



绿色健康城  
Green Health City

# CHARITÉ

UNIVERSITÄTSMEDIZIN BERLIN



## **Green Health City**

**Nucleus for a Centre of High-Performance Medicine**

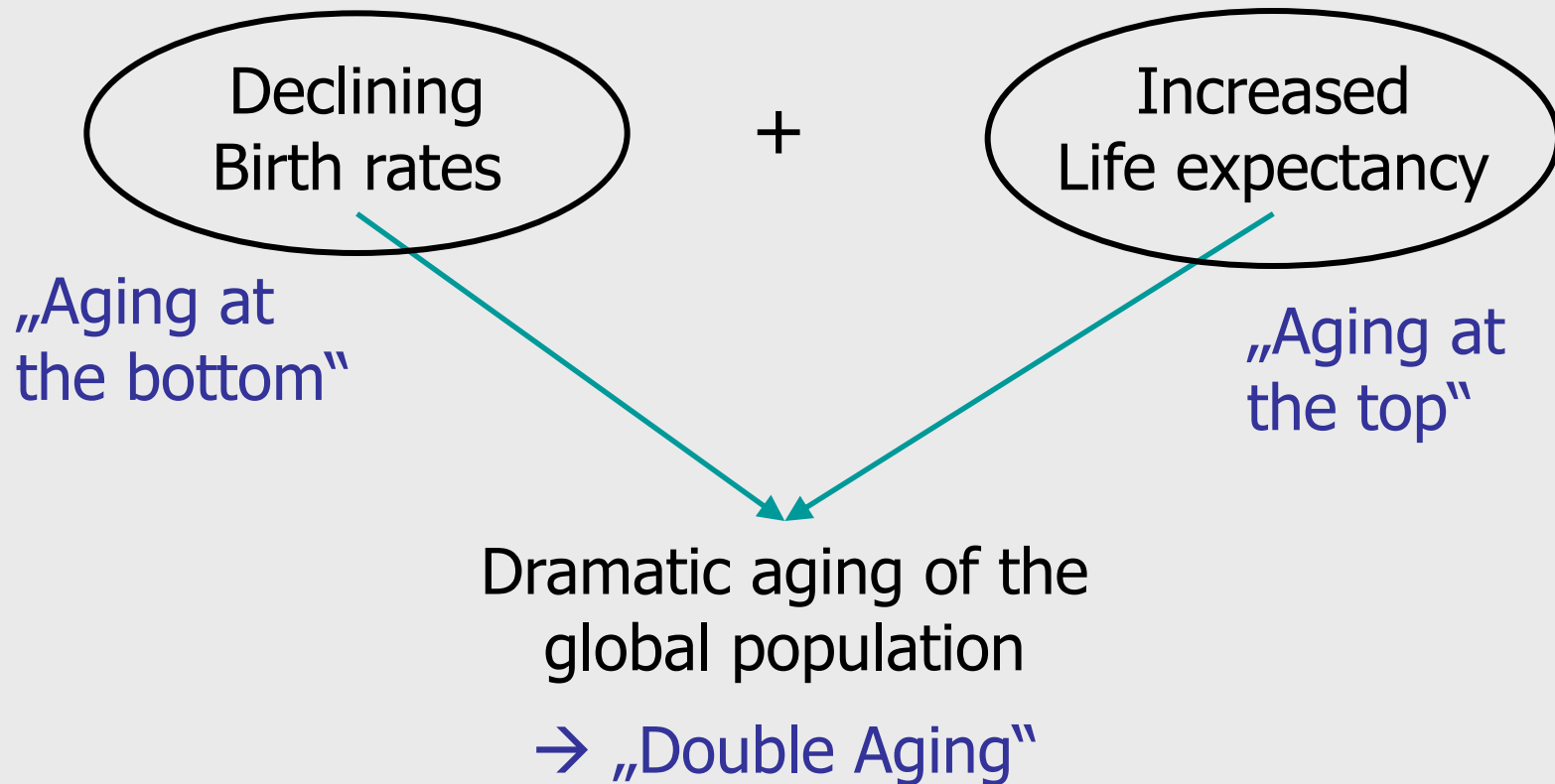
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# Background

- Increasing number of elderly people
- Decreasing number of younger people
- Medicine: Less acute diseases and
- More people suffering from chronic diseases
- Medical progress increases health costs

# Demographic Dilemma



# Causes of death worldwide 2004 - 2030



World Health Organization

2004			2030		
Disease or injury	Deaths (%)	Rank	Rank	Deaths (%)	Disease or injury
Ischaemic heart disease	12.2	1	1	14.2	Ischaemic heart disease
Cerebrovascular disease	9.7	2	2	12.1	Cerebrovascular disease
Lower respiratory infections	7.0	3	3	8.6	Chronic obstructive pulmonary disease
Chronic obstructive pulmonary disease	5.1	4	4	3.8	Lower respiratory infections
Diarrhoeal diseases	3.6	5	5	3.6	Road traffic accidents
HIV/AIDS	3.5	6	6	3.4	Trachea, bronchus, lung cancers
Tuberculosis	2.5	7	7	3.3	Diabetes mellitus
Trachea, bronchus, lung cancers	2.3	8	8	2.1	Hypertensive heart disease
Road traffic accidents	2.2	9	9	1.9	Stomach cancer
Prematurity and low birth weight	2.0	10	10	1.8	HIV/AIDS
Neonatal infections and other*	1.9	11	11	1.6	Nephritis and nephrosis
Diabetes mellitus	1.9	12	12	1.5	Self-inflicted injuries
Malaria	1.7	13	13	1.4	Liver cancer
Hypertensive heart disease	1.7	14	14	1.4	Colon and rectum cancers
Birth asphyxia and birth trauma	1.5	15	15	1.3	Oesophagus cancer
Self-inflicted injuries	1.4	16	16	1.2	Violence
Stomach cancer	1.4	17	17	1.2	Alzheimer and other dementias
Cirrhosis of the liver	1.3	18	18	1.2	Cirrhosis of the liver
Nephritis and nephrosis	1.3	19	19	1.1	Breast cancer
Colon and rectum cancers	1.1	20	20	1.0	Tuberculosis
Violence	1.0	22	21	1.0	Neonatal infections and other*
Breast cancer	0.9	23	22	0.9	Prematurity and low birth weight
Oesophagus cancer	0.9	24	23	0.9	Diarrhoeal diseases
Alzheimer and other dementias	0.8	25	29	0.7	Birth asphyxia and birth trauma
			41	0.4	Malaria



