



Pilltender

**Automated Pill Dispenser for
Seniors with Memory Loss**

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Problem

Call James

Take Medicine

Dinner with Alice

Doctor's Appointment

Pick up glasses

Take medicine

Drop off Matthew



Problem

- Memory loss is a common problem with aging

Take Medicine

Dinner with Alice

Doctor's Appointment

Pick up glasses

Take medicine

Drop off Matthew



Problem

- Memory loss is a common problem with aging
- Reminders help both seniors and caretakers

Take Medicine

Dinner with Alice

Doctor's Appointment

Take medicine

Drop off Matthew



Problem

- Memory loss is a common problem with aging
- Reminders help both seniors and caretakers
- Forgetting to set up reminders

Take Medicine

Doctor's Appointment

Take medicine



Problem

- Memory loss is a common problem with aging
- Reminders help both seniors and caretakers
- Forgetting to set up reminders
- Difficult to learn new behavior

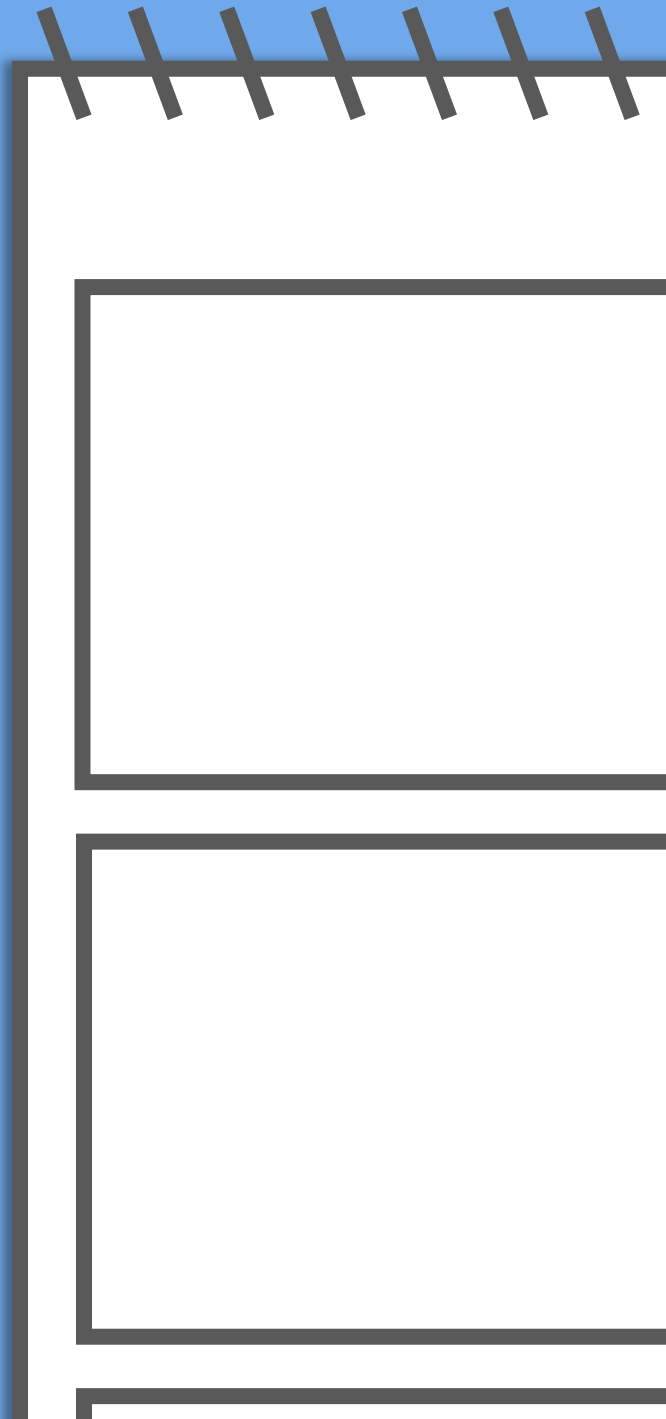
Take Medicine

Take medicine



Problem

- Memory loss is a common problem with aging
- Reminders help both seniors and caretakers
- Forgetting to set up reminders
- Difficult to learn new behavior
- Broad solution ineffective





