

iEndotracheal 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: February 14 to February 20, 2009

Problem Statement

The goal of this project is to develop an endotracheal tube adaptor that can be used to consistently deliver aerosolized medication to an anesthetized patient during surgery by anesthesiologists at the UW-Hospital. 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 if needed. Recent changes to the medicine canister's nipple housing due to a propellant change have rendered our client's current adaptor ineffective. Our client would prefer an adaptor that either works with the patients Multi Dosed Inhaler (MDI), directly with the new medication canister (Albuterol or Ipratropium), or as an addition to the current "Bush adaptor" used.

Last Week's Goals

- Research cleaning methods (CIDEX) and what impacts this would have on material choice and device longevity
- Become more fluent in Solid Works through tutorials
- Finalized PDS and put on website
- Brainstorm for design alternatives and product specifications/limitations
- Set up meeting with Professor Fronczak for flow dynamics

Summary of Accomplishments

- Found information on materials to use for adaptor
- Found pertinent information on cleaning methods (MetriCide) and material compatibility
- Began brainstorming design alternatives
- Finalized PDS and put on website

This Week's Goals

- Become more fluent in Solid Works through tutorials
- Brainstorm for design alternatives and product specifications/limitations
- Set up meeting with Professor Fronczak for flow dynamics
- Begin to develop preliminary drawings and a design matrix to evaluate alternatives

Project Difficulties

- Thus far have not been able to contact Professor Fronczak
- Learning the syntax and controls for advanced Solid Works use

Activities

Ozair Chaudhry

2.13.2009 Team Meeting	2.00 hr
2.19.2009 Team Meeting	2.00 hr
~~~~~ General research on MDI manufacturer	2.00 hr
~~~~~ Testing air flow brainstorming	1.00 hr
~~~~~ Contacting Professors	0.50 hr

### Timothy Barry

2.13.2009 Team Meeting	2.00 hr
2.16.2009 Brainstorming designs	1.00 hr
2.18.2009 Brainstorming designs	2.00 hr
2.19.2009 Team Meeting	2.00 hr
~~~~~ Website	1.00 hr

Ryan Childs

2.13.2009 Team Meeting	2.00 hr
2.14.2009 General research/brainstorming/drawing	3.00 hr
2.19.2009 Team Meeting	2.00 hr

Evan Joyce

2.13.2009 hr	Team Meeting	2.00
2.17.2009	General research/brainstorming	1.50 hr
2.18.2009	Progress report	1.00 hr
2.19.2009	Team Meeting	2.00 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
Research and Development																
Research	█	█	█				█								█	
Brainstorm		█	█	█			█								█	
Develop Prelim. Designs				█	█	█	█								█	
Detail/Evaluate Designs							█	█	█	█					█	
Build Prototype							█				█	█	█			█
Test Prototype							█						█	█	█	
Website		Timothy														
Deliverables							█	█							█	
Midsemester Presentation							█	█							█	
Midsemester Report							█	█							█	
Final Presentation							█								█	█
Final Report							█								█	█
Progress Reports	Evan															

Expenses

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