

## ORIGINAL ARTICLE

# @Prevention: a website project for prevention in the healthcare setting

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## Key words

Prevention • Public Health Website • Social Network

## Summary

*In the field of prevention, Internet websites and their related instruments constitute valuable tools for healthcare facilities, and particularly for Local Healthcare Authorities (LHA). As yet, however, their undoubted potential remains largely unexploited. Many LHA websites currently operating in Italy are organized in such a way that they fail to make adequate use of this precious resource. Indeed, communication regarding prevention is all too often limited to the simple reproduction of information and indications in a static and heterogeneous manner, so much so that it resembles a mere "online notice-board". The aim of the present research was to analyze the current situation and the various innovative proposals that have been made, in order*

*to construct a more effective website model that could be used nationwide.*

*To this end, the research was carried out through a two-pronged approach: on the one hand, all 190 LHA websites in Italy were analyzed; on the other, a questionnaire was administered to a sample of habitual users of the most modern and widespread social network, Facebook.*

*Analysis and elaboration of the data gathered led to the creation of the model "@Prevention". This project is intended to introduce an innovative perspective into the field of online communication for healthcare prevention by providing a highly useful tool for the LHA, healthcare workers and, obviously, citizens.*

## Introduction

Since the middle of the 1990s, the Italian National Health Service (NHS) has undergone changes both in its traditional internal relations and in its modes of external representation. As a result, the relationship between the providers and the users of healthcare services has changed markedly. Within the Public Administration, and particularly the NHS, changes aimed at improving the relationship between public institutions and citizens have gradually been brought in. This has meant undertaking intervention designed, first of all, to reorganize relationships with the citizen by implementing measures to improve transparency and to adopt market principles, thereby optimizing the quality of services.

These modifications fall within a broader framework of social and cultural change, whereby the providers of public services are increasingly called upon to respond to the needs of the user. This is a process which requires the awareness of all the parties involved and the need to establish mutually agreed procedures. At the same time, easier access to health services, a more user-friendly relationship with public institutions and the plethora of information provided by the media regarding health and well-being have modified users' perceptions of their right to choose. Within the healthcare system, communication is therefore a strategic resource, an indispensable management tool for all professionals. It is also indispensable in the overall evaluation of such themes as clinical government and

risk management. Moreover, it also constitutes a skill that fits into a wide-ranging, multidisciplinary, holistic and decidedly operational perspective. The concept of "patient empowerment", both in the scientific literature and in the strategic organization of healthcare services, is taking on greater importance and is the focus of debate among both academics and policymakers [1]. Nevertheless, the Information Technology strategies of healthcare providers have not yet been subjected to serious critical analysis.

In this regard, the present study aimed to evaluate an innovative model, "@Prevention", designed to enhance the culture of prevention among healthcare professionals and to improve "health literacy" among the population through information and social marketing.

The research was carried out in two phases: the first (Phase I) was based on investigations conducted in order to identify the main problems in obtaining information on healthcare prevention from the websites of the Local Health Authorities (LHA) in Italy; the second phase (Phase II) focused on the construction of a project (theoretical/practical model) specifically dedicated to healthcare prevention, to be posted on the websites of the Italian LHA.

## PHASE I

### METHODS

This first phase was subdivided into two parts: (i) once the various websites had been identified, an in-depth

**Tab. I.** Observational table used to record the indicators of 190 Italian Local Healthcare Authorities (LHA) websites.

Levels of details (presence/absence)		Indicatori						
		1	2	3	4	5	6	7
		Epidemiology	Vaccinations	Infectious diseases	Screening	Health education	Communication at risk	Community profile
1	Home page							
2	Pages in the site							
3	Computer updates							
4	Multilingual tool							
5	Additional links							

analysis of the contents of each website was carried out; (ii) a cognitive investigation was then conducted by administering questionnaires and by analysing and processing the data gathered.

