

ONCO WITH NO PAIN

MONITORING PATIENTS WITH CANCER PAIN THROUGH A TABLET DEVICE SYSTEM

ING. DANIELE SEGAGNI

LABORATORY OF INFORMATICS AND SYSTEM ENGINEERING
FOR CLINICAL RESEARCH



Pain represents one of the most important manifestations of the disease

Pain and especially chronic pain can have a significant negative impact on the quality of life for patients and their family

Wrong or absent pain management creates consequences on

- physical
- psychological
- social
- economic

Chronic pain affects about 25-30% of the population



Clinical care of this aspect is a real priority for the health care system

Project partners

Pilot project developed and tested at IRCCS Fondazione Salvatore Maugeri (FSM), Pavia, Italy

- Laboratory of informatics and system engineering for clinical research
- Oncology 1 Medical Division



Project partners:



Fondazione  Bruno Boerci



Improve the pain treatment strategy by monitor and measure type and the amount of pain perceived by cancer patients

Pilot patient set:

- Coming from FSM Oncology 1 Medical Division
- suffering from cancer pain in any stage of disease

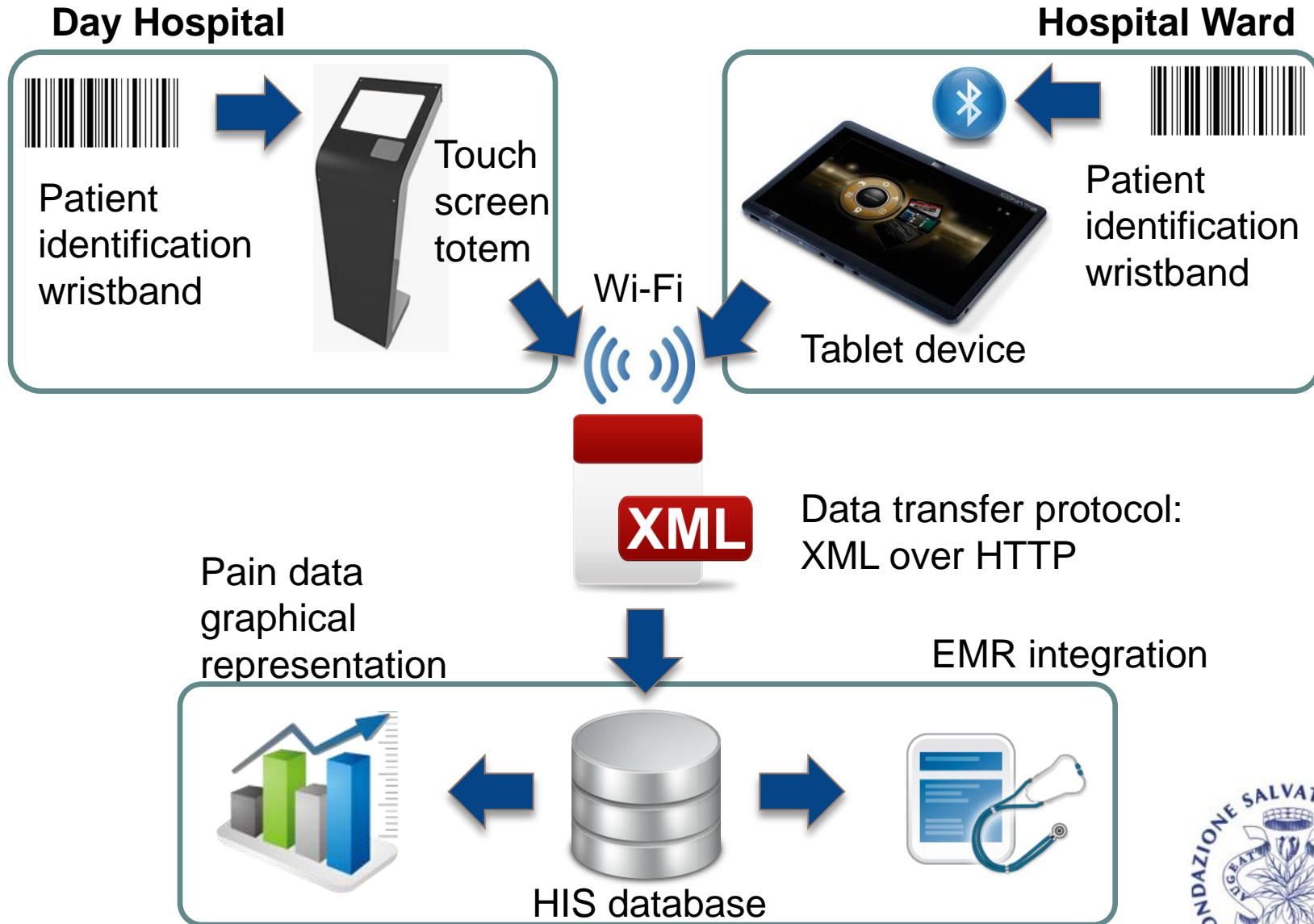
Issues:

