



OCCUPATIONAL RISK MANAGEMENT METHODOLOGY AND TOOLS

1. Case metadata

▪ ***Country/ies of origin:***

Italy

▪ ***Year of publication by agency:***

2009

▪ ***Sector:***

Q86.1.0 - Hospital activities

▪ ***Keywords:***

24401C Case studies

24361C Good practice

08801A Risk analysis and management

58201C Hospitals

19801D Safety communication

2. Organisations involved

AUSL di Piacenza – Servizio Prevenzione e Protezione & Mindpoint Srl

3. Description of the case

3.1. Introduction

The Piacenza Local Health Authority (AUSL) comprises:

- a hospital area, consisting of a single Hospital Complex comprising the Piacenza, Fiorenzuola and Castel San Giovanni hospitals, which operate in a network;
- a geographical area for the management of out-patient health problems, consisting of three districts (Urbano, Levante and Ponente);
- a third area supporting the previous two.

The AUSL employs a workforce of approx. 3 550 (650 medical and non-medical graduates, 2 380 healthcare personnel, and 520 administrative and technical personnel). The Health and Safety Department, managed by a Medical Director (an occupational health doctor) assisted by an Administrative Officer, is divided into a technical area, which employs an engineer, an industrial technician and a part-time surveyor, and a health area, which employs three occupational health doctors (two of whom work full-time) and four qualified nurses.

The need highlighted by the Piacenza AUSL's Health and Safety Department derived from the low communication potential inherent in the traditional structure of the risk assessment document, which in most cases does not appear to be a genuinely user-centred communication system.

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The collaboration between the Health and Safety Department and the Mindpoint consultants involved an analysis, conducted in terms of cognitive ergonomics, which produced a user-centred risk assessment and communication system and software (for the input and communication of assessments and therefore the production of a risk assessment document) based on two principles:

- Risk information must be available to users in the form that best meets their needs.
- The amount of information available must be tailored to the user's profile.

3.2. *Aims*

The Piacenza AUSL's did like to implement a shared risk management system. The main objective was to improve the communication relative to the risk assessment and develop a user-centred risk assessment and communication system.

3.3. *What was done, and how?*

If risk communication is not shared, distorted or used in a qualitatively and quantitatively inadequate manner, it will give rise to inefficient, ineffective preventive measures, and prevention will lose credibility as a method.

A user-centred risk communication methodology has been adopted, which employs two ergonomic approaches (cognitive ergonomics):

- **The risk communication cube (see figure 1):** The system user can choose the risk assessment access channel, displaying the information by risk, place, and type of person involved in the risk (task).
- **The information onion:** The quantity and type of information delivered to users depends on their type (user's role), and is commensurate with their level of organisational responsibility in order to prevent information overflow.

Figure 1. Risk communication cube



Source: AUSL di Piacenza

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The first principle is based on mapping the risk assessment information user types and their different objectives:

- Generic users are usually interested in knowing which risks they run in a given place.
- Workplace managers are usually interested in knowing which risks are run by the various types of people who have access to that place.
- Risk management officers are usually interested in knowing where each type of person runs that risk.

The 'risk communication cube' has been developed to produce a risk communication type centred on these three types of people. The basic concept is that each risk should be assessed according to three axes:

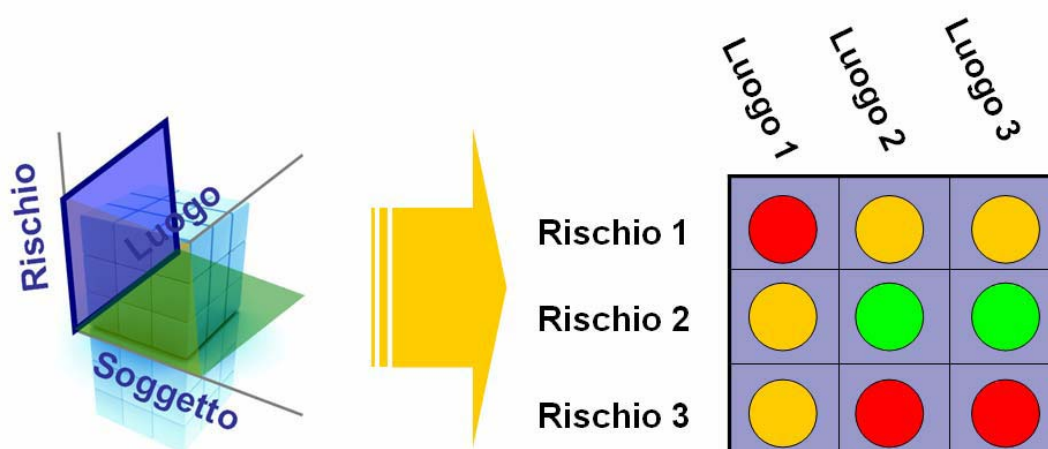
1. Type of risk
2. Persons potentially involved
3. Place where the risk exists.

