

# 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 6 to March 12, 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 should it be needed during surgery. A recent change to the metered dose inhalers (MDI) used by our client, specifically the addition of an actuation counter on the canister top, has rendered our client's current adaptor ineffective. Our client would prefer an adaptor that either works with the patients plastic dose dispenser, directly with the new MDIs (Albuterol or Ipratropium), or as an addition to the current adaptor used.

## Last Week's Goals

- Make final version of PowerPoint
- Begin work on mid-semester report
- Begin looking for company to fabricate prototype

## Summary of Accomplishments

- Finished and presented PowerPoint to peers
- Began dividing up work for the mid-semester report
- Started to consider options for fabrication (what company) and testing options

## This 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

## Project Difficulties

- Thus far have not met with a fluid mechanics Professor however this may be more relevant once a finalized design has constructed on SolidWorks

## Activities

### Ozair Chaudhry

|  |         |
|--|---------|
| 3.06.2009 PowerPoint presentation          | 2.00 hr |
| 3.10.2009 Mid-semester report organization | 2.00 hr |
| ~~~~~ Mid-semester report work             | 2.00 hr |

### Timothy Barry

|  |         |
|--|---------|
| 3.06.2009 PowerPoint presentation          | 2.00 hr |
| 3.10.2009 Mid-semester report organization | 2.00 hr |
| ~~~~~ Mid-semester report work             | 2.00 hr |
| ~~~~~ Website                              | 1.00 hr |

### Ryan Childs

|  |         |
|--|---------|
| 3.06.2009 PowerPoint presentation          | 2.00 hr |
| 3.10.2009 Mid-semester report organization | 2.00 hr |
| ~~~~~ Mid-semester report work             | 2.00 hr |

### Evan Joyce

|  |         |
|--|---------|
| 3.06.2009 PowerPoint presentation          | 2.00 hr |
| 3.08.2009 Mid-semester report work         | 2.00 hr |
| 3.10.2009 Mid-semester report organization | 2.00 hr |
| 3.12.2009 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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