The quality of communication within the LHA websites was mapped by evaluating the quantitative presence of 7 indicators regarding healthcare prevention. The research was conducted between February and May, 2010. The 190 LHA present in Italy were identified from the website [www.ministerosalute.it](http://www.ministerosalute.it) and were analysed by means of an observational table (Tab. I) in which the 7 indicators were recorded according to 5 different levels of investigation, yielding a total of 35 items to be investigated for each LHA. The choice of the variables and indicators was made on the basis of the issues most frequently requested on the Google search engine with regard to healthcare prevention. Preliminary testing of the observational table was carried out on a sample of 9 randomly selected LHA; the indicators and variables were then refined in order to minimise the possibility of error on the part of the analysers, given that the data were gathered subjectively.

In order to construct a complete and up-to-date database, to receive technical advice on the method of codification and to optimise the graphic representation of the data, we sought consultation from the Data-processing Service of the Department of Health Sciences (DISSAL) of the University of Genoa.

Considering the broad heterogeneity of the modalities of information on healthcare prevention, we decided to adopt a non-restrictive approach whereby a score of 1 was assigned if the pertinent information was present and a score of 0 was assigned if the information was absent. We decided not to perform a semi-quantitative analysis, in which different weights are assigned to the variables, as this would have given rise to inappropriate subjectivity of evaluation. The data were analysed by means of the SPSS13.0 software.

Not all of the information regarding the H1N1/v influenza pandemic was considered in the analysis, as this information had been amply broadcasted by the media. With regard to the cognitive investigation (ii), a brief, but highly specific, questionnaire (Appendix) was sent out through the social network Facebook. The aim of this was to pick out a small sample of competent web users, to identify preferences for communication modalities and to gather opinions and suggestions concerning the space dedicated to healthcare prevention on the websites of the Italian LHA.

This investigation was carried out in April and May, 2010, in parallel with the first part of Phase 1. The questionnaire was sent to 86 Facebook users, who were requested to return it within three days. The (non-representative) sample was made up of 52 females and 34 males aged between 22 and 55 years with a high school diploma.

## RESULTS

On the websites (i) of the 190 Italian LHA, the 7 indicators were examined in the 5 different thematic areas; a total of 6650 items were recorded. Subsequent analysis of the presence/absence of the various topics revealed that the 7 prevention issues investigated were very rarely found on the home pages of the LHA websites; only "Screening" and "Health Education" reached reasonably high percentages (35-37%) (Fig. 1). Moreover, the use of foreign languages in providing information and instructions for users proved to be scant; only among the LHA located in regions close to national borders (Friuli Venezia Giulia and Trentino Alto Adige, in particular) were multilingual icons used.

The cognitive investigation (ii) conducted through Facebook received 62 replies; however, only 55 of these respondents (33 females and 22 males) returned properly completed questionnaires. From the data gathered, it clearly emerged that citizens require information that is simple (38%) and clear (29%); as shown in Figure 2, most users would prefer to conduct searches through keywords (49%) or symbols (29%). The additional services which were most frequently reported to be useful were links to an e-mail address (46%) and the availability of a toll-free number (27%) (Fig. 3).

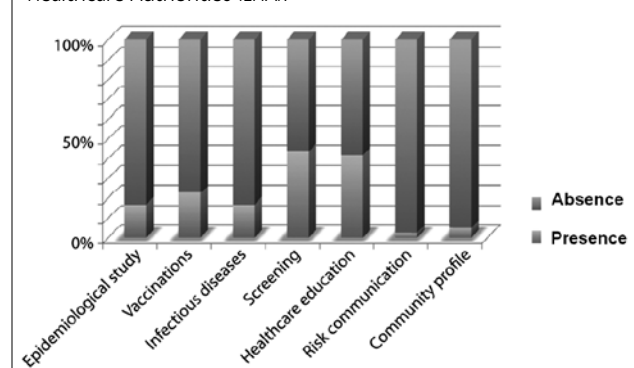
**Fig. 1.** Indicators examined on the websites of 190 Italian Local Healthcare Authorities (LHA).

