

SUMMARY

- Preparation of 5-FU infusion devices → Increased risk of developing **MSDs**
- Acquisition of a **dual-channel compounding system**: peristaltic pump (diluent) + syringe pump (5-FU) + integrated balance

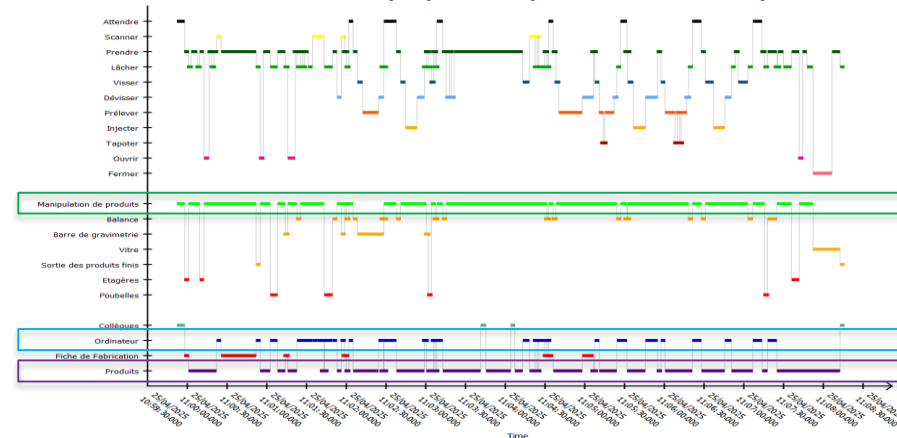
 Evaluate the contribution of the automated system to **MSDs reduction** by comparing manual (gravimetry-assisted) and automated filling of elastomeric infusion pumps

MATERIALS & METHODS

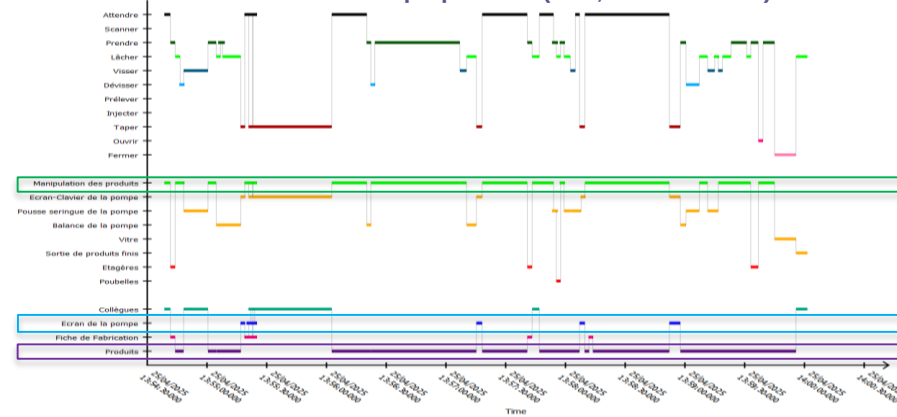
- Completion of a **self-assessment questionnaire** to pharmacy technicians before and one year after implementation of the system
 - => **Identification of pain locations and intensity (from no pain to unbearable pain)**
- Performance of two **activity logs to structure the systematic observations** of the two preparation methods (Actograph® software)
 - => **Assessment of the postures adopted**
 - => **Quantification of joint ranges of motion, movements performed, grasping areas, interactions, and timing**

RESULTS

Manual preparation (8'30, 13 actions/min)

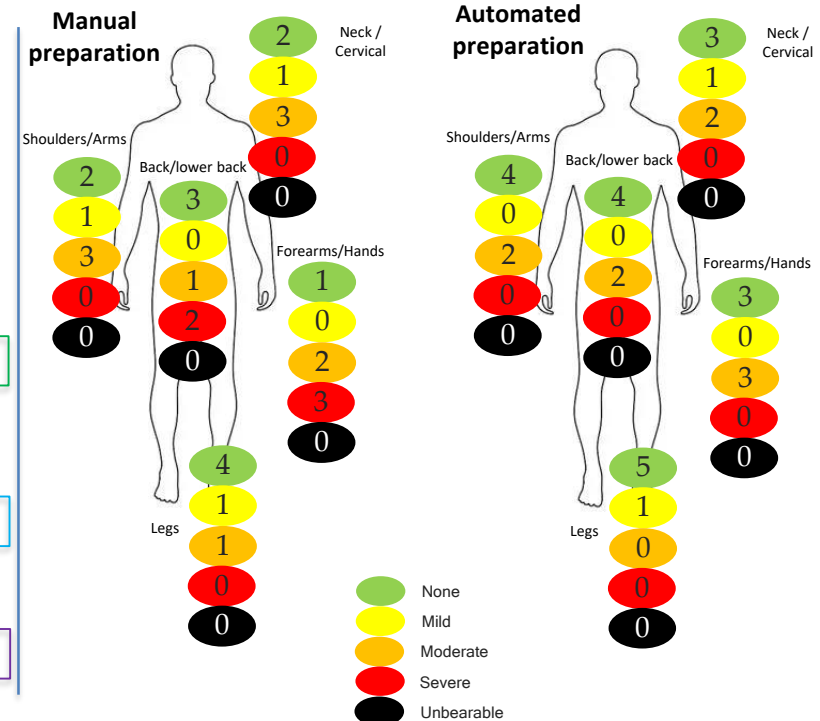


Automated preparation (5'30, 8 actions/min)



Evolution « before » => « after » automation

- Reduction in **preparation time**
8min30s => 5min30s
- Reduced number of **manual operations**
13 movements / min => 8 movements / min
90% of the time => 48% of the time
- Overall enlargement of the **reach area**
76% of the activity => 57% Within the close reach zone
- Reduced **interaction with the computer system**
26% of the time => 13% of the time
- Increased preparation time dedicated to **checks**
62% of the time => 73% of the time



6 questionnaires analyzed

- Pain location remains unchanged in the **upper limbs**
- Overall **reduction in pain intensity**
 - Severe : 5 => 0
 - Moderate : 10 => 9
 - Mild : 3 => 2

DISCUSSION / CONCLUSION

- Reduction in preparation time
- Reduction in physical strain on the upper limbs
- Increase in checking tasks (mainly correct filling of the 5-FU syringe)

Automation = Transformation of pharmacy technicians activities, with less manual handling and a greater focus on visual inspection