

Setting priorities for public health in the EU

Italian national experience

Giovanni Nicoletti

Office of the Secretary General – Ministry of health - Italy

BMJ Open Long-term prediction of major coronary or ischaemic stroke event in a low-incidence Southern European population: model development and evaluation of clinical utility

Giovanni Veronesi,¹ Francesco Gianfagna,¹ Lloyd E Chambless,² Simona Giampaoli,³ Giuseppe Mancina,⁴ Giancarlo Cesana,⁴ Marco M Ferrario¹

To cite: Veronesi G, Gianfagna F, Chambless LE, *et al.* Long-term prediction of major coronary or ischaemic stroke event in a low-incidence Southern European population: model development and evaluation of clinical utility. *BMJ Open* 2013;**3**:e003630. doi:10.1136/bmjopen-2013-003630

► Prepublication history and additional material for this paper is available online. To view these files please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2013-003630>).

ABSTRACT

Objective: To develop a long-term prediction model of first major cardiovascular event and to assess its clinical utility in a low-incidence European population.

Setting: Four independent population-based cohorts enrolled between 1986 and 1993 in Northern Italy.

Participants and methods: N=5247 35-year-old to 69-year-old men and women free of cardiovascular disease at baseline. Absolute 20-year risk of first fatal or non-fatal coronary or ischaemic stroke event (monitoring trends and determinants in cardiovascular disease (MONICA) validated) was estimated from gender-specific Cox models.

Main outcome measures: Model discrimination (area under the receiver operating characteristic (ROC)-curve, AUC). 'High-risk' subjects were identified based on several threshold values for the 20-year predicted risk. Clinical utility was defined in terms of fraction of missed events (events among those considered at low-risk) and unnecessary treatment (false true positive

and stroke events recommend the use of a multivariable risk prediction model to identify high-risk subjects.¹⁻² Several risk scores are available in different US³⁻⁴ and European⁵ populations of middle-aged adults, including the Italian one,⁶ to estimate the risk of first fatal and non-fatal cardiovascular event over a 10-year time interval. Primary prevention, however, has been recently moved towards the concepts of 'lifetime'⁷ and 'long-term' risks,⁸ motivated also by the increasing life expectancy in western countries. To this extent, 10-year risk prediction models are inadequate to distinguish between those at both low short-term and long-term risks, and those at low short-term but at elevated long-term risk due to the presence of non-optimal risk factors levels.⁹⁻¹¹ In the Framingham



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SCORE Risk Charts

EUROPEAN SCORE CHARTS

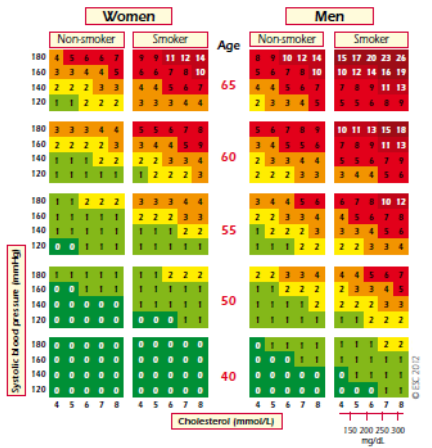
HOW DO I ASSESS RISK?

The «Priorities» section indicates that certain subjects declare themselves to be at very high or high risk without requiring the use of a chart such as SCORE (Systematic Coronary Risk Evaluation), which is designed for use in apparently healthy individuals. These are those with known CVD, type 2 diabetes or type 1 diabetes with target organ damage and those with moderate to severe CKD (all very high risk), and those with markedly elevated single risk factors (high risk). Such individuals require immediate attention to all risk factors. For others, the SCORE charts may be used to assign them to the appropriate risk category.

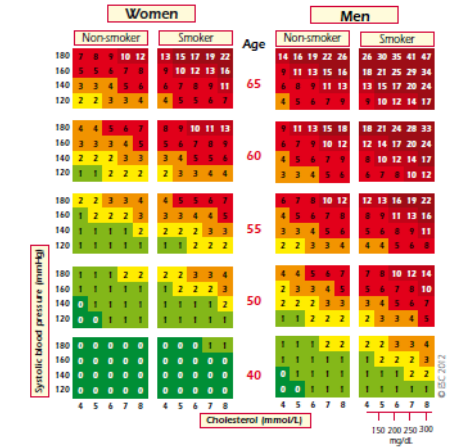
- Practice Tools & Support
- CVD Prevention Toolbox
- EACVI Imaging Toolboxes
- Guidelines into Practice Tracks
- ACCACV Toolkit
- Pocket Guidelines App
- Guidelines Summary Cards
- ACS Trials Comparison Tool
- Atrial Fibrillation Patient Website
- Heart Failure Patient Website

- Down
- EU Ch
- Risk a
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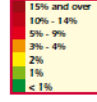
LOW RISK COUNTRIES



HIGH RISK COUNTRIES

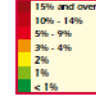


SCORE



10-year risk of fatal CVD in populations at low CVD Risk

SCORE



10-year risk of fatal CVD in populations at high CVD Risk

How do I use the SCORE charts to assess CVD risk in asymptomatic persons?

