

The MicMac project

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MicMac project

- MicMac offers a bridge between aggregate projections of cohorts (Mac) and projections of the life courses of individual cohort members (Mic).
- The objective of MicMac is to **develop** this methodology
- Two example countries: the Netherlands and Italy
- The project started in May 2005 and has a duration of four years

Modules of the MicMac project

- 1) Multi-state cohort-component model **Mac**
- 2) Micro-simulation model of individual biographies **Mic**
- 3) Methods and procedures for deriving argument based expert **views** on future trends of demographic variables
- 4) Morbidity and mortality
- 5) Fertility and living arrangements
- 6) Education

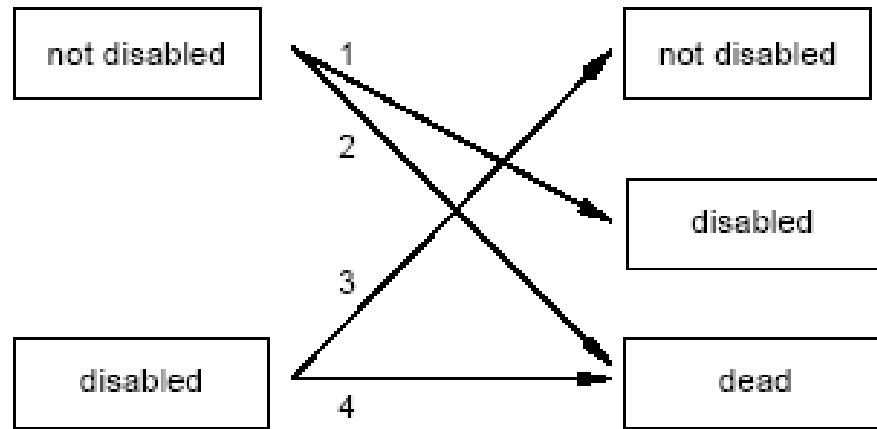
Modules of the MicMac project

- 1) Multi-state cohort-component model Mac
- 2) Micro-simulation model of individual biographies Mic
- 3) Methods and procedures for deriving argument based expert views on future trends of demographic variables
- 4) **Morbidity and mortality: Erasmus MC and UROS**
- 5) Fertility and living arrangements
- 6) Education

Morbidity and mortality

- Aims: to determine the age profile of **key events** in **morbidity** and **mortality** in the life course and the relative risks of these events in relation to proximate risk factors and to more distal determinants
- **Key events** are specified in terms of **transition rates** for **mortality** and **morbidity** by age and sex for four different **determinants**
- **Morbidity** is generic disability
- **Determinants:**
 - Smoking
 - BMI
 - Education
 - Household composition

Transition rates



1. Nondisabled to disabled (incidence)
2. Nondisabled to death
3. Disabled to nondisabled (recovery)
4. Disabled to death

Disability

- Activity limitations in Minimum European Health Module (MEHM) :

For at least the past 6 months, have you been limited in activities people usually do because of a health problem? Yes, strongly limited; yes, limited; no, not limited

ECHP: Are you hampered in your daily activities by any physical, mental health problem, illness or disability? Severely/ to some extent/ not limited.

Top-down approach

total mortality rates
prevalence of disability
initial estimates of **overall transition rates**

DISMOD-II

consistent **overall transition rates**

consistent **overall transition rates**
RRs for transition rates
population share of subgroup

back calculation

transition rates for subgroups

Data Sources

Type of data	Source
Total mortality rates	Statistics Netherlands + Istat + HMD
Prevalence of disability	ECHP
Initial estimates of overall transition rates	ECHP
RRs for transitions rates	Literature + ECHP
Population % of subgroup	HIS or ECHP or MicMac other modules

To date

- 1) Literature review of effect of four determinants on the transition rates (Gabriele Doblhammer, UROS)
 - Focus on four transitions
 - Most information on incidence
 - Association with: age, sex, education, marital status, smoking and/or BMI
 - Most information on age and sex
 - Fewest information on BMI and smoking
- 2) First steps to estimate transition rates by age and sex from the ECHP

Expected results:

- **Transition rates by age, sex and 4 determinants:**
 - Marital status
 - Education
 - Smoking status
 - BMI
- **Illustrated for the Netherlands and Italy.**
 - Same approach for other MS
- **Examples of possible applications:**
 - Health expectancy:**
 - Calculation of effect of smoking reduction on health expectancy in different MS
 - Projection of population by disability status**
 - Calculation of effect of increasing levels of education on the prevalence of disability in different MS

Questions:

- Experiences with the ECHP for the estimation of transition rates
- Additional studies on the effect of age, sex, education, marital status, BMI and/or smoking on the **transition rates**