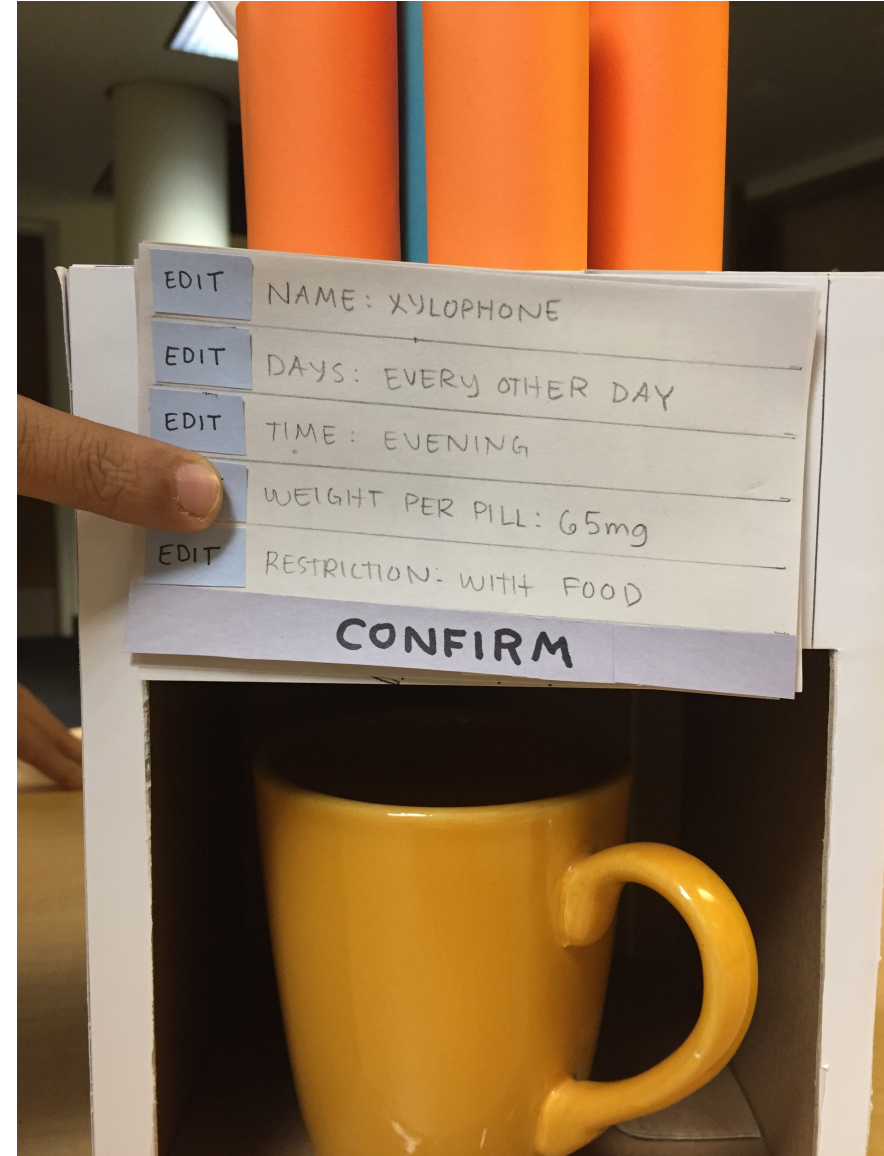
Initial Paper Prototype

- Pilltender machine
 - Scanner
 - Pods
- Specialized cup



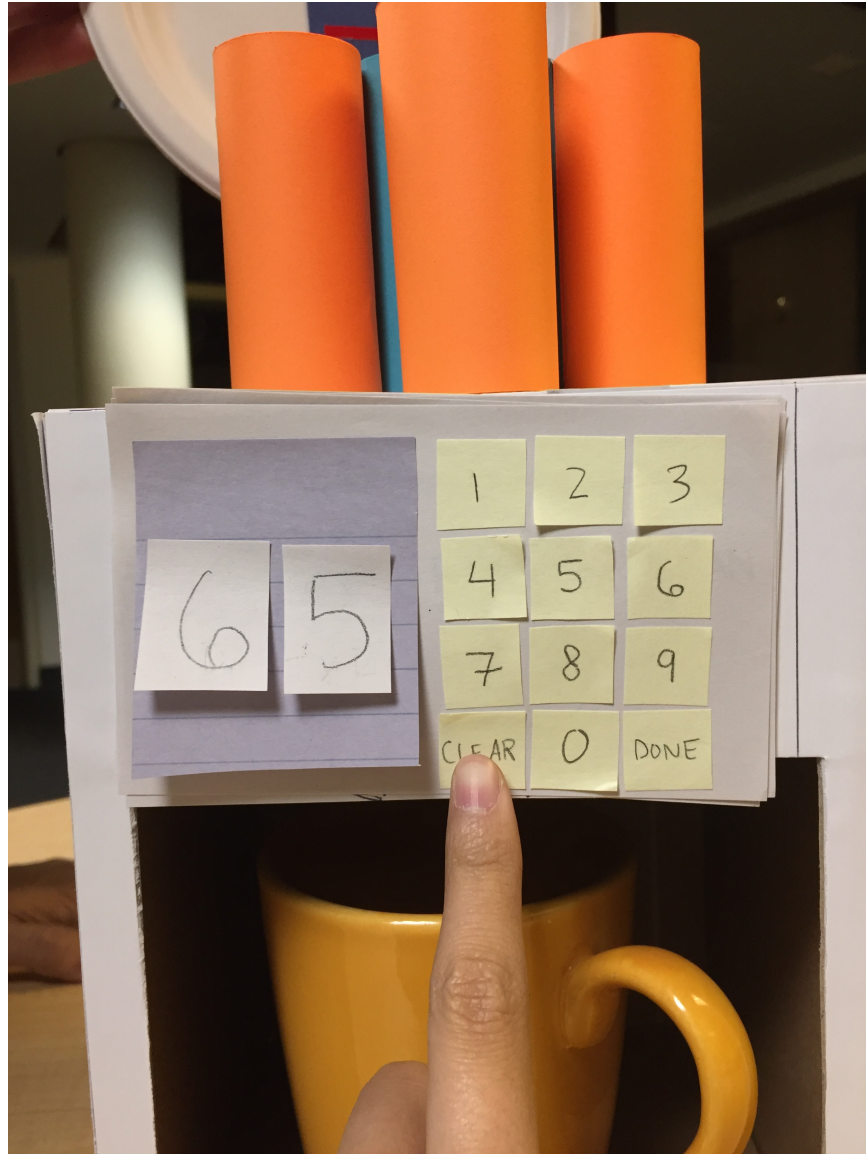


