

Newsletter



Patient Safety through Intelligent Procedures in medication

IN THIS ISSUE: PROJECT OVERVIEW

- Project Overview 1
- WPO: Management and co-ordination 2
- Stage 1: Improve Knowledge adverse event 2
- Phase 2: develop 'Clinical Decision Support Systems' (CDSS) 3
- WP 13: Dissemination and exploitation 4
- Other Information 5

Adverse Drug Events (ADEs) endanger the patients' safety and instigate considerable extra hospital costs. Therefore, a significant reduction of preventable ADE is a challenging issue in Public Health. To that end, the PSIP project will provide an innovative tool giving relevant knowledge to healthcare professionals and patients by means of Information and Communication Technologies (ICT).

management of the project while WP13 is dedicated to dissemination and exploitation of the results. WP1 to 12 describe the organisation and temporal sequence of the work to be done.

tems' (Cx-CDSS) (WP4-6)

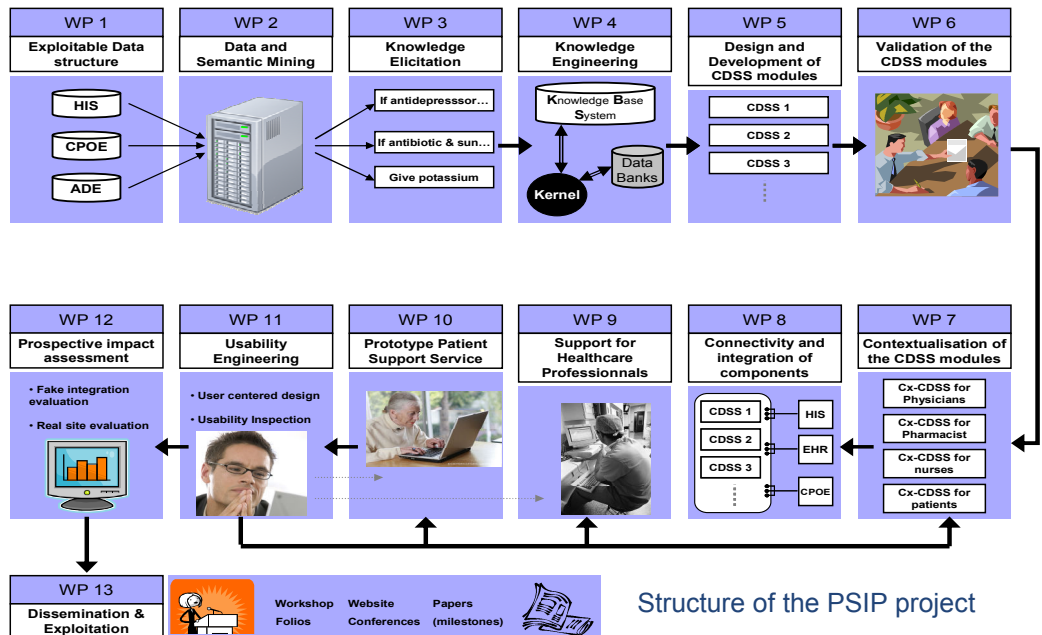
- A last phase is developed for the 'Integration in existing IT solutions and usage' (WP 7-10).

Three phases can be identified:

- A first phase dedicated to improve knowledge on Adverse Drug Events (ADE) (WP1-3)
- A second phase aimed at developing 'Contextualised Clinical Decision Support Sys-

WP11 and WP12 deal with Human Factors / usability engineering and perspective impact assessment all along the duration of the project.

The project is divided in 14 Work Packages (WP), numbered from 0 to 13. WP0 is devoted to the



andrea.bellusci@kitesolutions.it

Structure of the PSIP project

WPO: MANAGEMENT AND CO-ORDINATION

WP0: Management and co-ordination, *WP leader: CHRU Lille*

The project was launched on the kick-off meeting in Lille (24-25 January 2008). The project handbook (D0.1) was delivered in time after following PSIP's internal review process. Procedures for controlling tasks' progress

within the project are established. Communication means and formats used to exchange information are described. The main purpose of the Quality Management Task is to handle aspects of the quality and risk management within the project in a way that makes it effective, explicit and visible. The Quality and Risk manual (D0.2) was deliv-

ered in June 2008. It prescribes procedures for the quality management, and it contains the risk analysis.