1. Use the **low risk charts** in Andorra, Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, The Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland and United Kingdom. Use the **high risk charts** in other European countries. Of these, some are at very high risk and the charts may underestimate risk in these. These include Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia FYR, Moldova, Russia, Ukraine and Uzbekistan.
2. Updated, re-calibrated charts are now available for Belgium, Germany, Greece, The Netherlands, Spain, Sweden and Poland.
3. Find the cell nearest to the person's age, cholesterol and BP values, bearing in mind that risk will be higher as the person approaches the next age, cholesterol or BP category.
4. Check the qualifiers
5. Establish the total 10 year risk for fatal CVD.

NCDs : Italian situation



Cardiovascular diseases:

- 38% of deaths



Cancers:

- second leading cause of death (30% of all deaths)
- incidence increasing (approximately 250,000 new cases each year)



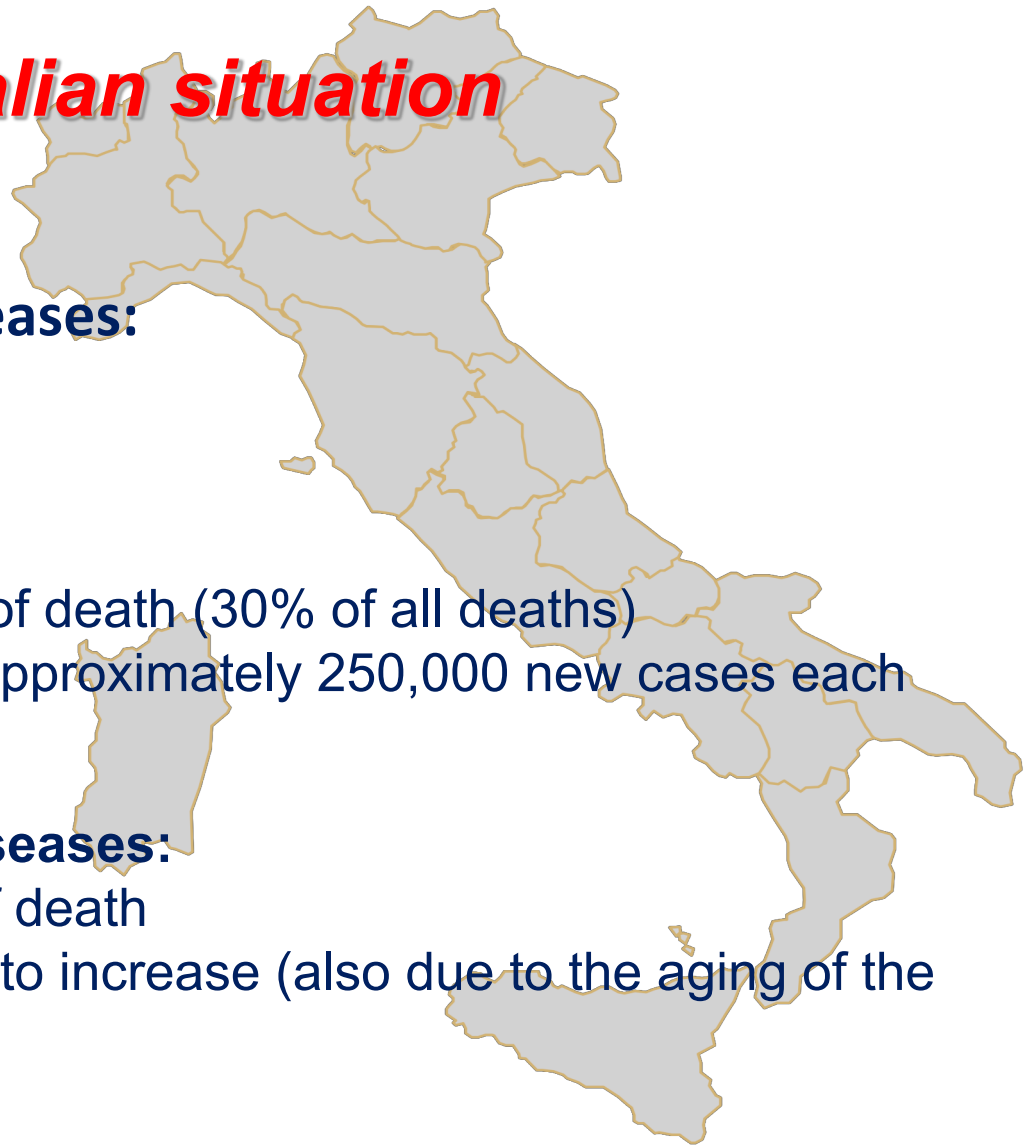
Chronic respiratory diseases:

- third leading cause of death
- prevalence expected to increase (also due to the aging of the population)

