

VIMERCATE HOSPITAL: AN EXCELLENT EXAMPLE OF TECHNOLOGICAL INNOVATION IN HEALTHCARE



Integration and automatization of clinical workflow processes in all hospital's units are made possible thanks to the adoption of the Fujifilm Synapse portfolio.

Giovanni Delgrossi, Vimercate Hospital Information Systems Manager, explains the innovative path followed along with Fujifilm Medical Systems in order to achieve their forward thinking aim.

Introduction: Vimercate Hospital is part of the Regional Healthcare society and manages the prevention, diagnosis, care and rehabilitation with the prime goal of driving improvements in the general health and wellbeing of the Lombardy residence.

The Hospital corporate sector is divided into hospital facilities and departments organized by different areas of care and technology / medical equipment, consistent with the national legislation.

The Hospital corporate sector "regional network" provides specialized care including preventive health, diagnosis, care and rehabilitation of medium and low complexity, intermediate care and guarantees the medico-legal functions and hospital operational performances. The "regional network" sector also provides the district services for the community: specialist outpatient assistance, drug addiction care

and prevention services, advice centers, services for disabled people, elderly and those with chronic conditions , as well as integrated homecare assistance.

The new structure of Vimercate, in operation since 30th October 2010, designed by architect Mario Botta and built in just three years, the hospital spreads over three above ground floors and two underground floors, with a total area of 113,000 m2. Architecture, technology and organization are all aimed at putting the patient with their diseases in familiar and comfortable settings, at the center of logistic and diagnostic-therapeutical paths; Vimercate Hospital is entirely designed to provide the best patient experience with high satisfaction and clinical outcome.

Problem/Challenge: As Giovanni Delgrossi says, the most ambitious challenge has been to realize a unique and reliable informatics architecture that could ensure the maximum integration of all healthcare services offered, through the best possible use of Fujifilm Imaging Management technology.

Delgrossi: “We designed an architecture that allows us to make the hospitalized patients workflow management very efficient; diagnostic examinations’ admission and delivery processing time have been dramatically reduced, real time diagnostic responses are immediately available for the different physicians and departments that, thanks to the perfectly integrated system, can access relevant clinical documents with digital signature and all images in a totally automatic and mobility way.”



The complete dematerialization of clinical papers and patient images, that made such a high level of integration has dramatically speed up of the Hospital’s workflow. This has been planned to achieve a double objective: maximum technological support for the physicians and simplification of the health services access’s procedure for the patients. As Delgrossi underlines, it’s an ambivalent process for which is not necessary to define in advance to privilege physicians’ needs or patients’ satisfaction; the development of an integrated informatics architecture and the continue and progressive automation of processes enables the hospital to meet both needs at the same time:

Delgrossi: *“We successfully satisfied the different needs of physicians and patients because we invested in three essential aspects: organization, processes’ integration and efficiency of services”.*

Regarding the services to end users, the patients, Delgrossi explains how the aim has been, of course to encourage as far as possible the maximum quality of the healthcare services, and at the same time to develop the best reception services and attention to focus on individuals, with the purpose of putting the final users in a position to physically visit the hospital only when their presence were essential for the care delivery:

Delgrossi: “The aim is to avoid that our patients come to the hospital in moment that are not the one dedicated to the health service.”

Solution: The innovation and efficiency path followed in Vimercate Hospital has been gradually achieved thank to the realization of many initiatives that contributed over the years to reach the final objective of realizing a unique and reliable informatics architecture at the service of hospital’s physicians and patients. Delgrossi underlined that solidity of the system’s architecture and pervasiveness of the adopted technological solution represent key elements in order to realize high integration level care pathways: the patient is directly involved in a diagnosis and care pathway that simplifies and optimizes the interactions with the hospital and the physicians. In this evolution and innovation from the traditional workflows, the Medical Informatics products of Fujifilm Synapse platform are key elements for the accurate and effective progress of the entire workflow; from the acceptance of diagnostic exams’ requests to the reception of patients, until the complete scheduling of clinical services with planning of specialist activities, creation and delivery of digital medical reports.