Initial Paper Prototype Task 1: Adding Medicine



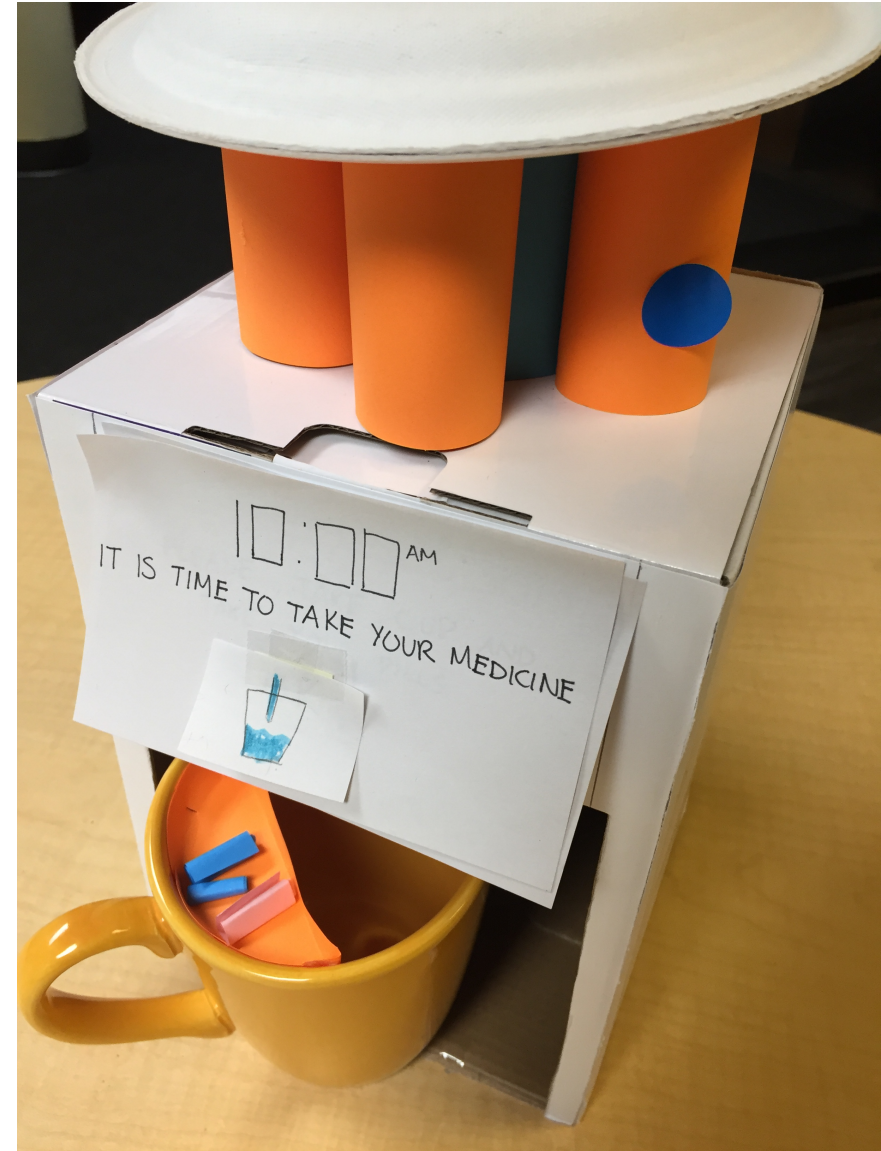
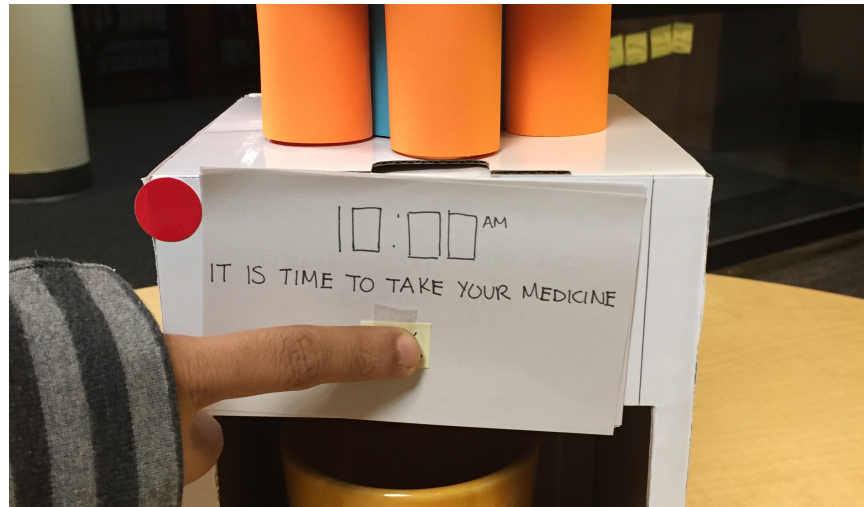
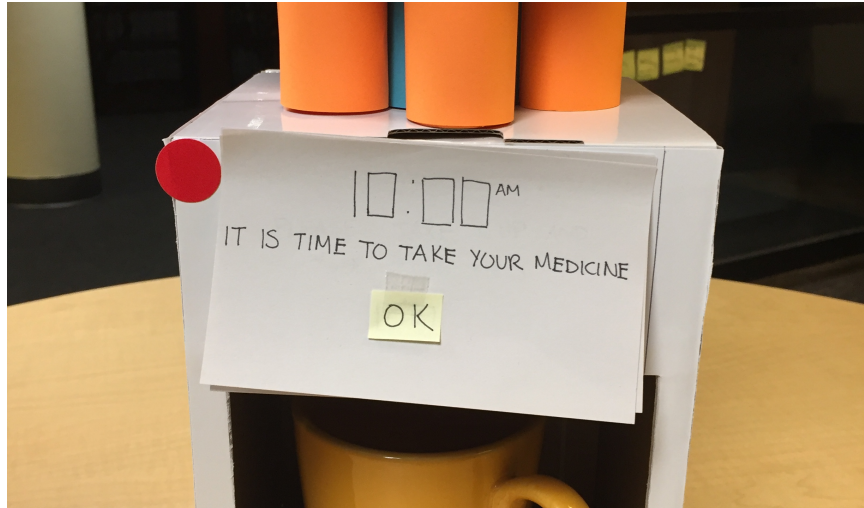


