Aligna - Reduced Pain IUD Placement

Progress Report 7

10/16/2026 - 10/22/2026

Team:

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Client:

Ms. Reshma Kandipati (kandipati@wisc.edu)

Problem statement

Intrauterine devices (IUDs) are highly effective in preventing pregnancy with no significant impact on fertility post-removal. They serve as a relatively low maintenance form of birth control that lasts up to 10 years. Despite the implementation of pain management techniques such as NSAIDs, the insertion process remains moderately to severely painful for more than half of patients. Our team aims to design a device that will prioritize patient comfort during the IUD insertion process while maintaining the efficacy of the procedure.

Brief status update

This past week the team worked to do some initial fabrication assembly and testing with our 3D printed models. As well as further developing the designs to better improve their functionality.

Previous Week Individual Goals and Accomplishments

- *Kendra Ohde*
    - 3D print model and update design changes as needed
    - Start assembly of device if possible
- *Carolyn Randolph*
    - Test compatibility of items purchased
    - Edit CAD of suction collar
- *Ashmita Bhowmik*
    - Get CAD design 3D printed and adjust as needed
    - Obtain materials and start fabricating the sounding parts
    - Work on designing the hand wheel that goes into the device
- *Francesca Angiulli*
    - Continue coordinating materials purchasing
    - Continue helping with prototyping
    - Help make a testing plans
- *Alexis DePuydt*
    - Help with 3D printing and adjusting CAD as needed
    - If we have the supplies, start assembling parts that work

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Carolyn	10/22 10/22	Fabricating suction mechanism Editing CAD	1 1	2	24.5
Ashmita	10/16 10/22	Edit CAD and 3D print suction Edit CAD based on 3D prints	1.5 0.5	2	27
Kendra	10/20-22 10/23	Work on updating CAD model 3D print CAD model	2 hrs		23
Francesca	10/19 10/22	Work on handwheel Work on additional testing plans for suction	1 1	2	22
Alexis	10/21 10/19	Coordinated and picked up supplies Reconstructed end piece of tube (earbud shape)	0.5 1	1.5	20.5

Major Team Goals For The Next Week

1. Assemble initial model for Show and Tell

2. Initial testing of suction
3. Ensuring feasibility of design with current CAD models

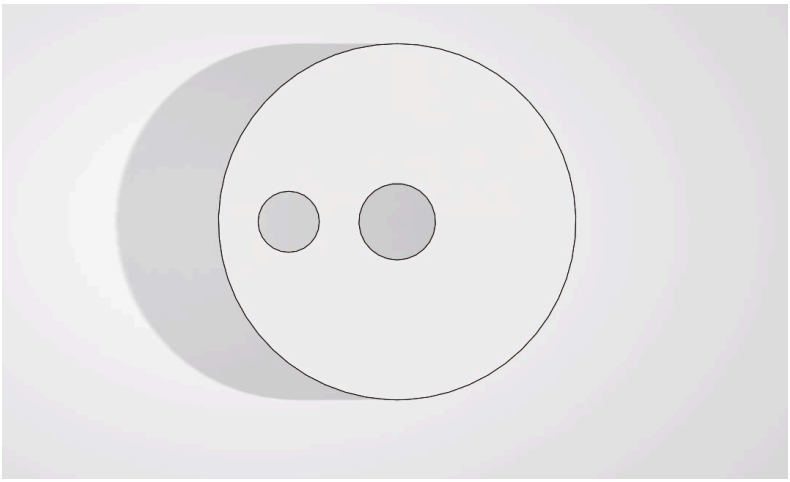
Next Week's Individual Goals

- *Kendra Ohde*
    - Edit and update then print 3D print model
    - Start assembly of device
- *Carolyn Randolph*
    - Make necessary edits based on print quality
    - Fine-tune testing plan
- *Ashmita Bhowmik*
    - Start assembling device together
    - Look into sounding fabrication of device
    - Print wheel for sounding of device
- *Francesca Angiulli*
    - Help with prototype assembly
    - Coordinate order of any additional materials as needed
- *Alexis DePuydt*
    - Print end piece for tube
    - Help with assembly of the device
    - Test if components work or where we need modification
    - Prepare for show and tell

