
Management of multilevel datasets
- A2** Basis for regional deployment of the pre-habilitation service & validation
Roadmap for the peri-surgical care program
- A3** Completion of innovative assessment of management of CCP
Deployment of novel ICT-supporting tools
- A4** Completion of the action & transferability
- A5** Transformation of La Meva Salut into an app application
Consolidation of the Adaptive Care Management functionalities (Camunda®)

LESSONS & CHALLENGES

evaluation strategies & scalability

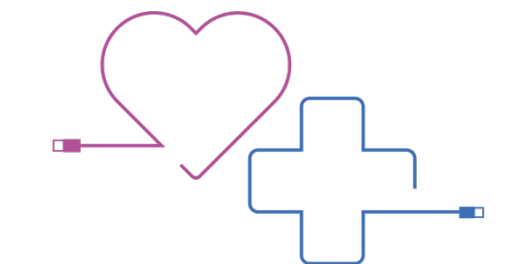


Peters DH et al. Implementation Research: what it is and how to do it. BMJ 2013;347:f6753

Pinnock H et al. Standards for reporting implementation studies (StaRI) statement. BMJ 2017;356:i6795

CONCLUSIONS

- ✓ The journey from **discovery** to **innovation** and **large scale implementation** is highly complex & long with numerous challenges emerging during the process
- ✓ Strategies for large scale deployment & sustainability must be appropriately planned as an early step of the innovation process



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Thanks

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