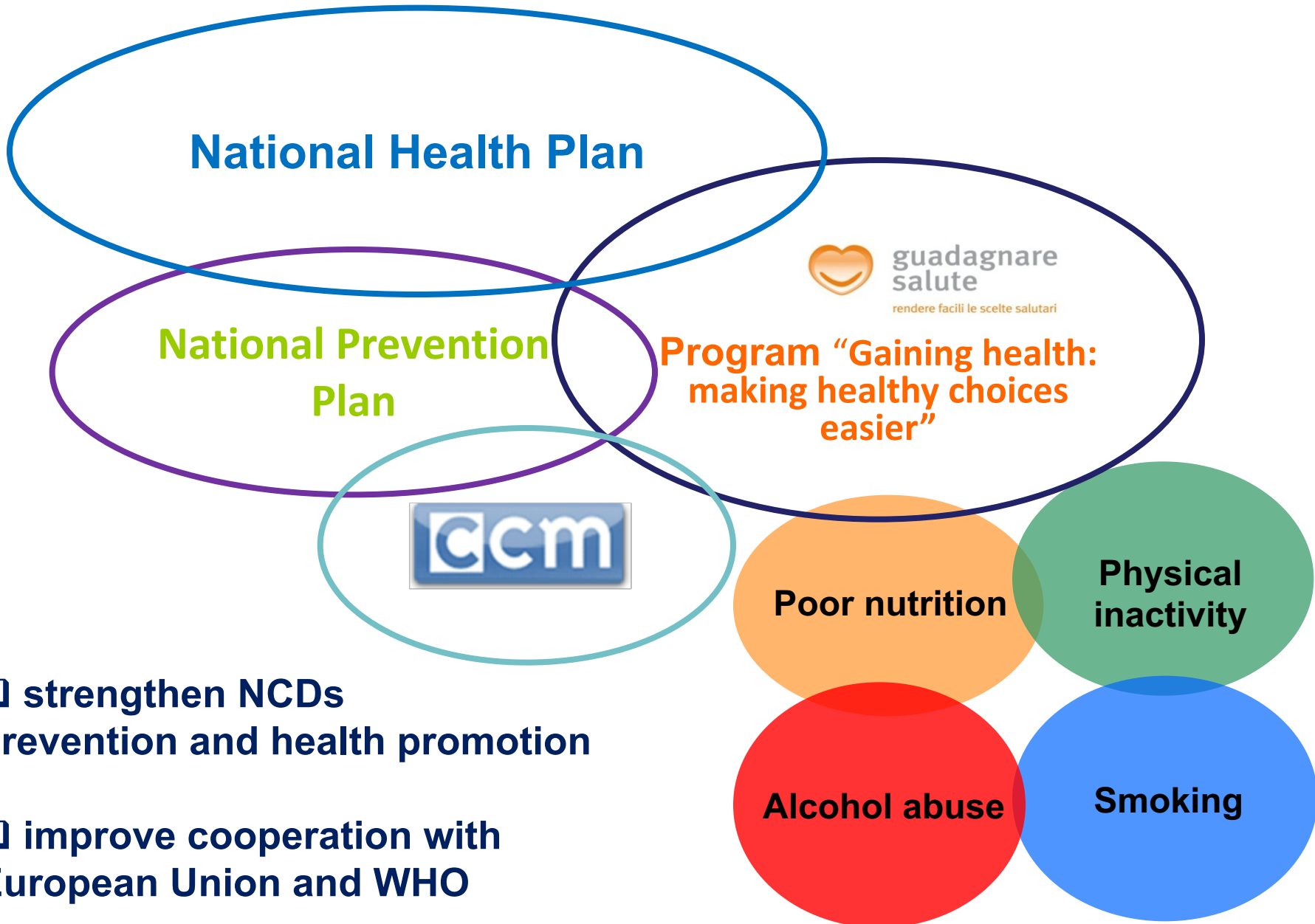


Diabetes:

- 3,000,000 people with diabetes (5% of the population)
- about a million people not aware of having the disease