Initial Paper Prototype Task 1: Adding Medicine





Initial Paper Prototype Task 2: Taking Medicine





Initial Paper Prototype Task 2: Taking Medicine





Testing Process



2 heuristic evaluations



3 usability tests



Testing Results



Flexibility of use



Visibility of System Status

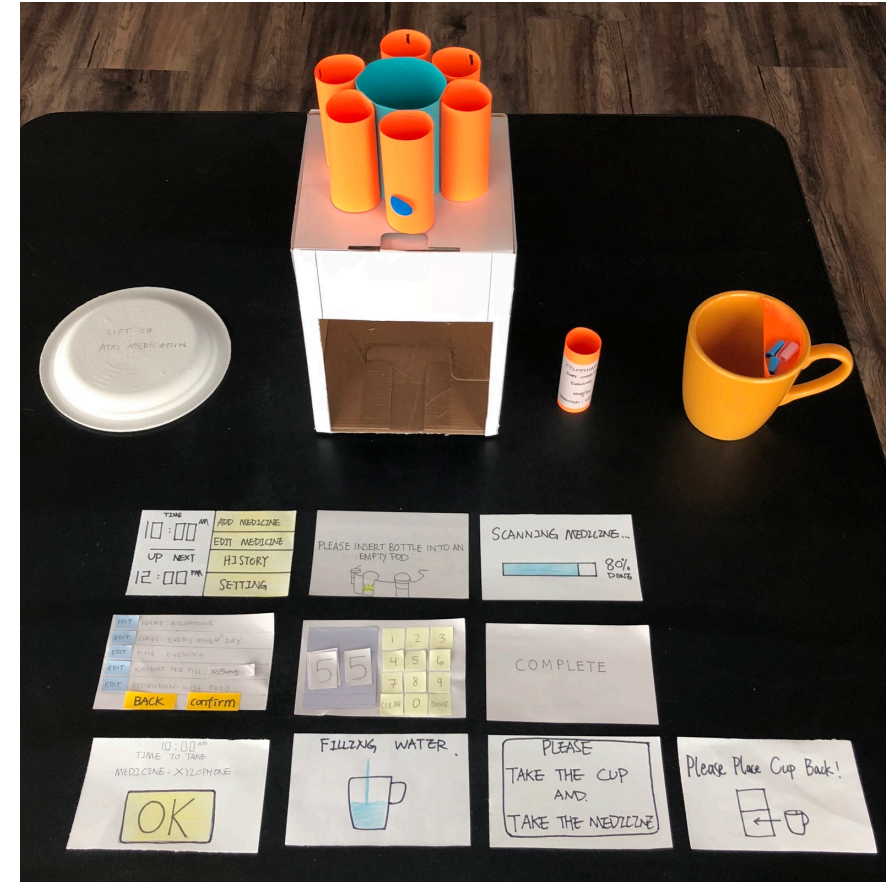


Error prevention



Final Paper Prototype

- Scanners in pod
- Larger text and buttons
- Progress bar
- Hidden menu in home screen



