



# Policy and planning of prevention in Italy: Results from an appraisal of prevention plans developed by Regions for the period 2010–2012



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## ABSTRACT

Health policies on disease prevention differ widely between countries. Studies suggest that different countries have much to learn from each other and that significant health gains could be achieved if all countries followed best practice. This paper describes the policy development and planning process relating to prevention activities in Italy, through a critical appraisal of Regional Prevention Plans (RPPs) drafted for the period 2010–2012. The analysis was performed using a specific evaluation tool developed by a Scientific Committee appointed by the Italian Ministry of Health. We appraised nineteen RPPs, comprising a total of 702 projects, most of them in the areas of universal prevention (62.9%) and prevention in high risk groups (27.0%). Italian Regions established prevention activities using an innovative combination of population and high-risk individuals approaches. However, some issues, such as the need to reduce health inequalities, were poorly addressed. The technical drafting of RPPs required some improvement; e.g. the evidence of the effectiveness and cost-effectiveness of the health interventions proposed was seldom reported. There were significant geographical differences across the Regions in the appraisal of RPPs. Our research suggests that continuous assessment of the planning process of prevention may become a very useful tool for monitoring, and ultimately strengthening, public health capacity in the field of prevention. Further research is needed to analyze determinants of regional variation.

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## 1. Introduction

Although finding the right balance between prevention and cure is difficult, in wealthy countries the focus of health care is changing from cure to prevention, so that future diseases in currently healthy individuals may be anticipated [1]. Existing comparative qualitative and quantitative analyses have documented a wide diversity of prevention-focused health policies across different countries [2–5].

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However, these studies agree that shortages of financial and human resources dedicated to prevention exist in many countries, that public health capacities need to be strengthened and that different countries have much to learn from each other, since considerable health gains could be achieved if all countries followed best practice in health policy [5].

Italy, whose health care system is characterized by universal coverage, good performance in terms of both good health indicators and low health care expenditure, and an ongoing devolution of responsibilities from central Government to the Regions, is an interesting case study (see **Box 1** for a general description of the Italian National Health Service). Concerning prevention, the National Prevention Plan (NPP) is the main policy and planning instrument in Italy. Issued approximately every 3–5 years, the NPP conceptually is the part of the National Health Plan (NHP) committed to the development of health promotion and disease prevention activities [6–8]. The NPP 2010–2012 (extended to 2013), which is the result of an agreement between the Government and the Regions [9], is structured into four macroareas of intervention: (i) predictive medicine; (ii) universal prevention; (iii) prevention in high risk groups; and (iv) prevention of complications and recurrence of chronic diseases. In accordance with the institutional framework that assigns to the Italian Regions much of the organization, administration and management of health care, the NPP establishes that each Italian Region should develop its own regional Prevention Plan (RPP), designing projects coherent with the regional epidemiological and organization context [10,11]. Having reconsidered its role, the Government (i.e. the Ministry of Health) is now mainly responsible for carrying out certain “central” actions that aim to support the regional prevention projects; this “stewardship” role is modeled on that played by the Ministry in the wider health system [12–16]. Among the main innovations of the NPP 2010–2012 is the widening of the prevention perspective: many health objectives and prevention intervention lines are included that were not considered in the previous NPP 2005–2007, and two macroareas of intervention – predictive medicine and prevention of complications and recurrence of chronic diseases – are completely new. The NPP and its application via the RPPs is likely to represent a unique example of the planning and implementation of prevention activities in Europe: it provides a comprehensive framework for public health activities, since it includes all the major domains of health promotion and disease prevention within a single national program. At the same time, it assigns to Regions the responsibility to develop projects that take into account specific local prerogatives, but still adopt a standardized methodology aimed at achieving uniform health objectives throughout the country. While in the majority of European countries policy frameworks are reported to be in place that outline responsibilities and accountabilities for public health activities, not in all of them a comprehensive national public health program is actually implemented, and only in a few countries public health policy planning is informed by and aligned with regional health needs of the population, as it occurs in Italy [4].

### **Box 1: General characteristics of the Italian National Health Service (INHS)**

- The INHS was established in 1978, founded on the principles of universal coverage, social financing through the use of general taxation and non-discriminatory access to healthcare services. It provides universal coverage and free healthcare at point of delivery.
- Further to the major reform of the Constitution (Constitutional Law number 3 of October 18th, 2001), which radically modified the roles and responsibilities of the State and the Regions, the key operational actors of the INHS are currently the 21 Regions and approximately 140 Local Health Authorities (Aziende Sanitarie Locali; ASL), which serve geographical areas with mean populations of about 300,000.
- The central Government, through the Ministry of Health, ensures that the general objectives and principles of the healthcare system are met, including definition of the basic benefits package (“livelli essenziali di assistenza” or LEA), which must be uniformly provided throughout the country. It issues the National Prevention Plan (NPP) approximately every 3–5 years.
- The Regions are responsible, through the Local Health Authorities (ASL), for the delivery of health services by means of accredited hospitals (both public and private), out-patient clinics and other facilities. They draft the Regional Prevention Plans (RPPs) based on the NPP.
- Within Local Health Authorities, the Prevention Departments are in charge of guaranteeing all prevention activities that target individuals and communities, and are therefore largely responsible for the implementation of RPPs. Besides implementing the specific projects included in the RPPs, Prevention Departments are responsible for routine health protection and disease prevention activities, included in the first LEA “Collective healthcare in the living and working environment”.
- The performance of the INHS can be considered good, as shown by the country’s good health indicators (life expectancy rates at birth for both female and male are the second highest in OECD Countries, 84.8 and 79.8 respectively in 2012) coupled with one of the lowest expenditure rates in healthcare in OECD Countries (8.6% of GDP in 2013).\*

\*Source: OECD StatExtracts [http://stats.oecd.org/index.aspx?DataSetCode=HEALTH\\_STAT](http://stats.oecd.org/index.aspx?DataSetCode=HEALTH_STAT).

