

# Safe and integrated onco-hematology workflow

C. Bufarini<sup>1</sup>, A. Marinozzi<sup>1</sup>, S. Guglielmi<sup>1</sup>, V. Rosini<sup>2</sup>, D. Paolucci<sup>2</sup>

<sup>1</sup> Oncology Pharmacy, University hospital of Ancona – Ancona (Italy) | <sup>2</sup> Loccioni Humancare – Moie di Maiolati, Ancona (Italy)

## BACKGROUND

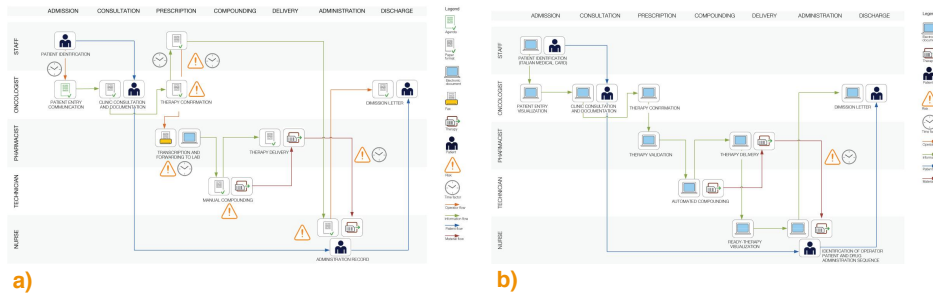
Chemotherapy is an highly dangerous medical practice due to intensity, seriousness and incidence of side effects resulting from medication errors. In addition to clinical risks, ensuring high standards of safety for healthcare operators who handle toxic drugs

is mandatory. In 2009 the hospital started a project aiming at implementing a safe, patient-centered onco-hematology workflow, which integrates information technology and automation of the compounding activities.

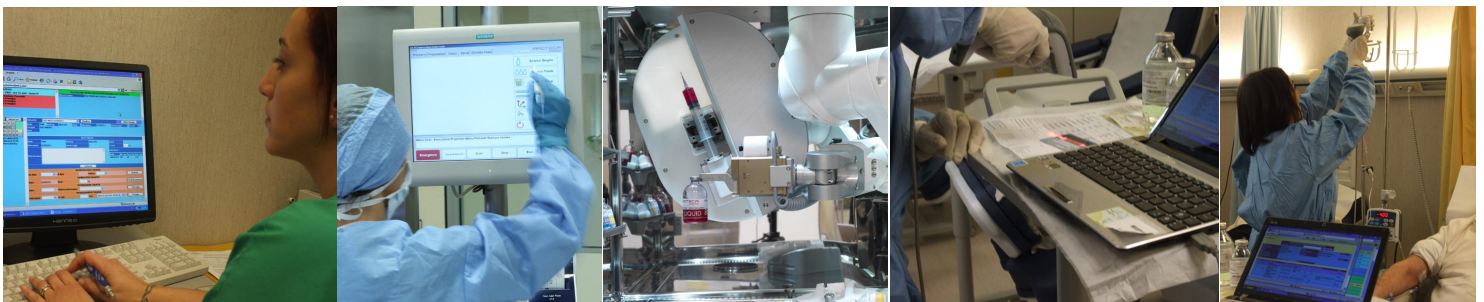
## OBJECTIVES

This project arose from the need to guarantee:

- Patient safety: to guarantee the right medication, with the right dose, at the right time, following the right route.
- Operator safety: to reduce exposition to toxic drugs during compounding and administration.
- Workflow efficiency: to reduce waiting/idle times, to remove overlapping procedures.



Onco-hematology workflow pre (a) and after (b) re-engineering



Different phases of the onco-hematology workflow after the re-engineering

## DISCUSSION

Nowadays every stage of the onco-hematology workflow, from prescription to administration, is fully controlled and traced, all patients are treated through the integrated and automated workflow. The medical health record is totally electronic, with a database of drugs and protocols validated and locked by pharmacist and physician jointly. The transfer of documents into electronic

format helps preventing medication errors and guarantees data integrity. The automation of hazardous manual activities in a closed environment, with steps of monitoring and control, significantly reduces the probability of error during compounding and minimizes the risk of exposition.

## In 2012

- 1,509 patients treated
- 430 protocols validated
- 19,972 IV doses prepared by means of APOTECAchemo
- 61 oncology drugs
- 79 users enabled.

## CONCLUSION

This project represents a good example of collaboration between public and private sectors. The partnership with Loccioni humancare (Lab@AOR) allowed to reach great technological progresses in safety for oncology patients and hospital personnel. In addition, it represented an intense moment of multidisciplinary dialogue among different stakeholders. Nurses, physicians, pharmacists, technicians, health manager and engineers seated at the same table to analyze the whole workflow, the relative problems and to reengineer the process.