Valve for an Endotracheal Tube Cuff
Progress Report #6, October 18, 2006

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

October 14 to October 18, 2006

Problem Statement
Develop a valve for an endotracheal tube cuff that will not allow inflation pressures to exceed 25 cm H₂O 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
• Midsemester Powerpoint
• Practice Presentation
• Injection Molding Possibilities
• Graphics

Summary of Accomplishments
This week’s work was focused on finishing and polishing the presentation. We met Tuesday, after compiling our portions and quickly ran through the entire presentation. Lucas created some very cool models of our design in Solidworks which will add greatly to our presentation and that we can use in pursuing our final design. We exchanged some criticism, and tomorrow we are going to meet in order to go over everything again.

Also this week, Samantha contacted Adam J. Kramschuster, a Ph.D student in polymer engineering, and today Tyler went to meet with him about possible fabrication options for our design. We received some good input and look forward to discussing our options.

This Weeks Goals
• Pursue Plastic Fabrication
• Midsemester Presentation
• Midsemester report
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)
    Compile Powerpoint (1.5 hrs)
    Total: 2.5 hrs
Claire:
    Team meeting (1 hr)
    PDS (2 hrs)
    Powerpoint (1 hr)
    Total: 4 hrs
Tyler:
    Team meeting (1 hr)
    Meeting w/ Kramschuster (1.5 hrs)
    Powerpoint (2 hrs)
    Total: 4.5 hrs
Samantha:
    Team meeting (1 hr)
    Communications (1.5 hrs)
    Powerpoint (1 hr)
    Total: 3.5 hrs
Lucas:
    Team meeting (1 hr)
    Powerpoint (1 hr)
    Graphics (2.5 hrs)
    Total: 4.5 hrs