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Patient Empowerment as a Cognitive Process

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patient empowerment

a process where

patients are encouraged to **think critically** and **act autonomously**

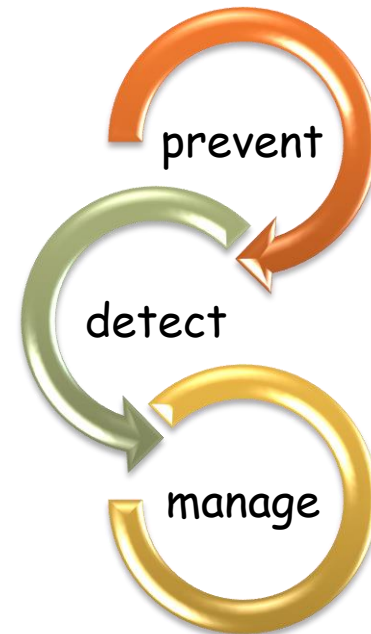
promotes **self-regulation**, **self-management** and **self-efficacy**
in order to achieve maximum health and wellness

empowerment: a process by which people, organizations, and communities
gain mastery over their affairs

empowering the chronic comorbid patient

facts:

- significant **increase** in the **prevalence** and **incidence** of chronic disease
- ½ of all chronic patients present **comorbidities**
- the chronic patient is mostly an **outpatient**
 - ↳ needs to care for herself at home
 - ↳ mainly away from continuous professional care
 - ↳ while trying to lead a normal life



cardiorenal disease & comorbidities

some numbers...



- ⇒ hypertension ⇒ 1/3 of adults (US 2008)
 - ⇒ diabetes ⇒ 8% of overall population
 - ⇒ chronic kidney disease ⇒ 9-16% of overall population
 - ⇒ 44% of chronic kidney disease is due to diabetes
 - ⇒ 86% of chronic kidney disease has at least 1 comorbidity
 - ⇒ most patients with chronic kidney disease develop cardiovascular disease
-
- ⇒ chronic heart failure ⇒ 1-2% of total healthcare costs
 - ⇒ end-stage renal disease (dialysis) ⇒ >2% of total healthcare costs



CARRE

Cardiorenal
comorbidity management
via **empowerment** and
shared informed decision