By assessing the risk in this way, each assessment is positioned at the point on the cube where the three dimensions meet. The practical outcome of the concept is that when users require access to risk assessment information, they can choose which dimension to enter, and thus obtain communication that focuses on their information needs. This methodology has been used to produce a program that enables any user of the Piacenza AUSL's risk assessment document to access the system through one of the dimensions:

1. View of assessments by type of person involved
2. View of assessments by type of risk
3. View of assessments by place where the risk exists

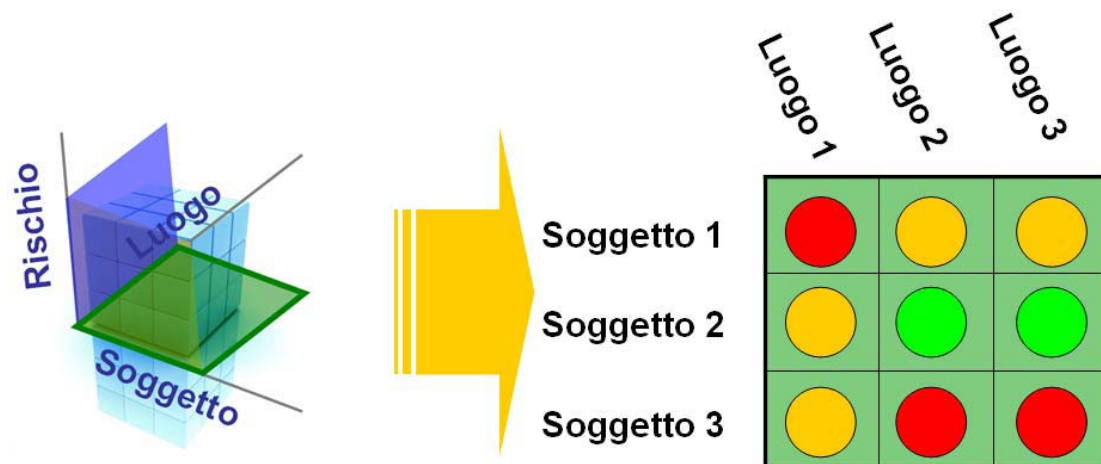
According to the type of access chosen, users will be presented with a risk assessment array in which the rows and columns represent the other two dimensions.

Figure 2. View by type of person involved



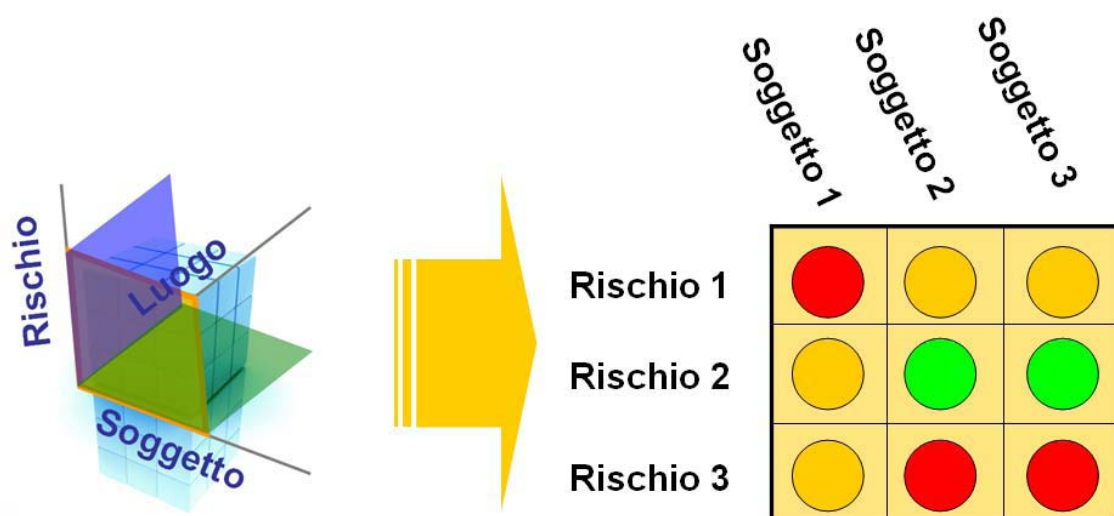
Source: AUSL di Piacenza

Figure 3. View by type of risks



Source: AUSL di Piacenza

Figure 4. View by place where the risk exists



Source: AUSL di Piacenza

As can be seen from the illustrations, users are presented with an array that represents risk assessment information organised in the most functional, ergonomic way. When accessing the system, the person responsible for managing a place will first of all identify the area of interest (for which the multilevel organisation Mental Map technique is used). They will then be presented with an array that illustrates, for that area, the types (and level) of risk run by all the types of people who have access to that area (see illustration above). The risk level is expressed by a symbol (green, yellow and red) resembling traffic lights, to make the communication universal and immediate. In the same way, after identifying the type of risk they are interested in, risk management officers will be presented with an array that illustrates, for that risk, where and the degree to which the risk is present for each type

of person exposed. Finally, after identifying their occupational profile, users of any type will be presented with an array informing them of the types and level of risk to which they are exposed in each area, and will be informed of the health and safety measures that they should adopt or manage, according to their level of responsibility.