This article provides an overview of the results of a critical appraisal of RPPs developed by the Italian Regions for the period 2010–2012 (extended to 2013). The data presented are mainly based on a descriptive analysis of RPPs conducted within a wider project funded by the Italian Ministry of Health; this project aimed to identify the strengths and weaknesses of the prevention policy and planning process in Italy and thereby to provide suggestions for strengthening regional capacities in this area. The results of the analysis were made available by the Ministry of Health to all Italian Regions to support the ongoing cycle of prevention planning. We also present

the methodology used to conduct the appraisal, which involved the development of a new evaluation tool, and describe the prevention planning process conducted by Italian Regions and differences across geographic areas.

## 2. Methods

RPPs were appraised using a tool specifically designed by a Scientific Committee appointed by the Italian Ministry of Health. The Scientific Committee included public health experts of universities, scientific societies, the National Institute of Health (Istituto Superiore di Sanità, ISS), and the National Agency for Regional Healthcare Services (Agenzia Nazionale per i Servizi Sanitari Regionali, AGENAS). The first meeting of the Scientific Committee was a brainstorming exercise, during which the general structure of the tool and the possible evaluation items were discussed. After the first meeting a coordinating group at the Department of Public Health and Infectious Diseases of Sapienza University of Rome was established with the objective to develop a first draft of the evaluation tool. Once produced, this draft was discussed in detail by all the members of the Scientific Committee and amended accordingly. A pilot study was carried out on the RPPs produced by two Italian Regions. During the last meeting of the Scientific Committee, which took place six months after the initial meeting, the final form of the evaluation tool was formally approved.

The RPPs were appraised using criteria developed from guidelines provided by the Ministry of Health in the NPP; these criteria concerned the underlying principles and methods of prevention planning, as well as the required structure and content of the regional plans. With respect to underlying principles and planning methods, the NPP requires first that the conceptual model of Project Cycle Management (PCM) be used when developing a RPP. PCM determines particular phases of a project cycle (programming, identification, formulation, implementation, evaluation and audit), and outlines specific actions and approaches to be taken within these phases. This methodology helps to ensure that projects are supportive of overarching policy objectives, relevant to an agreed strategy and to the real problems of target groups, feasible and sustainable [17]. Second, the NPP clearly indicates the need to increase the empowerment of individuals and communities to make informed decisions about their health, to adopt the principles of Evidence Based Prevention (EBP), to base decisions on an analysis of the epidemiological context and of the performance of the health system, to pay attention to the wider determinants of health and to select targets based on analysis of priorities and risk factors. Finally, the Scientific Committee arbitrarily selected some public health problems, mostly falling within the area of universal prevention, that deserve an “a priori” level of attention by the Regions.

Concerning the structure and content, RPPs are required to have two core sections that cover the Strategic Framework and the Operational Plan. Within the Strategic Framework section, some key points must be clearly spelled out: an analysis of the regional context, the identification of local needs, a description of regional health planning and a definition of priorities for the RPP

2010–2012. In the Operational Plan section, projects are developed as a consequence of the planning choices set out in the Strategic Framework section. Projects should match one or more of 22 general lines of intervention grouped into four macroareas (predictive medicine, universal prevention, prevention in high risk groups and prevention of complications and recurrence of chronic diseases).

The final appraisal tool (a simplified version is available in Appendix 1) was composed of two sections: (i) descriptive analysis of RPP and (ii) analysis of the projects included in RPP. The first section of the tool focused mainly on the analysis of the Strategic Framework section of RPPs, and assessed whether the RPP included a clear description of the local context (including the organizational, socio-economic, demographic and epidemiologic profile of the Region), local health policy and planning (including prevention strategies), local epidemiological and organizational needs and priorities identified for prevention strategies. The first section of the tool also included a descriptive analysis of the projects of the Operational Plan section, according to macroarea and general line of intervention. The second section of the tool was intended to analyze the individual projects included in each RPP. The analysis explored different items, such as: (i) coherence of the projects with the regional epidemiological context, contextualization with regional health programs and policies, and continuity with the former RPP for the 2005–2007 period; (ii) consideration of specific public health issues (lifestyle improvement programs, vaccination and oncological screening programs, use of behavioral surveillance systems, environmental primary prevention, etc.) and transversal issues (empowerment, health inequalities, networking, capacity building); (iii) adherence to principles of Evidence Based Prevention (EBP), feasibility, monitoring and evaluation. A document was produced for each project.

The analysis of each RPP was carried out by working groups composed of at least two members, one from Sapienza University of Rome and a second from the Catholic University of the Sacred Heart of Rome. In total, 19 working groups were established, composed of resident public health doctors and PhD students of both institutions, working under the supervision of a coordinating group of public health professors of Sapienza University. The coordinating group was responsible for developing specific guidelines for the assessment of RPPs and projects, for revising and standardizing the preliminary results produced and for supporting the working groups throughout the whole evaluation exercise. In particular, two training seminars were organized: the first seminar aimed to introduce the evaluation tool and the related guidelines, to explain the methodology for appraisal of the RPPs, the projects and other relevant policy documents, and to provide operational definitions; the second seminar aimed to resolve the main discrepancies that arose within or across the working groups involved in the appraisal process. Each section of the evaluation tool included a series of Yes/No questions that the working groups were required to answer with a brief comment. Each member of the working group made an independent evaluation, with any discrepancies resolved after discussion between

the members. The answers provided by both evaluators were unified in a single Excel spreadsheet for each RPP, including a worksheet for each project assessed and a worksheet for the general evaluation of the RPP.

Results of the analysis are expressed as percentage of Yes answers provided by the evaluators to the questions included in the tool. Differences across geographic areas were assessed, using the National Institute of Statistics' classification "North", "Center", "South and Islands", through ChiSquare or Fisher's Exact test (depending on the number of observations) with a significance level of  $p < 0.05$ , using STATA statistical software, version 12.0 (Stata Corp. LP, College Station, TX, USA, 2011).

### 3. Results

Nineteen RPPs were analyzed by the working groups, encompassing a total of 702 projects. Two Regions (Valle D'Aosta Region and the Autonomous Province of Bolzano) did not develop their RPP. The number of projects per RPP ranged from 18 (Sardegna Region) to 71 (Veneto Region).