# Aims

Minimize morbidity in

- Cardiovascular Diseases
- Cancer, Lung and Gastrointestinal Cancer
- Diseases of the Locomotorsystem
- Dementia

**→ Quality of Life**

- The aging of the population will raise fundamental new challenges for healthcare systems.
- The combination of increasing longevity and cost-intensive progress in medical treatments calls for a careful allocation of resources.



Resulting implications for future health care (megatrends)

## Prevention

Developing new strategies for disease prevention with the help of modern technology.

## Individualisation

Identifying the most suitable intervention for each patient. (high efficiency with reduced costs)



# Prevention Strategies

Primary Prevention  
Staying healthy

Secondary Prevention  
Diagnosis / Treatment

Tertiary Prevention  
Preservation, ADL, Qual. of  
life

Health → Disease → harm of viscera → functional constraint → Impairment of daily routine



**MENTAL:**  
MMSE < 20

**FUNCTIONAL:**  
LOSS OF MOBILITY  
BARTHEL-INDEX < 70

**SOCIAL:**  
LOSS OF INDEPENDENCE

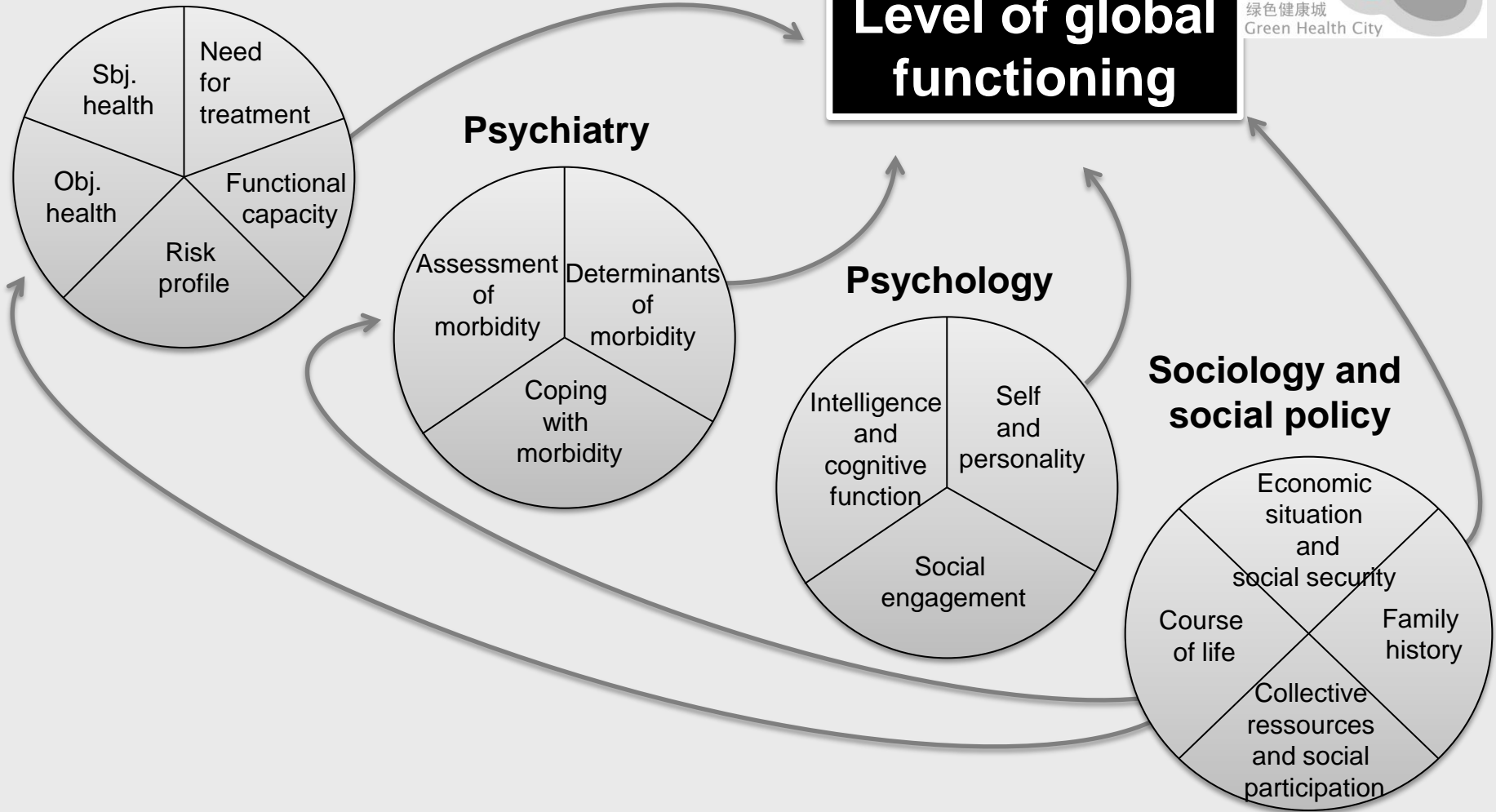
**MEDICAL:**  
> 3 DIAGNOSES  
> 3 PHARMACEUTICAL DRUGS