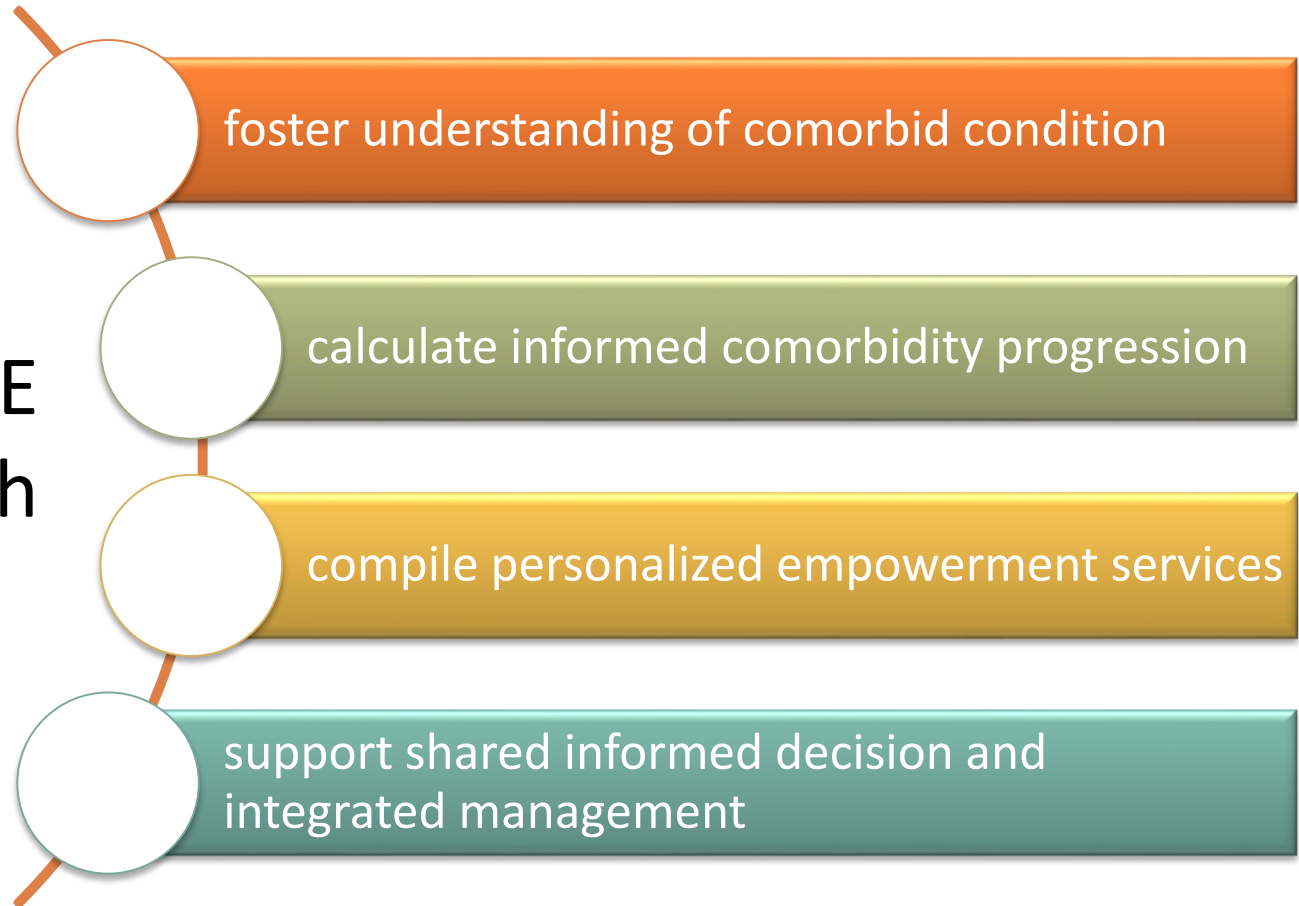
FP7-ICT-2013-611140

consortium: 6 partners
4 EU countries

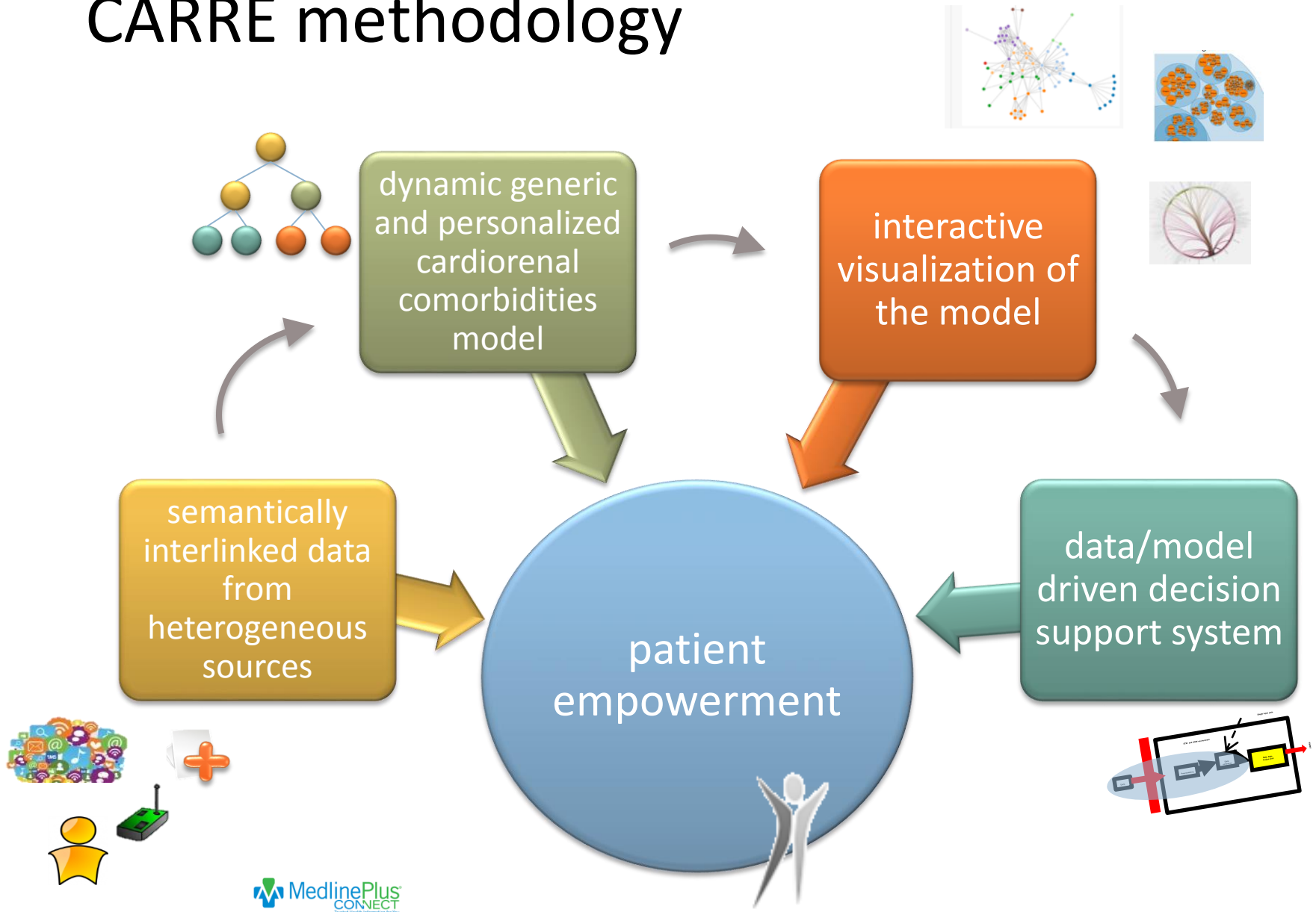
duration: Nov 2013 – Oct 2016

budget: 3,210,470€

CARRE approach



CARRE methodology



so, we have a good grasp of...

