

Design of a dispenser for crime scenes and laboratories

This project explores the context of laboratory technicians at the NFI and CSIs with the police, and their experience using dry wipes and disinfectant dispensers at their work. It also delves into designing a new dispenser for them, which is the project aim, with a focus on prototyping and validating designs.

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Programme

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Introduction

The laboratory technicians at the NFI and the CSIs with the police use the dry wipes and disinfectant dispensers, pictured above, to clean their tools (e.g. scissors, tweezers). The process to take a dry wipe and moisten it with disinfectant is not convenient for them. The number of steps it takes, and the amount of contact that occurs between the user and the disinfectant could be reduced.

OBJECTIVE

"Create a new dispenser(s) for disinfectant and dry wipes that is contamination-safe with a streamlined use process, to be used by both laboratory technicians and CSIs from the police/the NFI in the laboratory or at crime scenes."

METHODOLOGY

- Questionnaire
- User observations
- Interviews
- Ideation session
- Prototyping and testing

RESULTS

- User journey map
- List of requirements
- UV images showing where the user(s) come in contact with the dispensers
- Working wipe dispensing mechanism

Research analysis

From the research, it was discovered that both groups of users each had similar use processes but they all varied person-to-person. Despite this, the issues they faced were the same across the board (e.g. dispenser falling, difficult to pick up a wipe, disinfectant splashing on to the surface).

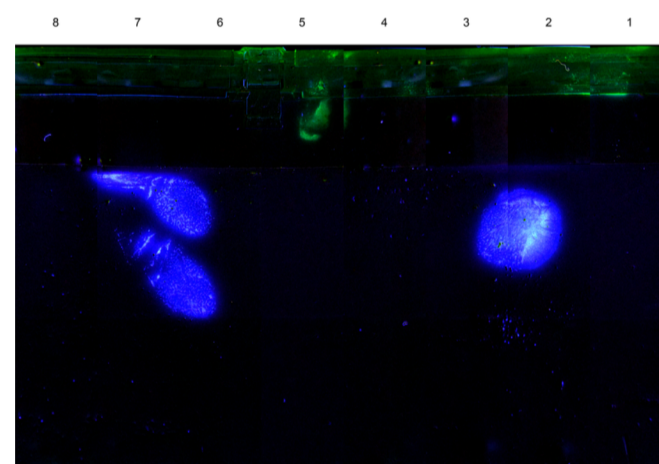
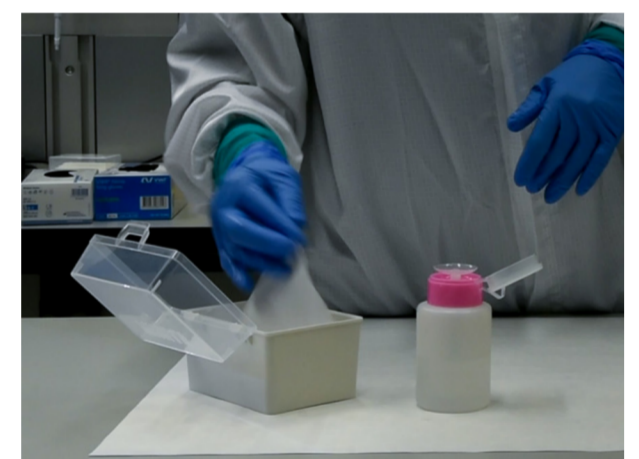


Image showing the fingerprints of the user on a dispenser, under UV light



User observation



Conclusion

A working dry wipes dispensing mechanism was developed. The user presses the handle down and turns it - this causes 3D printed PLA pins to hook into a wipe and pick it up. It is spring-loaded so that the wipes remain at the right height for this motion. Further development and testing with users is recommended.

The disinfectant dispensing mechanism is yet to be designed.