Delgrossi: *“Synapse technology involves all of the workflow from the patient’s arrival in the hospital until their departure: Synapse handles the entire diagnostic procedure and all the imaging timeline.”*

- As part of the hospital redevelopment project, multifunction Kiosk dedicated to the reception, technology integrated with a specifically customized Fujifilm solution, were first installed and used in 2013 and they are placed in the main hall of the hospital. In the beginning the aim was to use them as a tool to guide people to the use of digital technologies even in an health context. These Kiosks have a touchscreen video interface and they allow to book and pay for appointments etc, and allow the patients to collect reports by printing them or saving them on a USB device, avoiding waiting time at counters. In a wider vision, continues Delgrossi, Kiosk usage should represent a temporary phase necessary to promote the gradual shift to online services: with an end goal that the patients will be able to handle every aspect of their healthcare pathway directly from home, safely and in real time. Going to the hospital only to benefit from specific hospital based workflows and diagnostic procedures. Thousands of users a day already benefit from online services to access to their medical reports and diagnostic images .

- The Radiology Service has undergone a revolution in the management of ambulatory pathways. One of the major outcomes is that there has been a complex shift from the concept of ambulatory to the concept of ambulatory area. The patient does not have to physically seek out the specific ambulatory service for his/her medical appointment: in Vimercate Hospital as part of the planning and design there are only two macro-ambulatory areas where the patients go to be accepted and are automatically directed to the right waiting-room before the medical appointment. All of this process is automatic and is integrated with the physicians workflow management system from Fujifilm: just after the patient's registration at the desk is completed, the doctor in his office is automatically informed about the patient's physical presence in the waiting-room and, thanks to the colored graphic representation, then matched with the calendar schedule of appointments. In the waiting-room the patient is constantly informed about his appointment's progress. Thanks to the dedicated information display; around the schedule time for the medical examination, the patient is presented with a message on dedicated information displays and is automatically invited to go to the specific area, thereby simplifying the access to the services and reducing the longer waiting time.
- Even in the emergency department we decided to keep the waiting patient informed for every phases of his pathway, bringing benefits both to the patient themselves and to the physicians; patients can always have information about progress thanks to data displayed in real time on the dedicated digital monitors, physicians can operate in a more neat and less dispersed working environment, allowing them to focus more on their work.

Delgrossi: "The number of direct requests for updates and information that patients were asking nurses has disappeared. The patient is identified with a safe procedure and is equipped with an individual bracelet, and with advanced triage is given a priority to match their medical needs and the required level of care. In the end, the patient is visited by one of the doctors who start the diagnosis and relevant care pathway. During every phase of the pathway, the patient can stay comfortably seated while they wait for the progress of the medical activities. Staying constantly informed thanks to the digital displays which are updated in real time; the patient knows how crowded is the Emergency, he knows his personal code color and priority and even his progress through the system in real time and in a totally automatic modality, thus ensuring the maximum transparency..

- An additional area of innovation, both for physicians and for final users, was the complete digitalization and computerization of cardiology ECG exams management. Thanks to the customization of the Fujifilm solutions it has been possible to automate and speed up the acknowledgement of the patient submitted to ECG exam via integration of the information contained in the bracelet with the diagnostic signals coming from the device. This solution makes the acknowledgement process more even safer, especially in the case of non-cooperating patient. For example in an Emergency, this information can be distributed via the hospitals Wi-Fi network,

ensuring that the information is provided to all the physicians who need them in the fastest possible way (and without the use of easily lost paper notes), increasing both the diagnostic value and improving the care process. Users themselves can have access to their exams and the related results through the multifunctional Kiosks or directly online.

The future plans of Vimercate Hospital continue in the direction of a progressive delivery of a new hospital model in which patients' physical presence is strictly limited to specialist visits, and diagnostic exams which cannot be carried out outside of a hospital environment. Delgrossi commented: *“Our patients still really appreciate the physical contacts with the hospital structure and physicians, despite the huge increase in the availability of digital services offered (including online), they still willingly approach the hospital to obtain information of their interests and to directly benefit of available services.”*

“The relationship between Fujifilm and Vimercate Hospital has now been in existence for almost a decade now, since the award of the first tender for the supply of a RIS/PACS system in 2007” as Eugenio Talarico, Marketing Business Developer H.IT, Fujifilm Italia, says.

“Together we have faced many challenges and we followed a path that allowed us to bring the Fujifilm innovation in a technological context that is always evolving, the solution is completely integrated and really puts the patient at the center of the care pathways. Vimercate makes the new healthcare 2.0 reality , exploiting technology at its best and always contributing to improve it, providing the most effective services tailored to their varied patients' needs.”

The strategic goal to follow, as Delgrossi concluded, is always to put physicians in the environment to best fulfil their work, ensuring the highest degree of efficiency in the processes and the highest possible quality of the services and patient outcomes, and always to put the patients in position where they can access of all the services and only going physically to the hospital for specialized examination.