



11th IFIP Working Conference on VIRTUAL ENTERPRISES (PRO-VE'10)

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Care Network Coordination for Chemotherapy at Home: A Case Study

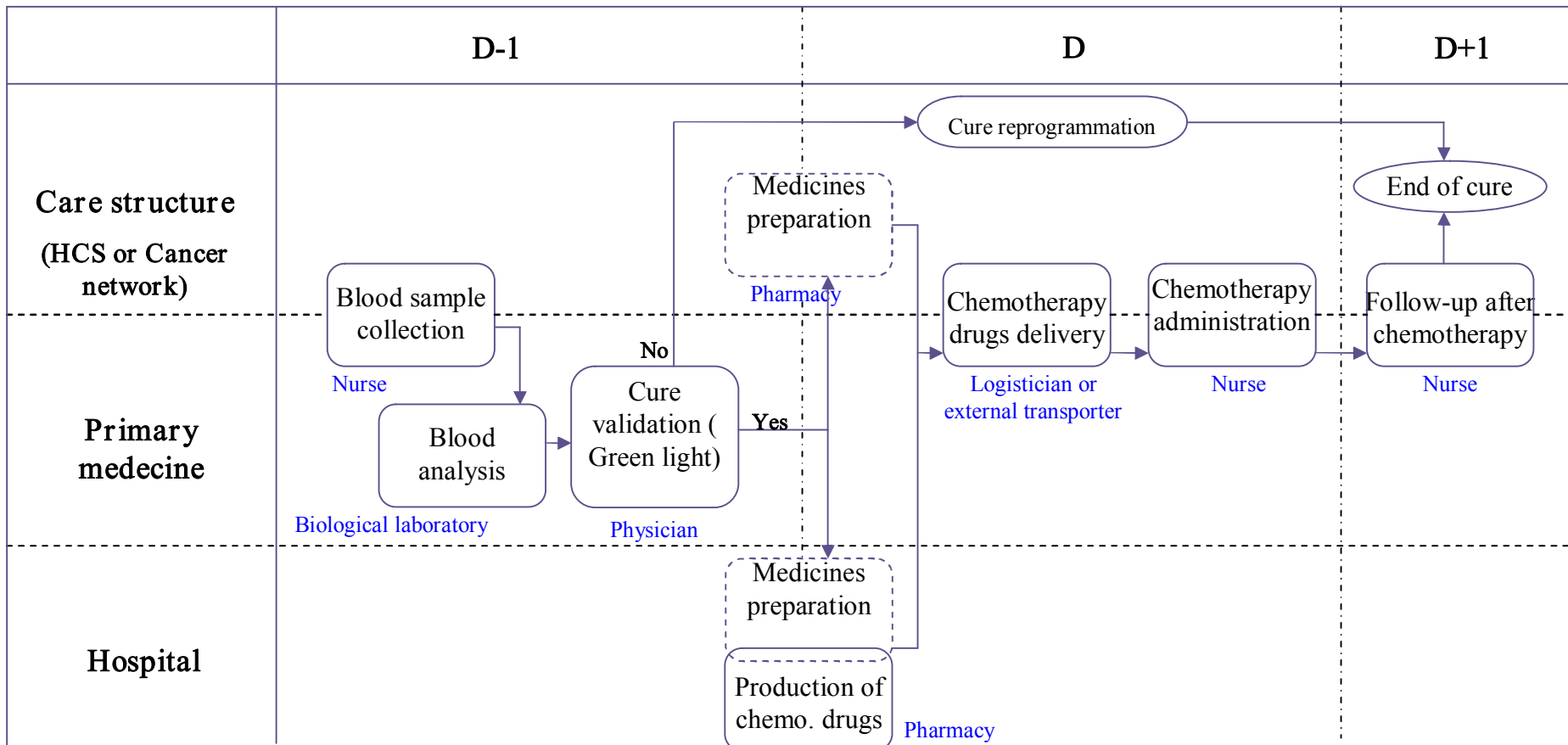
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Background