#### 3.1. General evaluation of RPPs

In general, the RPPs' were appropriate to their regional context, including in the majority of cases a description of the demographic, epidemiological, socio-economic and organizational contexts (Table 1). However, only 11 RPPs (57.9%) provided detailed information in their Strategic Framework section on regional health planning (values, objectives, implementation strategies, etc.) and the same number discussed the results obtained during the previous cycle of prevention planning (RPPs 2005–2007 and further extensions). Almost all Regions identified both epidemiological and organizational needs arising from the description of the local contexts, but all of these needs were addressed by specific projects in only 11 RPPs (57.9%) (Table 1). Most often, RPPs identified priorities in relation to epidemiological criteria, while only nine RPPs (47.4%) based priorities on the effectiveness of health interventions, according to the principles of EBP. A high level of attention was directed at the prevention of unhealthy lifestyles, which was indicated as one of the main objectives by almost all RPPs. The development and implementation of vaccination and cancer screening programs received comparable consideration. By contrast, only a few RPPs emphasized the reduction of inequalities (7, 36.8%) and the prevention of zoonosis (6, 31.6%) as main objectives. Promotion of individual and community empowerment, development of communication strategies for public health and capacity building of public health professionals were considered relevant by more than half of RPPs (Table 1). The behavioral surveillance systems mostly implemented in the RPPs were PASSI (Progress by Local Health Units toward a healthier Italy/Surveillance system in the population aged 18–64) and OKkio alla Salute (Surveillance System on Nutrition and Physical Activity in children attending primary school), with 17 RPPs including specific projects dedicated to the implementation of each surveillance system (73.7%) (Table 1). However, the use of behavioral surveillance systems was not optimal, since not all RPPs

used the data for the analysis of the regional epidemiological context and less than half of projects which could have used the information provided by such systems for planning and evaluation actually did so (data not shown). It is interesting to note that networking was a relevant working strategy for almost all RPPs (Table 1).

Considering the single items used for general evaluation of RPPs, there were no statistically significant differences across geographical areas of Italian Regions, with the exception of the item "Development and implementation of oncological screening programs", which was indicated less frequently by the Regions of the South and Islands as one of the main objectives of the RPP (Table 1).

#### 3.2. Descriptive analysis of the projects included in the RPPs

Most projects (442, corresponding to 62.9% of the total) fell within the macroarea of universal prevention, while a limited number of projects were within the macroareas of the prevention of complications and recurrence of chronic diseases (35, 5.0%) and of predictive medicine (30, 4.3%) (Table 2). The distribution of projects developed within the four macroareas was similar across geographical areas. However, there are some Regions in which universal prevention seems more important (i.e. Veneto and Friuli Venezia Giulia, with 75.6% and 73.7% of projects in this area, respectively) and others with larger number of projects relating to prevention in high risk groups, such as Molise (38.7%), Toscana (34.7%), and Sardegna (33.3%). Within the macroarea of universal prevention, most projects (19.5%) covered the prevention and surveillance of unhealthy lifestyles and related diseases, while the line of intervention with the lowest rate of projects was the prevention of healthcare associated infections (2.0%) (Table 2). In the macroarea of prevention in high risk groups most projects dealt with cancer and screening (9.7%). In this macroarea, several Regions decided not to dedicate any projects to some lines of intervention (neurological diseases, blindness and low vision, chronic respiratory diseases, osteoarticular diseases, deafness and hearing loss) (Table 2).

#### 3.3. Evaluation of projects included in the RPPs

The majority of projects conformed well to the regional context; a large number dealt with regional epidemiological issues described in the Strategic Framework of the respective RPP (603, 85.9%) and 596 projects (84.9%) addressed problems mentioned in the Regional Health Plan and/or other regional health policy documents (Table 3). Concerning public health issues addressed, most projects in the category of prevention and surveillance of unhealthy behaviors aimed to prevent an unhealthy diet (112, 16.0% of all projects), with the next highest number of projects aiming to promote physical activity (95, 13.5%). A significant number of projects were dedicated to the development and implementation of vaccination and cancer screening programs, and environmental primary prevention (particularly, prevention in the living and working environments). By contrast, very few projects were aimed at to prevent

**Table 1**  
Evaluation of Regional Prevention Plans (RPPs). Number and percentages of RPPs fulfilling specific criteria by geographical area of Italian Regions.

Item	Italy N. RPPs (%)	North N. RPPs (%)	Center N. RPPs (%)	South and Island N. RPPs (%)
<b>Contextualization of RPPs</b>				
Description of the demographic context	19 (100)	7 (100)	4 (100)	8 (100)
Description of the epidemiological context	18 (94.7)	7 (100)	4 (100)	7 (87.5)
Description of the socio-economical context	16 (84.2)	5 (71.4)	4 (100)	7 (87.5)
Description of the organizational context	14 (73.7)	6 (85.7)	3 (75.0)	5 (62.5)
Information on the Regional Health Plan	11 (57.9)	4 (57.1)	4 (100)	3 (37.5)
Evaluation of results of the previous RPPs (2005–2007 and further extensions)	11 (57.9)	4 (57.1)	2 (50.0)	5 (62.5)
Identification and reporting of the epidemiological needs	17 (89.5)	7 (100)	4 (100)	6 (75.0)
Identification and reporting of the organizational needs	17 (89.5)	7 (100)	4 (100)	6 (75.0)
Priorities consider all epidemiological needs	7 (36.8)	3 (42.9)	2 (50.0)	1 (12.5)
Priorities consider all organizational needs	7 (36.8)	7 (100)	4 (100)	6 (75.0)
All organizational/epidemiological needs addressed by specific projects	11 (57.9)	4 (57.1)	3 (75.0)	4 (50.0)
<b>Criteria used for the identification of priorities</b>				
Burden of disease	15 (78.9)	7 (100)	3 (75.0)	5 (62.5)
Risk factors	15 (78.9)	7 (100)	3 (75.0)	5 (62.5)
Evidence Based Prevention	9 (47.4)	5 (71.4)	2 (50.0)	2 (25.0)
Socio-economic factors	10 (52.6)	4 (57.1)	2 (50.0)	4 (50.0)
High-risk groups	12 (63.2)	5 (71.4)	3 (75.0)	4 (50.0)
High-risk settings	9 (47.4)	4 (57.1)	2 (50.0)	3 (37.5)
Mixed approach	14 (73.7)	6 (85.7)	3 (75.0)	5 (62.5)
<b>Main objectives of the RPPs</b>				
Lifestyle improvement	17 (89.5)	7 (100)	4 (100)	6 (75.0)
Development and implementation of vaccination programs	16 (84.2)	7 (100)	3 (75.0)	6 (75.0)
Development and implementation of oncological screening programs	15 (78.9)	7 (100)	4 (100)	4 (50.0)
Environmental primary prevention	8 (42.1)	4 (57.1)	2 (50.0)	2 (25.0)
Prevention of zoonosis	6 (31.6)	3 (42.9)	2 (50.0)	1 (12.5)
Reduction of inequalities	7 (36.8)	3 (42.9)	2 (50.0)	2 (25.0)
Promotion of individual and community empowerment	12 (63.2)	5 (71.4)	2 (50.0)	5 (62.5)
Development of communication strategies for public health	11 (57.9)	4 (57.1)	2 (50.0)	5 (62.5)
Capacity building for public health professionals	11 (57.9)	5 (71.4)	1 (25.0)	5 (62.5)
<b>Specific projects for the full implementation of surveillance systems</b>				
OKkio alla Salute <sup>a</sup>	14 (73.7)	5 (71.4)	4 (100)	5 (62.5)
HBSC <sup>b</sup>	7 (36.8)	3 (42.9)	2 (50.0)	2 (25.0)
PASSI <sup>c</sup>	14 (73.7)	5 (71.4)	4 (100)	5 (62.5)
PASSI d'Argento <sup>d</sup>	11 (57.9)	4 (57.1)	2 (50.0)	5 (62.5)
Use of networks	17 (89.5)	6 (85.7)	4 (100)	7 (87.5)
<b>TOTAL</b>	<b>19 (100)</b>	<b>7 (100)</b>	<b>4 (100)</b>	<b>8 (100)</b>