The Italian strategy

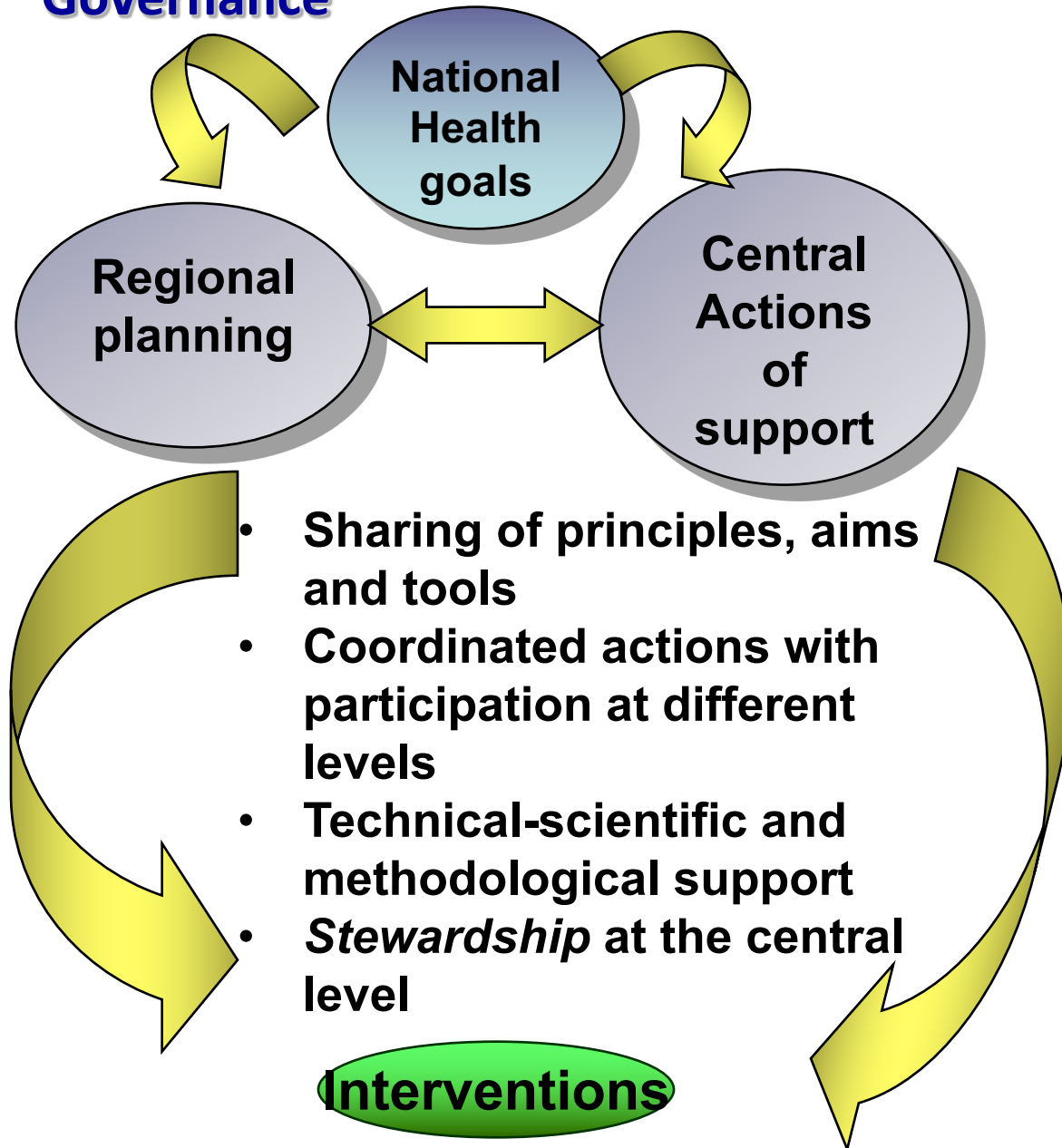


strengthen NCDs prevention and health promotion

improve cooperation with European Union and WHO

The National Prevention Plan

Governance



Programmatic document, shared between State and Regions, that engages all the Italian Regions to implement prevention programs addressed to the population, on the basis of:

- priority (epidemiological surveillance)
- evidence of effectiveness
- attention to the citizen (healthy or sick)

(since 2007)

REGIONE DEL VENETO



Population: 4,925 Ml.

400,000 (8%) 50-54 yrs old

9 «new» Local Health Units/Authorities

22 «old» Local Health Units/Authorities

11 involved in the project

Regional Prevention Plan 2014-2018

(Dgr 749, 14.05.15)

Cardiovascular Screening (S.4)

Objectives:

- To estimate cardiovascular risk among the 50 years old population (both males and females)
- Identify persons with unhealthy life styles
- Identify new cases of hypertension, hyperglycemia and hypercholesterolemia