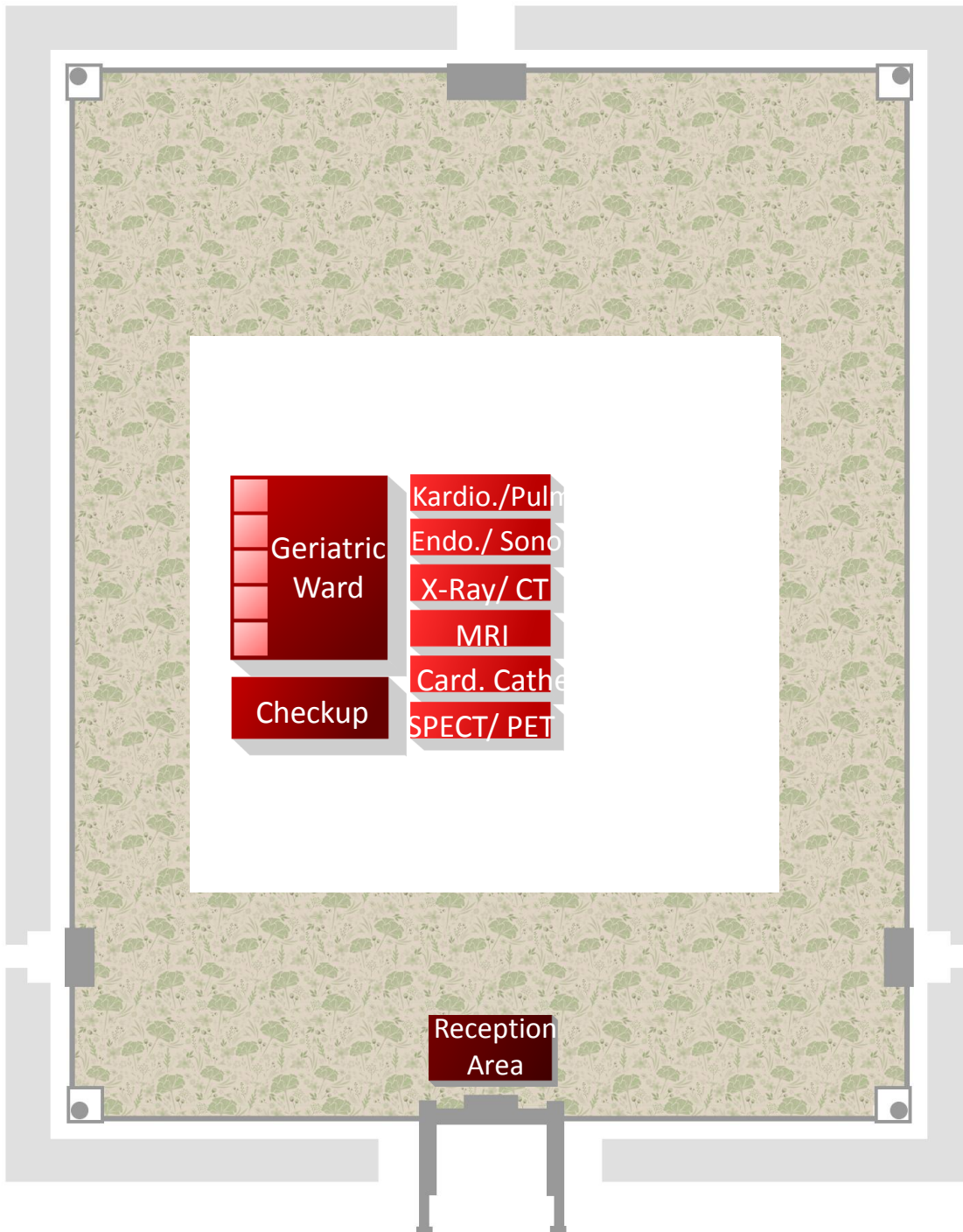


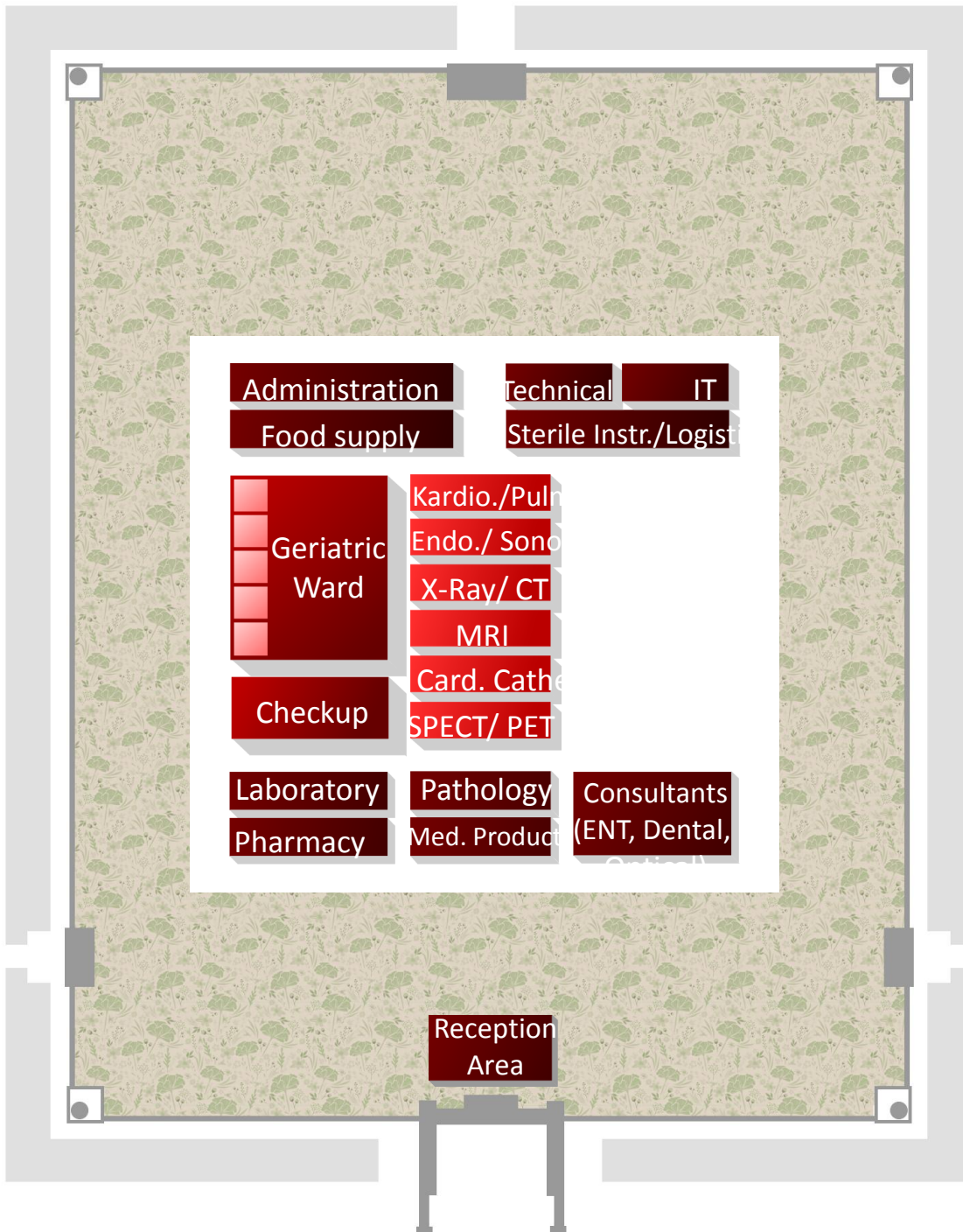
# Aging as a multidimensional process

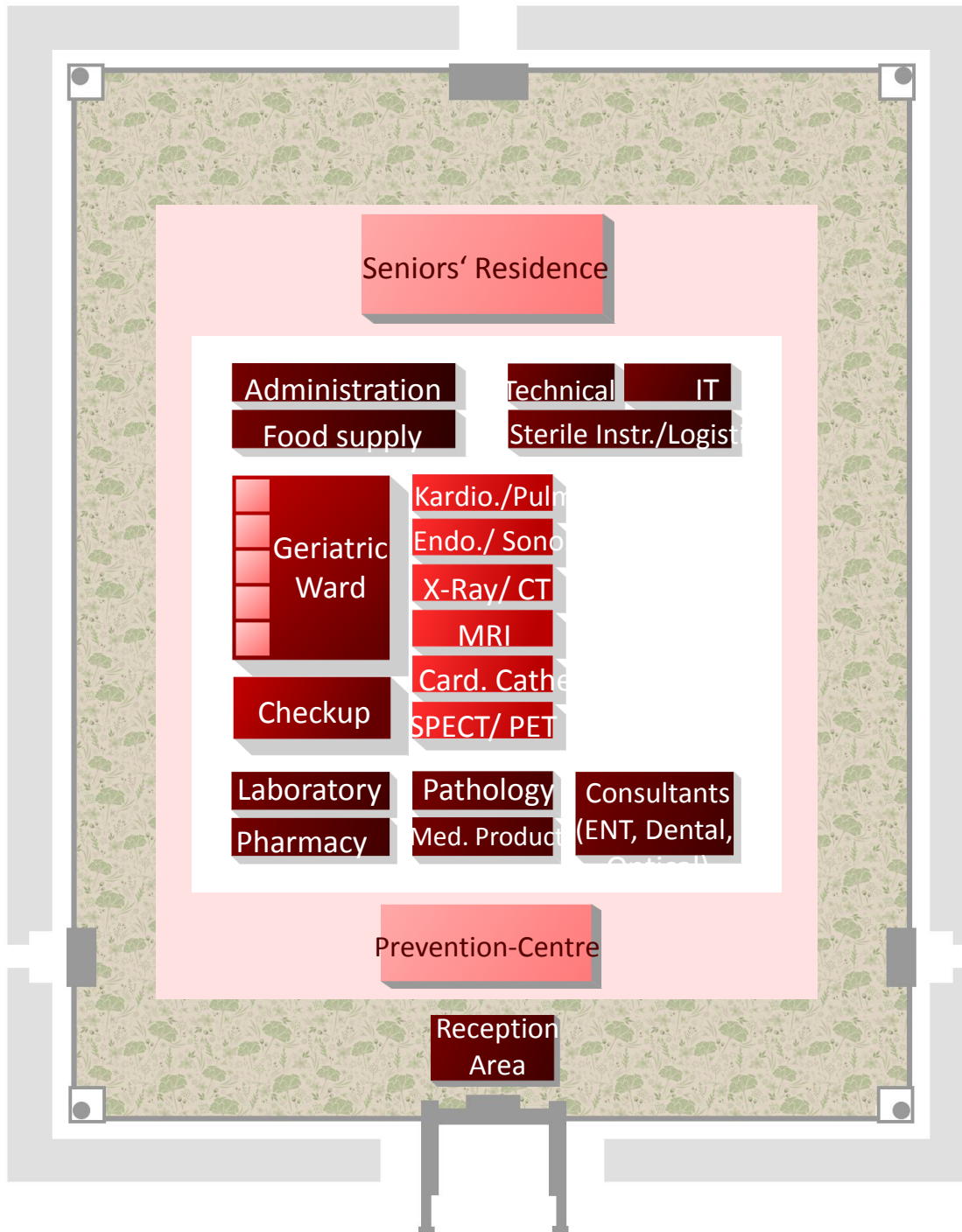


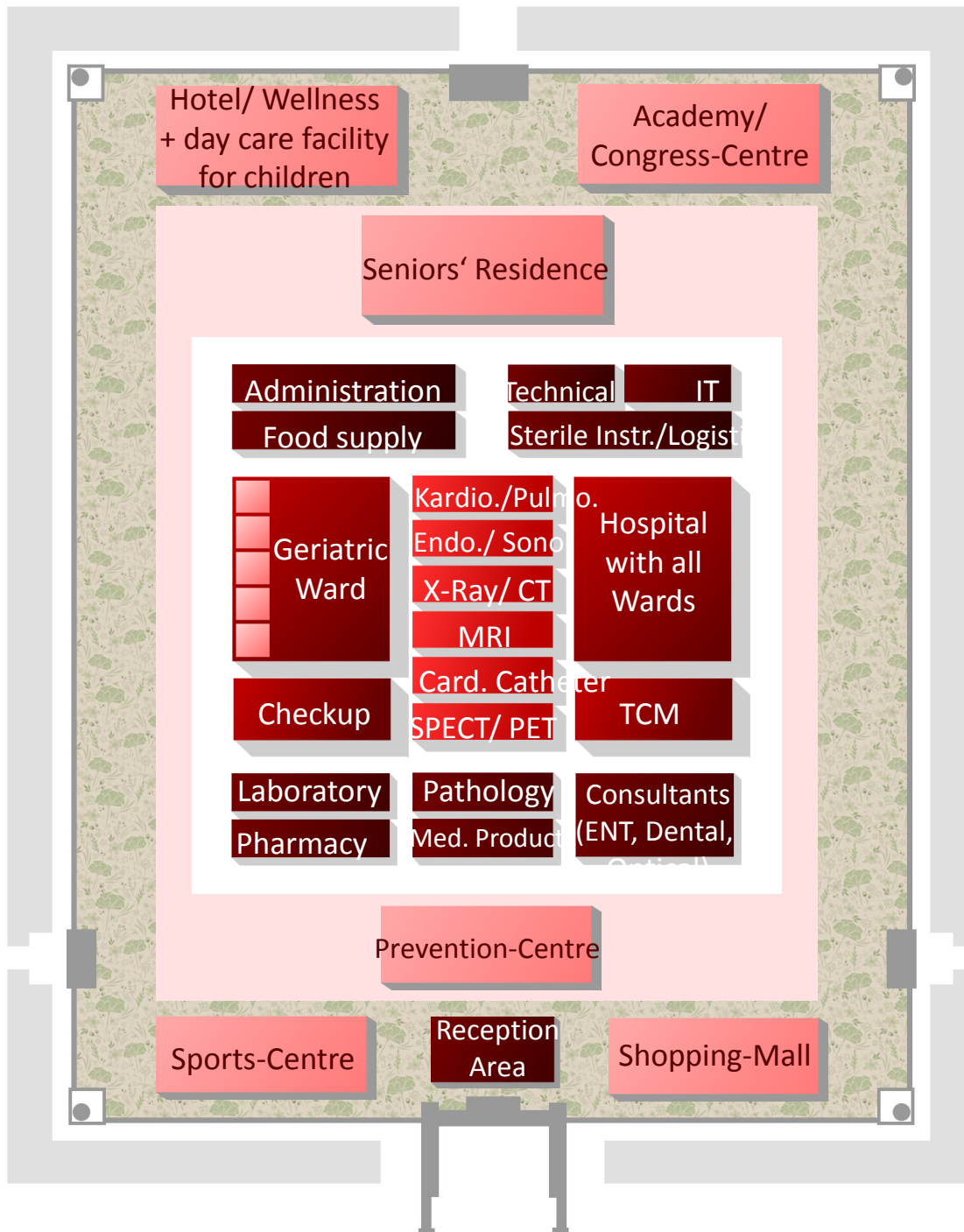
