

Aligna-Painless IUD placement

Progress Report 5

10/2/2026 - 10/8/2026

Team:

Kendra Ohde (ohde@wisc.edu)	Team Leader
Carolyn Randolph (crrandolph@wisc.edu)	Communicator
Ashmita Bhowmik (bhowmik3@wisc.edu)	BSAC
Francesca Angiulli (fangiulli@wisc.edu)	BPAG
Alexis DePuydt (adepuydt@wisc.edu)	BWIG

Advisor:

Prof. Darilis Suarez-Gonzalez (dsuarez@wisc.edu)

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 completed the preliminary report, consulted with UHS provider Phoebe Sullivan, and collaborated with Dr. Martin to start the purchasing process.

Previous Week Individual Goals and Accomplishments

- Kendra Ohde
 - OBGYN Zoom meeting
 - Preliminary Report Work
 - Prototype planning
- Carolyn Randolph
 - Preliminary Report
 - Begin CAD design for the distal end suctioning component
 - Verify materials list with rest of team
- Ashmita Bhowmik
 - Meet with OBGYN from UHS to talk about feasibility of our design and clear up any procedural questions
 - Work on Preliminary Report
 - Start prototyping and create a protocol/plan
- Francesca Angiulli
 - Gynecologist Discussion
 - Work on the Preliminary Report
 - Start planning for prototyping
- Alexis DePuydt
 - Meet with an OBGYN Provider to discuss more about IUD process and if our design seems feasible
 - Work on the Preliminary Report
 - Begin CAD and ordering materials for prototyping

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Carolyn	10/3 10/4-10/7 10/2	CAD sketch for suction cup Preliminary report Materials list	1 2 0.5	3.5	18
Ashmita	10/6-7 10/7	Preliminary Report Fabrication Research	2.5 1.5	4	18
Kendra	10/5-8 10/7	Preliminary Report Research for fabrication	3 0.5	3.5	16.5
Francesca		Obgyn Meeting Preliminary report Prototype research	0.75 2 0.25	3	17

Alexis	10/6 10/5-10/7 10/8	Met with OBGYN provider Preliminary Report Materials Research	0.75 1.5 0.25	2.5	17
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Major Team Goals For The Next Week

1. CAD/Design Process
2. Meet with design consultant

Next Week's Individual Goals

- Kendra Ohde
 - CAD design of device body to fit with syringe
 - Consider design improvements with new feedback
 - Update design documents as needed to be reflective of current prototype
- Carolyn Randolph
 - Suction cup CAD design
 - Consider design improvements based on UHS provider feedback
 - Edit PDS to be more quantitative
- Ashmita Bhowmik
 - Meet with team and look over any generated CADs from the last week
 - Update Fabrication Protocols, delegate fabrication tasks, and obtain materials necessary for fabrication
- Francesca Angiulli
 - Coordinate ordering of preliminary materials with the Pharmacy department
 - Do more research on handwheel mechanisms
 - Help with any preliminary prototyping
- Alexis DePuydt
 - Look into materials in more depth
 - CAD help where I can
 - Set up consultation for fabrication

Difficulties / advice requests

Identified by the UHS provider: Our method of sounding doesn't allow the provider to "feel" when they've hit the fundus or where the distal end is in relation to patient anatomy – detaches the provider from tactile sense.

Cervical os is not always centered – could be on top of vagina, pointed in different directions, only half-visible ect. which complicates the proposed usage of our device.

Similar suctioning devices are not implemented at UHS because if the vacuum disengages they have to use the tenaculum (in other words the vacuum seal only gets one chance).