Fig. 2. Results of questionnaire.

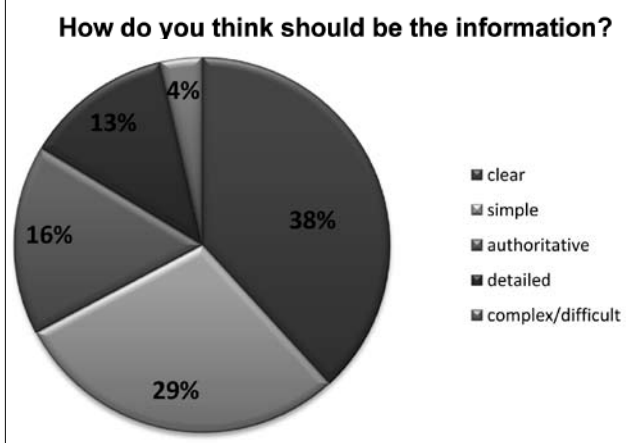
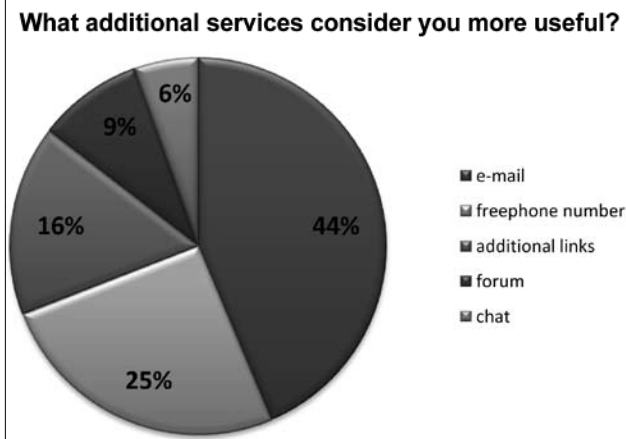


Fig. 3. Results of questionnaire.



## PHASE II

### METHODS

On the basis of the data gathered during the first phase of the study (Phase 1) and of those reported in the literature [2-5], the model “@Prevention” was constructed; this model consists of an integrated, standardised website area with interactive features and deals with the main issues of healthcare prevention, as indicated in the 2010-2012 National Prevention Plan (NPP) [6].

The principal criteria on which the “@Prevention” model is based are summarised as follows:

- the need to share a homogeneous instrument of communication at the national level, with the commitment of healthcare professionals to its continued and proper use;
- the need to integrate prevention issues into a single area, with particular reference to the healthcare setting;
- the need to standardise website areas and the topics they deal with;
- the need to be able to use this instrument in order to “learn” about problems of communication and/or gaps in information;

- the need to make the instrument easily accessible through the use of a logo and standard positioning on the websites;
- the recommendation to provide information and to communicate through two separate channels: one for the public and one for professionals;
- the recommendation to provide multilingual communication (at least English, Spanish, Chinese and Arabic) at least to describe the topics;
- the recommendation to endow the instrument with accessories that enable interactivity (public agency/population and population/public agency).

With regard to the criteria of identification of the areas and the prevention issues, most of the recommendations made in the 2010-2012 NPP (universal prevention, prevention for the population at risk) were adopted. Moreover, the areas dealing with vaccinations and infectious diseases were prioritised, as these are of intrinsic importance. Areas concerning chronic disorders and disabilities were not included on account of the specificity and complexity of these conditions.

Steps were taken to ensure interactivity; on the basis of the requests gathered through the questionnaires and the interviews, the model was endowed with various interactive accessories, both for the public (e-mail addresses, toll-free numbers and the possibility to fill in questionnaires on satisfaction and online surveys and to print certificates) and for healthcare professionals (reserved e-mail addresses, service telephone numbers, a central server for the sending of reports/documents and an electronic platform for teleconferences).