- Pain information missing in EMR
- Pain Information collected in a non structured manner
- Patients therapies not really reflect the patient pain status

Project targets:

- collect pain information in a standardized way
- provide patients with a tool for easy communicate their pain
- provide physicians with a system to improve the treatment of cancer pain and measure the deviation of the prescribed therapies respect with medical guidelines
- merge pain information with the EMR

System Architecture



Devices:

- 1 touch screen workstation – for DH spontaneous reports
O.S. Microsoft Seven



- 2 tablet computer – for bedridden patients
O.S. Google Android v2.2.3 Froyo



Client Side App:

- Based on NRS (Numerical Rating Scale) and VAS (Visual Analogue Scale) for pain report
- Web application for Microsoft O.S.
- Wrapped using WebView class in an apk application for Android O.S.

Data Transfer protocol:

- XML defined with XSD schemas
- REST Web Services over HTTP



Visual Analogue Scale

Numeric Rating Scale

The information collected will be used to

- create pain trend charts
- create descriptive statistics and reports
- monitor the efficacy of therapy

For each pain report can be added information related to

- drugs type
- active principle
- dose of drugs

Physicians can observe

- progress of pain values for each patient
- direct relationship between therapeutic treatment and values of pain
- adherence to guidelines recommendations
- measure of satisfaction in the analgesic therapy

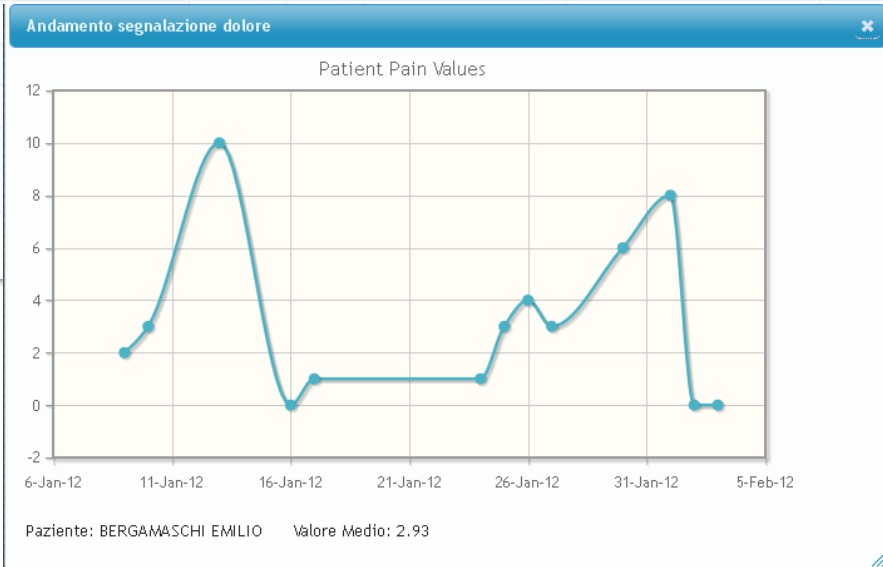
Pain Data Graphical application v1.2

Oncologia senza dolore: elenco ultimo valore di dolore segnalato. Clicca

Paziente	Dati	Sesso	Regime di degenza	Data inizio ultimo contatto
		F	DH	29/02/2012
		M	Ricovero	22/02/2012
		M	Ricovero	22/02/2012
		M	Ricovero	17/02/2012
		M	DH	29/02/2012
		F	Ricovero	20/02/2012
		M	Ricovero	03/02/2012
		M	Ricovero	10/02/2012
		M	Ricovero	20/02/2012
		F	Ambulatorio	27/02/2012

