

Where have we got to?

by Carmelo Scarcella (ASL Brescia)

The Healthreats Project has arrived at a turning point in its development. We defined the processes regarding decision-making, planning and control activities in the context of a health emergency caused by an influenza pandemic, and we identified the requirements of an innovative decision support system. We thus reached the experimental phase of the project that involves Italy, Spain, Romania and Slovenia; each country has identified a central level of experimentation and a local level as well. Decision makers and professionals from both

levels will be trained in order to acquire the necessary skills to be able to conduct the organizational management of difficult situations caused by a health crisis in a scenario of spreading pandemic. In this issue you will find what I have described earlier, an update of the work done regarding the 'Processes, Decision Support System and Training (PDT) package', which is the objective of the Healthreats Project, and a brief description of the pandemic plan of Catalonia (Spain) and of the Health Local Authority of Brescia (Italy), as a contribution about management models adopted in two partner countries.



5th PMB Meeting - Bucarest

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Processes

by Daniela Fogli (UNIBS)

The activity constituting the "P" (Processes) component of the Healthreats PDT package has been focused on analyzing, modeling, reviewing and as far as possible improving the mid-level processes relevant to decision making, planning and control in the context of a health

emergency caused by a pandemic flu.

The work started from the analysis of high-level processes and prescriptions for the pandemic alert phases (3, 4 and 5), the pandemic period phase (6) and surveillance phase defined in the "WHO Global influenza

preparedness plan".

Individual and group interviews with experts in health domain, and review/validation sessions have been adopted: (i) to identify the relevant facts (primary events) that may happen during a pandemic emergency and need to be managed by the



crisis manager (e.g. the “Need for a mass vaccination” or “Human case exposed to risk of contagion”); and (ii) to elicit the processes (intervention plans) necessary to effectively respond to the emergency caused by each event (e.g. the “Emergency vaccination plan” or the “Plan for the surveillance of human subject exposed to risk of pandemic virus” to activate the sanitary surveillance for the human subject exposed to risk of contagion). All processes have been critically reviewed and improved by domain experts, with the support of knowl-

edge engineers and process experts, with the aim of establishing best practices for pandemic flu emergency management.

Afterwards, such processes have been represented through a semi-formal graphical language, the Business Process Modeling Notation (BPMN), which could be clearly understood by both domain experts (in the phases of elicitation, definition, review and validation) and knowledge engineers and software designers (for the subsequent tasks concerning DSS implementation). BPMN is powerful enough to repre-

sent all structural characteristics of a generic process in the specific Healththreats application domain: it supports the definition of a variety of control structures, including sequence, selection, iteration, and parallel execution as appropriate. For example, in Fig. 1, it is shown the BPMN diagram representing the intervention plan for the surveillance of human subject exposed to risk of pandemic virus. All process models will be the main inputs for the DSS by constituting the core part of the DSS knowledge base.

