

# Nursing PREDOCS consultation prevents postoperative delirium, depression, pressure ulcers and infections

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**RESEARCH CENTRE FOR**  
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# Facts & Figures



- Over 70% of all cardiac surgery procedures in the Netherlands are done in patients of 65 years and older
- Older patients do have a higher risk on functional and/or cognitive decline due to occurrence of adverse events during the hospital admission like:

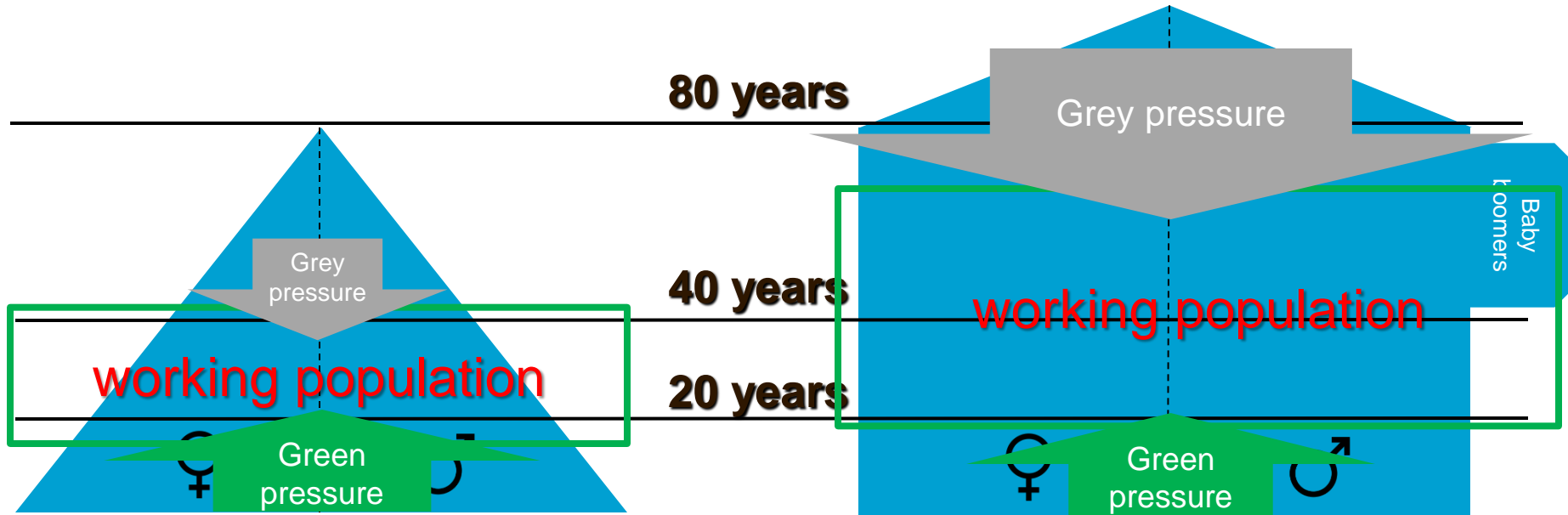
**Delirium** 14.7% - 54.9% (Arenson et al, 2013; Smulter et al, 2013)

