

Back to Paper Age: Fake cyberattack / Real production – Real-world exercise in the CRU (Cytotoxic Reconstitution Unit) and the Day Hospital (DH)

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Introduction

Computer science → integral to chemotherapy production.
↑ **frequency in cyberattack** → a robust **Activity Continuity Plan (ACP)** is essential to ensure continuity of care.

Goals

The aim of conducting a full-scale exercise was to test the ACP and prepare staff to implement it safely.

Materials and methods

• **Reduced patient schedule planned** with the Day Hospital.

• **Only 1 software disabled** → CHIMIO® (with possibility to restore access immediately if necessary).

• **Briefing on the contingency tools** (stored on a USB drive):

◦ Paper patient records

◦ Protocols (PDF)



◦ Excel®-based compounding worksheet generator

◦ Prescription template



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• **Pre- and post-exercise questionnaires** were completed by participants → evaluation of **several criteria** on a **scale of 0 to 4**.

• **Organizational metrics and production timelines** were recorded **before** and **throughout** the exercise and subsequently compared.

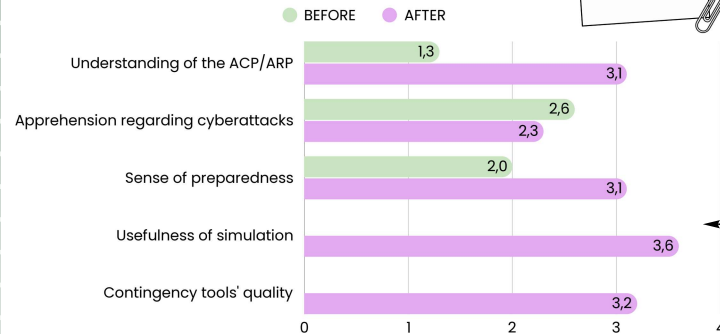


Typical day at the CRU

≈ 20 patients per day
≈ 30 chemotherapy preparations
Average of 7 trips between CRU and DH
CRU-DH distance = 250m

Professionals who participated in the exercise and completed the questionnaires:

- 2 pharmacy technicians
- 1 secretary
- 1 supply technician
- 4 physicians
- 1 pharmacist
- 2 nurses



Note: The results regarding understanding of the ACP/ARP exclude the pharmacist's responses.

Discussion

Familiarization of healthcare professionals with contingency procedures.

Several operational weaknesses confirmed → CRU-DH distance, requirement of 2 pharmacists, documents updates.

Correctives actions → creation of a checklist, double-checking of compounding worksheet, regular updating of reference contingency tools (every 3 months), and completion of patient records (allergies).

Effective multidisciplinary communication proved essential to maintaining safe and efficient production.

Real-world simulation → **a valuable tool for evaluating the ACP + enhance team preparedness ++**

Results

• **Duration** of the ACP: **4h** (+3h30 of Activity Recovery Plan (ARP)).

• Schedule of 12 patients including 10 who ultimately received treatment.
→ **24 chemotherapy preparations produced**

• **Retrieving and printing patient records** → 1h15 of pharmacist's and pharmacy resident's time.

• **15 trips** between CRU and DH, **BUT** no meaningful impact on production timelines.

• **CHIMIO® software did not require reactivation BUT one error occurred during the exercise** → **incorrect administration times between boluses and infusion cassettes were assigned to three 5-fluorouracil preparations on the compounding worksheet** (discrepancy detected and corrected by hand before drug release).

• **Questionnaires results**

100% of the participants would be willing to repeat the experience

