BME Design: 200, 300, 301, 400 and 402

Medication Delivery and Use in Home-Based Hospital Care

(Medication Delivery)

Date: 10/22/2026 - 10/30/2026

Client: Jennifer Woodard
Advisor: Randy Bartels
Team:

Aariel Moore - Team Leader, ajmoore4@wisc.edu
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Problem statement

Older adults and others with reduced grip strength, dexterity, or vision frequently cannot open blister-packaged medication, particularly peel-back foils. Existing aids either require substantial force, fail on peel-away packaging, or are too large, costly, or hazardous for personal use. As a result, patients drop pills, use sharp tools, or miss doses. A portable, low-force, low-cost tool is needed that safely opens both peel-back and push-through blister packaging without modifying the package or exposing sharp edges.

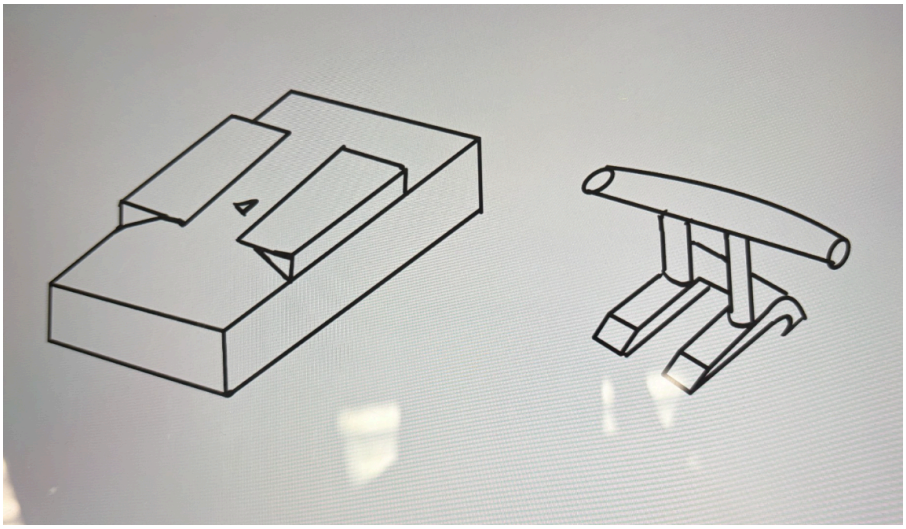
Brief status update

The team has met outside of class to 3D print a prototype. We ended up choosing an alternative design to print as our original design did not fit our problem statement. Future client meetings to discuss progress have been scheduled to discuss this design. Future testing of this new prototype has been planned.

Difficulties / advice requests

We are having difficulty with finding a way to successfully push the pills through the plastic out the other end. Through some testing we realized that the last part of prescribed pills is a little more difficult to work with than over the counter medicine. The goal now is to make a clean slice through the backing. We will attempt to take the pill out of the package using a secondary tool. Making this a two step process instead of one.

Current design



Materials and expenses

Item	Description	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Category 1: Lever Design										
PLA	Lever Design							$0.02	$1.94	
PLA	Rods and Hex Nuts								$0.19	
Category 2: Push Cut Pop										
PLA	Top Part								$2.74	
PLA	Bottom Part								$2.01	
PLA	Push, Cut, Pop Design							$0.02	$4.14	
								TOTAL:	**$0.00**	

Goals

Major team goals for the next week

1. Continue Testing
2. Do blade research
3. Continue advancing design

Next week's individual goals

- Aariel Moore
  - Solidwork new design
  - 3d Print even more
  - Keep testing
- Alayna Allsop
  - 3D print new design
  - Test complete assembly
- Caiden Krzmarzick
  - Iterate new design
  - Test first 3d printed version
  - Maintain in contact with advisor and client
- Sascha Jameson
  - Test complete design
  - Research blades
  - Meet with advisor
- Sila Olcay
  - Continue testing
  - Keep prototyping and improving our design
  - Continuing research
- Sarvesh Anandhaganesen
  - Continue testing, hoping for improvement with new design
  - Keep prototyping and improving where we can on our design

Timeline

Task	Sept				Oct					Nov				Dec	
	4	10	17	24	1	8	15	22	29	5	12	19	26	3	10
Project R&D															
Empathize	X	X	X	X	X	X	X	X	X						
Background…		X	X				X		X						
Prototyping						X	X	X	X						
Testings								X							
Deliverables															
Progress Reports	X	X	X	X	X	X	X	X	X						
Prelim presentation					X										
Final Poster															
Meetings															
Client				X	X			X							
Advisor			X	X	X	X	X								
Website															

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Update	X	X	X	X	X	X	X	X	X						

Filled boxes = projected timeline
X = task was worked on or completed

Detailed accomplishment

Previous week's goals and accomplishments

- Aariel Moore
  - Tested some pill package removals
  - Finished trainings
  - Update lab archives
- Alayna Allsop
  - CAD model of new design with blade
  - Tested designs for proof of concept
  - Prepared for show and tell
  - Complete required training
- Caiden Krzmarzick
  - Sketched and designed new prototype
  - Prepared for show and tell presentation
  - Completed final required training
- Sascha Jameson
  - Researched blades
  - Updated lab archives
  - Updated website
  - Completed required trainings
- Sila Olcay
  - Came up with a new prototype
  - Prepared for show and tell
  - Completed all required trainings
- Sarvesh Anandhaganesen
  - All required trainings
  - Testing pill removal and brainstorming solutions
  - Prepped for show and tell

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Aariel Moore	10/28/2026	Research, Training	3	3	30
Alayna Allsop	10/28/2026	Training, CAD	4	4	28
Caiden Krzmarzick	10/29/2026	Design, Training	3	3	26

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Sarvesh Anandhagansen	10/28/2026	Design prototyping, Trainings	7	7	26
Sila Olcay	10/28/2026	Design, Training	7	7	29
Sascha Jameson	10/28/2026	Research, Training	4	4	24