

Endotracheal tube adaptor for administration of nebulized medications

Client: Dr. Mark E. Schroeder

Team Members: Ryan Childs (BSAC)
Ozair Chaudhry (Communicator)
Timothy Barry (BWIG)
Evan Joyce (Leader)

Date: March 13 to March 27, 2009

Problem Statement

The goal of this project is to develop an endotracheal tube adaptor that can consistently deliver aerosolized medication (Albuterol or Ipratropium) to an anesthetized patient during surgery by anesthesiologists at the UW-Hospital. The adaptor will be used on an intubated patient who is anesthetized with medication from an anesthesia circuit. The device should not impede the anesthesia circuit which flows at a rate of 4–5 Liters of air/minute and should solely act as a port to deliver medication should it be needed during surgery.

A recent change to the metered dose inhalers (MDI) made by GlaxoSmith&Klein, specifically the addition of an actuation counter on the top of the canister, has rendered our client's current adaptor ineffective. Our client would prefer an adaptor that either works with the patient's plastic dose dispenser, directly with the new MDIs, or as an addition to the current adaptor used. The adaptor we are pursuing acts as a "syringe" to dispense medication in a simple fashion, with one hand, into the Luer port of a readily available plastic anesthesia elbow. The elbow has a locking cap on the Luer port which will be used to prevent the circuit from being broken when the "syringe" adaptor is not in use.

Last Week's Goals

- Finish mid-semester report and turn in to advisor
- Finish and turn in notebooks to mailroom
- Begin discussing SolidWorks designs and searching for a company to fabricate adaptor

Summary of Accomplishments

- All group members deposited notebooks for review and mid-semester report was finished as well
- Finished researching Luer locks, materials, and metal fabrication companies
- Started to find various companies that are able to fabricate adaptor and discussed various testing options

This Week's Goals

- Finish SolidWorks model of prototype over spring break
- Contact companies that are able to build adaptor. Try to get quotes a few companies to find our best option
- Further discuss and start searching for testing options (for after we have a physical prototype)

Project Difficulties

Activities

Ozair Chaudhry

3.13.2009 Advisor meeting/SolidWorks	2.00 hr
3.22.2009 Finalized SolidWorks model	2.00 hr
3.26.2009 Group meeting	1.00 hr
~~~~~ Contacting various companies	3.00 hr
~~~~~ Reviewing notes on mid-semester report	1.00 hr

Timothy Barry

3.13.2009 Advisor meeting/SolidWorks	2.00 hr
3.26.2009 Group meeting	1.00 hr
~~~~~ Looked into testing ideas	2.00 hr
~~~~~ Website	1.00 hr

Ryan Childs

3.13.2009 Advisor meeting/SolidWorks	2.00 hr
3.18.2009 Met with 3M design specialists	3.00 hr
3.19.2009 Finished SolidWorks model	7.00 hr
3.22.2009 Finalized SolidWorks model	2.00 hr
3.26.2009 Group meeting	1.00 hr
~~~~~ Contacting various companies	1.00 hr

Evan Joyce

3.13.2009 Advisor meeting/SolidWorks	2.00 hr
3.17.2009 Questions for Ryan to ask at 3M	0.50 hr
3.19.2009 Contacting GSK over break	2.00 hr
3.22.2009 Finalized SolidWorks model	2.00 hr
3.23.2009 Contacting shops on campus	2.00 hr
3.25.2009 Met with Doug Dummer to discuss adaptor	0.50 hr
3.25.2009 Met with Bill Cotter to discuss adaptor	0.50 hr
3.25.2009 Progress report	1.00 hr

### Project Schedule

Tasks	January		February				March				April				May	
	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8
<b>Research and Development</b>																
Research	█	█	█				█								█	
Brainstorm		█	█	█			█								█	
Develop Prelim. Designs				█	█	█	█								█	
Detail/Evaluate Designs							█	█	█							
Build Prototype							█				█	█	█	█		
Test Prototype							█					█	█	█		
<b>Website</b>	Timothy															
<b>Deliverables</b>																
Midsemester Presentation							█	█							█	
Midsemester Report							█	█								
Final Presentation															█	█
Final Report															█	█
Progress Reports	Evan															

### Expenses

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