

Introduction to MIAMOD/PIAMOD software

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

March 7-9, 2007

Centro Nazionale di Epidemiologia
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7 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*

7 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

8 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*

8 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

9 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**