Key persons: Jytte Brender, Florence Nosal

STAGE 1: IMPROVE KNOWLEDGE ON ADVERSE EVENTS

WP1: Exploitable Data Structure, *WP leader: Oracle*

The first task (**task 1.1**) was the definition of a common data model to extract the information to be mined. This task was achieved in March and this data model is currently used by all the partners of the project (particularly the hospital partners) to perform the extraction of the data from their data bases: demographic, clinical, biological, and drugs items are extracted under a common frame and files are now available for the data mining phase. In this first step, the data concerned only a limited number of medical records, in a restricted domain of medicine (gerontology, internal medicine). As the model is now routinely implemented and used by the hospitals, data exports will now cover larger domains in Medicine and Surgery. The second task (**task 1.2**) is the data extraction generalization, the first

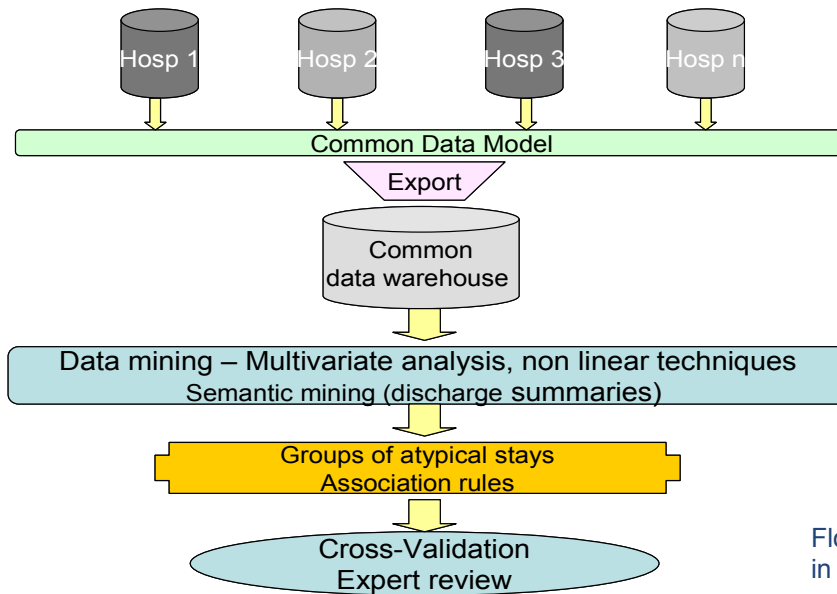
extractions and exports of data were realized in April 08.

WP2: Data and Semantic Mining, *WP leader: Ideaa*

Different methods of data mining were tested since March 08: Decision trees, Associated Rules, Principal Component Analysis (PCA), Multiple Correspondence Analysis (MCA)... to identify the most reliable methods to be used in order to identify Adverse Events, and the items (clinical, biological, drugs) associated to these Events. The methodology of data mining has been progressively refined. First interesting results are available since May 2008. At the last workshop on this subject in Thessaloniki, the current available results amounted to 37 decision trees and approximately 200 decision rules. Deliverable 2.1 "first results of data mining" is available since August 2008.

WP3: Knowledge Elicitation, *WP leader: CHRU Lille*

Knowledge Elicitation is one of the key phases of the project. This phase will involve medical experts from various origins to validate, from medical records, the quality of the decision trees, and decision rules proposed from the data mining results. A meeting was held in Lille in March, to refine the methodology of Knowledge elicitation from the data mining, taking into account the experts' advices. The methodology was discussed through workshops into international congress: MIE (International Congress of the European Federation for Medical Informatics) in May 2008 and HEPS (Healthcare systems Ergonomics and Patient Safety) in June 2008. The methodology of the WP3 is now complete. This phase has started in September 2008, and is susceptible to continue all along the project.



Flowchart for ADEs identification in PSIP

PHASE 2: DEVELOP 'CLINICAL DECISION SUPPORT SYSTEMS' (CDSS)

WP4: Knowledge Engineering, *WP leader: AUTH*

Key persons: Nicos Maglaveras, Vassilis Koutkias, Jimmy Klitgaard

Knowledge Engineering is hub in the project, aiming to provide the means for modeling and representing the knowledge that will be generated in the context of tasks within WP2 and WP3. In this regard, a first report has been elaborated containing knowledge engineering requirements for the project, as well as knowledge engineering principles and related methodologies that are of interest and potentially applicable/suited for PSIP. The report is of primary interest to WP5, towards CDSS candidates' identification and final selection, as well as to WP3, which will provide elicited

knowledge to WP4 that has to be engineered and effectively represented, so as to be integrated and used in the abovementioned CDSS. Being a WP with major interdependencies, WP4 was analyzed for risks, while relevant contingency plans have been elaborated, from its early beginning. costs.

WP5: Design and development of CDSS modules, *WP leader: Region H*

Risk analysis has been updated in the beginning of the summer. A list of key features and a list of candidates for a CDSS module have been analyzed and composed. 7 test scenarios have been set up. Definitions for Knowledge based system (KBS) and Clinical Decision Support

System (CDSS) have been agreed. The report with recommendation for the choice of KBS has been delivered before the decision was taken during the Thessaloniki workshop (in September).

“They endanger the patients’ safety and originate considerable extra hospital costs”

WP 13: DISSEMINATION AND EXPLOITATION

A first version of the PSIP portal has been implemented. The portal is already utilized as main areas for exchange of data and documents amongst partners. A revision of the portal is under way, so as to improve user requirements and friendliness. The web page, aimed at presenting the findings and aims of PSIP to the general public, is also under development, and a first version will be distributed for comments to partners by the end of July. Finally, dissemination material (posters and leaflets) is being prepared for comments before printing and distribution.