CCM Pilot Project

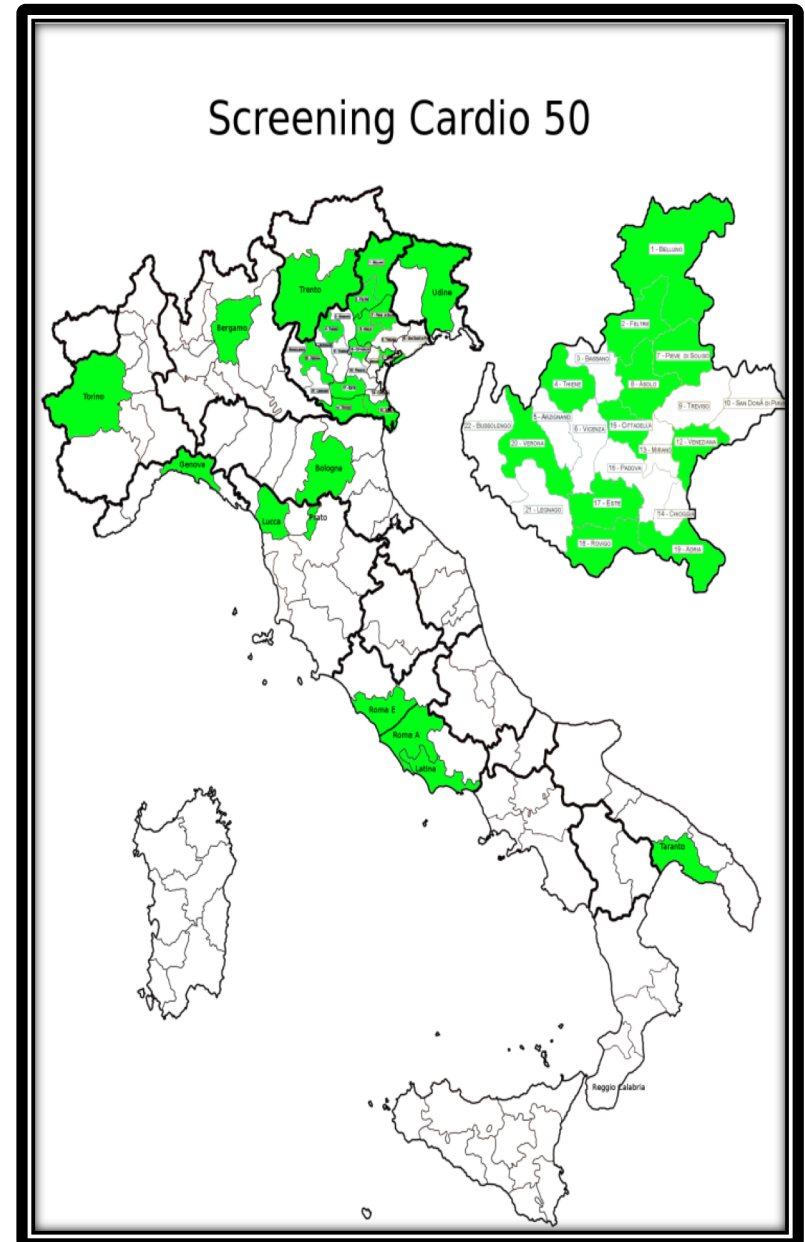


11 LHA of Veneto

Belluno, Feltre, Alto Vicentino, Pieve di Soligo, Asolo, Veneziana, Alta Padovana, Este, Rovigo, Adria, Verona

12 LHA not Veneto

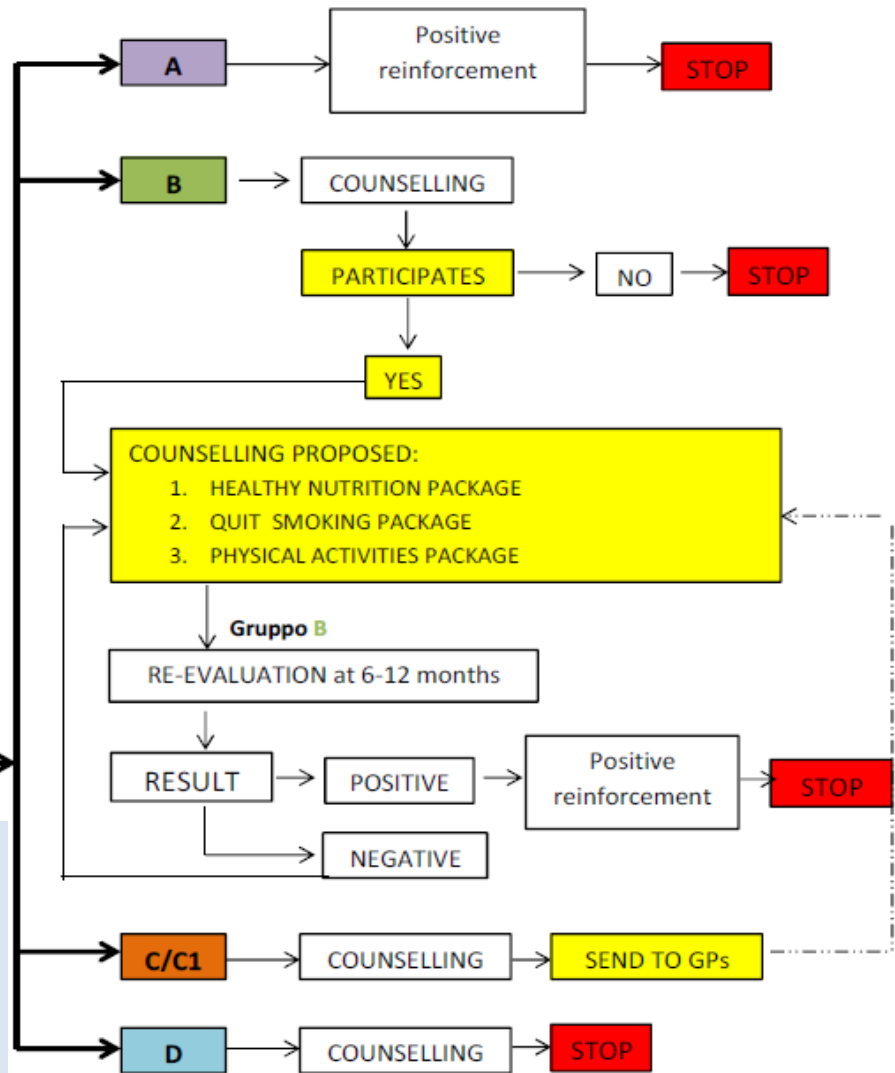
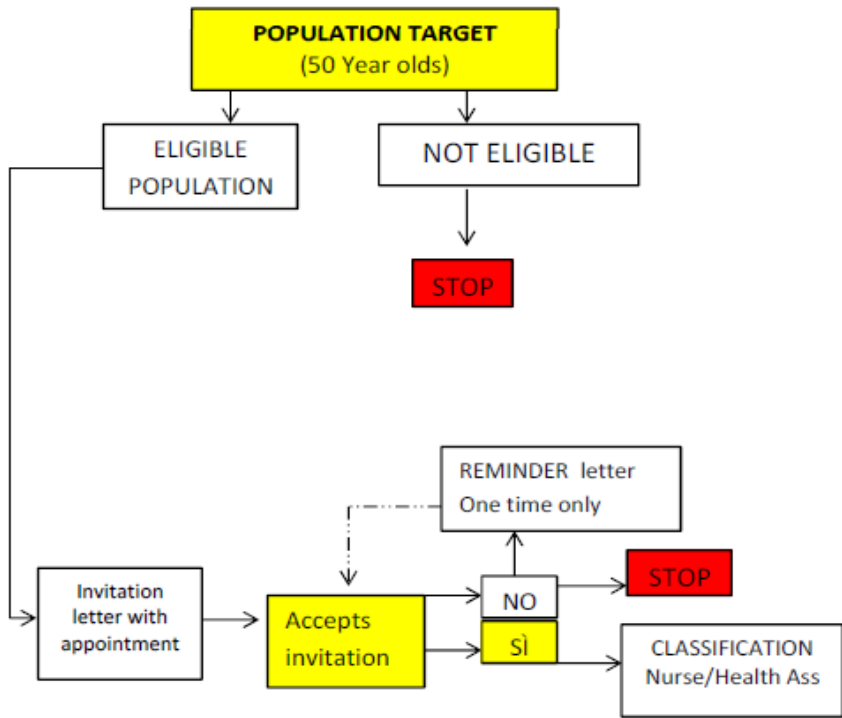
Friuli Centrale, Trento, Bergamo, Torino, Bologna, Genovese, Lucca, Prato, Roma 1, Latina, Taranto