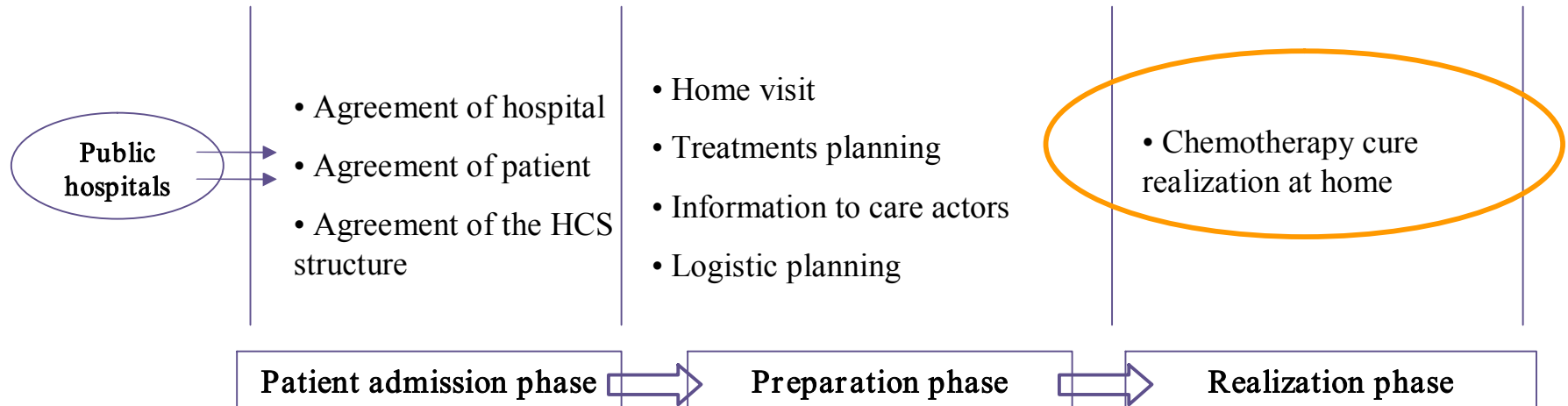
- ❑ Cancer chemotherapy : 83% in day hospitals
- ❑ Rapid development of chemotherapy at home (15,6% in 2006)
- ❑ Three-day patient treatment process