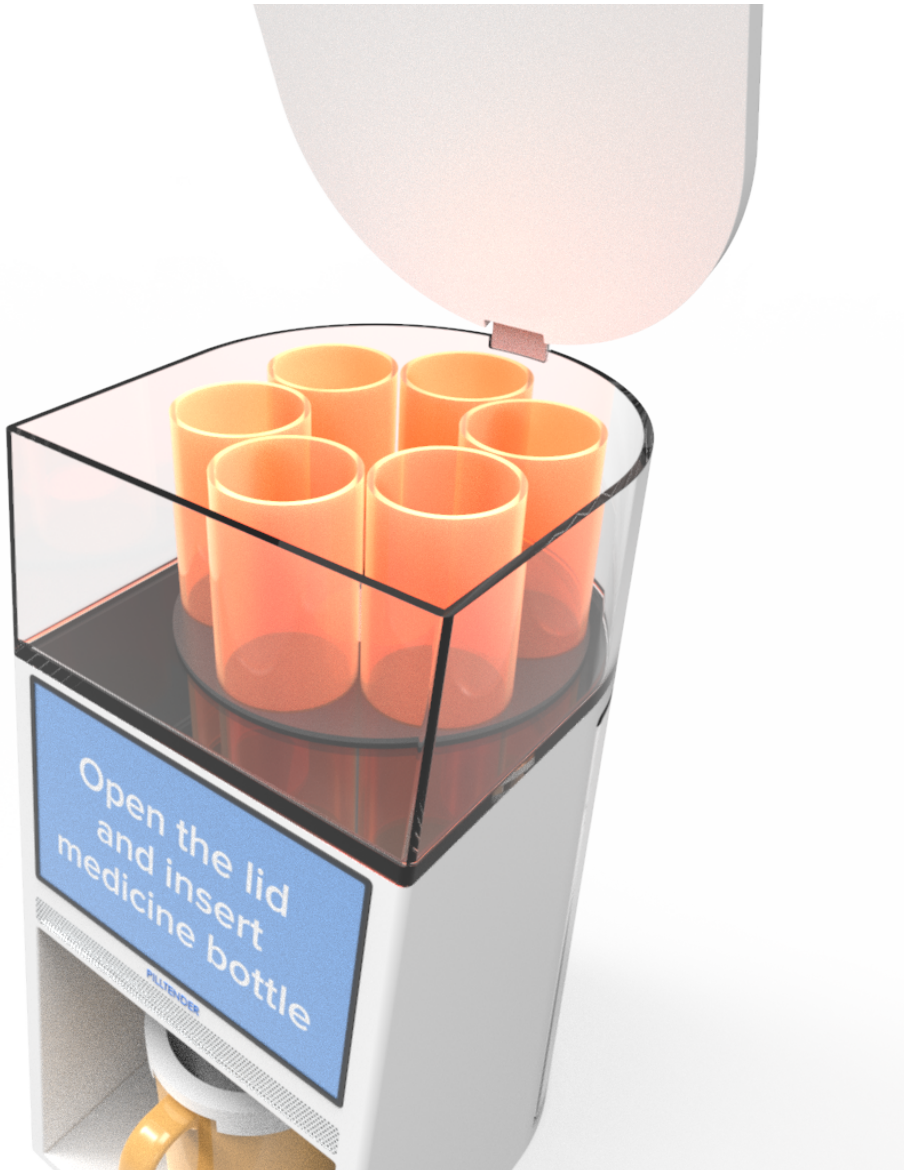


Digital Mockup Task 1: Adding Medicine



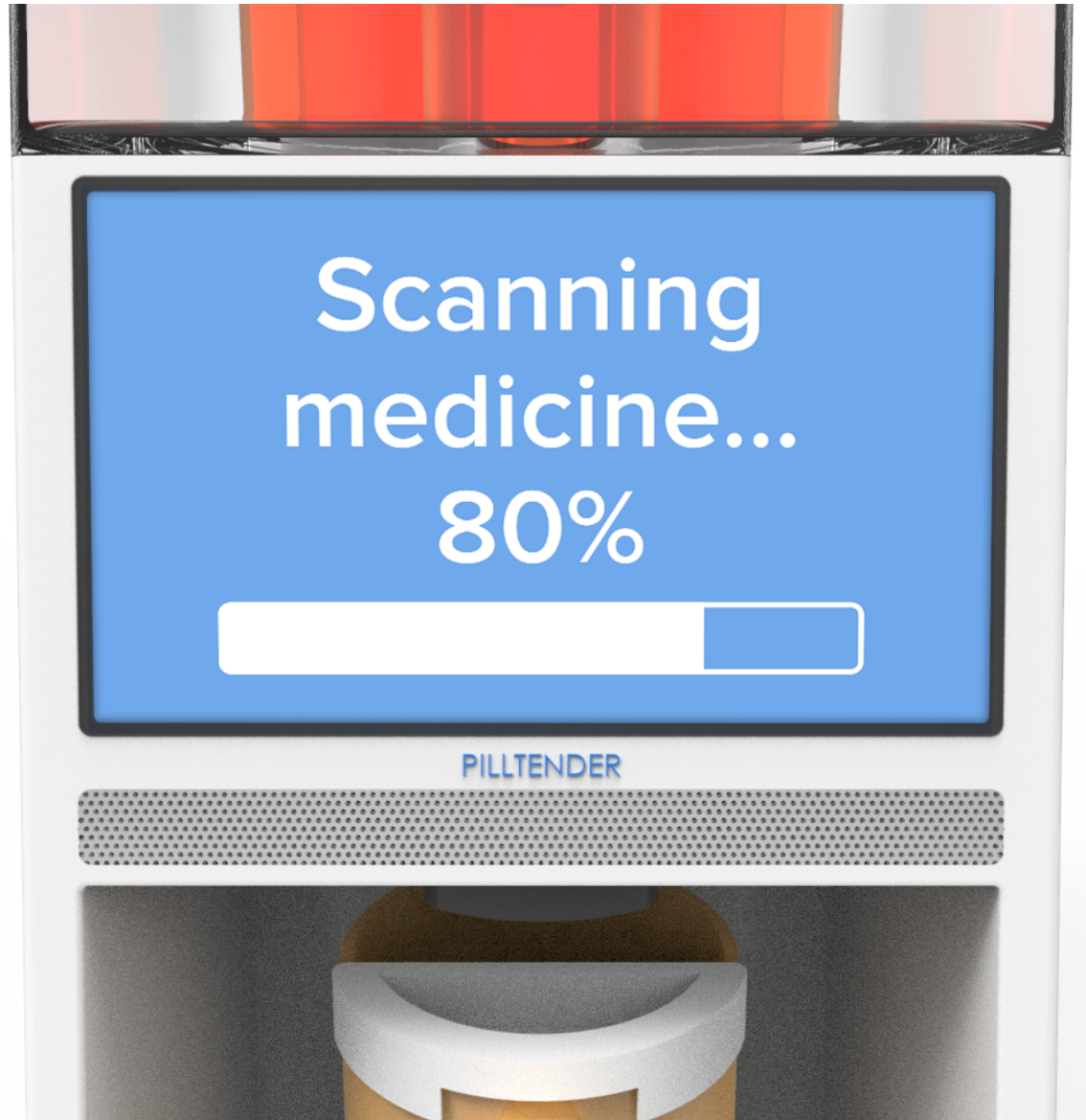


Digital Mockup Task 1: Adding Medicine



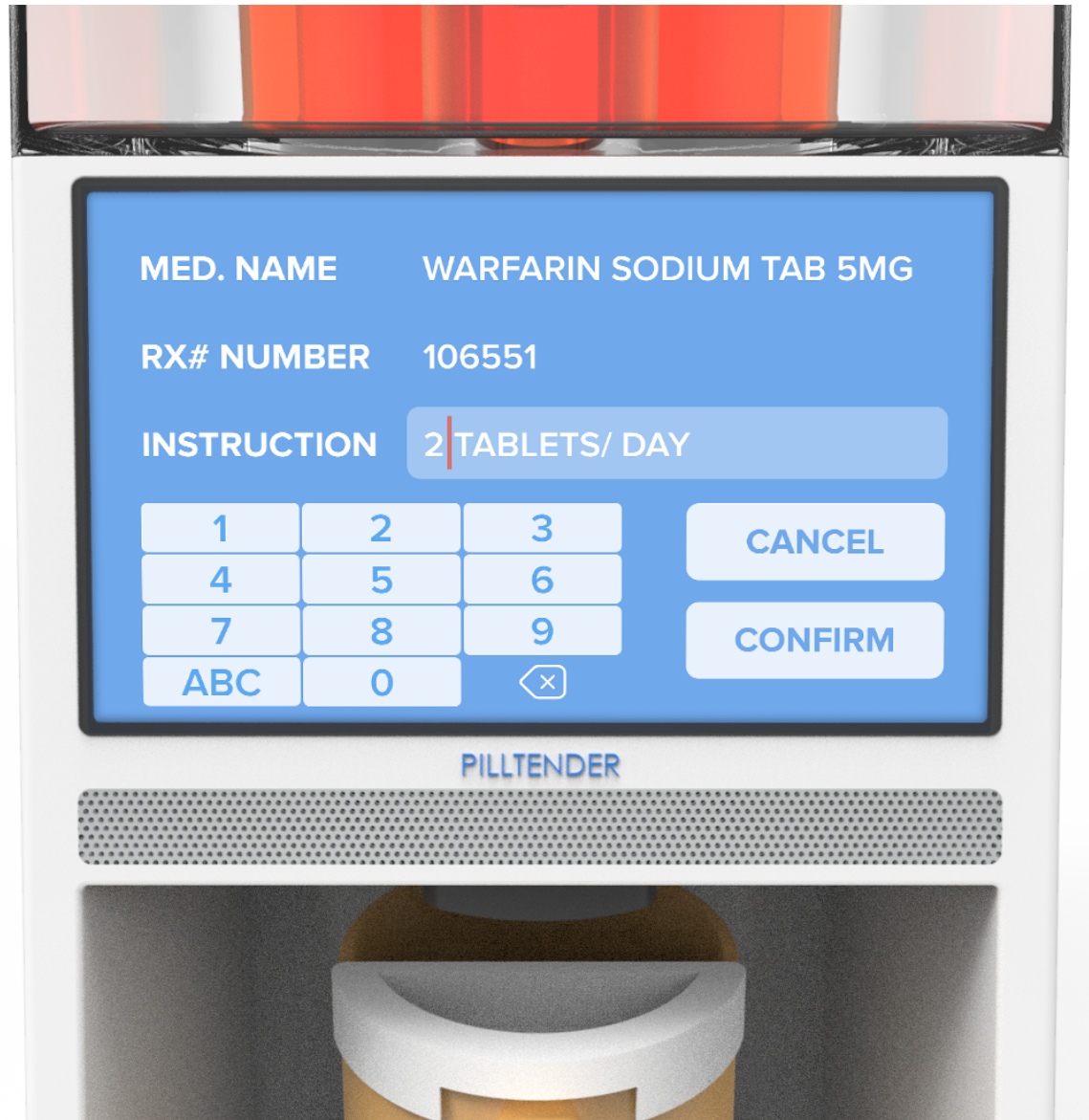


Digital Mockup Task 1: Adding Medicine





Digital Mockup Task 1: Adding Medicine