Cardio 50 Process

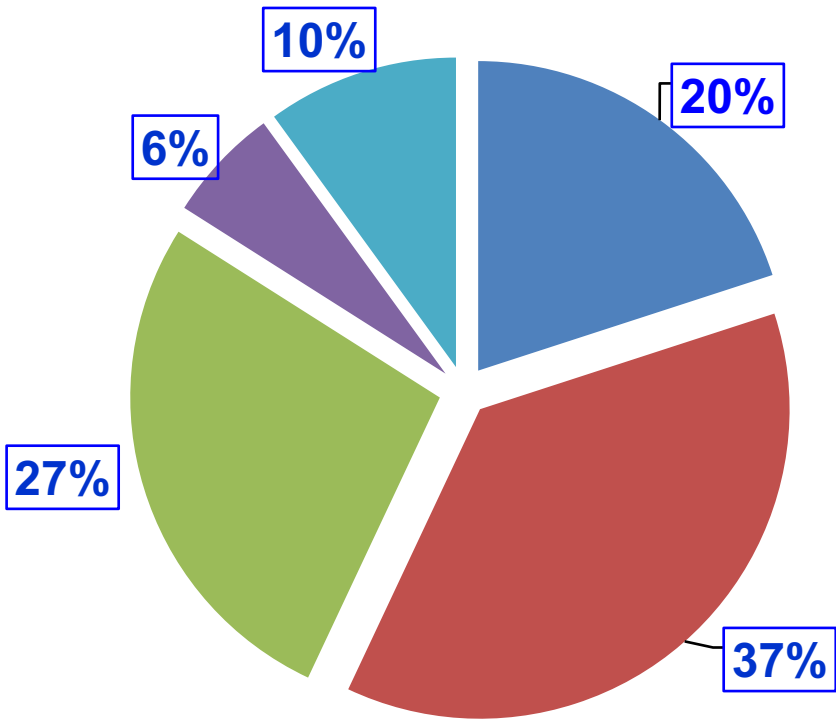
- Active invitation by letter
- **Screening** visit and evaluation by a health professional:
 - Blood sugar/cholesterol level tests (Sticks)
 - Weight, height and blood pressure measurement
- Life style **Assessment** (smoking, eating and exercise habits) with a standardised questionnaire
- **Classification** in 4 groups (through software)
- Life style **Counselling** with healthier habits proposals
- Assignement of medical report
- Referral to GP (if required)
- Follow-up for specific class (B)

FLOW CHART "Cardio 50"



- ▶ **Class A** *Healthy life style, no risk factors*
- ▶ **Class B** *Unhealthy lifestyle, no risk factors*
- ▶ **Class C** *Unhealthy lifestyle with risk factor(s)*
- ▶ **Class C1** *Healthy lifestyle with risk factor(s)*
- ▶ **Class D** *In therapy, exits screening*

- ➔ **Clas**
- ➔ **Clas**
- ➔ **Clas**
- ➔ **Clas**
- ➔ **Clas**



- Class A
- Class B
- Class C
- Class C1
- Class D

S
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tor(s)
(s)

Some results - First visit (1)

Total invited (2015-2017) ~**44,000**

Participation rate ~ **61%**

Follow-up compliance ~ **53%**

Physical activity

- **16,1%** insufficient *
- **56,6%** moderate
- **27,2%** high

* less than 30' a day 5 times a week

Smoking Habits

- **21%** Smokers *
- **22,8%** males
- **19,5%** females

* 11,6 average n. cigarettes smoked daily

Some results - First visit (2)

Nutrition and Weight

- **72,5%** Fruit and vegetables consumption*
 - 71% males,
 - 74,4% females
- **36,6%** Fish intake at least twice a week

*less than 5 portions a day

Waist circumference

- **27,7 %** males (≥ 102 cm),
- **42,8%** females (≥ 88 cm)

- **48,8% *Overweight*** (BMI ≥ 25)
 - **60,3%** males
 - **39%** females

- **15% *Obese*** (BMI ≥ 30)

Some results - First visit (3)

«Early» detection

New subjects with:

- **23% Hypertension**
(16 % females , 31% males)
- **9% Hyperglycemia**
- **21% Hypercholesterolemia**
(22 %females, 19 %males)