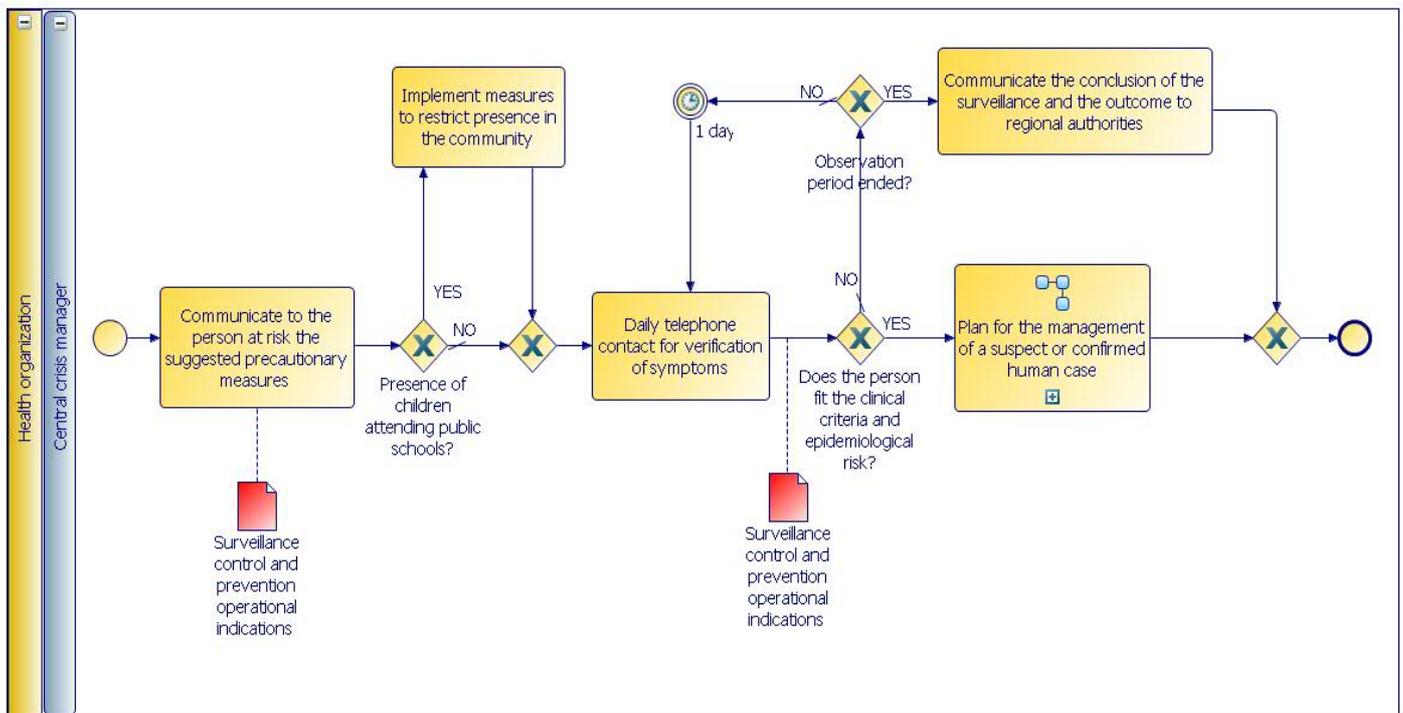


Fig. 1 Plan for the surveillance of human subject exposed to risk of pandemic virus



Decision Support System

by Massimiliano Giacomini (UNIBS)

The “D” (Decision Support System) component of the Healththreats PDT package is aimed at designing and developing an innovative decision support system (DSS) for crisis managers facing health threats. To this end, a

requirement analysis has been carried out according to a user-centered approach by involving several experts in health domain through questionnaires, individual interviews and focus groups.

This activity has revealed that the majority of decisions relevant to emergency management can be made on the basis of available domain knowledge. More precisely, it emerged that most decisions can



be supported by a *normative approach*, in that existing regulations, formal emergency plans and available experience provide a rich and reliable knowledge base for decision making, which can be coded into *intervention plans*. An intervention plan defines the activities to be carried out in response to a specific event and the relevant control flow. Thus, in front of a specific event, the DSS can suggest the best available intervention plan (or plans) and then, when the plan is activated, it monitors its correct execution. An *informative approach* is instead advocated whenever human judgment is required, for example in the selection among alternative intervention plans. For these cases, crisis managers should receive from the DSS a focused decision support to as-

sess the situation and make the best decision. Another important requirement concerns the definition of the basic operation mode of the DSS. All data collected from the emergency field and significant to the emergency management process constitute inputs for the DSS and are characterized as *events*. The DSS operates in a basic event-driven style: when an event occurs, the DSS is activated, analyses the event, suggests the best available intervention plan (or plans) to face the situation, instantiates a process to monitor plan execution, and then returns in a waiting state until a new event occurs. It has also been recognized that the user interface is a key component in DSS operation: as DSS users are

not necessarily computer experts, a 'user-friendly' interface satisfying well-defined usability requirements is essential for DSS final acceptance. Moreover, it has been clarified that different classes of users will need different views of the DSS and hence different interfaces. Based on DSS specifications, a DSS architecture has been designed (see Figure 2). It is organized into different levels including presentation and interaction components, the data subsystem (implementing the informative approach), document access components, the DSS core (implementing the normative approach), and administration components, as well as different databases.