the context

↳ **who:** cardiorenal patients

↳ **why:** prevent and manage a common, chronic, progressive, costly, health burden

the process:

↳ **how:** data integration, semantic technologies, visual analytics, decision support systems

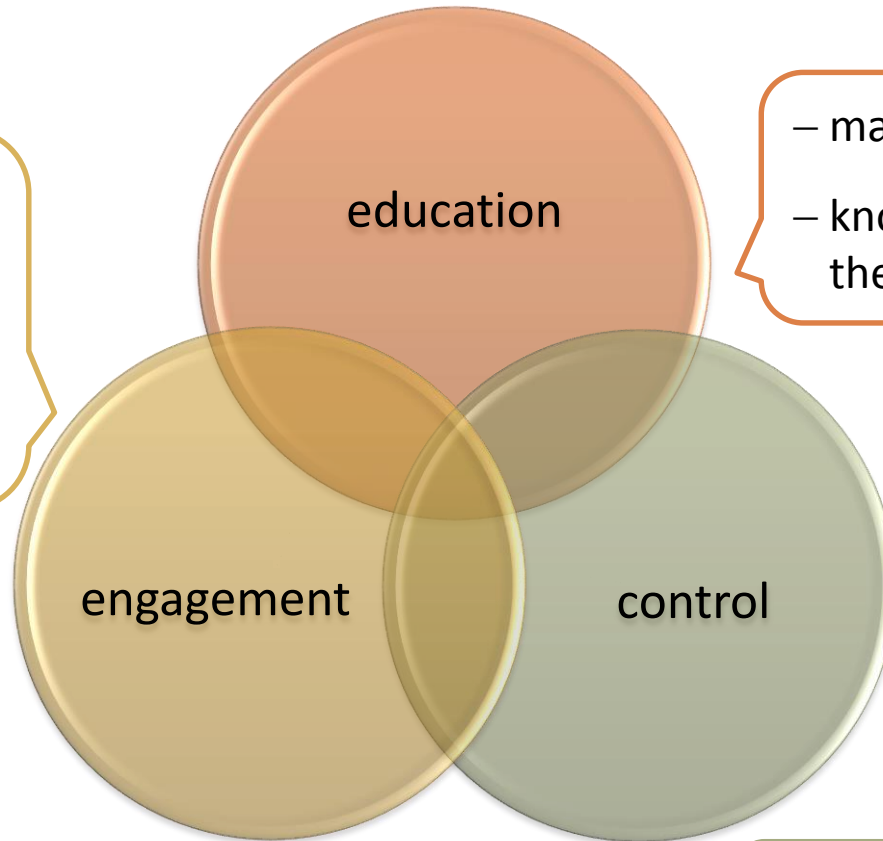
but, it is still unclear...

the content:

↳ **what** is to be designed and evaluated

patient empowerment so far ...

- cooperate with health professionals
- actively engage in disease self-management