## Internal and geriatric medicine







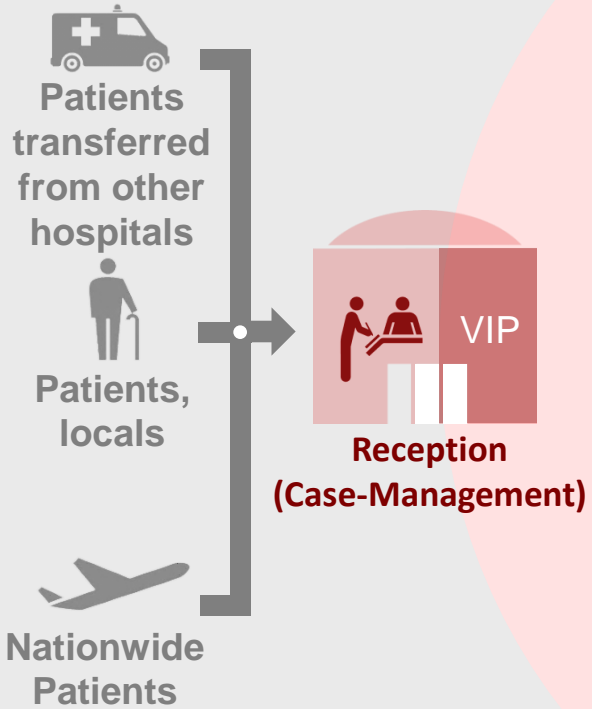




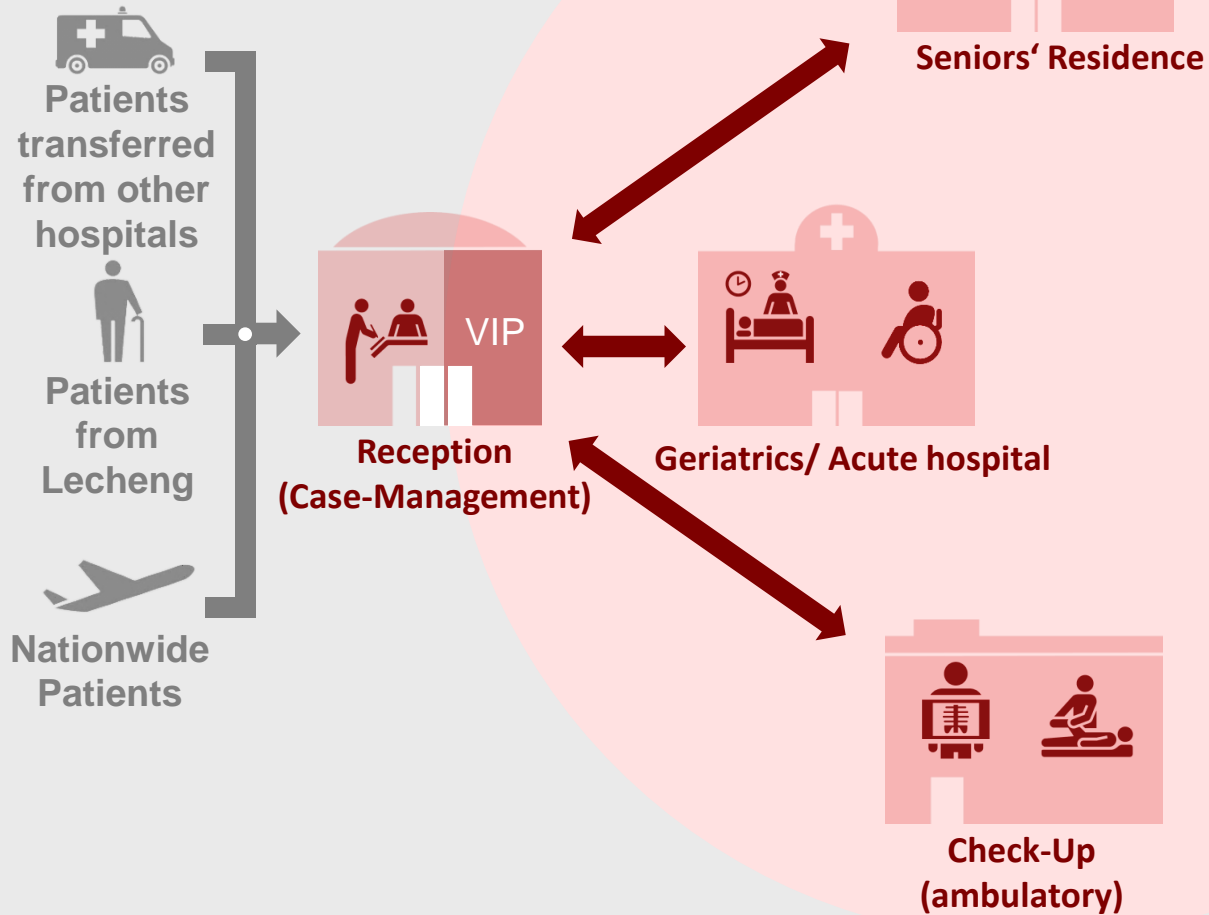


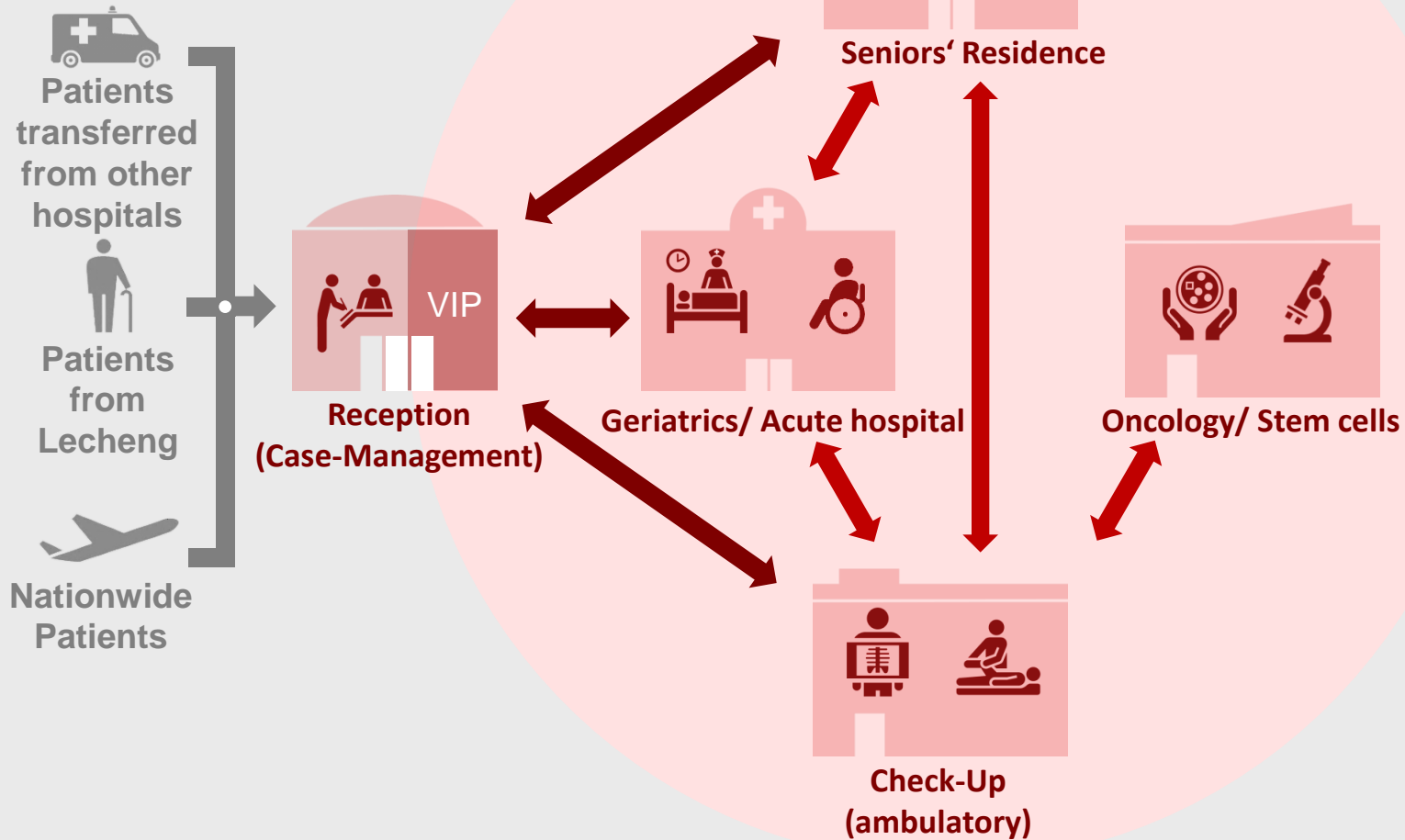