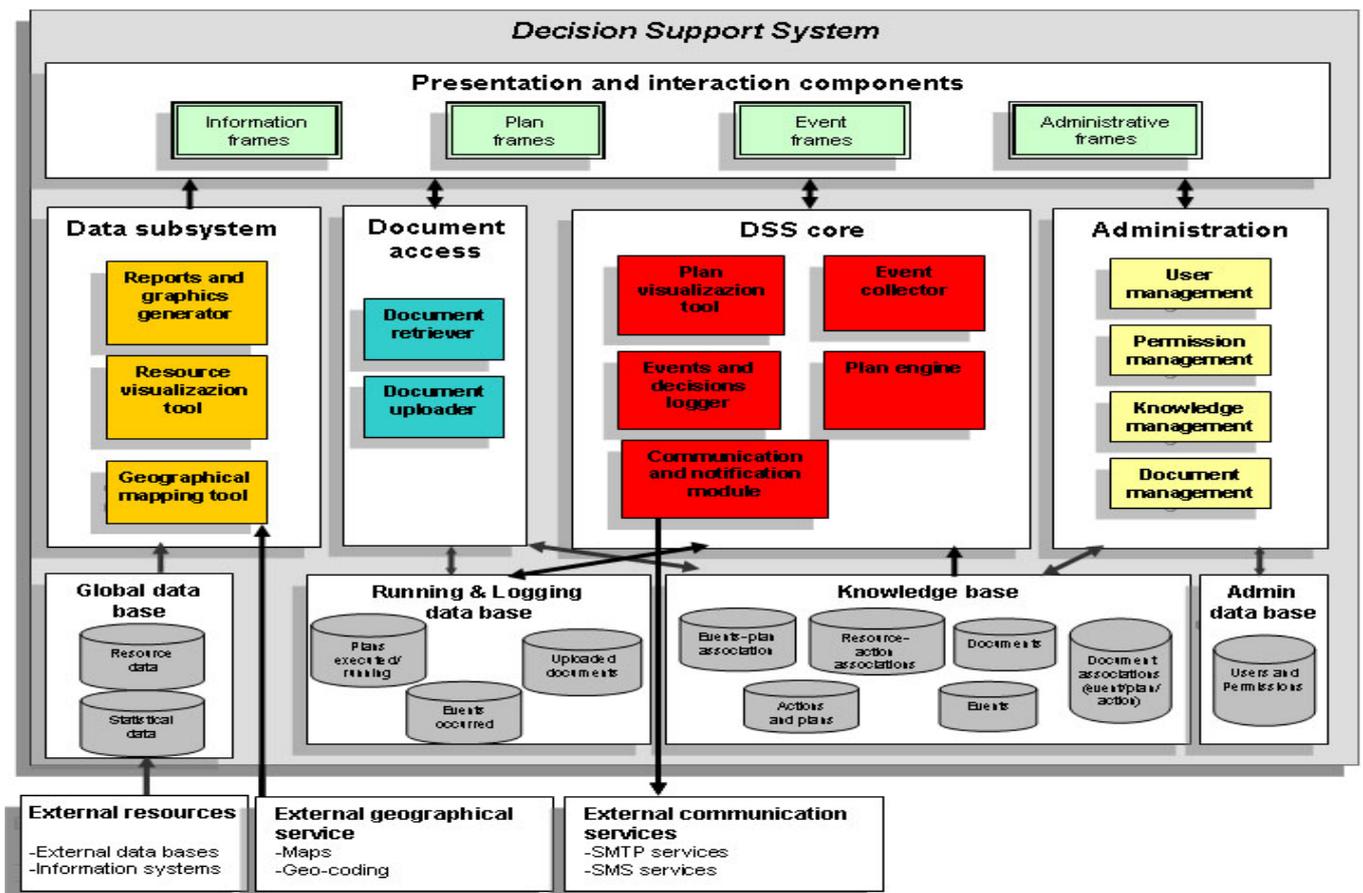


Fig. 2 The DSS architecture



Training

by Emilia Palazzo (LASER)

The activities which describe the training component (T) of the Healththreats PDT package aim at elaborating a training plan whose addressees will be on one hand the project partners, especially the socio-health facilities which will be involved in the experimental phase, on the other hand the facilities staff which would be anyway involved in the process of a crisis management. The training plan, being part of the Healththreats project, aims therefore at developing abilities and both specific and transversal knowledge required for managing situations of difficult organizational management caused by a health crisis in a scenario of pandemic diffusion.

