Valve for an Endotracheal Tube Cuff
Progress Report #4, October 4, 2006

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

September 29 to October 4, 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
• MRI Compatibility Research
• Contact Dr. Proctor
• More Component sources
• Meet about other possibilities for pressure transducer

Summary of Accomplishments
This week as been slightly sporadic due to the sheer number of exams everybody currently has to deal with, but we took care of some important decisions. Yesterday, we met and voted on the final three designs that we will pursue for our mid-semster presentation. Those designs look to be one mechanical solution, one electronic solution, and our old design, the pressure relief valve. We are going to have to meet again to flesh out the details more thoroughly.

The MRI compatibility problem still looms (over me, at least). We’ve contacted Dr. P as to his thoughts on the subject, but have yet to get a response back. With his response we’ll be able to proceed.

This Weeks Goals
• Design Matrix
• Graphics
• Begin PowerPoint
• Graphics
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)
    Compatibility Research (.5 hr)

Total: 1.5 hrs

Claire:
    Team meeting (1 hr)
    Component Search (2 hrs)

Total: 3 hrs

Tyler:
    Team meeting (1 hr)

Total: 1 hrs

Samantha:
    Communications (1.5 hrs)

Total: 1.5 hrs

Lucas:
    Team meeting (1 hr)
    Design Brainstorming (2 hr)
    Component Search (2 hrs)

Total: 5 hrs