

# Introduction to MIAMOD/PIAMOD software

## Methods and instruments for estimating cancer incidence and prevalence from population-based data

*March 8-10, 2006*

*Registro Tumori Ticino  
Locarno (Switzerland)*

### 8 March , morning session

- 9,00     **Introduction** (*A. Verdecchia*)  
Welcome to participants. Motivation, aims and structure of the course
- 9,15     **Population-based estimates of cancer burden** (*A. Verdecchia*)  
Definition and use of cancer burden indicators. Overview of direct and indirect methods for estimating the indicators. The transition rate method (MIAMOD/PIAMOD): use and applications.
- 9,45     **Method overview – part one: basic equations and MIAMOD regression** (*R. Capocaccia*)  
Transition Rate equations relating morbidity and mortality probabilities  
Modelling cancer incidence with age-period-cohort (APC) models  
Modeling/extrapolating cancer survival: tabulated and model-based data  
MIAMOD solution to transition equations: regression on mortality data (back-calculation) to derive incidence parameters  
Basic outcomes (regression diagnostic statistics and morbidity estimates)
- 10,45    *Coffee break*
- 11,15    **Software overview – part one: the Graphical User Interface** (*R. De Angelis*)  
Overview of the software interface: main menu and flow to run a session
- 11,35    **Guided exercise** (*R. De Angelis*)  
Running a MIAMOD session
- 12,30     *Lunch time*

## 8 March, afternoon session

- 14,00 **Method overview – part two: PIAMOD regression and optional outputs** (A. Verdecchia)  
PIAMOD solution to transition equations: regression on incidence data  
Prevalence estimates by disease duration and other optional outputs
- 14,45 **Guided exercise** (R. De Angelis)  
Running a PIAMOD session
- 15,15 *Coffee break*
- 15,30 **Exercise by groups 1: Deriving default and optional outputs**  
Producing default and optional outputs by running the previously saved MIAMOD/PIAMOD sessions
- 16,30 Discussion on the results of Exercise 1

## 9 March , morning session

- 9,00 **Method overview – part three: time projections and identification of the optimal incidence model** (R. Capocaccia)  
Improving incidence APC modelling: step-wise regression and cubic-splines  
Time projections of MIAMOD/PIAMOD estimates
- 9.30 **Software overview– part two: regression with multiple models** (R. De Angelis)  
Session to execute multiple models  
Illustration of the step-wise procedure to find optimal incidence models
- 10,00 **Exercise by groups 2: Performing a step-wise regression**  
Identification of the best model by using a PIAMOD multiple execution session
- 11,00 *Coffee break*
- 11, 30 **Model-based relative survival for MIAMOD/PIAMOD applications** (S. Francisci)  
Role of survival in MIAMOD/PIAMOD estimates and projections  
Survival models supported by MIAMOD/PIAMOD (mixture models with 'cure')  
Description of the SAS programs for modelling survival
- 12,30 **Using model-based survival in the Graphical User Interface** (S. Francisci)  
Parameters setting and Plot utilities in the MIAMOD/PIAMOD software
- 12,45 *Lunch time*

## 9 March , afternoon session

### 14,30 **Exercise by groups 3: Using model-based survival**

Evaluating the effect of different survival projection options on MIAMOD/PIAMOD estimates

16,00 *Coffee break*

### 16,30 **Summary of the results of Exercise 3 (A. Verdecchia)**

Comparing estimates from MIAMOD and PIAMOD regressions

## 10 March, morning session

### 9,00 **Estimating cancer burden in regions with partial registration coverage**

Validating survival local estimates (PIAMOD regression)

Using validated survival to estimate incidence and prevalence at the regional scale (MIAMOD regression)

### 9,20 **Exercise by groups 4: Estimating regional cancer burden from local CR data**

Example application on Italian data: colorectal cancer in E. Romagna

11,00 *Coffee break*

### 11,30 **MIAMOD/PIAMOD method: critical discussion (R. Capocaccia)**

Validation of the results and sensitivity analysis

Illustration of the main critical aspects

Application range and comparison with other methods

### 12,30 **Closing remarks and discussion**