Title: Emergency Cricothyroidotomy

Date: April 4, 2024

Client: Dr. Lenard Markman
Advisor: Darilis Suarez-Gonzalez
Team:
Katerina Smereka

Zac Mayhew

Megan Finell

Mateo Silver

Problem statement

Every year in the United States over 5,000 people die due to choking. There are only a few precious minutes between loss of the airway and brain death. By creating a device which can establish an airway in case of blockage (either caused by choking or anaphylaxis), many of these people could be saved. Crucial to the success of the device is its availability. The device will be low-cost and easy to use, so it can be added to first aid kits and placed in public areas. Unlike current devices on the market, which are expensive and difficult to use, our product aims to be accessible when emergencies occur.

Brief status update

The team is preparing for data collection next week. This includes organizing pick up of porcine larynges with the UW Meat Plant as well as brainstorming and designing more succinct fixation methods for the animal tissue. Also, the team is drafting an executive summary for the Tong Award.

Difficulties / advice requests

None to report

Current design

Materials and expenses

Item	Description	Manufac-turer	Mft Pt#	Vendor	Vendor Cat#	Date	#	Cost Each	Total	Link
Semester 1 Expenses										
All expenses									$29.67	
Semester 2 Expenses										
Porcine Skin		N/A		Asian Midway Market		2/10/2024	1	2.97	$2.97	
									$2.97	
								TOTAL:	$32.64	

Major team goals for the next week

The team hopes to test the device's ability to puncture through skin as well as if the device can puncture through multiple layers: the skin on top of a porcine larynx.

Next week's individual goals

- Katerina
    - Create a successful protocol that allows for adequate tension of the animal tissue
    - Test the device for multiple layers
- Zac

    - Finalize handle device
    - Test the device on new samples
- Megan
    - Obtain the pig tracheas/larynges (and hopefully pig skin as well)
    - Help create a way to effectively test multiple layers of tissue together
    - Test the device on new samples
- Mateo
    - Brainstorm method of affixing tissue for testing
    - Conduct final porcine testing

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																
Empathize	X	X	X	X	X	X	X	X	X	X	X					
Background…	X	X	X	X	X	X	X	X	X	X	X					
Prototyping				X	X											
Testings				X												
Deliverables																
Progress Reports	X	X	X	X	X	X	X	X	X	X	X					
Prelim presentation			X			X										
Final Poster																
Meetings																
Client		X														
Advisor	X	X	X	X	X	X	X	X	X		X					
Website																
Update	X	X	X	X	X	X	X	X	X		X					

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

Previous week's goals and accomplishments

- Katerina
    - Complete outreach reflection
    - Acquire new animal models
    - Finish and submit WARF application
- Zac
    - Update handle design and 3d print
    - Finish and submit WARF application
- Megan

    - Help complete outreach reflection
    - Contact Dillon again about picking up the porcine tissue samples
    - Complete BPAG request for funds (for porcine samples)
    - Finish and submit WARF idea disclosure
- Mateo
    - Finish and submit WARF disclosure
    - Helped coordinate and complete outreach activity

Activities

Name	Date	Activity	Time (h)	Week Total (h)	Sem. Total (h)
Katerina	4/1 4/4 4/4	Create an outline and assign parts of executive summary Write assigned part of executive summary Edit executive summary	0.5 0.75 1	2.25	25
Zac	4/4	Write part of executive summary	1	1	23
Megan	4/2 4/3 4/4	Contact Dillon about pig samples again Write executive summary Complete WARF application questions	0.5 1 1	2.5	24.5
Mateo	4/2	Work on executive summary	1	1	22