The screen displays a form for adding medication. The fields are filled with: MED. NAME: WARFARIN SODIUM TAB 5MG, RX# NUMBER: 106551, and INSTRUCTION: 2 TABLETS/ DAY. Below the instruction field is a numeric keypad with buttons 1-9, 0, ABC, and a backspace button. To the right of the keypad are CANCEL and CONFIRM buttons. The device is labeled PILLTENDER at the bottom.

MED. NAME WARFARIN SODIUM TAB 5MG

RX# NUMBER 106551

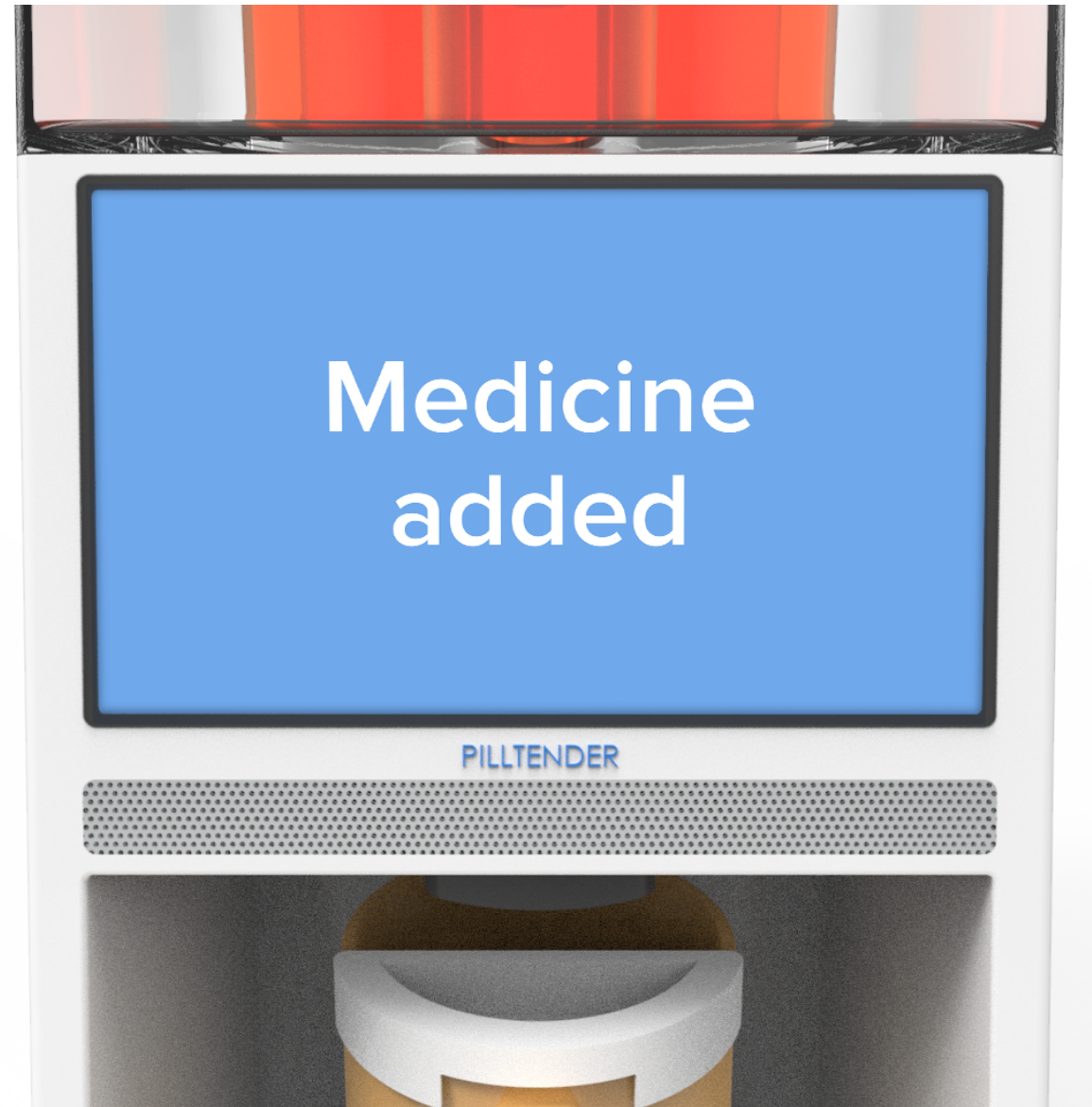
INSTRUCTION 2 TABLETS/ DAY

1	2	3
4	5	6
7	8	9
ABC	0	< x

CANCEL

CONFIRM

PILLTENDER



The screen displays a confirmation message: Medicine added. The device is labeled PILLTENDER at the bottom.