Gestione Terapie

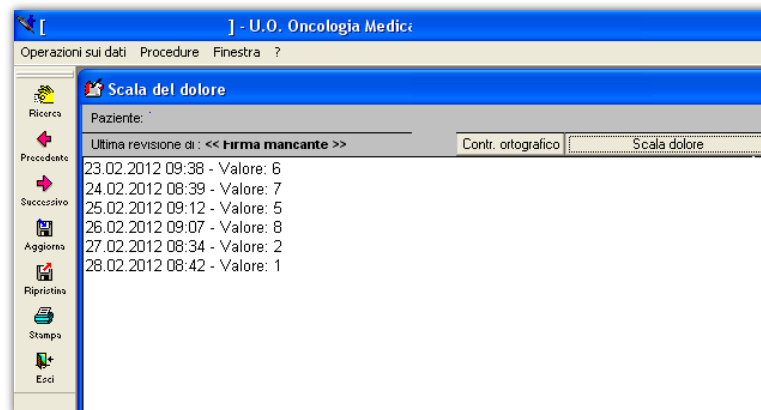
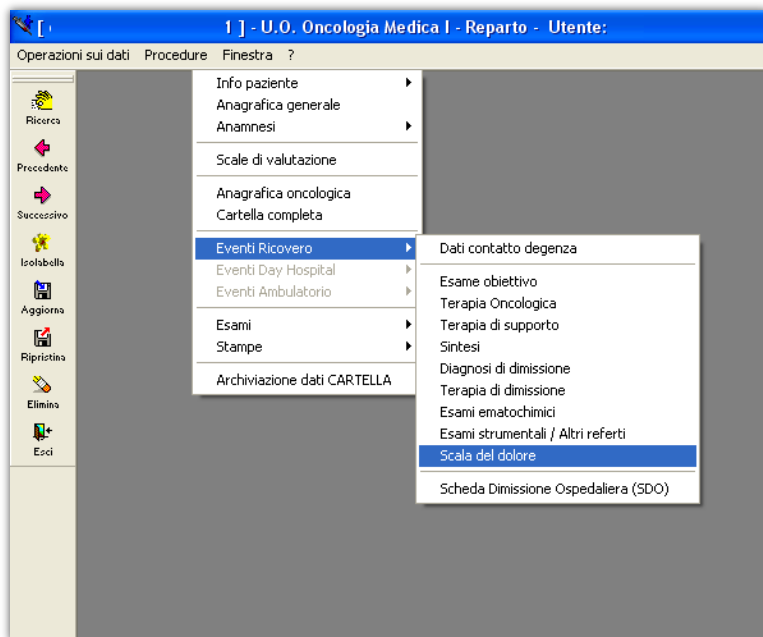
Data Segnalazione	Valore	Terapia
23-02-2012 09:39:28	3	Paracetamolo
23-02-2012 09:38:53	3	Paracetamolo
23-02-2012 09:37:56	8	Morfina soft
23-02-2012 09:37:06	2	<input type="button" value="+"/>
23-02-2012 09:35:56	3	<input type="button" value="+"/>



27/02/2012	4	5	23-02-2012 09:27:51
27/02/2012	7	0	23-02-2012 09:18:33
22/02/2012	4	0	22-02-2012 09:16:08
23/02/2012	4	1	22-02-2012 09:12:07
-	1	1	22-02-2012 09:10:44
22/02/2012	9	10	21-02-2012 09:11:17



Pain data is fully integrated in the FSM EMR system



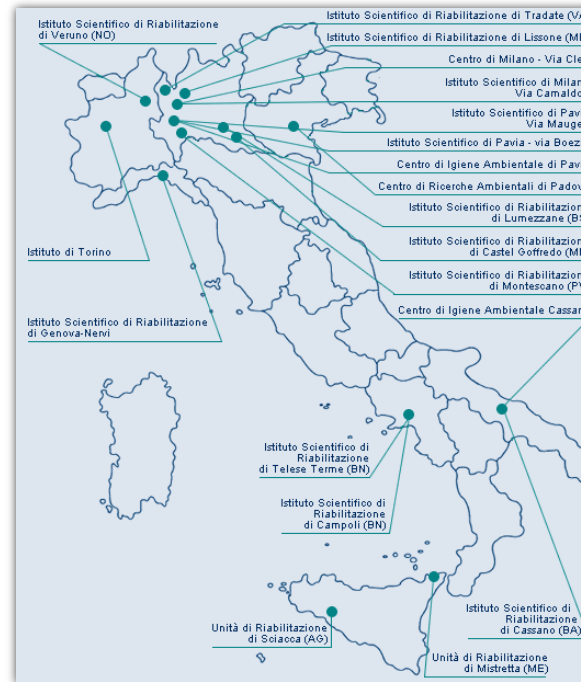
Results

Ward	Start date	Patients	Reports	Report/Patient	Ward Avg Value
Oncology 1	29-11-2011	181	1017	5.6	1.8
Palliative Care	24-04-2012	31	218	7	2.1

The development of an IT system that allow physician supervising, collecting and treating pain levels permit to:

- improve the treatment of pain through standardized diagnostic and therapeutic pathways defined by cancer guidelines
- educate patients to communicate pain and cooperate with physicians to fight against it
- increase the valuable information on the type of pain present in the medical records
- keep proper track of the level of pains (mandatory information from march 2010)

Extend the pilot project to other Medical Division and other FSM venues



Telemedicine

- improved patient access to healthcare using Android based smartphones



THANK YOU

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