Valve for an Endotracheal Tube Cuff
Progress Report #9, November 10, 2006

Client: Dr. Lester Proctor
Team: Michael Alexander (Leader)
       Claire Edlebeck (BWIG)
       Samantha Bergh (Communicator)
       Tyler Lark (BSAC)
       Lucas Vitzthum (Graphics)

November 2 to November 10, 2006

Problem Statement
Develop a valve for an endotracheal tube cuff that will not allow inflation pressures to exceed 25 cm H\textsuperscript{2}O pressure. Overinflation of the cuff that provides a tight seal between the endotracheal tube and the patient’s trachea is a common problem. The excess pressure can cause many complications, especially in children. Our task is to create a cuff that fails predictably at 25 cm H2O so the cuff can be safely utilized in pediatrics.

Last Weeks Goals
• Pursue Plastic Fabrication
• Finalize Prototype dimensions
• Machine shop logistics
• Contact suppliers

Summary of Accomplishments
I’m happy to say that this week we accomplished all the goals we were looking to get done before the start of next week. After our Tuesday team meeting, we have contacted several suppliers of plastics, springs and medical components, and we have a bunch of stuff currently en route. We also went over the final dimensions of the piston design and have a several different options in case some of the larger volume designs don’t work.

We are currently talking to several people about pressure testing options. We need to find a means to read the intracuff pressure so we can calibrate the pressure indicator attached to the piston.

This Weeks Goals
• Begin Fabrication
• Find sensitive manometer
• Initial testing
### Project Schedule

- **9/8**: Form team, contact client, assign team roles, set up client meeting
- **9/15**: Literature search, create problem statement, begin PDS
- **9/22**: PDS, brainstorming, begin developing designs, fix prototype
- **9/29**: Brainstorming
- **10/6**: Decide on 3 design alternatives, prepare for mid-semester presentation
- **10/13**: Mid-Semester Presentation
- **10/20**: Hand in report and notebooks
- **10/25**: Work on final design
- **10/27**: Decide on final design
- **11/3**: Work on final design
- **11/10**: Work on final design
- **11/17**: Work on final design, begin preparing poster and paper
- **11/24**: Thanksgiving
- **12/1**: Final Poster Presentation
- **12/8**: Hand in final written report and notebooks
- **12/13**: Final meeting with advisors

### Activities

**Michael:**
- Team meeting (1 hr)
- Finalize prototype dimensions (2 hrs)

  **Total: 3 hrs**

**Claire:**
- Team meeting (1 hr)
- Resistance supplier Contact (2 hrs)
- Resistance Research (1 hr)

  **Total: 4 hrs**

**Tyler:**
- Team meeting (1 hr)
- Plastic Supplier Contact (1 hr)

  **Total: 2 hrs**

**Samantha:**
- Team Meeting (1 hr)
- Communications (3 hrs)

  **Total: 4 hrs**

**Lucas:**
- Team meeting (1 hr)
- Finalize prototype dimensions (2 hrs)

  **Total: 3 hrs**