<sup>a</sup> Surveillance System on Nutrition and Physical Activity in children attending primary school.

<sup>b</sup> Health behavior in school aged children.

<sup>c</sup> Progress by Local Health Units toward a healthier Italy/Surveillance system in the population aged 18–64.

<sup>d</sup> Progress by Local Health Units toward a healthier Italy/Surveillance system in the population over 64 years.

\* *p* value <0.05.

zoonosis (20, corresponding to 2.9% of the total) (Table 3). Concerning the degree of attention devoted to some transversal public health issues, the use of networks was planned in a very high proportion of projects (621, 88.5%), as were training initiatives to improve capacity building of public health professionals (484 projects, 69.0%) (Table 3). While many projects included the use of communication strategies for individual and community empowerment (431, 61.4%), attention to health inequalities appeared to be minimal (Table 3). Less than one third of projects (217, 30.9%) provided evidence on the effectiveness of the interventions proposed, and only in 13.8% of cases (97 projects) were there considerations of the applicability of such evidence to the local context. Cost-effectiveness of the interventions was discussed in 56 projects (8.0%) (Table 3). Feasibility of projects was not always discussed, and a limited number of projects (80, 11.4%) provided indications on the sustainability of the intervention proposed (i.e. the capacity

to continue with the public health intervention proposed after completion of the project) (Table 3). Monitoring and evaluation (M&E) strategies were included in almost all projects (693, 98.7%), with process indicators being those most widely adopted (86.3% of projects) (Table 3).

Statistically significant differences were detected across geographical areas of Italian Regions for the coherence and the contextualization of projects, adherence to the principles and criteria of EBP and the feasibility of the project. Although the projects developed by the Regions of the Center seem to be of higher quality, the results did not follow a similar pattern across all items evaluated and were not always consistent within the same domain. For example, in the domain of feasibility of projects, projects developed by the Regions of the Center were of higher quality in terms of specification of the resources needed and of lower quality in terms of description of the expected difficulties/barriers and possible solutions (Table 3).

**Table 2**  
Distribution of projects included in the Regional Prevention Plans (RPPs) by macro-area, line of intervention and geographical area of Italian Regions.

Macroarea	General line of intervention	Italy N. projects (%)	North N. projects (%)	Center N. projects (%)	South and Islands N. projects (%)
Predictive medicine	Evaluation of the individual risk of disease	30.5 (4.3)	11.0 (3.6)	5.5 (4.3)	14.0 (5.2)
Universal prevention	Prevention of road injuries	25.8 (3.7)	9.8 (3.2)	6.0 (4.7)	10.0 (3.7)
	Prevention of work related injuries and illnesses	67.5 (9.6)	32.5 (10.7)	12.0 (9.4)	23.0 (8.5)
	Prevention of domestic injuries	30.0 (4.3)	13.0 (4.3)	4.0 (3.1)	13.0 (4.8)
	Prevention of vaccine-preventable diseases	41.5 (5.9)	16.5 (5.4)	6.0 (4.7)	19.0 (7.0)
	Prevention of healthcare associated infections	14.0 (2.0)	8.0 (2.6)	2.0 (1.6)	4.0 (1.5)
	Prevention of non-vaccine-preventable infections	41.3 (5.9)	19.3 (6.3)	6.0 (4.7)	16.0 (5.9)
	Prevention of diseases linked to chemical, physical and biological exposure	48.8 (6.9)	29.8 (9.8)	8.0 (6.3)	11.0 (4.1)
	Prevention of foodborne disease, including drinking water related diseases	36.3 (5.2)	17.3 (5.7)	5.0 (3.9)	14.0 (5.2)
Prevention in high risk groups	Prevention and surveillance of unhealthy behaviors and lifestyles and related diseases	136.8 (19.5)	56.8 (18.7)	28.0 (21.9)	52.0 (19.3)
	Tumors and screening	68.0 (9.7)	28.0 (9.2)	18.0 (14.1)	22.0 (8.1)
	Cardiovascular diseases	21.2 (3.0)	8.2 (2.7)	3.5 (2.7)	9.5 (3.5)
	Diabetes	25.2 (3.6)	7.2 (2.4)	3.5 (2.7)	14.5 (5.4)
	Chronic respiratory diseases	5.3 (0.8)	1.3 (0.4)	1.0 (0.8)	3.0 (1.1)
	Osteoarticular diseases	8.7 (1.2)	4.7 (1.5)	1.0 (0.8)	3.0 (1.1)
	Oral diseases	11.5 (1.6)	3.0 (1.0)	2.0 (1.6)	6.5 (2.4)
	Psychiatric diseases	29.0 (4.1)	13.0 (4.3)	4.0 (3.1)	12.0 (4.4)
	Neurological diseases	4.3 (0.6)	2.3 (0.7)	0.0 (0.0)	2.0 (0.7)
	Blindness and low vision	7.5 (1.1)	1.0 (0.3)	2.0 (1.6)	4.5 (1.7)
Prevention of complications and recurrence of chronic diseases	Deafness and hearing loss	9.0 (1.3)	1.0 (0.3)	3.0 (2.3)	5.0 (1.9)
	Medicine of complexity and related clinical pathways	8.8 (1.3)	4.3 (1.4)	1.5 (1.2)	3.0 (1.1)
Additional macroareas	Prevention and surveillance of disability and loss of self-sufficiency	26.1 (3.7)	11.1 (3.6)	6.0 (4.7)	9.0 (3.3)
		5.0 (0.7)	5.0 (1.6)	0.0 (0.0)	0.0 (0.0)
TOTAL		702.0 (100.0)	304.0 (100.0)	128.0 (100.0)	270.0 (100.0)