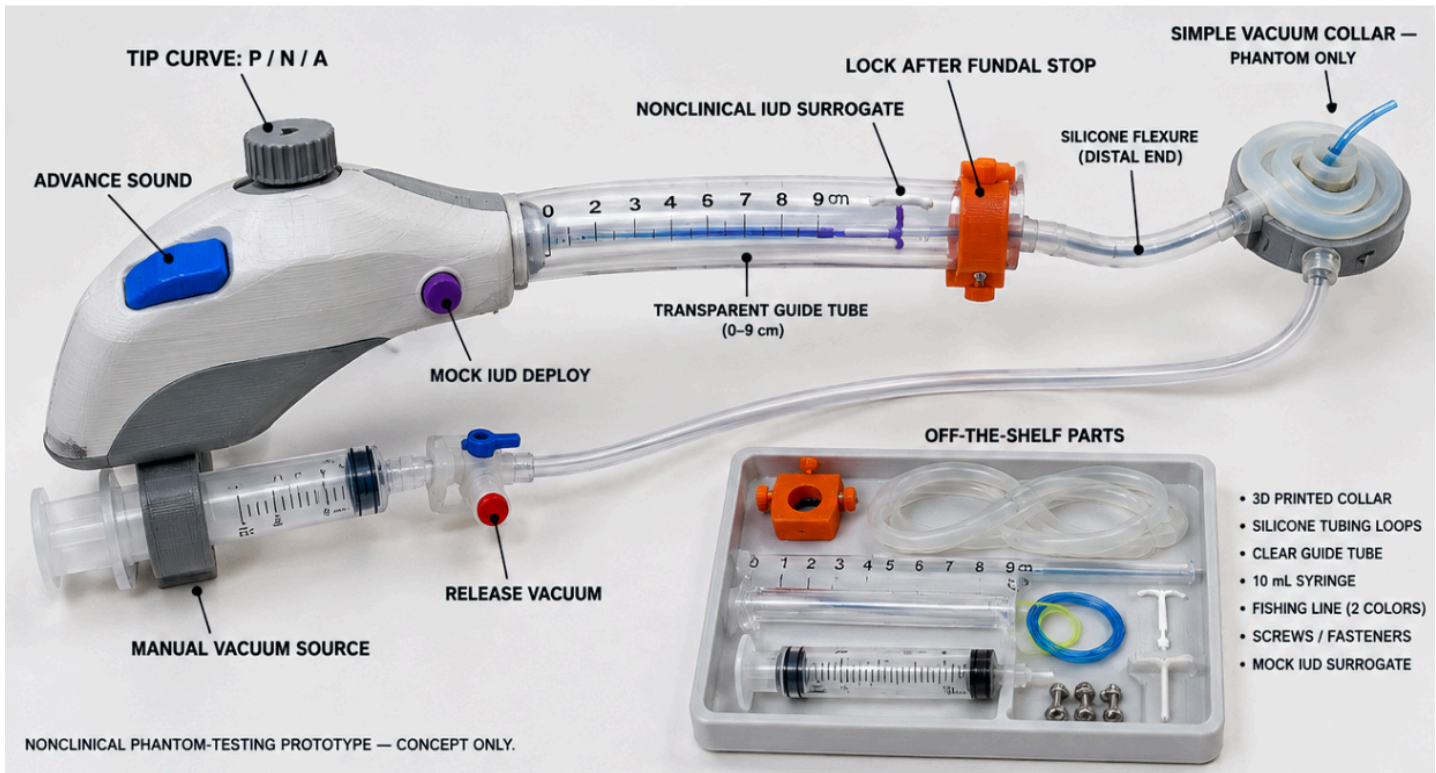
The uterine sound always helps because it is cheaper than an inserter. Our design combines the sound and the inserter so in the event that the procedure cannot proceed it costs significantly more.

We also don't have a plan in place for when the IUD doesn't deploy which occurs even with the current inserter.

Lastly our design doesn't leave much room to perform the cervical block which requires cervical stabilization.

Current design

Design Matrix: [link here to full document](#) with criteria descriptions



Materials and expenses

Item	Description	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Category 1										
									\$0.00	
									\$0.00	
Category 2										
									\$0.00	
									\$0.00	
								TOTAL L:	\$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																
Project Manufacturing																
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

(Optional) Invention Disclosure Report: October 16th

Show and Tell: October 30th

Final Poster Presentations Due: December 4th

Final Deliverables Due: December 9th

Current References:

1)