Progress Report - Week 1

Title: Vaginal Self-Swab Device to Minimize Contact Contamination

Client: Dr. Jean Riquelme
Advisor: Dr. Megan McClean
Team:

Sara Morehouse (Leader)
Cherry Qiu (Communicator)
Katherine Kafkis (BWIG and BSAC)
Adam Berdusco (BPAG)

Date: January 30, 2024

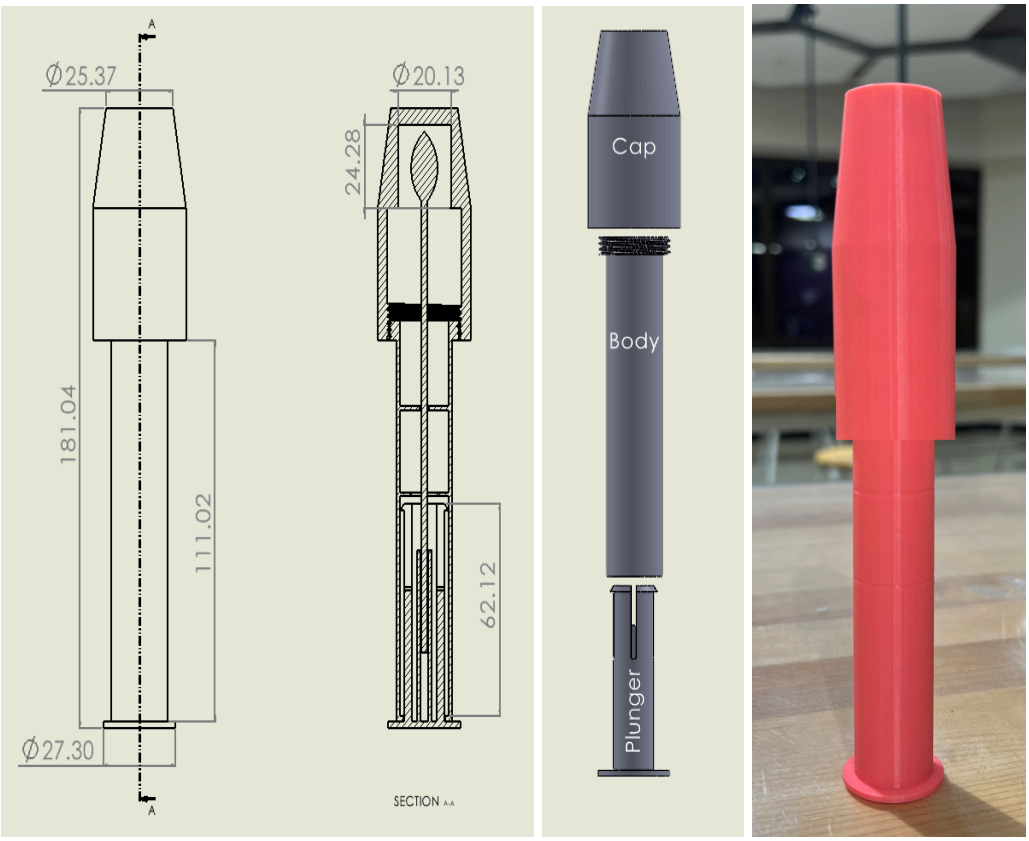
Problem Statement:

Quality sexual health is important for every woman to sustain, but with women ages 15-24 accounting for 43% of undiagnosed STI cases, the system supporting women's sexual health could use some improvement (CDC). The team has developed a novel self-swab STI testing device that allows women the privacy of swabbing themselves without the potential discomfort of a physician present. This was conceived with the goal in mind of making STI testing more accommodating while reducing contamination of the testing environment. However, the current design has issues with media leaking from the device after use, as well as with the aesthetics of the design. Additionally, the device requires the addition of a thin, puncturable film to the cap to contain transport media. The team is tasked with modifying the original design to address the issues currently being faced while still seeking to limit contamination of the device and testing environment as well as account for patient comfort.

Brief Status Update:

This week, the team met and assigned our roles for this semester. We updated our website with our team photo and contacted our client to introduce our new members. We have discussed the current design and our past work, and have begun our initial research to address our design goals for this semester.

Current Design:



The current design was developed last semester and includes a plunger, body and cap. The prototype was 3D-printed and assembled with the plunger being inserted into the bottom of the body, and the cap screws onto the top of the body. A swab is inserted through the body and into the plunger.

Materials and Expenses:

Item	Description	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
-									$0.00	
-									$0.00	
-									$0.00	
-									$0.00	
-								**TOTAL:**	**$0.00**	

Major team goals for the next week:

1. Complete our initial research and compile sources we can refer to throughout the semester as we make design changes
2. Review the previous semester's Product Design Specification (PDS) and use our new research to make edits and update the PDS to be relevant going forward

Next week's individual goals:

- Sara:
    - Continue preliminary research to better understand our design specifications
    - Meet with Dr. Riquelme on Monday to discuss the project and goals for this semester
    - Complete assigned sections of the PDS
- Cherry:
    - Continue researching to understand the project better.
    - Meet with our client to discuss further direction with the project.
    - Work on PDS
- Katherine:
    - Continue researching biopolymer blends and sealing mechanisms to be used in the design
    - Attend the client meeting on Monday to discuss goals and the presentation at the statewide family medicine meeting in March
    - Update the PDS to be more aligned with our current research
- Adam:
    - Continue to research potential ways to seal the device so that the media does not come out
    - Meet with our client to discuss goals for the semester
    - Update PDS so that it aligns with the goals of the semester

Timeline:

Task	Jan	Feb				March					April				May	
	26	2	9	16	23	1	8	15	22	29	5	12	19	26	3	10
Project R&D																
Background research	X	X														
Design development																
Prototyping																
Testings																
Deliverables																

Progress Reports		X														
PDS																
Prelim presentation																
Final Poster																
Meetings																
Client																
Advisor	X	X														
Website																
Update	X	X														

Previous week's goals and accomplishments:

- Goal: Introduce the project and complete all required tasks for starting the project
    - This week, the team selected this project and set up our website. We have been working to get acquainted with each other and the project so we can hit the ground running for the next week as we research and create our PDS.

Activities:

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Katherine	1/31/24	Researched Biopolymers, O-rings, and production methods of clean devices for medical use	3	3	3
Sara	1/31/24	Research o-rings and sustainable materials for medical devices	1.5	1.5	1.5
Cherry	1/31/24	Researched Plastic materials and STI demographics	1.5	1.5	1.5
Adam	2/01/24	Researched anatomy, potential materials, and methods of sealing the device	2	2	2