Figure 5. The information onion



Source: AUSL di Piacenza

The second principle underlying the risk assessment and communication method (and software) focuses on the different levels of detail needed by each user of a risk assessment document (see figure 5). For this reason, the types of information have been classified under different families, to give the core information that must be shared with all users (degree of risk, protective devices, etc.), and the detailed information reserved for some types of user profile only.

The onion metaphor has been used to illustrate the stratification of information and 'successive approximation' logic that governs risk communication, which is all too often standardised, without taking account of the specific information needs of each type of user. For this reason, our methodology allows a profile to be entered for each user who accesses the system, distinguishing between the degree of access to information for each dimension (risk, type of person involved, and places). The end result is that readers of the Piacenza AUSL's risk assessment document will be presented with a structured communication system specifically centred on their information needs, in terms of the type of information (by place, type of person and type of risk), level of information available, and consequent managerial responsibilities.

The system has thus progressed from a communication logic centred on the needs of the issuer (mainly dictated by statutory obligations) to a user-centred communication logic, which, except as regards the legal compliance aspects of the risk assessment document, is based on the information requirements of the person consulting it.

On the basis of this system, a software program has been developed to manage risk assessment inputs, updates, communication, management and archiving. The system manager can monitor the internal circulation of information and, according to the access types, the level and degree of interactivity from the questions and comments made (feedback logic).

During the three-year period of study, trial and application of the System, the Health and Safety Department conducted a parallel process of progressive integration of analysis skills and techniques and organisational behaviour. This mission culminated in the design and organisation of training courses on specific risks, with operational personnel acting as trainers, involving the whole organisation (2 400 people trained in the three-year period 2006-2008). The system analysis and implementation process has had beneficial repercussions on the information and training strategy, leading to the development and sharing of individual and collective knowledge, skills and behaviour.

A positive effect of this process has been that the Piacenza AUSL's Health and Safety Department has also achieved greater methodological uniformity in the risk assessment process and greater awareness of risk communication mechanisms. The Department has therefore progressed from a communication and assessment culture centred on the communication issuer to a communication culture centred on the user/learner. This is a crucial step towards a risk management logic in which



the next step will be the implementation of an occupational health and safety management system that complies with OHSAS standard 18001:2007.

3.4. *What was achieved?*

The user-centred approach includes a feedback system that is:

- voluntary and conducted independently by users;
- systematic, in the case of the access data analysis and audits required by the Occupational Health and Safety Management System with which the communication system is integrated.

The advantages are intrinsic and extrinsic to the system.

Intrinsic advantages:

- Assessment bias is reduced as standards and parameters have been introduced into the assessment process, with the participation of the team of assessors.
- The assessment is set in context: the attribution of significance relates to the time and place of assessment.

Extrinsic advantages

- Users have coded information (risk traffic lights) available according to the type and quantity of their information needs.
- This action allowed a three years' joint work by the Piacenza Local Health Authority (AUSL) and Mindpoint Srl (a training and consultancy firm).
- It created a shared cultural background within the Department; and the construction of mental maps of risks, places and tasks.
- The research into and sharing of a user-centred communication methodology was developed, together with the implementation of risk assessment and communication software.
- Training and information activities which involved the Department were put into place.
- The benefits of this project involved a shared operational and communication procedures within the Department, and an increased external credibility, authoritativeness and efficacy of risk prevention practices.

3.5. *Success factors*

- A good communication and cooperation between the different services allowed this project to be successful.
- The transfer from a communication and assessment culture centred on the communication issuer to a communication culture centred on the user/learner has been a key factor in the success of this action.

3.6. *Further information*

Mr. Franco Pugliese
AUSL di Piacenza – Servizio Prevenzione e Protezione
Via G. Taverna, 49
29100 Piacenza - Italia



Tel: +39 (0) 523 - 302235

Fax: +39 (0) 523 - 302909

E-mail: f.pugliese@ausl.pc.it

Mr. Luca Baiguini

Mindpoint Srl

Via XX Settembre 48

25121 Brescia - Italia

E-mail: Luca.baiguini@mindpoint.it

3.7. *Transferability*

Applicable in hospitals, but also in other, mainly large, companies where is a need for information exchange and communication.

4. References, resources:

Information provided by the company/organisation in the framework of the Good Practice Award Competition 2008/2009.