### RESULTS

Figure 4 shows a simple graph of the model [7]; the logo is “@Prevention” and the icon depicts an orange [8].

The model should be posted in a standardised position on the home page of the official LHA website: top right; minimum size 2cm x 2cm (Fig. 4a).

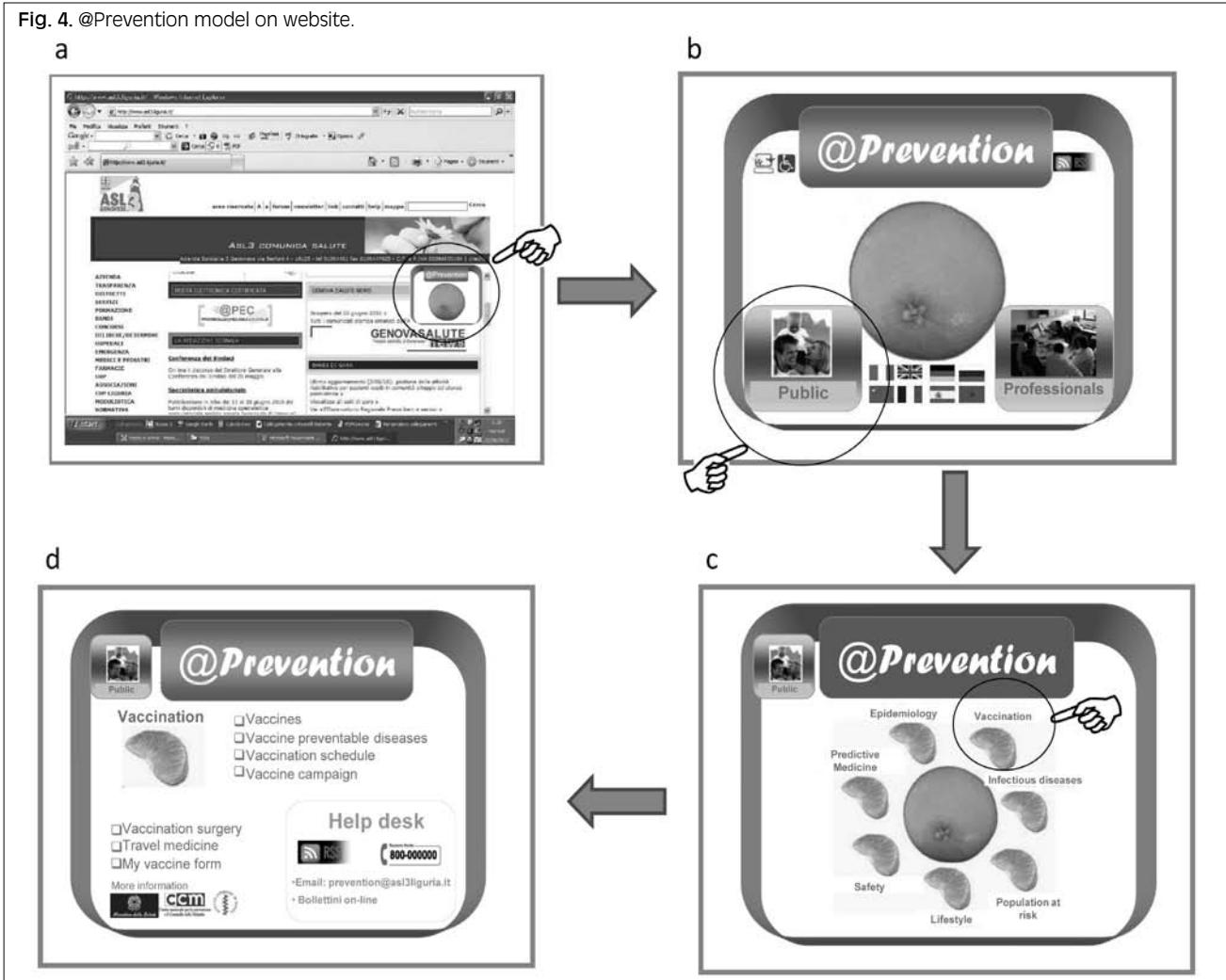
The model offers two options: a link for the public (giving access to the issues of greatest interest to users) and a link for professionals. Information is multilingual. Moreover, accessibility and conformity of the website are ensured [9] (Fig. 4b).