**Depression** 10.0% - 37.7% (Horne et al, 2013; Doering et al, 2013)

**Pressure Ulcer** 14.0% - 18% (Brindle et al, 2012; Gomez et al, 2009)

**Infection** 8.3% - 54.5% (Rahmanian et al, 2013; Segers et al, 2008)

*The part of older people is increasing in our societies*



## Population Structure *100 years ago*

### Due to

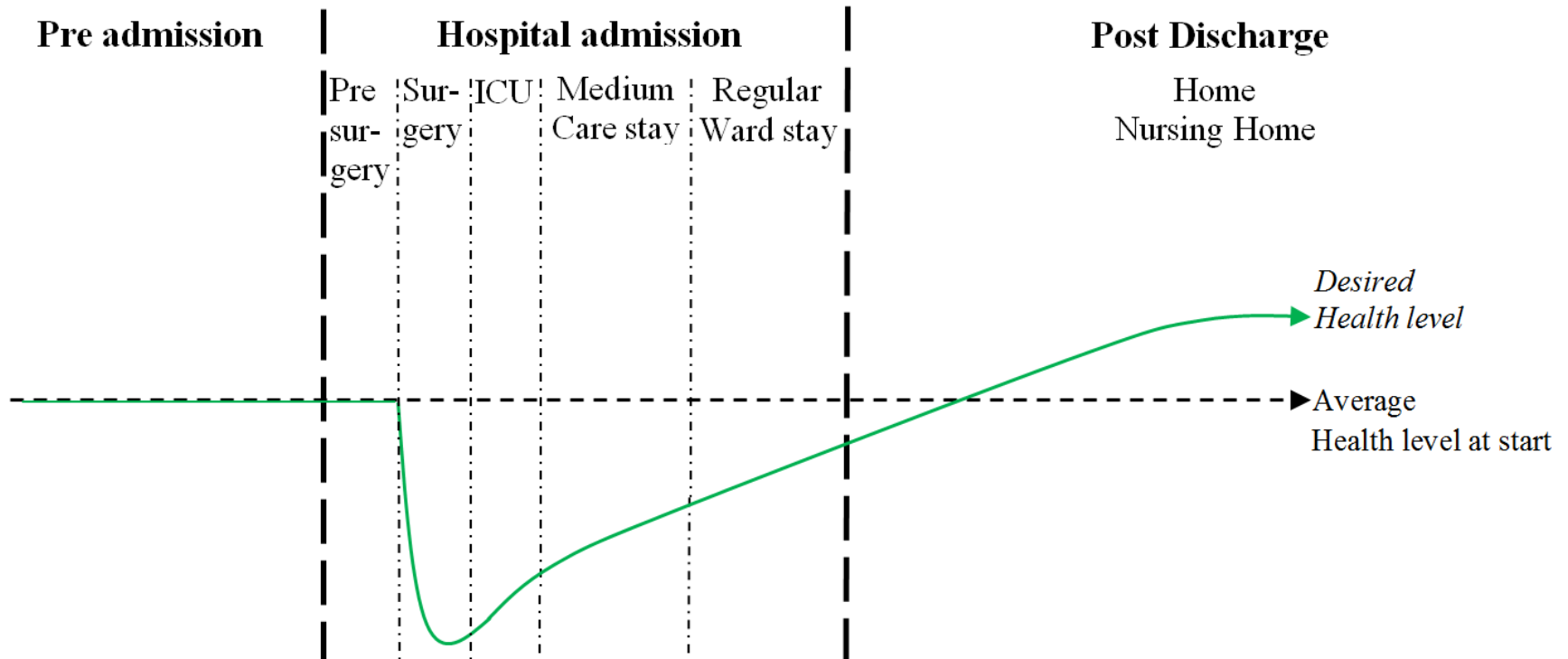
- Poor hygiene
- High infection rate
- No clean drinking water
- Wars and battles
- Poor housing
- Food shortages

## Population Structure *Nowadays*

### Due to

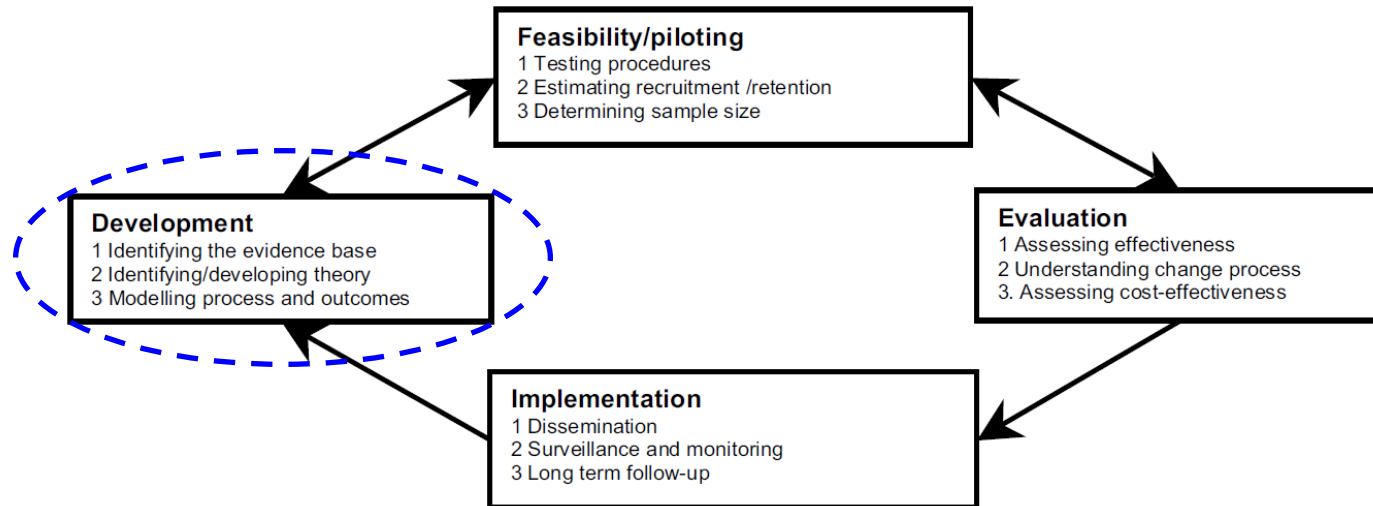
- Bathing, cleaning and clothing
- Antibiotics treatments / Healthcare
- Clean tap water
- Peace and stability
- Social housing
- Food surplus