# Green Health City

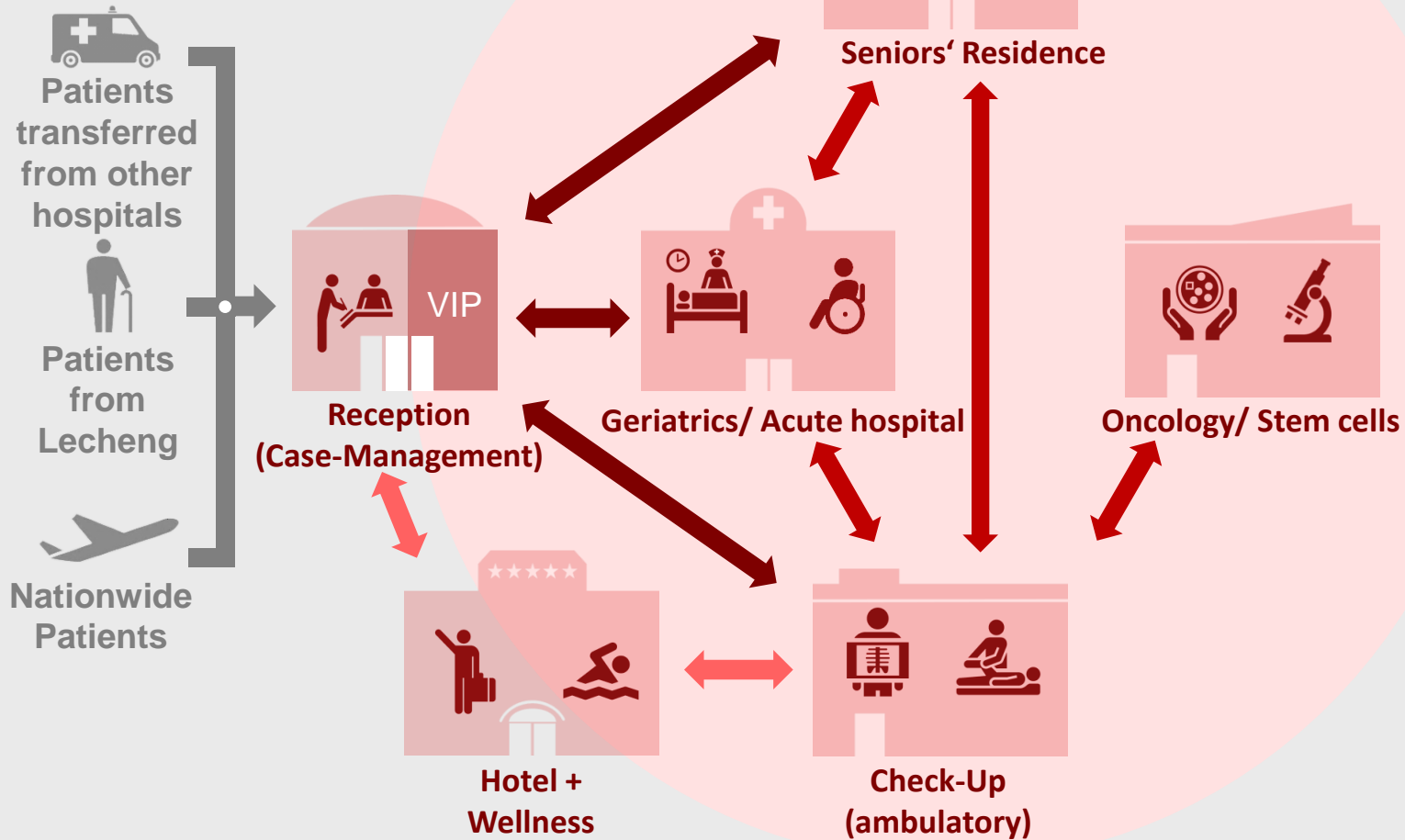
## Patient flow













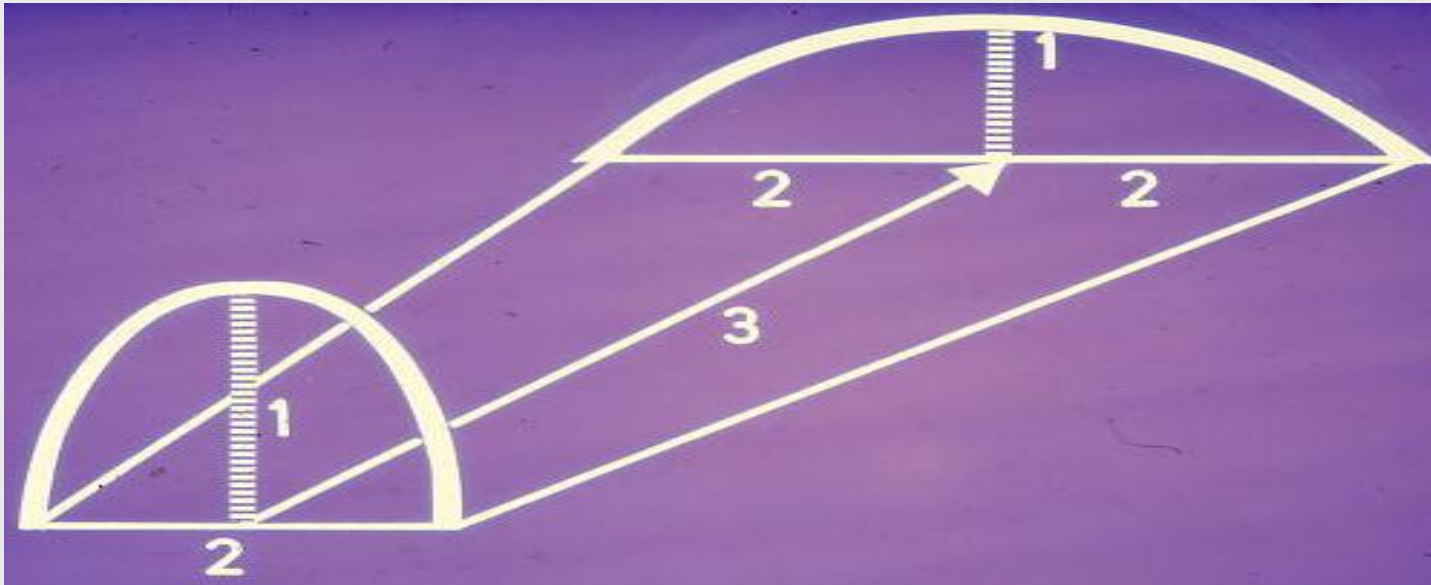
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**→ Quality of Life**