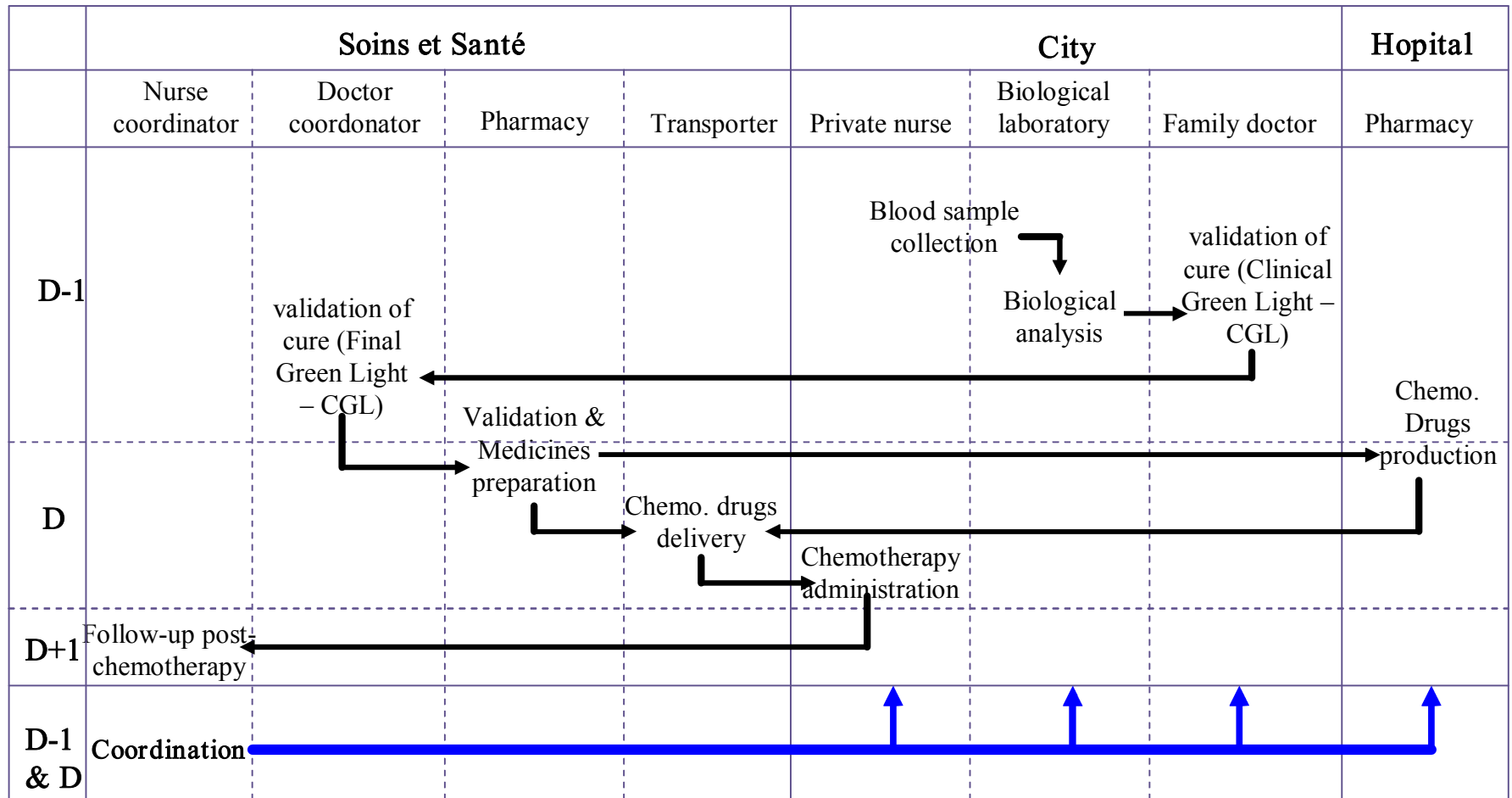
❑ Real-world case study

- HCS structure situated in Rhône-Alpes province in France
- Beginning of the chemotherapy at home activity in the 90's
- Chemotherapy at home = 3% of patient admissions

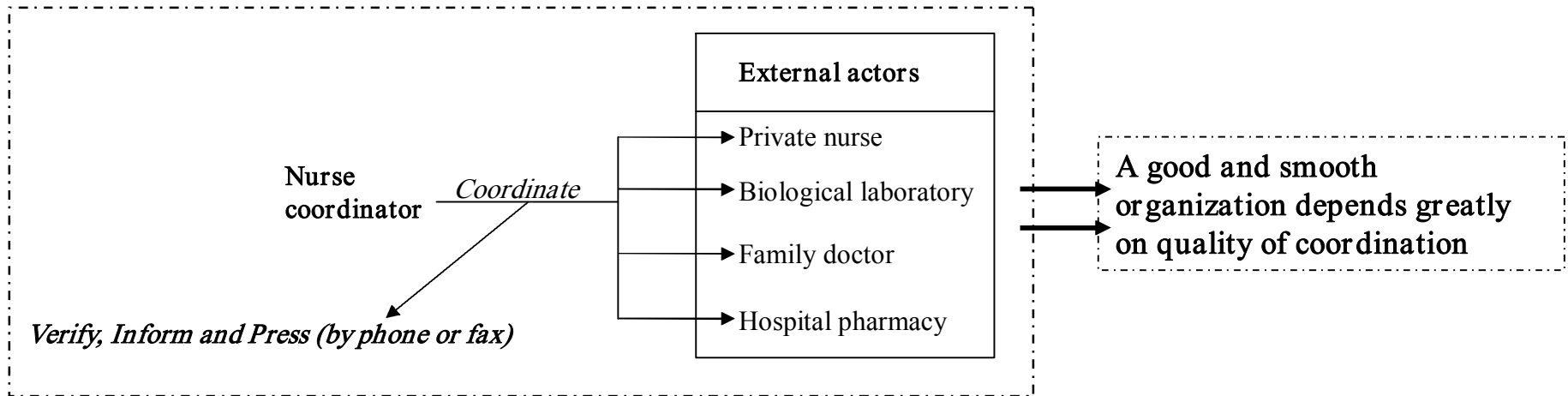
Three-phases process modelling



□ Realization process of chemotherapy at home



- A chemotherapy at home system managed by a coordination center



Efficient and good quality coordination ???