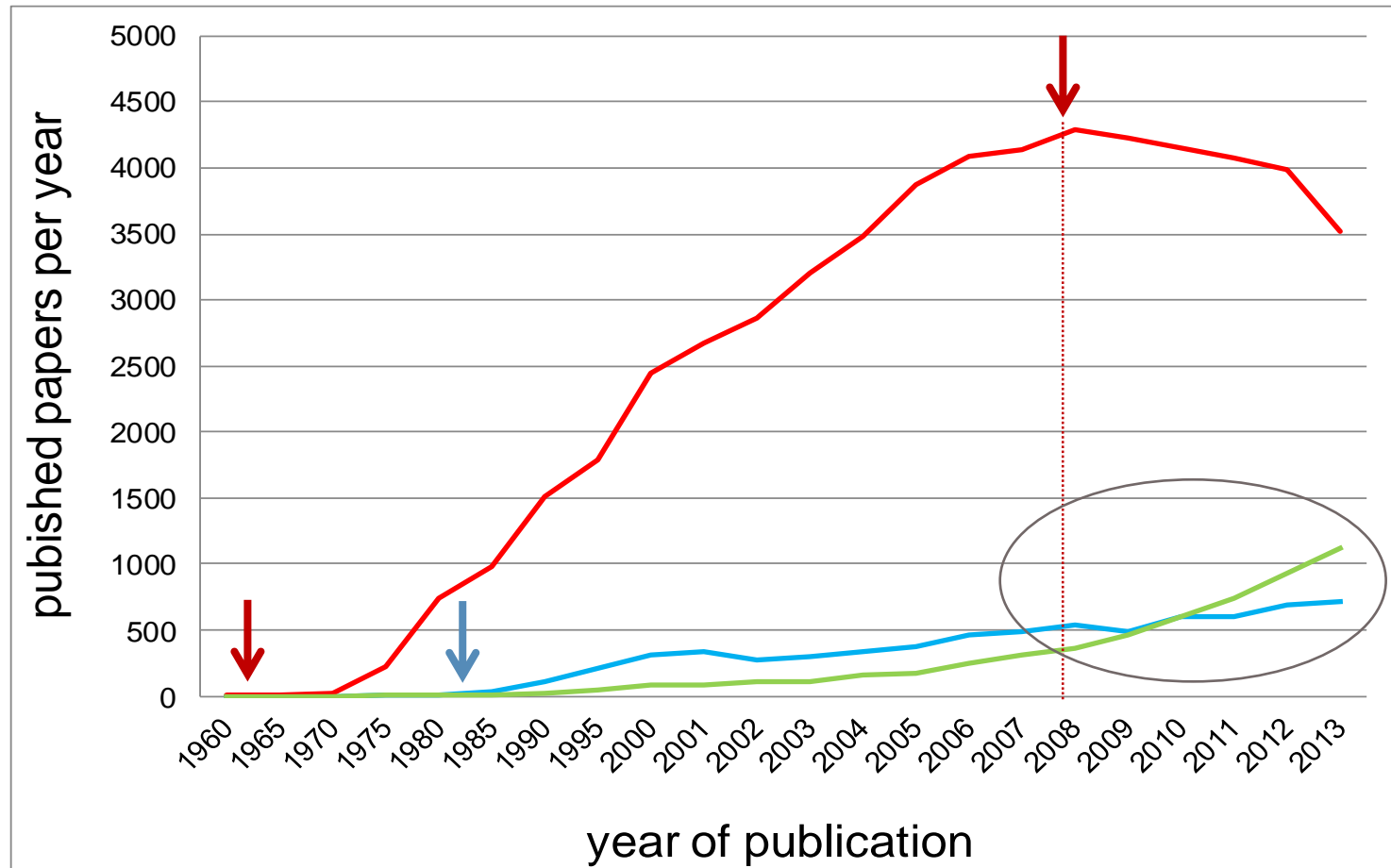


- maintain or improve health
- know how to care for themselves

actively participate in health related decisions

searching PubMed

— patient education
— patient engagement
— patient empowerment



empowerment as a cognitive process

empowerment \Leftrightarrow control on one's own actions

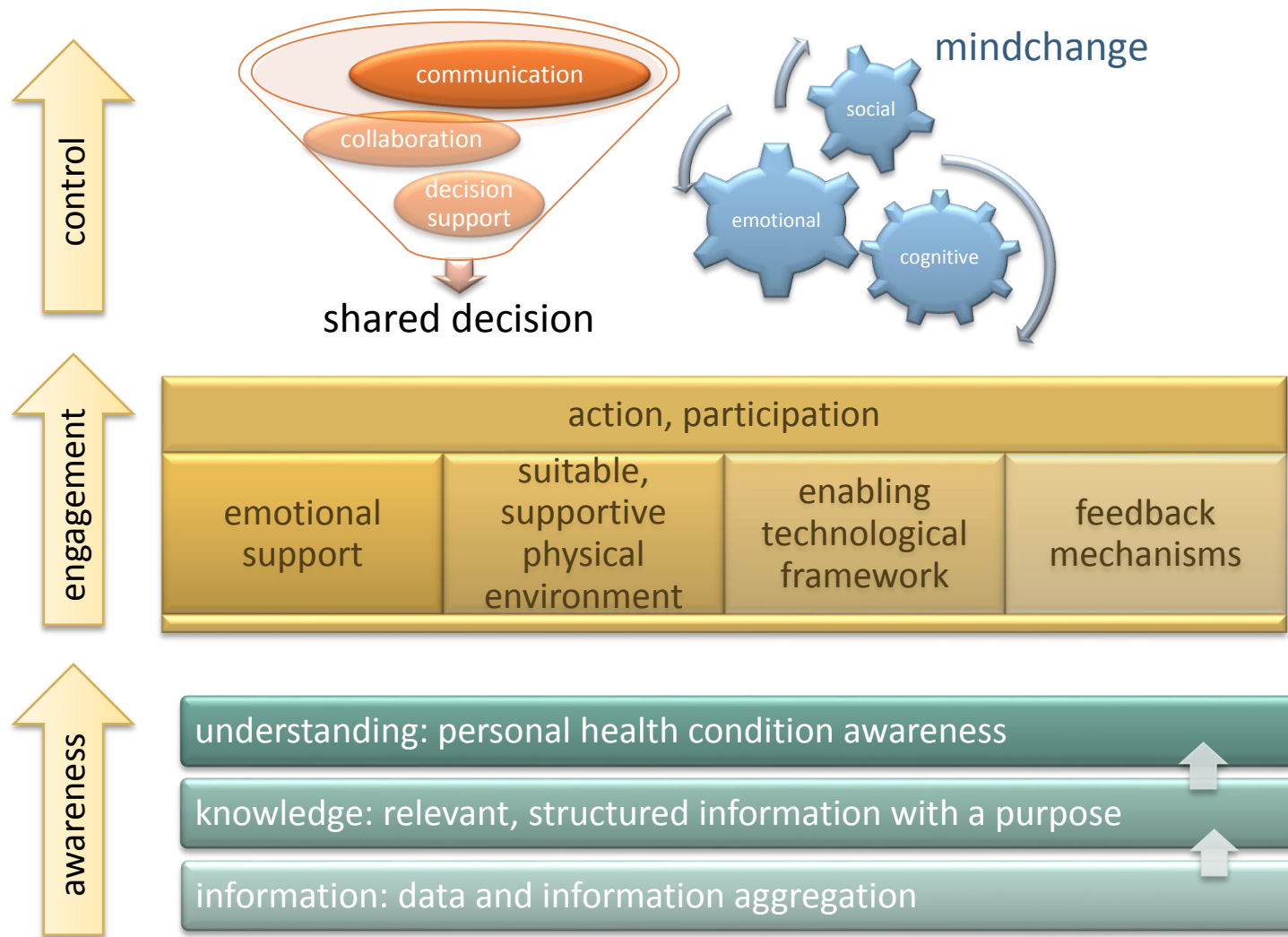