The “orange” icon opens to reveal the segments inside; the notion of universal prevention is expressed through the integration of the topics of greatest importance within the area of prevention (Fig. 4c):

- safety;
- lifestyle;
- population at risk;
- infectious diseases;
- vaccinations;
- epidemiology;
- predictive medicine.

By clicking on a topic area, for example “Vaccinations”, the user can access not only general information on the subject [10] but also local information on the timetables of services, the types of services offered, the documents required, and so on (Fig. 4d). In addition, links to institutional websites are provided, so that the user can ac-

Fig. 4. @Prevention model on website.



cess more detailed information on specific subjects, as are various interactive tools, such as toll-free numbers, e-mail addresses and feedback facilities.

On accessing the area reserved for professionals, the user is not only provided with interactive tools and links to institutional websites specialising in various subjects, but also has the possibility to take part in discussions on various issues in the dedicated forum, a precious feature which enables new issues to be tackled promptly.

## Discussion

The “@Prevention” model provides the means of sharing information. However, if it is to find application within the spheres of NHS and Regional Health Services, it will require a high level of involvement on the part of all the institutions involved (LHA, Regional Authorities, Ministry of Health). Indeed, in the future, we may well envision a codified and homogeneous modality of communication between healthcare professionals and specialists in communication. The use of a “common language” in the various professional sectors should enable a fundamental objective to be achieved: i.e. that of correctly conveying

information on prevention and working out communicative strategies that will impact directly on the lives of citizens. In this regard, empowerment of the citizen and health literacy [11] are essential ingredients; these can be promoted through information, communication and, especially, social marketing, the aim being to instil a new healthcare culture in the population. The realisation of this project will also require a web platform where documents can be shared and “learning” material (advice, critical points, etc) can be filed. One of the main expectations stemming from the application of the model proposed is that organisational tools and methods of work management will be shared. Indeed, such instruments are as yet scantily utilised, as they do not form part of the mentality of the various activities of healthcare prevention. In the initial phase, the proposed model may encounter numerous difficulties of application and a degree of resistance on the part of the bodies involved. Nevertheless, it is to be hoped that public healthcare institutions and their managements will gradually come round to accepting the model, given that there is now an evident need for a “common language” that can help to streamline and optimise the activities of the HLA within the framework of both the Regional Health Services and NHS.

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## APPENDIX. Questionnaire sent through Facebook.

### SATISFACTION QUESTIONNAIRE ON “HEALTH PREVENTION IN THE WEB SITE LHA”

Dear Visitor,

to understand what aspects of “Health Prevention” can be improved on the Local Healthcare Authorities (LHA) websites, we decided to collect opinions and suggestions through an anonymous questionnaire that we ask you to fill out on line and send us.

Thanks for your cooperation

**Suggest the 3 most interesting issues on health prevention, for you**

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If you're looking for information on “Health Prevention” and you're browsing a website of a Local Healthcare Authorities (LHA):

**Do you think it's easier to search through the presence of :**

- keywords
- propositions
- symbols (icons)
- images

**Where would you like to find the information concerning Health Prevention?**

- on the home page of the site
- in the site (no more than 2 clicks)
- in a specific site by a link

**How do you think should be the information?**

- clear
- simple
- authoritative
- detailed
- complex/difficult

**What additional services consider you more useful?**

- forum
- chat
- e-mail
- freephone number
- additional links

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