- Evaluate the quality of coordination of the studied system
- Propose improvement schemes

❑ Method and approach

- Discrete-events simulation (Software Rockwell ARENA)
- Current system (*Scenario 1*) => Redefinition of coordination design (*Scenario 2*) => Use of a traceability management system (*Scenario 3*)

❑ Elements of simulation model

- From 0 to 4 patients per day
- 7 chemotherapy protocols
- 2 public hospital pharmacies
- Intervention area : 80 km around the studied HCS structure
- Simulation of two first days of the process with a 3 months' experiment period

❑ Performance indicators

- Coordination time
- Impact of coordination design on chemotherapy at home organization

Simulation scenarios description

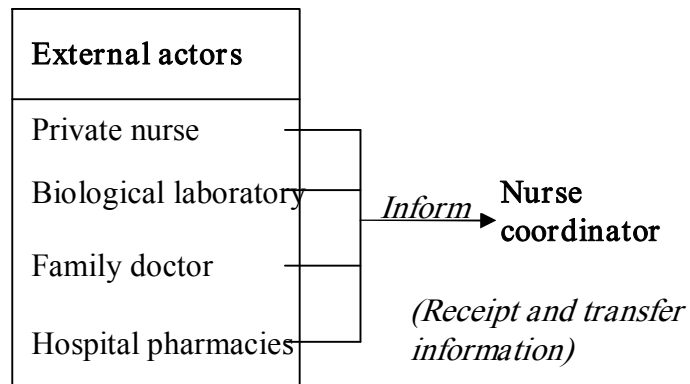
□ Scenario 1 – Current system

Coordination design: Nurse coordinator takes the initiative to communicating with external actors

- Verify activities execution
- Transfer information
- Press them in case of forgetfulness, mistakes and delays

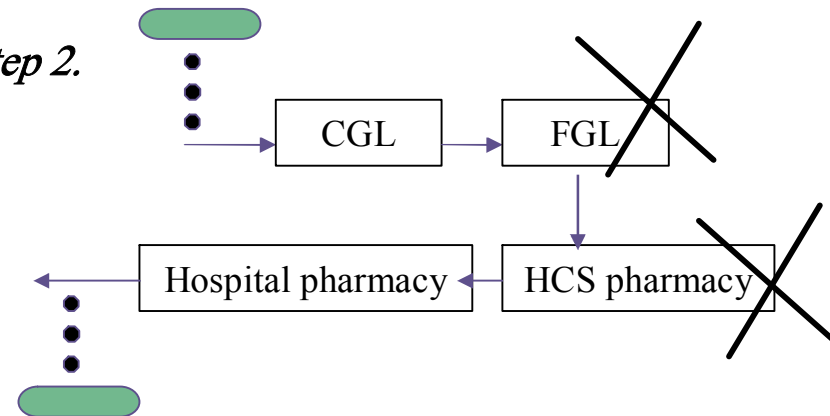
Scenario 2 – Redefinition of coordination design

Step 1.