# Aging: Adaptability and variability



- 1) Reduction in general adaptability
- 2) Increase in interindividual variability
- 3) Age – Time

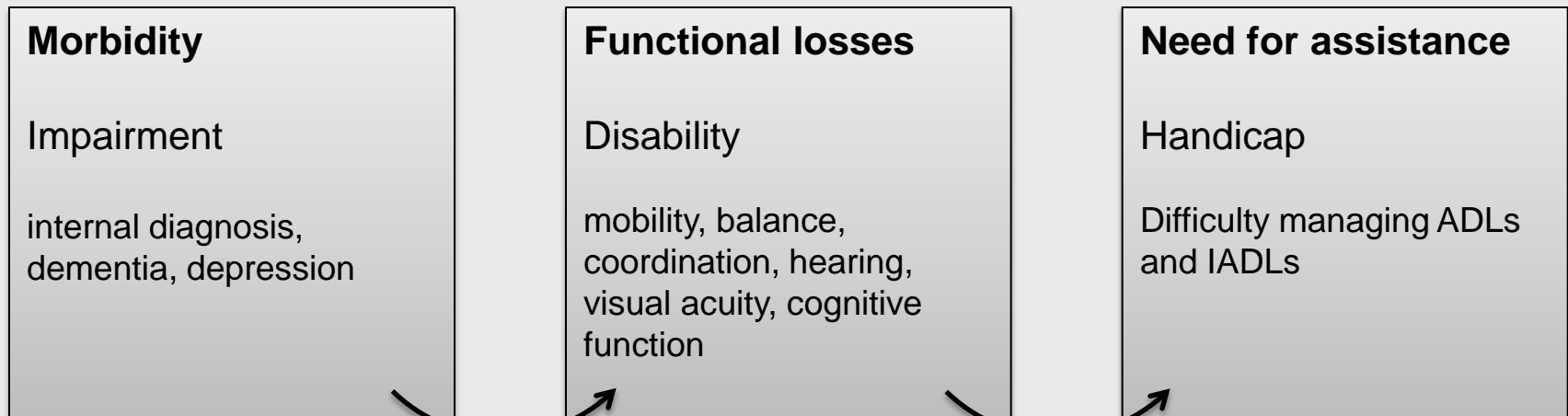
# Extra-individual factors (interventions)



i.e. pharmacotherapy

- positive interventions (compensation)
- negative interventions (over-/under-)

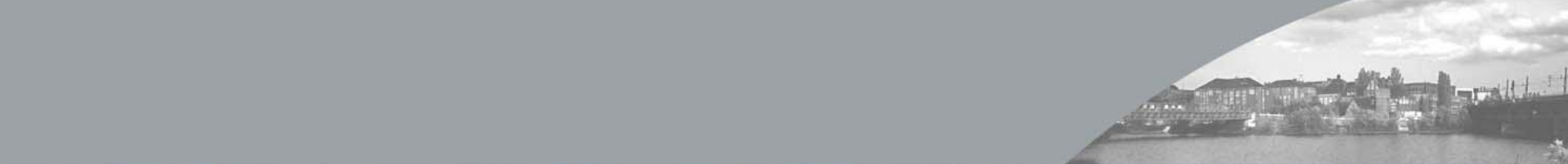
## Main process



Cardiovascular risk factors  
➤ hyperlipoproteinemia

Biological risk factors  
➤ sex

Intra-individual factors (ressources)  
➤ socioeconomic status



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