The numbers of projects are represented by decimals, since some projects concern more than one line of intervention and therefore are assigned to them proportionally.

#### 4. Discussion

In the present context of economic and financial crisis, the strategic role of prevention in improving health of the population while containing health-care costs is well recognized at the European Level [18]. Efforts to support health protection, health promotion and disease prevention can have important cost-effective benefits, but, at present, governments spend only a small fraction of their health budgets on promoting health and preventing disease – about 3% in OECD countries [19]. Moreover, striking variations among European countries in process and outcome indicators of health policies in the field of prevention were recently detected [5]. Among the priority actions of the health policy framework recently developed by the WHO regional office for Europe, the strengthening of public health capacity within health systems with universal coverage figures prominently [18]. The analysis of the policy and planning prevention process described in this paper

is useful for understanding the choices made by the Italian Regions and their consistency with the NPP, as well as for identifying strengths and weaknesses of public health capacities in the field of prevention planning in Italy.

In terms of prevention policy, governments can choose either high-risk strategies where single individuals are the targets of interest, or population strategies where everybody is exposed to public health measures. It is generally agreed that this choice is a political question more than a scientific one [20–23]. The majority of the projects planned by the Italian Regions concerned the macroarea of universal prevention, followed by the area of prevention in high-risk groups. Therefore, the prevention planning process conducted at the Central and Regional level has led to a mixed approach to prevention in Italy, combining strategies directed both to the general population and to high-risk individuals, guaranteeing the complementarity of these approaches rather than their mutual exclusion. The choice of a mixed prevention approach is in line with

**Table 3**

Evaluation of projects included in the Regional Prevention Plans (RPPs). Number and percentage of projects fulfilling specific criteria by geographical area of Italian Regions.

Item	Italy N. projects (%)	North N. projects (%)	Center N. projects (%)	South and Island N. projects (%)
Coherence and contextualization of projects				
Coherence with the regional epidemiological context*	603 (85.9)	259 (85.2)	119 (93.0)	225 (83.3)
Coherence with the Regional Health Plan or other regional health programs/policies*	596 (84.9)	242 (79.6)	120 (93.8)	234 (86.7)
Implementation/continuation of projects included in the previous RPP 2005–2007 and further extensions	339 (48.3)	146 (48.0)	55 (43.0)	138 (51.1)
Implementation/continuation of other projects previously realized in the Region*	85 (12.1)	30 (9.9)	28 (21.9)	27 (10.0)
Public health issues addressed				
Smoking	70 (10.0)	28 (9.2)	15 (11.7)	27 (10.0)
Physical inactivity	95 (13.5)	38 (12.5)	14 (10.9)	43 (15.9)
Unhealthy diet	112 (16.0)	43 (14.1)	18 (14.1)	51 (18.9)
Excessive alcohol consumption	74 (10.5)	27 (8.9)	18 (14.1)	29 (10.7)
Development of vaccination programs	39 (5.6)	17 (5.6)	6 (4.7)	16 (5.9)
Development and implementation of oncological screening programs	68 (9.7)	29 (9.5)	18 (14.1)	21 (7.8)
Environmental primary prevention	34 (4.8)	12 (3.9)	6 (4.7)	16 (5.9)
Prevention in the living environment (home, schools, etc.)	205 (29.2)	89 (29.3)	38 (29.7)	78 (28.9)
Prevention in the working environment	112 (16.0)	56 (18.4)	22 (17.2)	34 (12.6)
Prevention of zoonosis	20 (2.8)	12 (3.9)	3 (2.3)	5 (1.9)
Transversal issues (empowerment, health inequalities, capacity building, networking)				
Use of communication strategies for individual and community empowerment	431 (61.4)	156 (51.3)	87 (68.0)	188 (69.6)
Reduction of health inequalities	13 (1.9)	10 (3.3)	2 (1.6)	1 (0.4)
Solving public health problems relevant to vulnerable populations	43 (6.1)	26 (8.6)	8 (6.3)	9 (3.3)
Improving access to health services for vulnerable groups	38 (5.4)	21 (6.9)	10 (7.8)	7 (2.6)
Use of networks	621 (88.5)	265 (87.2)	113 (88.3)	243 (90.0)
Development of capacity building of health professionals	484 (68.9)	196 (64.5)	81 (63.3)	207 (76.7)
Adherence to principles and criteria of Evidence Based Prevention				
Evidence reporting of the effectiveness of the intervention proposed	217 (30.9)	78 (25.7)	62 (48.4)	77 (28.5)
Considerations of the applicability to the local context of the intervention proposed*	97 (13.8)	36 (11.8)	30 (23.4)	31 (11.5)
Considerations of the cost-effectiveness of the intervention proposed*	56 (8.0)	20 (6.6)	17 (13.3)	19 (7.0)
Feasibility				
Resources needed (human, economic, instrumental, etc.) clearly stated†	598 (85.2)	253 (83.2)	122 (95.3)	223 (82.6)
Description of the expected difficulties/barriers and possible solutions*	384 (54.7)	165 (54.3)	55 (43.0)	164 (60.7)
Considerations on sustainability	80 (11.4)	40 (13.2)	13 (10.2)	27 (10.0)
Monitoring and evaluation (M&E)				
M&E activities	693 (98.7)	299 (98.4)	127 (99.2)	266 (98.5)
Use of structure indicators	54 (7.7)	18 (5.9)	6 (4.7)	30 (11.1)
Use of process indicators	606 (86.3)	279 (91.8)	122 (95.3)	245 (90.7)
Use of output indicators	454 (64.7)	165 (54.3)	91 (71.1)	198 (73.3)
Use of outcome indicators	55 (7.8)	27 (8.9)	8 (6.3)	20 (7.4)
Timeplan reported	565 (80.5)	240 (78.9)	97 (75.8)	227 (84.1)
TOTAL	702 (100)	304 (100)	128 (100)	270 (100)