complex construct that involves various **cognitive** processes and skills

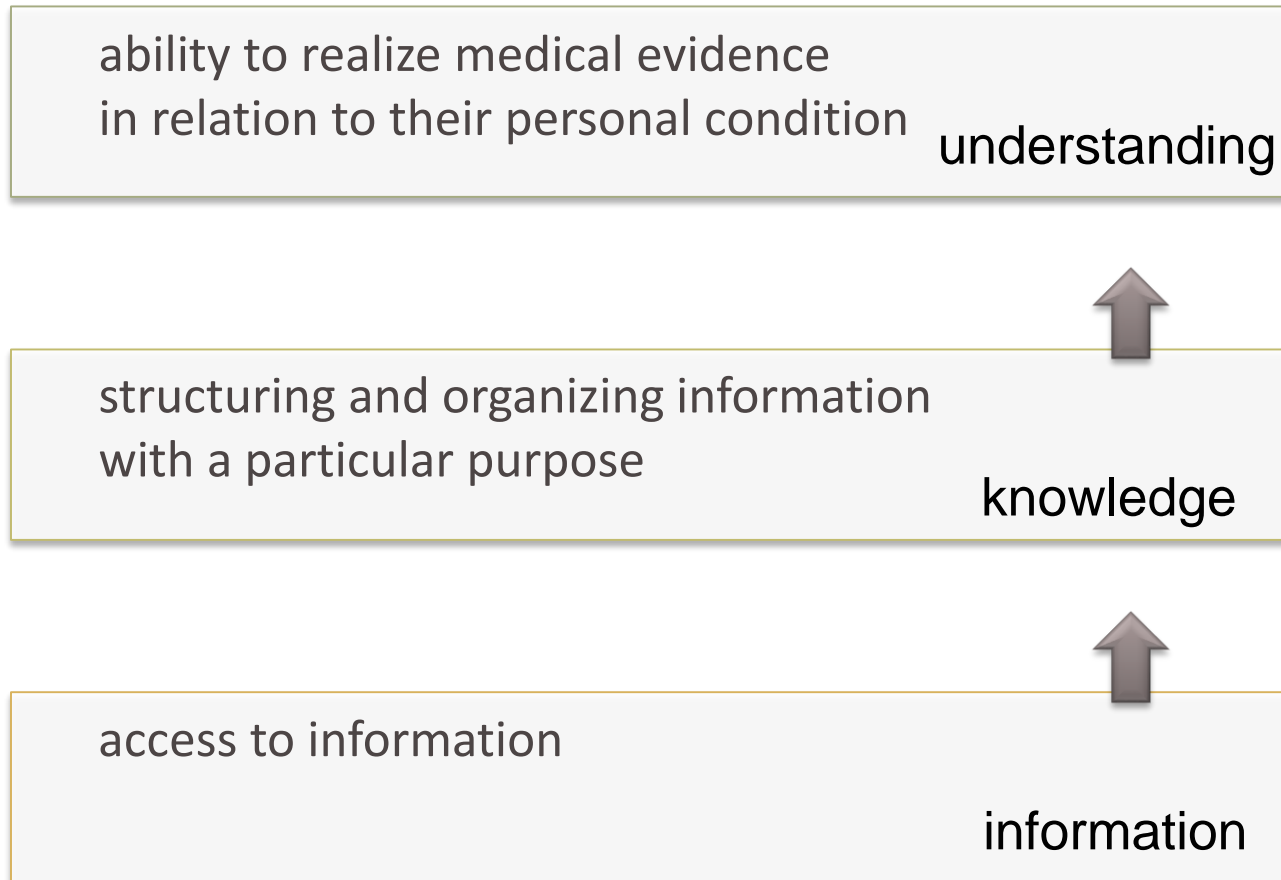
- ↪ knowledge acquisition, through perception
- ↪ thinking and learning
- ↪ awareness of one's own current conditions and /or needs
- ↪ active participation in the management of the current or future condition and in the relevant decision making

thus, following the overall approach of cognitive psychology...