Medicine
added

PILLTENDER

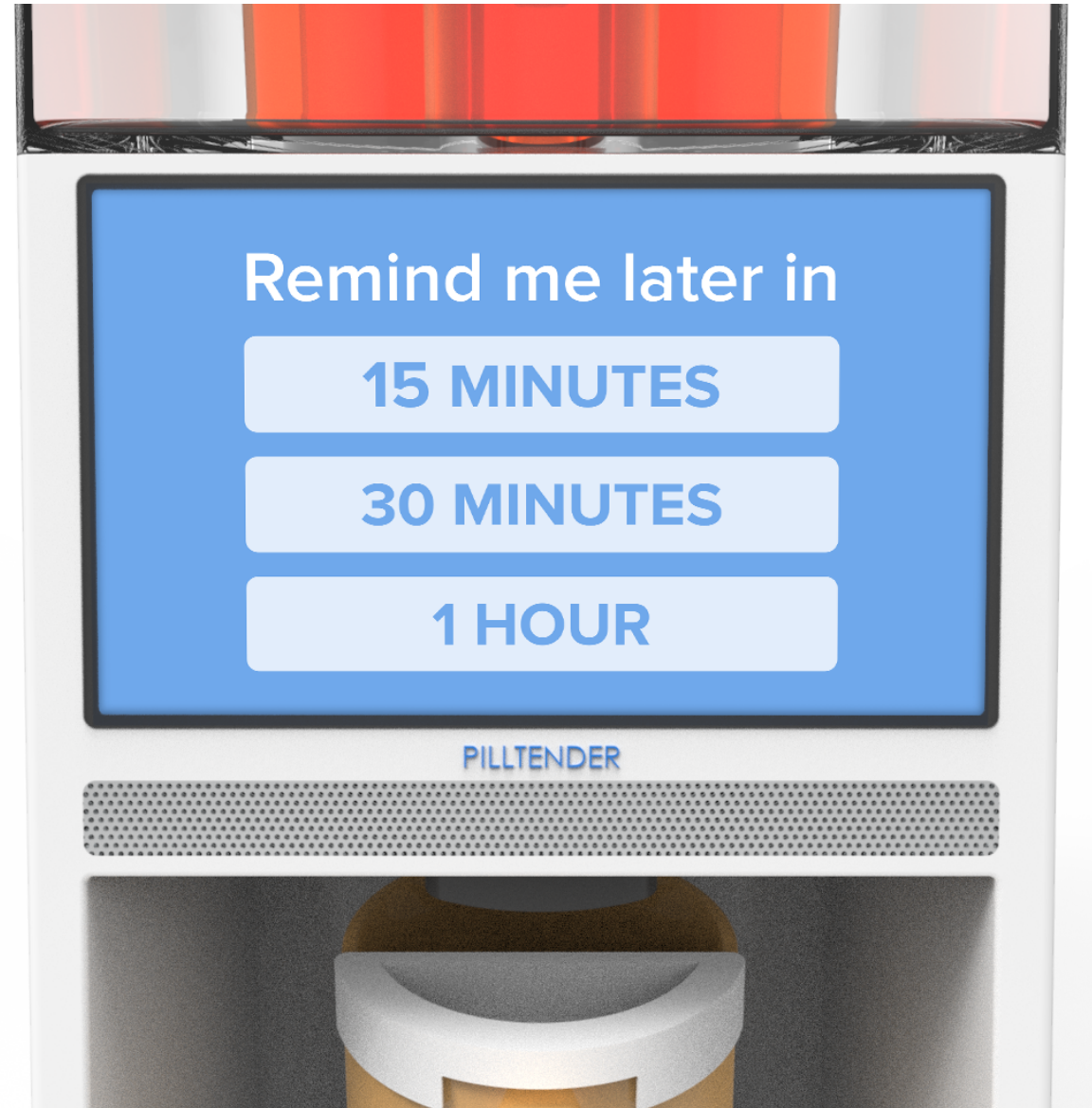


Digital Mockup Task 1: Adding Medicine





Digital Mockup Task 2: Taking Medicine





Digital Mockup Task 2: Taking Medicine





Digital Mockup Task 2: Taking Medicine





Digital Mockup Task 2: Taking Medicine





Key Takeaways

- Tailoring usability testing methods such as heuristic evaluation to our project is important
- Helpful if usability tests are conducted before every major improvement of the prototype
- Maximizing the variety of participants within a target group helps gain more inclusive insights from usability testing