Nice University Hospital

PRE-ICIS at ESCP-EAP – RFID Projects: a case of healthcare

Evaluation of the interest of RFID in the medication use system: Application to chemotherapy process.

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Agenda

- The medication use system
  - Chemotherapy process
- Potential interest of RFID
- The Project
- Evaluation methodology of impact
- Discussion

Characteristics

- Process with multiple steps and multiple actors, with necessary specific competencies
- Particular risks mainly linked to:
  - ✓ Complexity of the multi therapy, technical step of preparation Intrinsic drug toxicity, Patient vulnerability …
- Constraints :
  - ✓ organizational
  - ✓ time (activity, stability)
  - ✓ infrastructure
- Economic and environmental impact

Why RFID ?

- Traceability and security of activities, products and actors

  “scanning” and error reduction at different levels:
  the drugs (-75%), the dosage (-62%), the patients (-93%) or
  the moment of administration (-87%). *Bonnabry and al*

- Piloting of activities in the patient care process

Expected outcomes

RFID :

- real impact
- added values
- relative position regarding other technologies

- National funding done by DGE (Direction Générale des Entreprises).
- Through Competitive Cluster SCS (Solution Communicantes Sécurisée)
- Several industrial partners (IBM, ST microelectronics, etc.)
- On the pharmaceutical side: Nice University Hospital (NUH)

- Nice University Hospital: 2000 beds
- L'Archet site: 800 Beds
- Pharmacy – Chemotherapy
  - 10 people
  - 150 cocktails per day
- Chemotherapy drug pathway managed by a specific IT software (CHIMIO)
- Objective 2011: ISO 9001 certification

Methodology

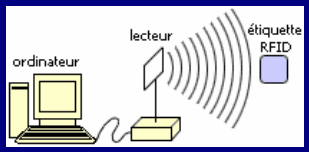
- Prospective study with a comparison before/after of a practical application
- Model of global hospital medication using system performance management
- Dynamic cartography of processes based on systems engineering approach bringing to an *a priori* risks cartography
- Performance indicators:

Regulatory compliance, normative and to the practical limits ;
Activity ; Cost ;
Quality – Risks & Professional practices evaluation

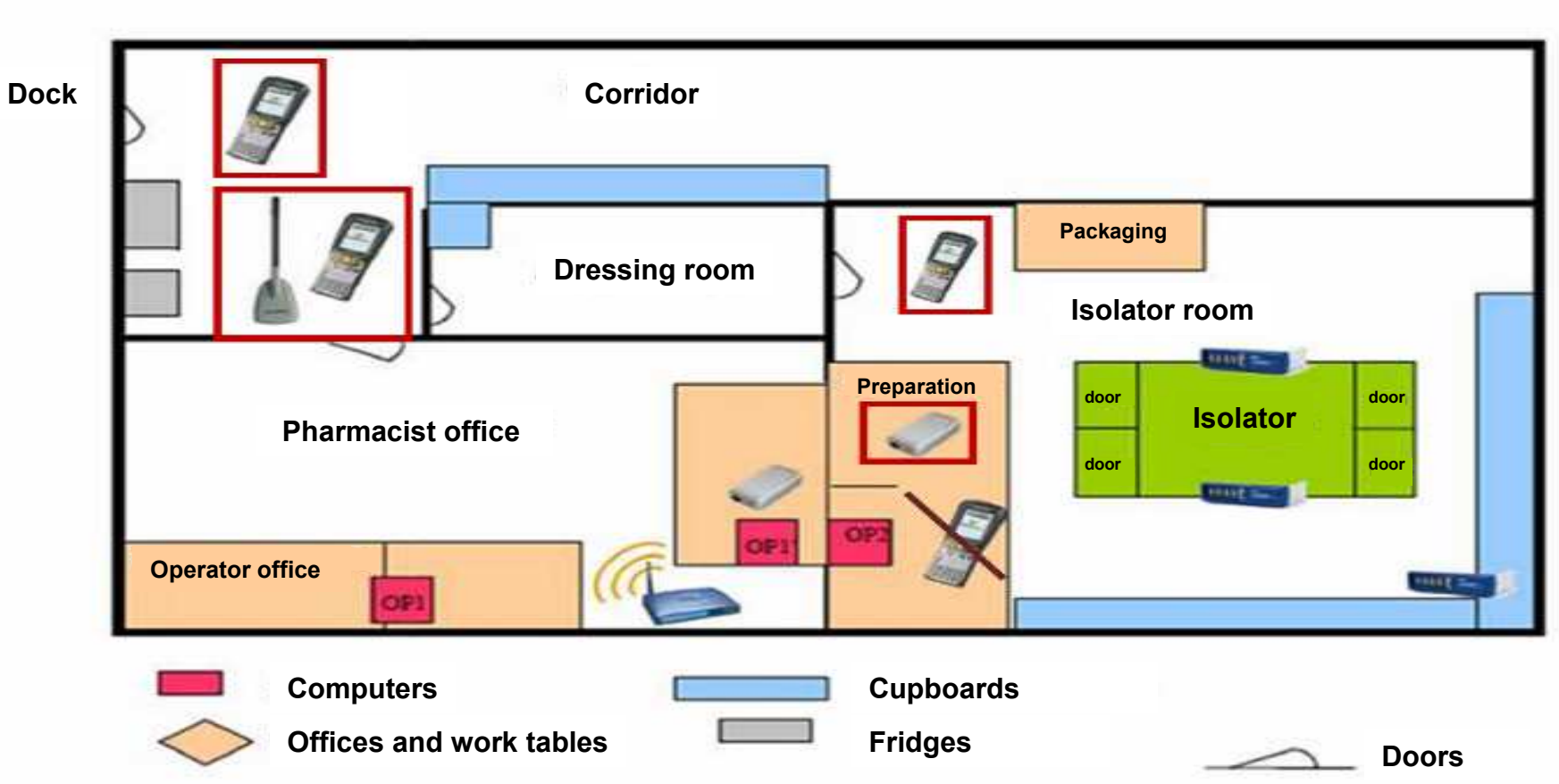
Necessary Information and Indicators	
Mandatory information	**Health Professional identification** **Initial product identification**
Constraints	**Short term ; different packs; possible drug mix of classical drugs; intermediary actors / carriers**
Risks	**Degraded product non detected; accountancy errors; future management errors**
Indicators	**Non conformity of the product reception expressed in number, in percentage, in cost then by the origin of non conformity: workload, cost**

Results

	Criteria
Technical feasibility	Reading errors average
	Reading speed
	Writing failure average
	Writing speed
	Tagging errors average
	Connection errors average
	Intelligent cupboard errors average
	Visual indicators errors average
	Remaining products management errors average
Economical feasibility	Deployment financial cost
	Operational financial cost
	Human cost for deployment
	Human cost for operations
	ROI
Organizational feasibility	Specific
Acceptability	Survey



Chemotherapy cocktails fabric site map



Practically :

- Products and actors traceability: ISO 9001
- Risk prevention: avoid failures
  - Manufacturing process / products
  - Chemotherapy plastic bag / prescription / patient

- Evaluation of the impact of the integration of RFID technology in the hospital care system needs a systemic methodology

- RFID : Potential interest of improvement of traceability and the security of the process, in real time,
and the patient remains at the centre of the system.

- An approach, associating processes and quality approach, preliminary risks analysis should allow us to determine the advantages, in the real world, of RFID

What else ?

Thank you for your attention

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