In detail, relating to the different professional profiles involved (see Fig. 3), competence profiles have been elaborated on the basis of each specific responsibility and activity. The task has been focalized at the beginning on detecting the requirements and on the analysis of the training need of the different health facilities, giving the experienced medical staff both questionnaires and individual and group interviews based on the topics scheduled by the *National and regional Preparation and Response Plan for a Flu Pandemic*. Then, in order to fix the training contents, the results of the research phase have been considered, as far as concerns the scientific and normative docu-

mentation on how a pandemic Flu is managed and on the decisional support instruments in a health crisis scenario. Then a training plan has been elaborated, which will be used as a General Model for each partner of the experimental phase and also other facilities may as well refer to it, with the necessary adaptations according to its proper training needs. Basing on this elements, up to now different training experiences have been elaborated, involving:

- 90 ASL staff members
- 170 volunteers of the civil protection of some municipalities of the province of Brescia
- Mayors and town Councillors of the Province of Brescia.

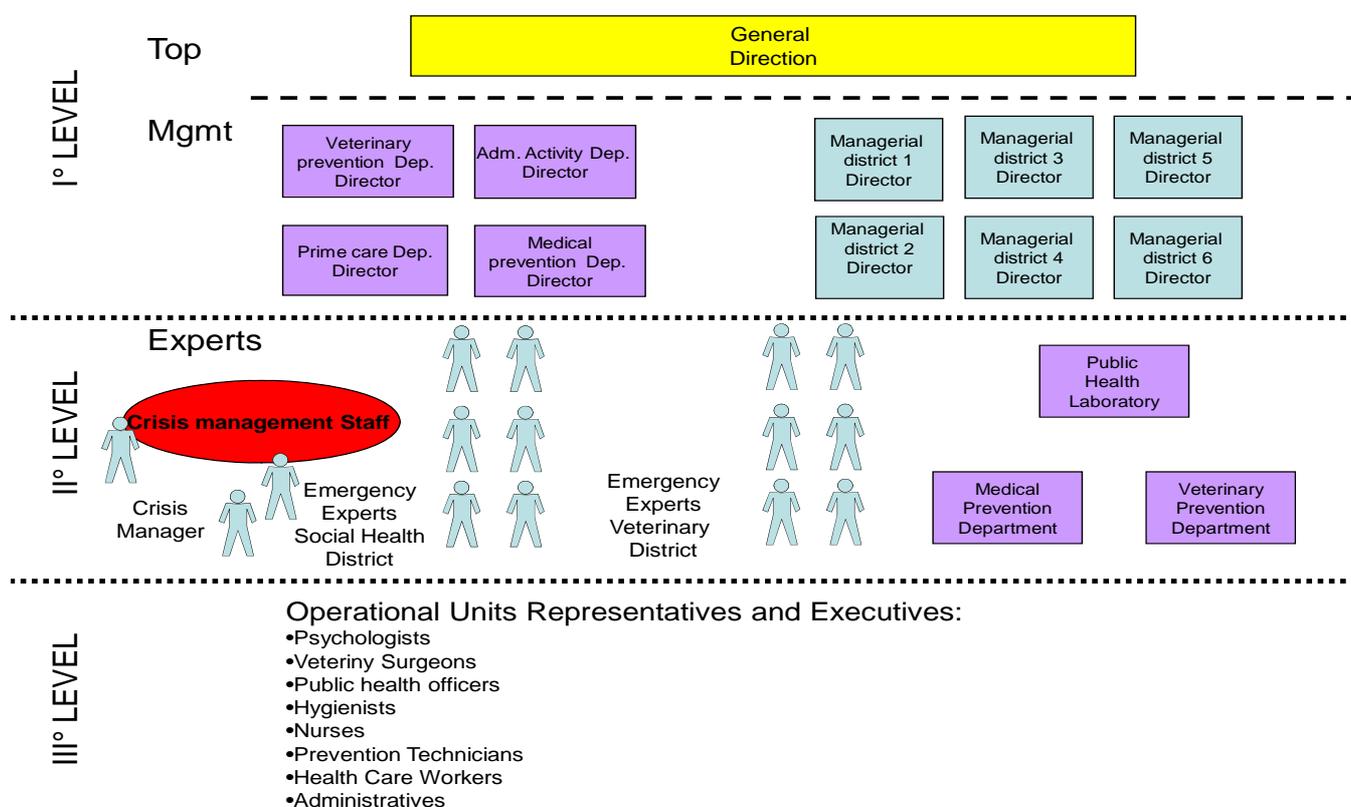


Fig. 3 General division of the possible training intervention models within a social-health facility



Workshop on Generic Preparedness Planning

by Pietro Baroni (UNIBS)

The Healththreats project has taken part to the Workshop on Generic Preparedness Planning (GPP) projects funded under the Health programme 2003-2008, organized by the Executive Agency for Health and Consumers (EAHC) on behalf of Directorate General for Health and Consumers (DG SANCO) of the European Commission.