# Problem & Approach



# Intervention Development & Feasibility

## PREDOCS



# MRC phase: Development (2007 – 2013)



## Identifying the evidence base:

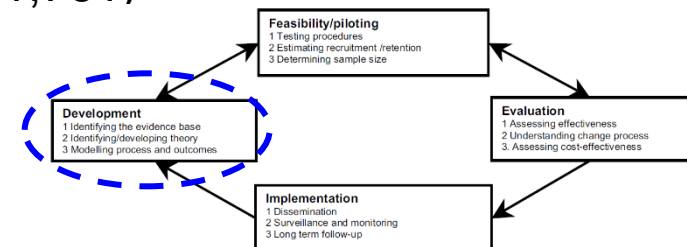
1. *Systematic review prevalence postoperative complications*
2. *Systematic review preadmission patient characteristics related to a problematic postoperative course*
3. *Systematic literature review: effective preventive interventions*

## Identifying / developing theory:

4. *Identifying risk factors for surgery and ICU complications (11,395 cardiac surgery patients)*
5. *Etiologic relations: modifiable preadmission characteristics and post surgery complications (n=1,761)*
6. *Interviews patients: needs (n=9)*
7. *Surveys nurses: opinions prevalence and preventions (n=250)*

## Modelling process and outcomes:

8. *Prognostic modelling: selection of frail patients (n=1,761)*
9. *Intervention development*



# Intervention **PREDOCS**



## Intervention includes 3 parts:

1. General applicable for all cardiac surgery patients
2. Selection of frail patients (increased risk on postoperative complications)
3. Specific preventive measures according to the increased risk

## Part 1 (*General*):

### a. Standard information on three levels:

- *Procedure / What patient will experience / What patient can do*

### b. Nutritional condition

### c. Empower partner/children/social environment

### d. Pain management for rapid postoperative recovery



# Intervention **PREDOCS**

## Part 2 (Selection) :



Delirium Risk Score during the Preoperative Consultation	Points
Previous Delirium	2
Diagnosis Alzheimer	2
Use of a walking stick or a walker	2
EuroSCORE greater than 20% risk	1
Receives support from family / friends (informal care) and living alone or no active support partner	1
Age above 70 years	1
History of CVA / TIA	1
Use of Benzodiazepines	1
<i>Total (increased risk of delirium is 3 or higher)</i>	

Pressure Ulcer Risk Score during the Preoperative Consultation	Points
History of Tricuspid Insufficiëncy	5
Physically limited *	3
Living alone	3
EuroSCORE greater than 20% risk	2
Use of Fraxiparin	2
Renal impairment	1
<i>Total (increased risk of pressure ulcers at 3 or higher)</i>	

Depression Risk Score during the Preoperative Consultation	Points
Use of insoles	3
Deaf of deafness	2
Female	1
Use of Benzodiazepines	1
<i>Total (increased risk of depression at 2 or higher)</i>	

\*) within the survey the patient is asked whether she or he has a disability. The response categories were: 'deaf', 'blind', 'disability' and 'intellectual disability'.

Infection Risk Score during the Preoperative Consultation	Points
History of Tricuspid Insufficiëncy	3
EuroSCORE greater than 20% risk	2
Use of Diuretics	2
<i>Total (increased risk of infection is 3 or higher)</i>	

Statistical performance (n = 1,761):

**AUC's: 0,72; 0,59; 0,68; 0,64**

**P-values, U-statistics: 1; 1; 0,16; 1**

.... clinical eye!



