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**