The workshop, held in Luxembourg on September 30-October 1 2009, has been attended by 23 designated representatives of the projects to be presented and by observers from EAHC and DG SANCO and several other international institutions including the World Health Organization (WHO), the European Centre of Disease Prevention and Control (ECDC), and the European Chemicals Agency (ECHA).

The main goals of the workshop have been the exchange of experience among projects, in order to identify areas of possible cooperation and coordination, and the production of inputs to the definition of policy needs related to the implementation of the Health Security projects.

The workshop agenda has been articulated into four project presentation sessions, each concluded by summary and discussion conducted by a DG SANCO officer.

The projects invited to the workshop refer to three main thematic areas: "preparedness and response to health threats from CBRN acts of terrorism", "generic preparedness for health emergencies", "influenza preparedness and response" and cover a wide spectrum of health emergencies issues ranging from release of

toxic chemicals or radioactive material to highly infectious diseases and from ship sanitation to problems posed by influenza pandemic to current public health laws.

The project presentations have witnessed an intense research and development activity at the level of European Union in a variety of fields as mentioned above, with some projects involving cooperations also with partners outside EU (e.g. eastern Europe non-EU countries or non-EU Mediterranean countries).

The workshop has been conducted in a friendly and open atmosphere, each presentation being followed by questions, remarks and manifestations of interest by other participants: several opportunities of inter-project information exchange and cooperation have emerged in this way, thus successfully fulfilling one the main goals of the event.

Prof. Pietro Baroni of University of Brescia, on behalf of the Healththreats project coordinator Dr. Carmelo Scarcella of ASL Brescia,

has presented to the workshop participants the main project motivations, its partnership and articulation into work packages (WPs), its goals related to the notion of PDT (Processes, DSS, Training) package and the current state of advancement of the project activities, including the results of the completed WPs and the work plan for the next (and final) year.

In the discussion with workshop participants following the project presentation it has been remarked that the Healththreats consortium is committed to ensure the reusability of its methodology and results beyond the strict scope of the project.

Potential opportunities of cooperation and exchange with other projects in the area of pandemic preparedness presented at the workshop have also been identified, including in particular the "Health security and health system preparedness" initiative of the Regional Office for Europe of WHO.

The main results

HEALTHREATS will result in a package including Processes, DSS and Training, in short PDT, that will be tested and validated in Italy, Slovenia, Romania, and Spain

Workshop on Health Programme projects on Generic Preparedness Planning and response in health emergencies
30 September and 1 October 2009 - Luxembourg



A(H1N1) flu pandemic and anticipative strategies in Catalonia

by Carmen Ceinos (SEC)



The Health Ministry of Catalonia, jointly with other departments and local authorities, and acting under the coordination of the Inter-territorial Council of the National Health System, is working on an anticipative strategy in order to minimise the threats posed by a possible A(H1N1) flu pandemic onset.

The policies implemented in order to face an A(H1N1) flu outbreak follow three complementary lines of action – organisational strategies, medical monitoring and response, and public awareness and dissemination.

Organisational strategies

- Inter-territoriality and coordination: a common set of recommendations for the whole territory has been established and a vaccination schedule (seasonal and H1N1) has been defined with timelines linked to the school calendar.
- Multidisciplinary feedback and update: a joint committee of experts has been assembled, and weekly meetings are taking place in order to provide real-time updates to all relevant agents (political, social, medical and scientific).

Medical monitoring and response

- Epidemiological surveillance: acute respiratory infections in Catalonia are being closely monitored and all tracking data obtained is published on a weekly basis.
- Ambulatory response: information on the specificities of the A (H1N1) strain, has been disseminated and healthcare centres have been instructed.
- Vaccine immunization campaign: target priority segment, people with clinical risk factor, pregnant women, healthcare personnel, security and emergency personnel.
- Antiviral treatments: oseltamivir - Zanamivir administered in hospitals, shortly to be also administered in primary healthcare centres.

Public awareness and dissemination

- Public awareness activities addressing the educational environment (students, teachers, targeted population), as well as workplace environment (workers monitoring, guidelines and plan to anticipate adverse effects in business economies).
- Communication and training actions: a series of dissemination campaigns have been launched: actions aimed at citizens (posters, leaflets, press articles, electronic cards, twitter, facebook, special website) and actions aimed at healthcare professionals (website, updated protocols and algorithms, articles, informative bulletins and training).