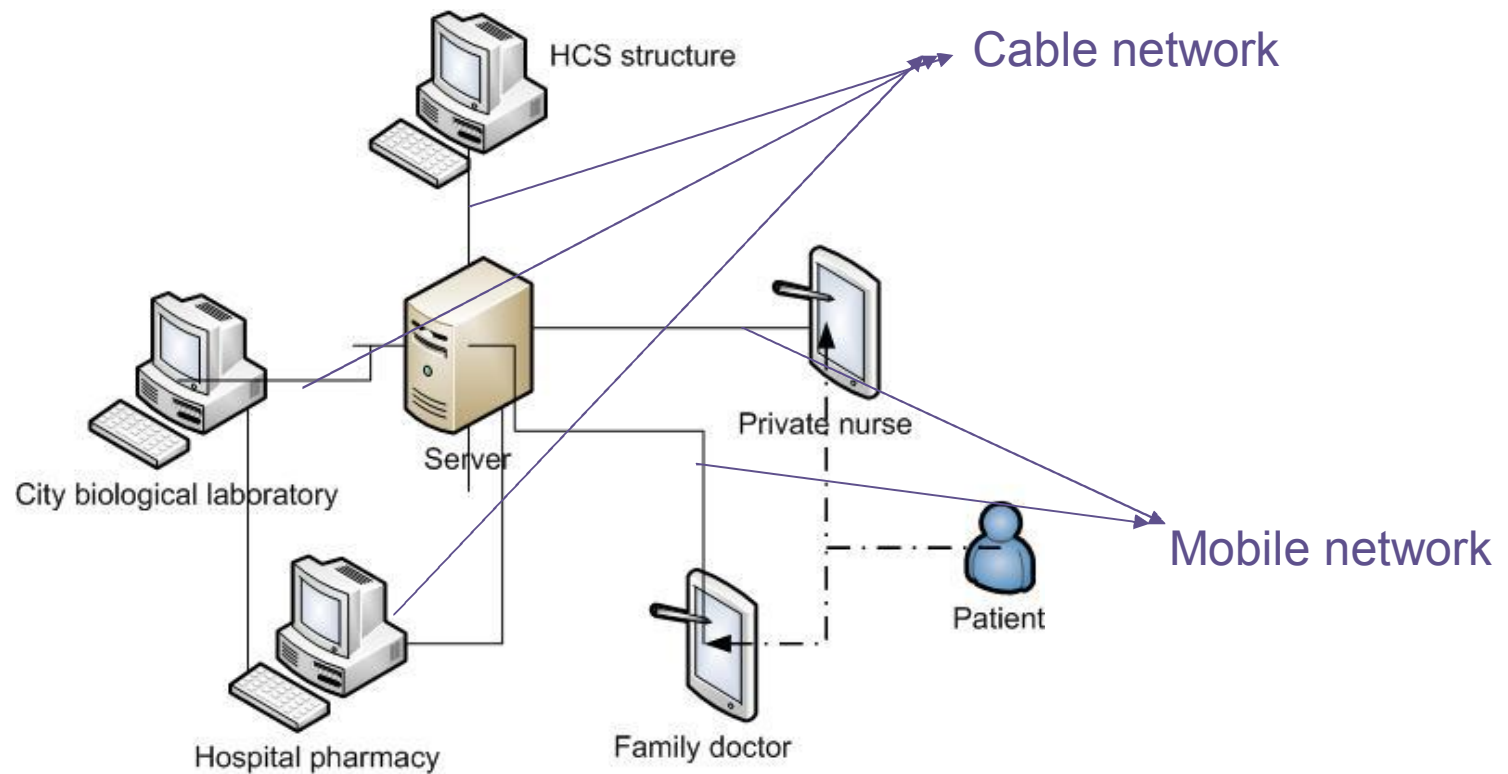
Redefinition of actors' responsibility

Step 2.