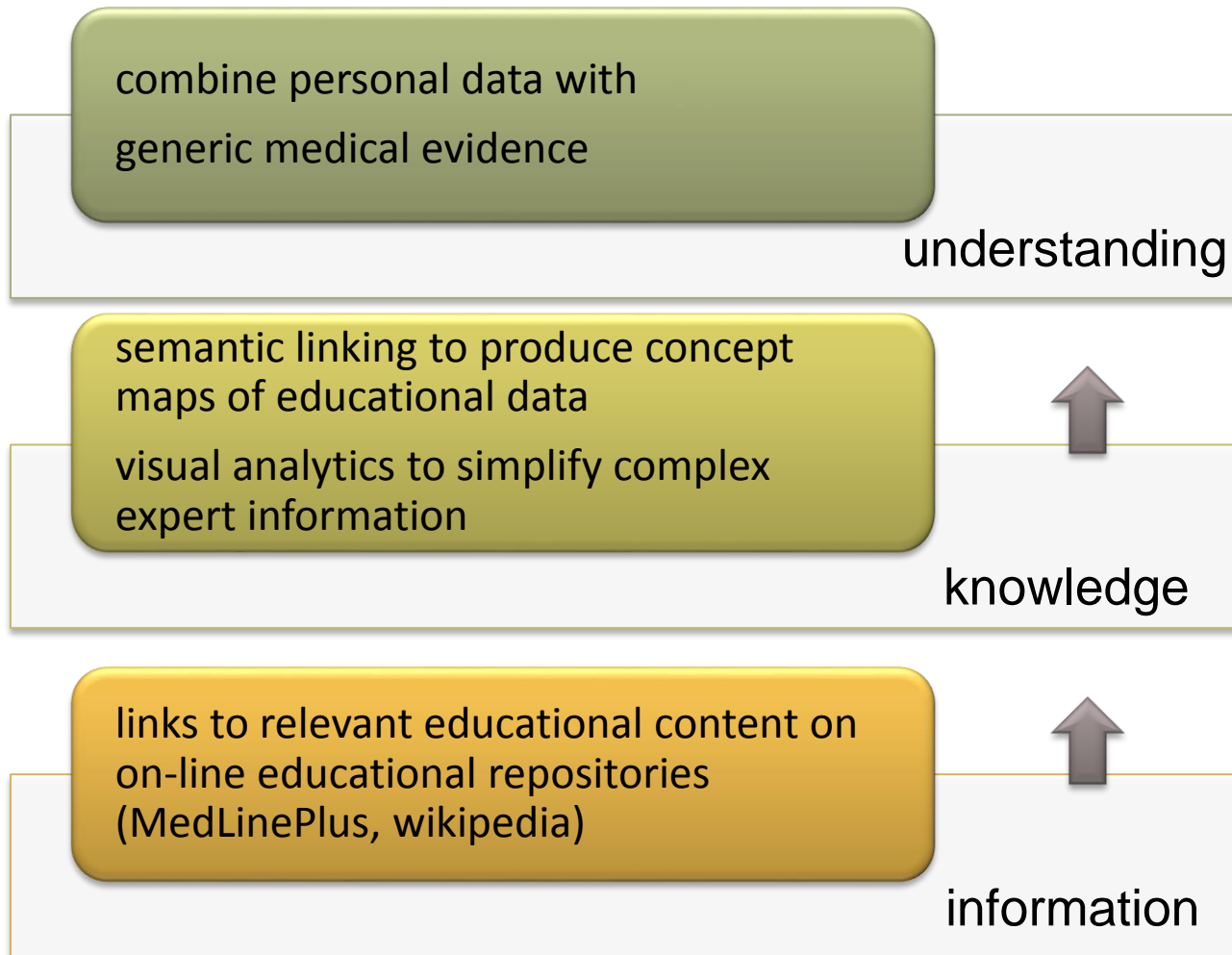
empowerment as a cognitive process



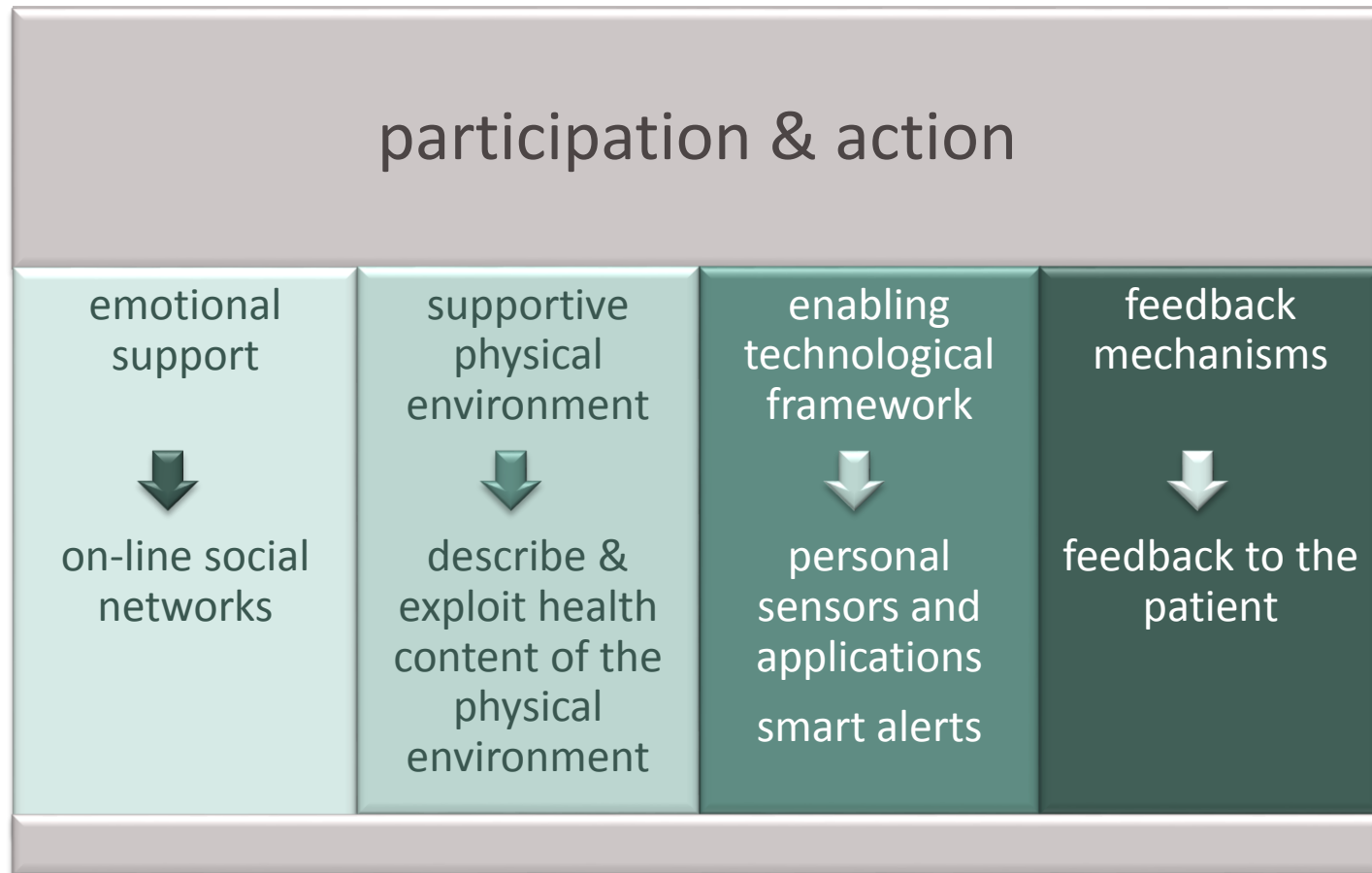