3th PMB Meeting - Barcelona



Flu pandemic and anticipative strategies in ASL Brescia

by Fiorenza Comincini (ASL Brescia)

In Italy, the "State of emergency" is declared by the President of the Council of Ministers. The management and coordination of activities related to the specific field of health and veterinary prevention are directed, at regional level, by the Operating Committees of the Civil Defense integrated by the General Directorate for Health, and, at provincial level, by the Local Health Authority (ASL). According to the regional guidelines for health emergency management, the ASL of Brescia has organized coordinated structures to be activated in case of emergency, with the support of a network inside and outside the ASL that, if an emergency occurs, is able to coordinate all the stakeholders in the health system. A document was elaborated, in order to define the health measures necessary at a local level to face a pandemic in a timely and coordinated way.

The document identifies:

- The Decision Makers and the Chain of Command, top-down from the ASL General Direction hierarchically;
- The flow chart about how information is delivered to General Practitioners and to health facilities regarding the first cases, with the activation of operations for the surveillance of groups at risk, the definition, identification and management of suspected cases, and

control;

- The plan for internal training courses with annual pursuits addressed to operators potentially exposed, and plan for external communication to health partners and population;
- The emergency plan to increase the availability of beds in health care facilities, that defines the tasks of the health facilities, of ASL Brescia and of the Operational Call Center for Emergencies for emergency of Brescia;
- The plan for the containment of hospitalizations by increasing health care at home and by establishing agreements with the Long-Term Facilities in order to ensure the best care to residents and an appropriate care pursuit in case of need for hospitalization;
- The plan for the storage and distribution of protection devices (e.g. masks, gloves) for the operators;
- The plan for distribution of antivirals, whose use is defined in relation to the evolving stages of the pandemic;
- The plan for the implementation of the extraordinary vaccination campaign, through 1) the quantification of vaccine supplies

according to the priorities already set by the Regional Authority, 2) the definition of strategies for carrying out the vaccinations (e.g. non-urgent outpatient activities to be suspended; collaboration with GPs), 3) the preparation of any necessary storage and distribution of vaccines from time to time to deal with pandemic emergencies, 4) updating of the lists with the numbers of subjects to be vaccinated according to the categories of priorities set by the Region.

- The Board of Control of the ASL of Brescia to ensure the monitoring and verification of all local actions necessary to counter the pandemic by controlling the efficiency and effectiveness of the system and facilitating the integration of different professional skills in a multidisciplinary approach.

Actions of psychological support are planned as well, to be performed by psycho-social care professionals specifically trained in the past years; this support is aimed to face emotional distress of employees in case of emergency and to improve the community preparedness in dealing and coping with health emergencies.

An international conference about the results of the Healththreats Project will be held on September 24th, 2010, in Brescia

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6th Healthtreaths PMB Meeting in Portugal

by Joao Correia (AGILUS I+D)

The city of Matosinhos, in Porto district, hosted the sixth meeting of the Healthtreaths Project Management Board on 21 November 2009. Joao Correia, administrator of AGILUS I+D - the applied research institute of INOVAMAIS Group - was in charge of the meeting organization. The meeting was well participated with representatives of almost all partners involved in the project. Dr. Carmelo Scarcella, Project Coordinator and Managing Director of ASL Brescia, settled that, as the project is approaching its last phase, the main objective and relevance of the meeting was linked to the understanding of how is the preparatory work ongoing at each project site, aimed at welcoming and instantiating the Healthtreaths PDT package and its DSS part, in

particular. The preparatory work should in fact be aimed at developing a suitable scenario for the localization and testing of the Healthtreaths approach, methodology, procedures and DSS system. During the meeting the partners presented their state of readiness to receive and localize the decision support system, particularly in the pilot sites in Italy, Romania, Slovenia and Spain, with the possibility of localization also for Portugal. A number of actions were identified to prepare the several test scenarios for the local installation after the DSS release in April. Another relevant matter of the meeting held with the dissemination of project results. Although

ny dissemination activities were taken until the present moment, as the project approaches its last phase and the results are becoming even more evident, all the partners should be more active in its dissemination.

Concerning the evaluation of the project all the activities are progressing reasonably following the plans. The activities of DSS design and implementation are on-time and on-schedule for the DSS system delivery in April and a relevant set of training material has already been finalised.

The meeting was concluded with a training session - Adopting a Decision Support System: the impact on users.