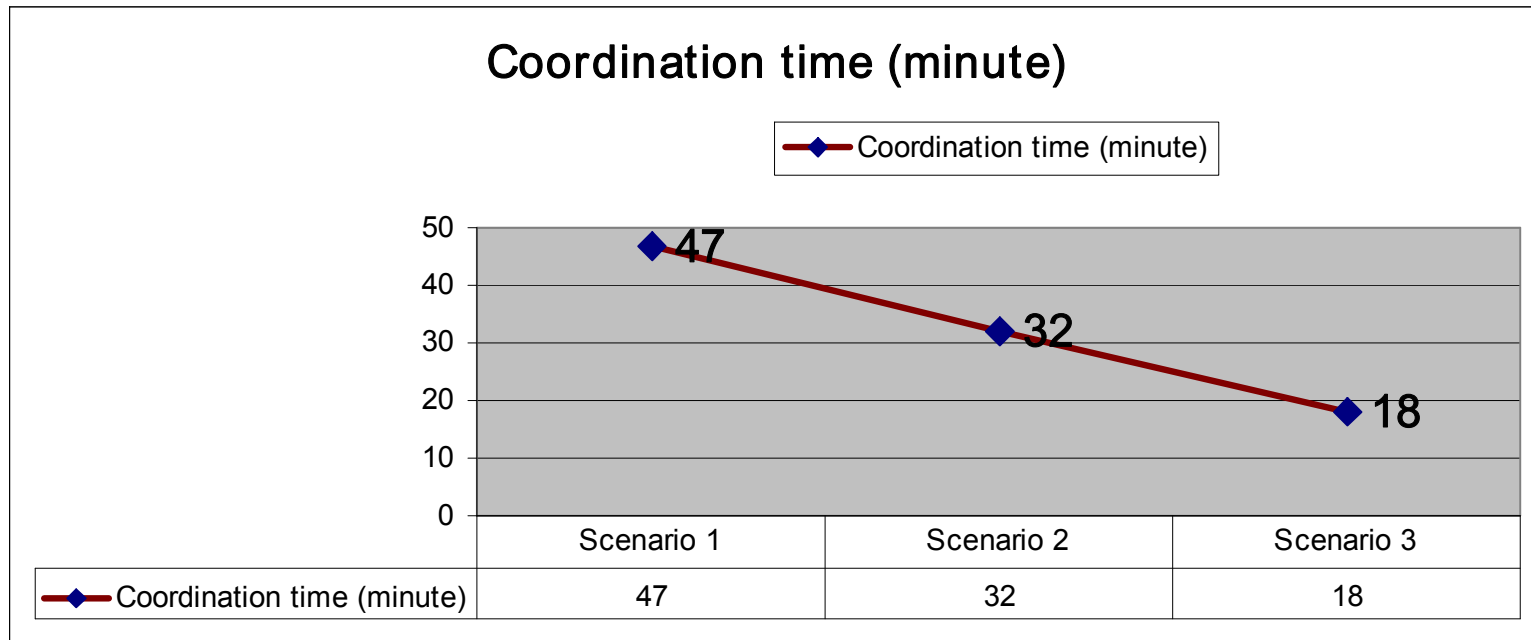


Cut of redundant activities

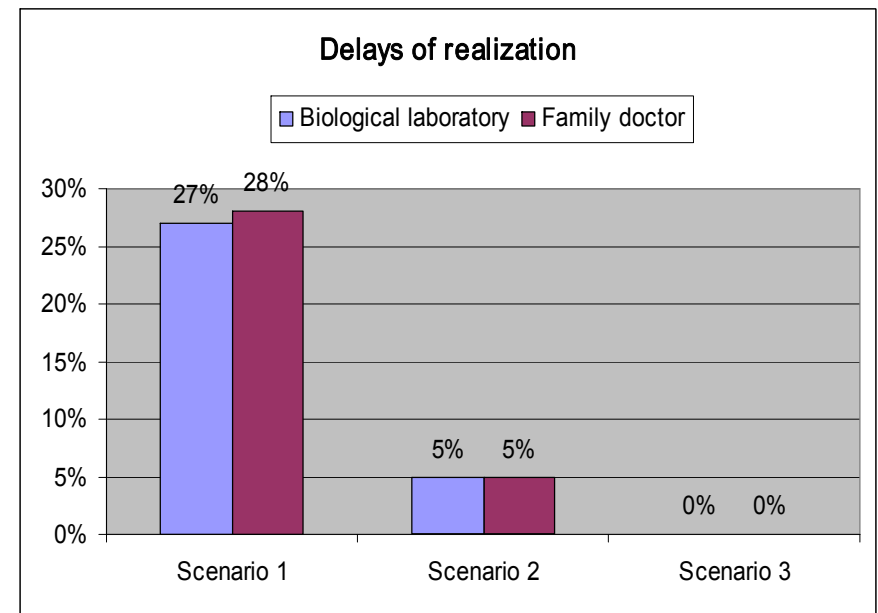
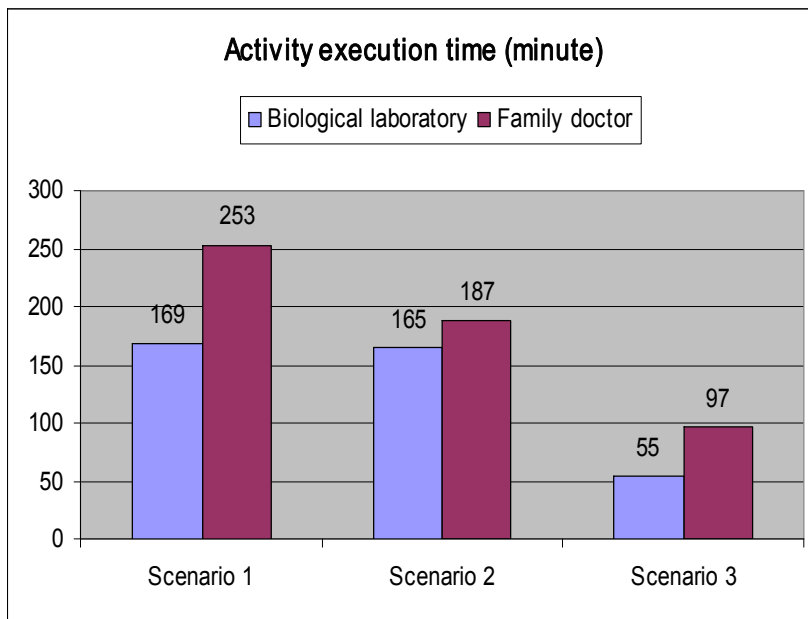
□ Scenario 3 – Use of a traceability management system



□ Comparative analysis



Comparative analysis



❑ Study of chemotherapy at home system

- Work based on a real-world study
- Process modelling
- Performance evaluation in terms of quality of coordination

❑ Proposition of improvement schemes

- Two propositions : redefinition of the coordination design and use of a traceability management system
- Traceability management system = the best solution for quality of coordination improvement



Thanks for your attention!

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