# Intervention **PREDOCS**

## Part 3 (*Preventive measures*):

### ***Delirium***

- a. Signs & Symptoms
- b. Favorite food and drinks
- c. Quick mobilization
- d. Sleeping habits
- e. Use the aids
- f. Orientation
- g. Will for information
- h. Daily visits or sleeping

### ***Pressure Ulcer***

Signs & Symptoms

### ***Depression***

- a. Relaxing music
- b. Daily visits
- c. Signs & Symptoms

### ***Infection***

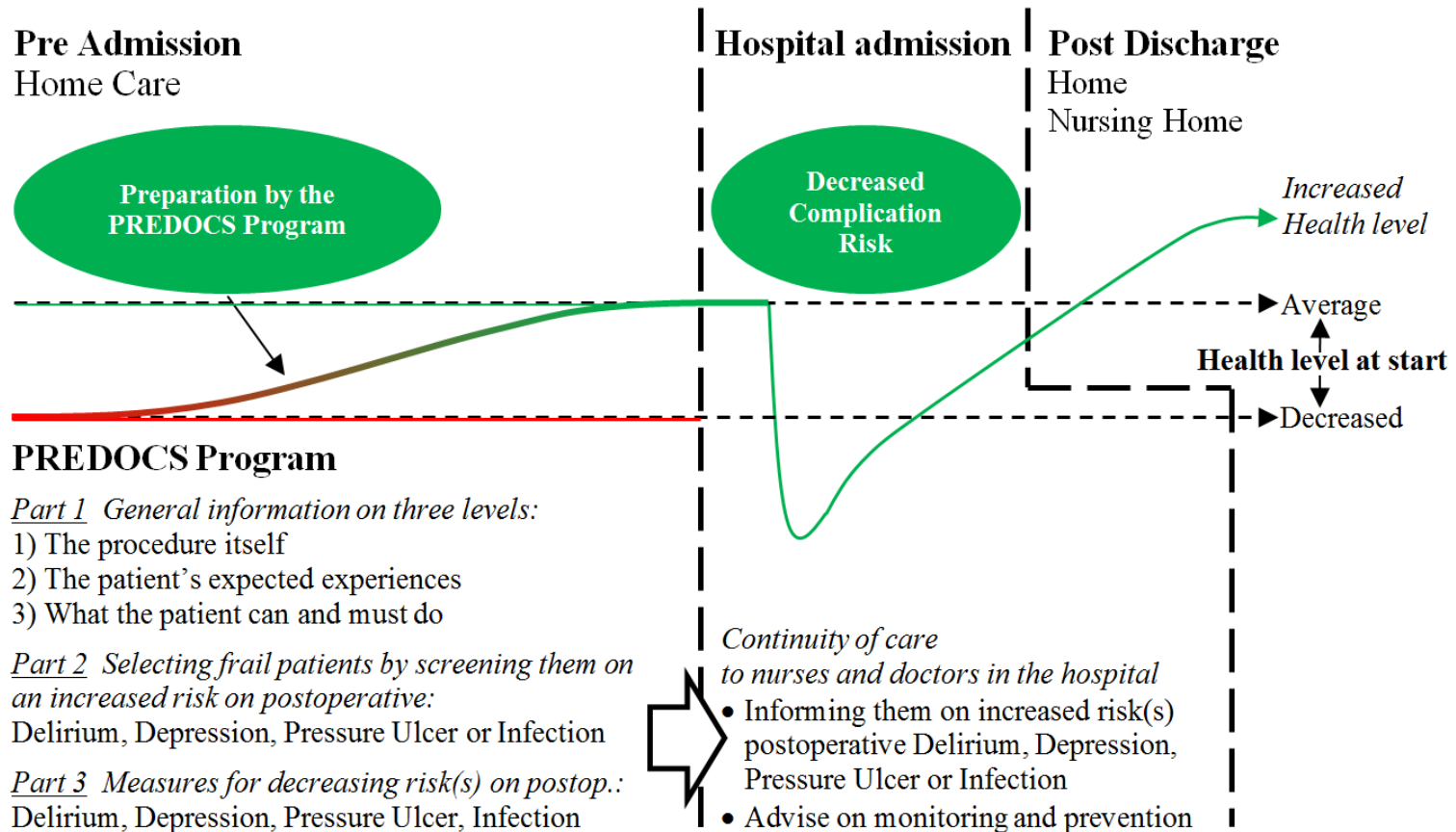
- a. Breathing exercises
- b. Coughing up / Huffing
- c. Signs & Symptoms
- d. Not touching the wound

### ***Continuity of care***

Report of findings and intervention given, in the patient file for ward care

Solution:

# *Prepare patients for their hospital admission with cardiac surgery!*



# Short Instruction Film PREDOCS



better in better out in cardiac surgery



better in better out in cardiac surgery



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## Thank you for your attention

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