\* *p* value < 0.05.

challenges recently directed at Geoffrey Rose's population strategy of prevention [24], i.e. the significant improvements in the accuracy with which high-risks individuals can now be identified and the consideration that his population strategy of prevention may inadvertently worsen

social inequalities in health [25–27]. The low level of attention to the areas of predictive medicine and prevention of complications and recurrence of chronic diseases may be due to inadequate evidence of effectiveness of preventive interventions in the sector of predictive medicine

and to difficulties in incorporating principles and tools of prevention into primary care, respectively. However, some advances are being made in Italy in both areas, with the implementation of a National Plan for Public Health Genomics [28], which envisages the development of evidence-based recommendations for the appropriate use of genetic testing in preventive medicine, and the experimental application of the chronic disease management model in primary care for specific health issues, such as diabetes [29–31].

Most of the RPPs chose, as priority objectives, the fight against unhealthy lifestyle behaviors, the full realization of recommended vaccination programs and the implementation of population screening programs for cancer; many projects addressed these issues. These choices appear definitively evidence-based. However, only a minority of RPPs prioritized the need to reduce health inequalities, and too few projects contained actions specifically targeting these objectives. Moreover, some important health topics, such as the surveillance and control of health-care associated infections and the prevention of zoonoses, were addressed by very few projects. These health topics require a strong integration between the medical workforce of prevention departments and other public health professionals, such as the hospital health care management and the veterinary component of prevention departments. In any case, networking activities seem to be quite extensively implemented throughout the RPPs and the various projects, as are empowerment and communication actions and training initiatives for public health professionals [11]. On the other hand, most Regions have decided not to incorporate routine prevention activities into the RPPs that may include, for example, surveillance and prevention of zoonoses, focusing only on specific and innovative projects aimed at achieving the NPP's objectives (e.g. the Lazio Region only included one comprehensive program for each of the 22 intervention lines envisaged by the NPP).

There is room for improvement in the technical drafting of the RPPs and regional projects. RPPs properly described the regional demographic and epidemiological contexts and, to a lesser extent, the socioeconomic and organizational settings, but sometimes they failed to give a full description of the general regional health planning and of the results of the previous RPPs. Although the vast majority of projects were consistent with the regional epidemiological context and with the general strategy of regional health planning, not all regional epidemiological needs and health topics mentioned in the general regional health plan were addressed by specific projects. The majority of RPPs actually used a mixed approach to establish criteria for identifying priorities, but these criteria were clearly described in less than two-thirds of the RPPs. Most importantly, RPPs and regional projects often failed to provide a robust evidence base for the effectiveness and cost-effectiveness of the health intervention proposed, to correctly use the existing health behavior surveillance systems, and to indicate the resources needed to guarantee the feasibility and sustainability of the intervention proposed. Lack of scientific evidence in selecting and implementing programs, developing policies, and evaluating progress is

a major issue already acknowledged in the fields of public health and prevention [3,32].

There were significant differences in the appraisal of RPPs across the various geographical areas of the Italian Regions, particularly for some quality elements of the projects (i.e. coherence and contextualization with the local context, adherence to the principles and criteria of EBP, and feasibility of the interventions). We did not develop an overall quality score of RPPs, since our intention was to provide suggestions that might help strengthen regional public health capacities in the prevention policy and planning process, rather than to evaluate each Italian Region or to rank their performance. Since economic and financial constraints may have a negative impact on health promotion and prevention activities, geographical differences of the projects quality could be related to different levels of regional Gross Domestic Product (GDP) and financial health care deficit. A preliminary analysis actually seems to indicate that the quality of projects is lower in Regions with lower GDP and in which the level of health care deficit required the implementation of regional Recovery Plan to restore financial equilibrium (data not shown). The identification of determinants of the quality of RPPs and projects is an important issue that deserves a further dedicated analysis.

Comparing data of the present study with results of similar studies conducted in other countries is difficult. Some tools have been developed and adopted for the assessment of public health and health promotion capacities [4,5,33–38]. However, these have a different focus to our tool, which emphasises the regional process of planning of prevention activities based on the NPP directives, and they are intended to assess other domains of public health capacities, such as health system structure, policies, plans and strategies [4,34,35,37], health policy performance related to specific health indicators [5], organizational capacities [33], or more specific issues such as program sustainability [38] and the capacity for evidence-based decision making [36]. We specifically assessed the capacity of Regions to plan for prevention activities and for their compliance with the guidance provided by the central Government. In this regard, our work is more similar to the assessment of the quality of a project proposal [39] than a policy analysis [40], making it impossible to compare our results with similar analyses conducted in this area.

This study has some limitations that should be acknowledged. First, to our knowledge, no validated tool is available for the critical appraisal of prevention policy and planning documents, and, therefore, a specific tool had to be developed. Although it is possible that relevant evaluation items were not considered, we believe this unlikely as a consequence of the iterative process that we used for developing the tool with the active involvement of a dedicated and authoritative scientific committee. Second, the critical appraisal of RPPs and projects was prone to a certain degree of subjectivity. However, this assessment bias was kept to a minimum, with working groups comprising at least two members who worked independently and resolved any discrepancies in their assessments by discussion; a coordinating group supervised the different working groups and standardized definitions and procedures. Finally, our



analysis was limited only to RPPs and planned projects, and did not include the assessment of the actual level of implementation and the results obtained; this was beyond the scope of our work and is at present performed institutionally by the Italian Ministry of Health and its technical agencies.