First visit vs. follow up

(Class B subjects)

First Visit

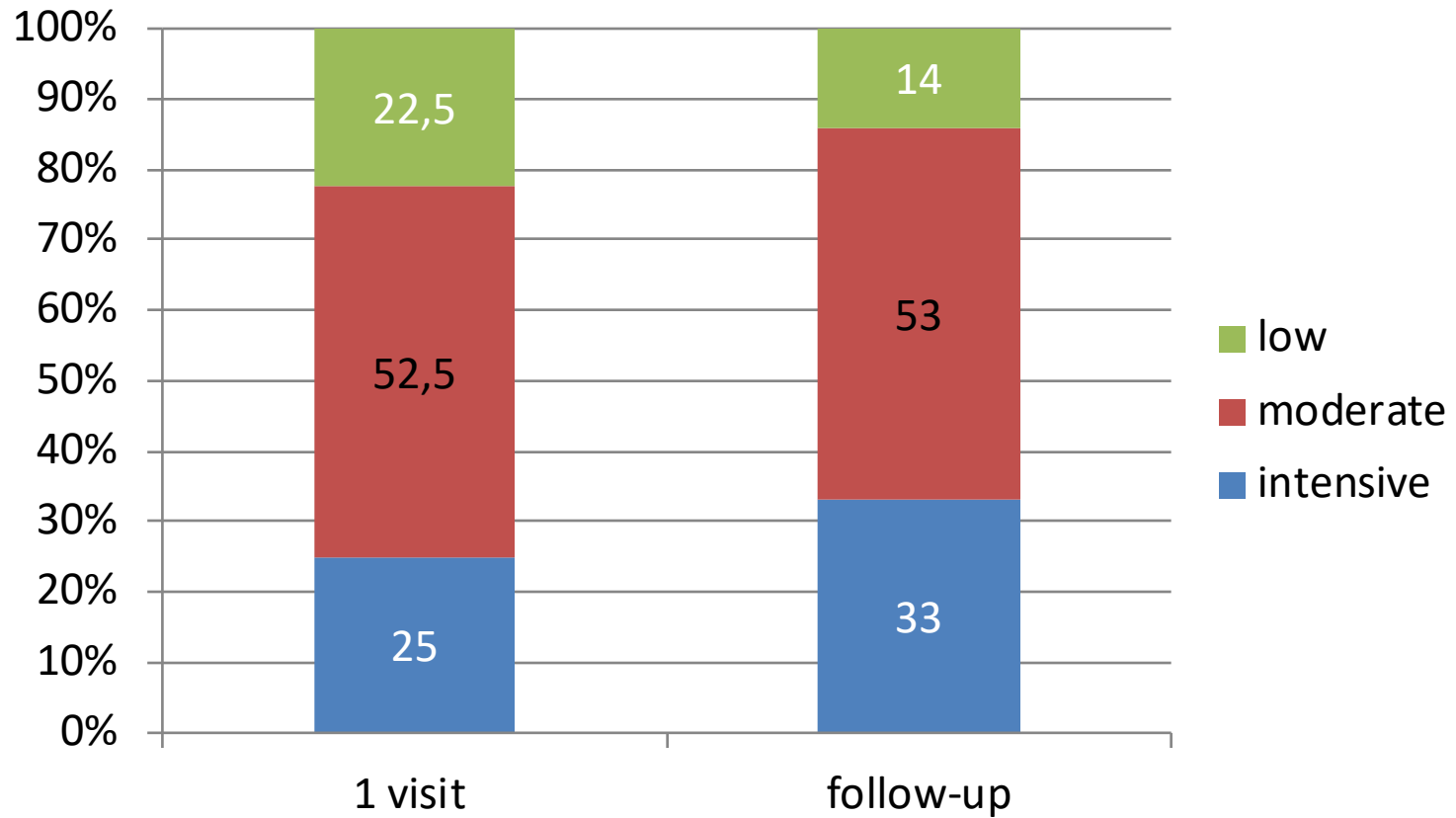
- **30,4%** Smokers
- **35,4%** Fish consumption less than twice a week
- **60%** Overweight
 - **51%** Females
 - **71,6%** Males

Follow up after 6-12 months

- **21,9 %**
- **39,3%**
- **56,7%**
 - **47,5%** Females
 - **67,3%** Males

First visit vs. follow up: Physical activity

(Class B subjects)



Cardio 50 «European» Path

- Submitted and accepted in JA «CHRODIS» Platform as Best Practice (BP) (2016)
- Selected by the EU Commission in the first round of potential BPs to be endorsed by newly instituted SGPP and to be implemented on the basis of MS choices (Mar 2017)
- Selected as Practice to be implemented after survey among SGPP members/MS health authorities (1 half 2017)
- Included as background in EU HP 2018 WP (Dec 2017)
- Call for Implementation project launched (June 2018)
- «YOUNG50» Application submitted (September 2018)

**Partners (Countries) involved
in EU project application:**

2 LHA in Veneto (Italy)

VIESTOJI ISTAIGA CENTRO POLIKLINIKA
(Lithuania)

MINISTERE DE LA SANTE'
(Luxembourg)

ASOCIATA AER PUR ROMANIA
(Romania)

Scientific Partners:

***ASOCIACION CENTRO DE EXCELENCIA
INTERNACIONAL EN INVESTIGACION SOBRE
CRONICIDAD (Kronikgune)***

EUROPEAN SOCIETY OF CARDIOLOGY (ESC)

Specific Objectives

- 1. Adaptation and export of the CARDIO50 screening model to the EU member countries participating in the project (Lithuania, Romania, Luxembourg)**
- 2. Reduce risk factors of cardio-vascular diseases through the change of lifestyles**
- 3. Perfecting the model to achieve maximum performance, maximum sustainability and dissemination**

Phase Development

- 1. Provide a needs assessment and situation analysis; adapting the Cardio 50 example to local context and defining implementation action plans**
- 2. Rolling out and piloting of the screening and prevention intervention in selected MSs**
- 3. Impact evaluation of the pilot and follow up study in order to institutionalize the project**

WP 4 - Situation analysis and feasibility/needs assessment (KRONIKGUNE)

WP 4 will describe the current situation in terms of epidemiological context and existing cardiovascular health promotion and prevention activities in the three pilot sites countries. Partners will identify core features in CARDIO 50 which are essential to achieve desired results in YOUNG50. They will identify and categorize significant factors faced in their region/country in deploying YOUNG50, their adapted YOUNG50 local prevention plan and produce an Action Plan and process indicators to define local prevention programs deployment and monitoring

WP 5 - Adaptation of cardio 50 procedures and materials (CENTRO POLIKLINIKA)

The main goal of WP5 is successful adaptation of Cardio 50 procedures and material to local contexts. This will ensure the sustainable and reliable process of implementing the best practice, reaching objectives and accurate quantitative and qualitative analysis of the data. A study visit of to Italy will ensure an alignment of intent and procedures of software during design, development and adaptation. The interventions defined in CARDIO50 will be reviewed and customized/adapted to local sites. A survey one month after the beginning of implementation will provide information for any necessary changes. WP5 will also provide training of IT and health professionals. The issues of data protection and consent to use the data received for the statistics in accordance with the laws in force in each country is also addressed.

WP 6 - Implementation of Screening and prevention intervention (MINISTERE DE LA SANTE)

WP6 will extend the CARDIO 50 model to other countries (Romania, Lithuania and Luxemburg). The CARDIO 50 good practice transfer and implementation will be prepared. It will be necessary to set up local governance structures for the implementation of the project, with the help of local key stakeholders. Local sites will launch the adapted YOUNG50 Prevention Programs. The different implementations experiences will be assessed by analysing some process indicators. In this way it will be possible to find out improvement solutions, since programs will continue operating. The development and the pilot launch of an APP for the collection of follow-up data is provided, and more in general it will be studied the program's ability to be sustainable in future.

WP 7 - Follow up and recommendations (AZ. ULSS6 EUGANEA)

WP 7 will focus on the future, making the implementation of YOUNG50 sustainable. A set of output health-related indicators will be defined, in order to follow-up data collection and analysis. The final goal is a better understanding of ways to integrate screening and prevention intervention into regional and national policy and planning. Outcomes expected are the development of recommendations and Policy Guidelines to foster the inclusion of CVD prevention through the YOUNG50 model in Regional or National



Isola di Ventotene e di Linosa



GUARDAVO SPARIRE L'ISOLA
NELLA QUALE AVEVO RAGGIUNTO
IL FONDO DELLA SOLITUDINE,
M'ERO IMBATTUTO NELLE AMICIZIE
DECISIVE DELLA MIA VITA.
AVEVO FATTO LA FAME,
AVEVO CONTEMPLATO
COME DA UN LONTANO LOGGIONE
LA TRAGEDIA DELLA SECONDA GUERRA
MONDIALE, AVEVO TIRATO LE SOMME
ENIGMI DI QUEL CHE ERO ANDATO
MEDITANDO DURANTE SEDICI ANNI.
AVEVO SCOPERTO L'ABISSO
DELLA RASSEGNAZIONE,
LA VIRTÙ DEL DISTACCO,
IL PIACERE DEL PENSARE PULITO,
L'EBBEREZZA DELLA CREAZIONE POLITICA,
IL FREMITO DELL'APPARIRE
DELLE COSE IMPOSSIBILI...
...NESSUNA FORMAZIONE POLITICA
ESISTENTE MI ATTENDEVA,
NÉ SI PREPARAVA A FARMI FESTA,
AD ACCOGLIERMI NELLE SUE FILE,
CON ME NON AVEVO PER ORA,
OLTRE ME STESSO,
CHÉ UN MANIFESTO, ALCUNE TESI
E TRE O QUATTRO AMICI...

ALTIERO SPINELLI
18 AGOSTO 1945

A SESSANTA ANNI DALLA PUBBLICAZIONE DEL
MANIFESTO DI VENTOTENE
PER UNA EUROPA LIBERA ED UNITA
IL 29 OTTOBRE 2004 A ROMA
I RAPPRESENTANTI DEI 25 PAESI
DELL'UNIONE EUROPEA FIRMARONO IL
TRATTATO CHE...

Acknowledgments

Francesca Russo, Mary Elizabeth Tamang, Federica Michieletto

Directorate for Prevention, Food Safety and Animal Health – Veneto Region - Italy

Daniela Galeone, Giovanna Laurendi, Roberto D'Elia

Directorate for Health Prevention, Ministry of Health - Italy



Thanks for your attention!