Incoming Events

January 12, 13, 14, 2009: PSIP meeting in Innsbruck Hall, Austria

Upcoming Events

October 19-22, 2008: 25th Conference of International Society for Quality in Health Care (ISQua) will be held in Copenhagen. During the session "Patient safety through intelligent procedures and medical systems", on the 21st of October, the PSIP European project will be presented by Jonas Egebart, Régis Beuscart and Marie-Catherine Beuscart-Zéphir.

November 3-6, 2008: The World of Health IT (WoHiT) Conference & Exhibition in Copenhagen will be held in Copenhagen. The World of Health IT Conference & Exhibition has been designed for and by the healthcare IT community in the European region including: technology end users, vendors, providers and policy makers. Régis Beuscart, the PSIP coordinator, will present the European project during an education session on the 4th of November (16H15).

November 8-12, 2008: American Medical Informatics Association (AMIA) 2008 Annual Symposium will be held in Washington. The Annual

Symposium provides a wide range of formats for education and discussion. Papers and posters present peer-reviewed state-of-the-art scientific and technical work. Demonstrations and Partnerships in Innovation allow for comprehensive presentation of advanced systems, including new developments and innovative uses of commercial systems. Panels, invited keynote presentations, tutorials, and workshops bring together thought leaders for in-depth and active audience exchange about critical issues of the day. Marie-Catherine Beuscart is appointed to a



panel with Peter Elkin and Jan Talmon "the issue of the quality of reporting" on the 12th of November.

The symposium continues to flourish as the premier forum for education in clinical informatics, clinical research informatics, public health informatics, and translational bioinformatics.

Biographie

Régis Beuscart was born in 1951 in Lille, France. He was graduated M.D. in 1981 from the University of Lille. He is specialised in Cardiology and Nuclear medicine. He re-

ceived the Ph.D. degree in Mathematics from Paris University in 1985 for his study of Pharmacokinetics of insulin in human beings.

He is Professor of Biostatistics and Medical Informatics in the Faculty of Medicine of Lille (Université Droit et Santé de Lille, France). He is also director of the "CERIM" research laboratory (EA2694), and Head of the Public Health Department in the University Hospital of Lille.

Since 1990, he is working on new information technologies: Computer-Supported-Cooperative Work, "Advanced Communication" and applications in Telemedicine. He was particularly involved in middleware integration and development projects for medical purposes, Hospital Information Systems, and Telemedicine systems for hospital communication and Homecare. He coordinated 3 European Projects: ISAR (1994), ISAR-Telematics (1996) and VICO (1998).

He has been Project Officer in the French Ministry for Research (France 2000-2005) for "Technologies in Healthcare". He is IEEE-EMBS member, and IMIA member. From 2002 to 2008, he has been the chairman of the IMIA Working Group "Telematics in Healthcare".

Régis Beuscart is the coordinator of the PSIP project. Besides the Coordination Activities, he is mainly involved in the first 3 workpackages: Data models, Data Mining, and Knowledge Elicitation. He will be also deeply concerned by WP10 enhancing the integration of the patient in the PSIP project.

Régis Beuscart is married, 5 children, 2 grandchildren.

He lives in Armentières, 15 kilometers from Lille (France). His principal hobbies are gardening, and of course, computers.

Visit our website

The web site www.psip-project.eu contains all the informations about the project.

Here you can find background material concerning:

- Project structure
- Partners
- Aims and targets

Read our newsletter

The PSIP newsletter is the best way to stay updated with the project progresses.

Detailed articles will inform you about:

- Recent news
- Incoming events
- Achieved results

| PSIP | |
|--|--|
| Project coordinator is CHU de Lille. | |
| The research leading to these results has received funding from the European Community's Seventh Framework Programme (FP7/2007-2013) under grant agreement n°216130. | |
| Name | Email address |
| Andrea BELLUSCI | andrea.bellusci@kitesolutions.it |
| Régis BEUSCART | regis.beuscart@univ-lille2.fr |
| Marie-Catherine BEUSCART-ZEPHIR | mcbeuscart@univ-lille2.fr |
| Jytte BRENDER | jytte.brender@inet.uni2.dk |
| Carlo CACCIABUE | carlo.cacciabue@kitesolutions.it |
| Emmanuel CHAZARD | emmanuelchazard@yahoo.fr |
| Jimmy KLITGAARD | jik@dk.ibm.com |
| Vassilis KOUTKIAS | bikout@med.auth.gr |
| Nicos MAGLAVERAS | nicmag@med.auth.gr |
| Cristian NICULESCU | cristian.niculescu@ideea.biz |
| Florence NOSAL | f-nosal@chru-lille.fr |
| Cristian PREDA | cristian.preda@univ-lille2.fr |
| Lone RANDI FABER | Lone.randi.faber@regionh.dk |
| Sanne JENSEN | sanne.jensen@regionh.dk |
| Jean-Charles SARFATI | jean-charles.sarfati@oracle.com |
| Patient Safety through Intelligent Procedures in medication | |