awareness: understand own health condition



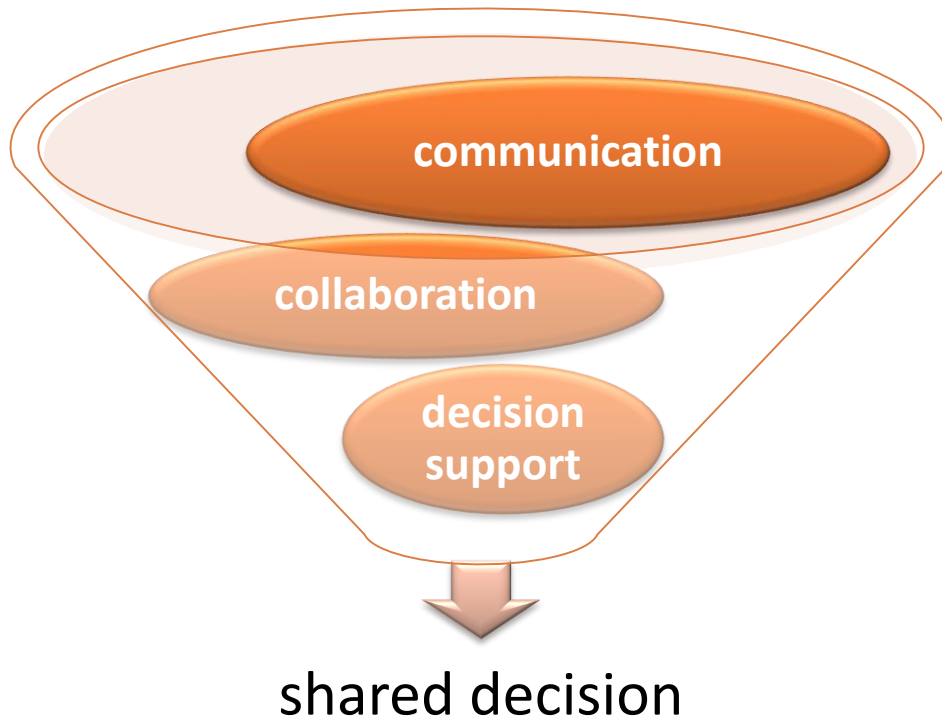
awareness: understand own health condition