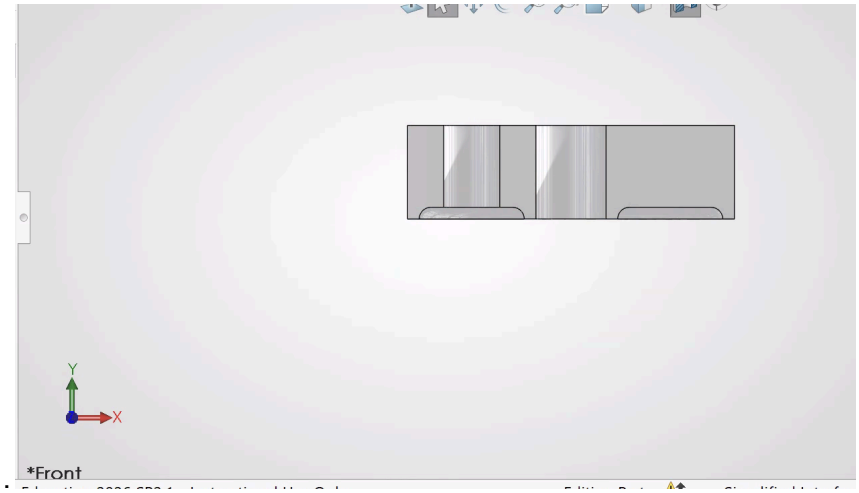
Difficulties / advice requests

Current design

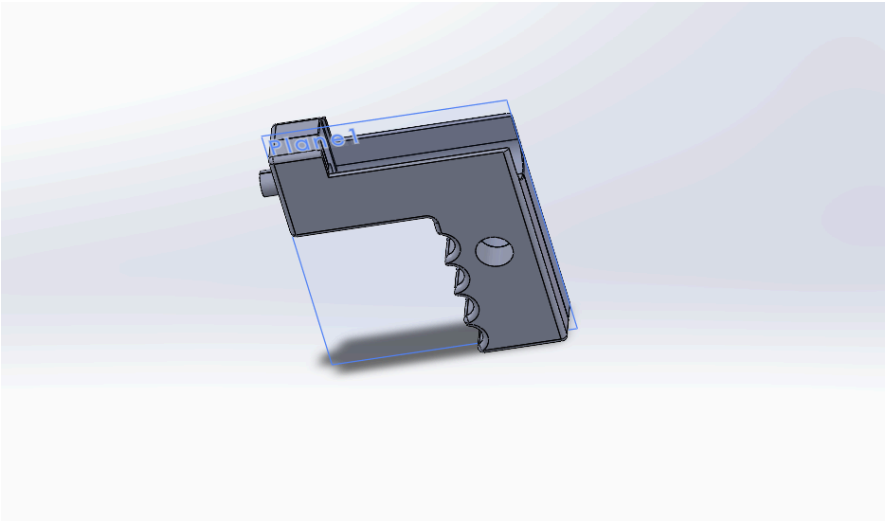
Design Matrix: link here to full document with criteria descriptions



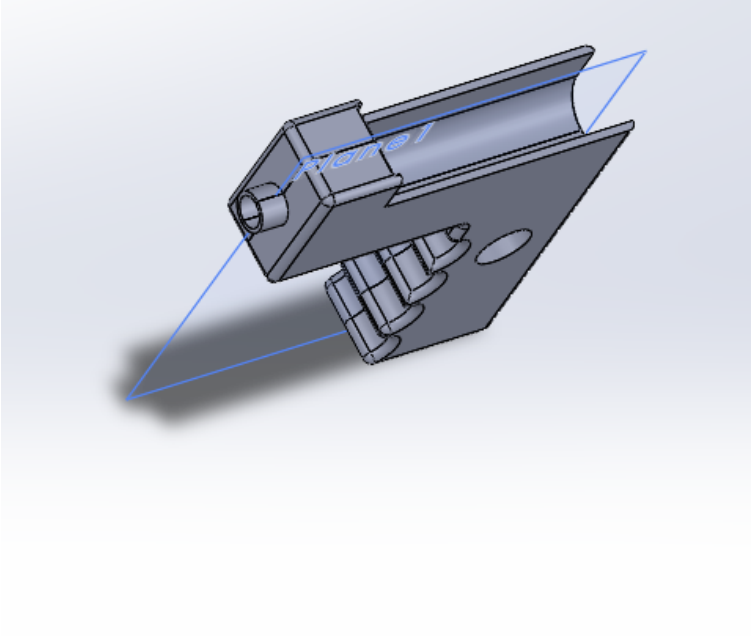
Top view of suctioning collar



Sliced side view of suctioning collar



Handle Side View



Handle Top View

Materials and expenses

Item	Description	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Suction Collar	3D print in PLA					10/15	1	$0.06	$0.06	See CAD above
									$0.00	
Testing										
									$0.00	
									$0.00	
								TOTAL:	**$0.00**	

Timeline

Task	Week #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Project Selection		X														
Project Report		X														

Client Meeting			X													
PDS				X												
Design Matrix					X											
Prelim Presentation						X										
Prelim Deliverables							X									
Final Design							X									
Project Manufacturing							X	X								
Invention Disclosure Report																
Show and Tell																
Final Poster																
Final Deliverable																

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

Important Dates:

~~*First PDS Draft Due*: September 18th~~
~~*Design Matrix Criteria and Design Ideas Due*: September 25th~~
~~*Preliminary Presentation*: October 2nd~~
~~*Preliminary Deliverables*: October 7th~~
Show and Tell: October 30th
Final Poster Presentations Due: December 4th
Final Deliverables Due: December 9th

Current References:

1)