In conclusion, the analysis described in this paper shows that the planning process of prevention in Italy, which is still in its early stages, has both strengths and weaknesses. There is no doubt that Regions have failed to properly address some priority issues, such as health inequalities, and could improve the technical drafting of RPPs and regional projects. At the same time, the Italian health care system has successfully put in place a prevention planning process that can accommodate both center-oriented prevention policy and regional prerogatives. Since the trend toward the decentralization of regional decisions for prevention is likely to continue, it is essential that the Ministry of Health makes a strong commitment to provide Italian Regions with operational guidelines, appropriate training and adequate resources for improving public health capacities. In this way, continuous assessment of the planning process of prevention may become a useful tool for monitoring, and ultimately strengthening, public health capacity in the field of prevention.

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### Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.healthpol.2015.03.012>.

### References

- [1] Gervas J, Starfield B, Heath I. Is clinical prevention better than cure? *Lancet* 2008;372:1997–9. [http://dx.doi.org/10.1016/S0140-6736\(08\)61843-7](http://dx.doi.org/10.1016/S0140-6736(08)61843-7).
- [2] Ritsatakis A, Makara P. Gaining health. Analysis of policy development in European countries for tackling noncommunicable disease. Copenhagen: World Health Organization; 2009. [http://www.euro.who.int/\\_data/assets/pdf\\_file/0018/105318/e92828.pdf](http://www.euro.who.int/_data/assets/pdf_file/0018/105318/e92828.pdf) [last accessed 20.10.14].
- [3] Allin S, Mossialos E, McKee M, Holland W. Making decisions on public health: a review of eight countries. Brussels: European Observatory of Health Systems; 2004. [http://www.euro.who.int/\\_data/assets/pdf\\_file/0007/98413/E84884.pdf](http://www.euro.who.int/_data/assets/pdf_file/0007/98413/E84884.pdf) [last accessed 20.10.14].
- [4] Brand H, Aluttis C. Reviewing public health capacity in the EU. Final report. Maastricht: Maastricht University; 2011. [http://ec.europa.eu/health/social\\_determinants/docs/report\\_ph\\_capacity\\_2013\\_en.pdf](http://ec.europa.eu/health/social_determinants/docs/report_ph_capacity_2013_en.pdf) [last accessed 20.10.14].
- [5] Mackenbach JP, McKee M. A comparative analysis of health policy performance in 43 European countries. *European Journal of Public Health* 2013;23:195–201. <http://dx.doi.org/10.1093/eurpub/cks192>.
- [6] Boccia A, De Vito C, Marzuillo C, Ricciardi W, Villari P. The governance of prevention in Italy. *Epidemiology, Biostatistics and Public Health* 2013;10:e89141–2. <http://dx.doi.org/10.2427/8814>
- [7] Boccia A, Federici A, Ricciardi W. La governance della prevenzione in Italia tra livello centrale e livello regionale. In: Boccia A, Cislighi C, Federici A, et al., editors. Rapporto Prevenzione 2011. Le attività di prevenzione [Prevention Report 2011. The activities of prevention]. Bologna: Società Editrice Il Mulino; 2011. p. 219–29.
- [8] Oleari F. La prevenzione nella programmazione sanitaria nazionale. In: Boccia A, Cislighi C, Federici A, et al., editors. Rapporto Prevenzione 2012. La governance della prevenzione [Prevention Report 2012. The governance of prevention]. Bologna: Società Editrice Il Mulino; 2012. p. 367–84.
- [9] Conferenza Permanente per i rapporti tra lo Stato, le Regioni e le Province Autonome di Trento e Bolzano [Permanent Conference for relations between the State, Regions, Autonomous Provinces of Trento and Bolzano]. Intesa tra il Governo, le Regioni e le Province Autonome di Trento e di Bolzano concernente il Piano Nazionale per La Prevenzione per gli anni 2010–2012 [Agreement between the Government, the Regions and the Autonomous Provinces of Trento and Bolzano concerning the National Prevention Plan 2010–2012]; April 29 2010. [http://www.statoregioni.it/Documenti/DOC\\_026549.63%20csr.pdf](http://www.statoregioni.it/Documenti/DOC_026549.63%20csr.pdf) [last accessed 20.10.14].
- [10] Marzuillo C, Di Thiene D, Unim B, de Belvis AG, La Torre G, Villari P. Un'analisi d'insieme ai Piani Regionali della Prevenzione (PRP). In: Boccia A, Cislighi C, Federici A, et al., editors. Rapporto Prevenzione 2012. La governance della prevenzione [Prevention Report 2012. The governance of prevention]. Bologna: Società Editrice Il Mulino; 2012. p. 417–35.
- [11] Russo F, Michieletto F, Pettenò A, Postiglione C, Napoletano G. Priority features of the different Regional Prevention Plans: common features and innovations. *Epidemiology, Biostatistics and Public Health* 2013;10:e89431–4. <http://dx.doi.org/10.2427/8943>
- [12] Travis P, Egger D, Davies P, e Mechal A. Towards better Stewardship: concepts and critical issues. In: Murray CJL, Evans DB, editors. Health systems performance assessment: debates, methods and empiricism. Geneva: World Health Organization; 2003. p. 289–300.
- [13] Saltman RB, Ferroussier-Davis O. The concept of Stewardship in Health Policy. *WHO Bulletin* 2010;78:732–9. [http://www.who.int/bulletin/archives/78\(6\)732.pdf](http://www.who.int/bulletin/archives/78(6)732.pdf) [last accessed 20.10.14].
- [14] Federici A. Piano nazionale della prevenzione e stewardship: evoluzione delle azioni centrali e scelte operative di “sistema”. In: Boccia A, Cislighi C, Federici A, et al., editors. Rapporto Prevenzione 2012. La governance della prevenzione [Prevention Report 2012. The governance of prevention]. Bologna: Società Editrice Il Mulino; 2012. p. 385–402.
- [15] Federici A, Filippetti G, Oleari F. National Preventive Plan: putting stewardship into practice. *Italian Journal of Public Health* 2012;9:99–105.
- [16] La Torre G, de Belvis AG, Di Thiene D, Saulle R, Marino M, Specchia ML, et al. The development of a tool for measuring the implementation of stewardship in public health. *Italian Journal of Public Health* 2012;9:106–14.
- [17] European Commission-Europe Aid. Project cycle management guidelines. Bruxelles: European Commission; 2004.