engagement



control: decision making



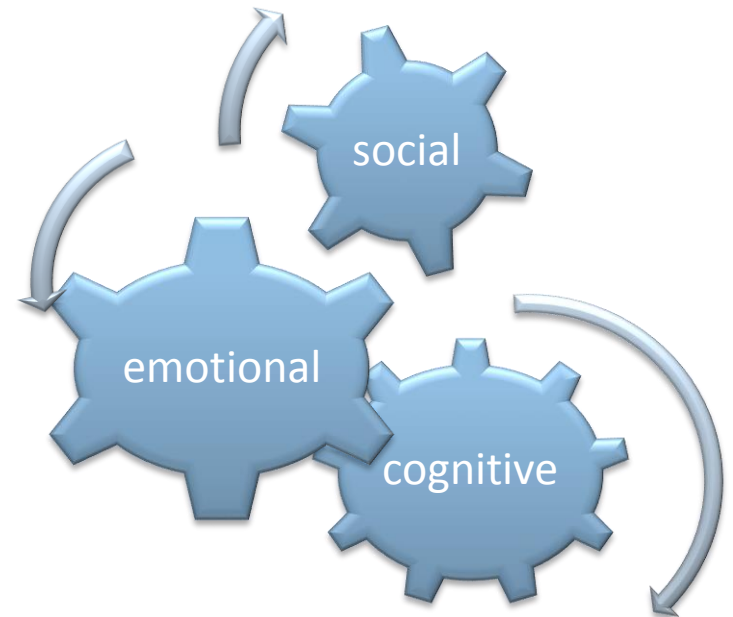
collaborative spaces
personal health records
decision support systems

control: mind change

modify one's own mental states, e.g. beliefs, emotions, intentions, and thus achieve and maintain a healthy behavior

- identify motivation, attitude, habits
- design interventions to change first representations then behaviours

requires highly interdisciplinary research



mapping CARRE services to the empowerment model.

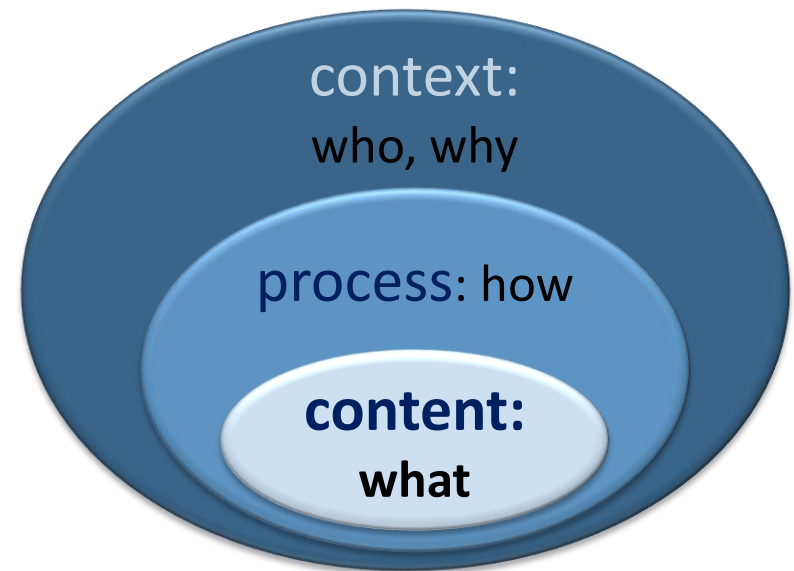
model level	CARRE service
awareness: information aggregation and knowledge	provide visual and quantitative model of disease progression pathways and comorbidities trajectories, based on current medical evidence
awareness: understanding	personalize the risk model to each individual based on his personal medical data and real-time sensor measurement to support disease status awareness
engagement: enabling framework	use the personalized model in conjunction with real time monitoring to create a set of alarms to enable patient engagement and give feedback
control:	provide advanced decision support services and mindchange interventions based on the real-time coupling of medical evidence, personal health status and intentions and beliefs, as deduced from social web data mining

work in progress

based on the understanding of the “content” (the what”)

- design appropriate evaluation methodology that follows the various levels of the empowerment model
- make informed selection of and/or construct appropriate evaluation tools for each level of the empowerment model

Symons’
evaluation onion
(Symon 1991 & Pettigrew 1985)



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CARRE: Personalized patient empowerment and shared decision support

for cardiorenal disease and comorbidities

<http://www.carre-project.eu/>



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