- [18] World Health Organization. Health 2020. A European policy framework and strategy for the 21st century. Copenhagen: WHO Regional Office for Europe; 2013. [http://www.euro.who.int/...data/assets/pdf\\_file/0011/199532/Health2020-Long.pdf](http://www.euro.who.int/...data/assets/pdf_file/0011/199532/Health2020-Long.pdf) [last accessed 20.10.14].
- [19] OECD. Health at a glance: Europe 2012. Paris: OECD Publishing; 2012. <http://www.oecd.org/els/health-systems/HealthAtAGlanceEurope2012.pdf> [last accessed 20.10.14].
- [20] Thelle D. Different governments, different public health problems. *European Journal of Public Health* 2001;11:455–7.
- [21] Vallgård S. Governing people's lives. Strategies for improving the health of the nations in England, Denmark, Norway and Sweden. *European Journal of Public Health* 2001;11:386–92.
- [22] Raphael D, Bryant T. The state's role in promoting population health: public health concerns in Canada, USA, UK, and Sweden. *Health Policy* 2006;78:39–55. <http://dx.doi.org/10.1016/j.healthpol.2005.09.002>.
- [23] Bernier NF. Extending the realm of health policy with a "new public health" approach: a comparative look at the Canadian and Swedish national experiences. *Canadian Public Administration* 2009;52:71–89.
- [24] Rose G. Sick individuals and sick populations. *International Journal of Epidemiology* 1985;14:32–8.
- [25] Manuel DG, Lim J, Tanuseputro P, Anderson GM, Alter DA, Laupacis A, et al. Revisiting Rose: strategies for reducing coronary heart disease. *British Medical Journal* 2006;332:659–62. <http://dx.doi.org/10.1136/bmj.332.7542.659>.
- [26] Frohlich KL, Potvin L. Transcending the known in public health practice: the inequality paradox: the population approach and vulnerable populations. *American Journal of Public Health* 2008;98:216–21. <http://dx.doi.org/10.2105/AJPH.2007.114777>.
- [27] McLaren L, McIntyre L, Kirkpatrick S. Rose's population strategy of prevention need not increase social inequalities in health. *International Journal of Epidemiology* 2010;39:372–7. <http://dx.doi.org/10.1093/ije/dyp315>.
- [28] Simone B, Mazzucco W, Gualano MR, Agodi A, Coviello D, Dagna Bricarelli F, et al. *Health Policy* 2013;110:214–9. <http://dx.doi.org/10.1016/j.healthpol.2013.01.015>.
- [29] Maggini M. IGEA-a chronic disease management project for people with diabetes. *Annali dell'Istituto Superiore di Sanità* 2009;45:349–52.
- [30] Musacchio N, Lovagnini Scher A, Giancaterini A, Pessina L, Salis G, Schivalocchi F, et al. Impact of a chronic care model based on patient empowerment on the management of Type 2 diabetes: effects of the SINERGIA program. *Diabetic Medicine* 2011;28:724–30. <http://dx.doi.org/10.1111/j.1464-5491.2011.03253.x>.
- [31] Lombardo F, Ruggeri P, editors. I Congress. IGEA: integrated model of care for people with chronic diseases. Rome: Istituto Superiore di Sanità; 2013 [Abstract book] [http://www.iss.it/binary/publ/cont/13\\_C3.pdf](http://www.iss.it/binary/publ/cont/13_C3.pdf) [last accessed 08.10.14].
- [32] Brownson RC, Fielding JE, Maylahn CM. Evidence-based public health: a fundamental concept for public health practice. *Annual Review of Public Health* 2009;30:175–201. <http://dx.doi.org/10.1146/annurev.publhealth.031308.100134>
- [33] Joffres C, Heath S, Farquharson J, Barkhouse K, Hood R, Latter C, et al. Defining and operationalizing capacity for heart health promotion in Nova Scotia, Canada. *Health Promotion International* 2004;19:39–49.
- [34] Bagley P, Lin V. The development and pilot testing of a rapid assessment tool to improve local public health system capacity in Australia. *BMC Public Health* 2009;9:413. <http://dx.doi.org/10.1186/1471-2458-9-413>.
- [35] World Health Organization. Assessing national capacity for the prevention and control of noncommunicable diseases: report of the 2010 global survey. Geneva: World Health Organization; 2010. <http://www.who.int/cancer/publications/national.capacity.prevention.ncds.pdf> [last accessed 20.10.14].
- [36] Jacobs JA, Clayton PF, Dove C, Funchess T, Jones E, Perveen G, et al. A survey tool for measuring evidence-based decision making capacity in public health agencies. *BMC Health Services Research* 2012;12:57. <http://dx.doi.org/10.1186/1472-6963-12-57>.
- [37] World Health Organization Europe. Review of public health capacities and services in the European Region. Copenhagen: WHO Regional Office for Europe; 2012. <http://www.euro.who.int/en/health-topics/Health-systems/public-health-services/publications/2012/review-of-public-health-capacities-and-services-in-the-european-region> [last accessed 20.10.14].
- [38] Luke DA, Calhoun A, Robichaux CB, Elliott MB, Moreland-Russell S. The Program Sustainability Assessment Tool: a new instrument for public health programs. *Preventing Chronic Disease* 2014;11:130184. <http://dx.doi.org/10.5888/pcd11.130184>.
- [39] European Commission. EuropeAid Cooperation office – PCM Helpdesk. Guide for the assessment of project proposals. Bruxelles: European Commission; 1999.
- [40] Walt G, Shiffman J, Schneider H, Murray SF, Brugha R, Gilson L. 'Doing' health policy analysis: methodological and conceptual reflections and challenges. *Health Policy and Planning* 2008;23:308–17. <http://dx.doi.org/10.1093/heapol/czn024>.