

Tracheotomy tube security device

Client: Dr. Timothy McCulloch

Team Members: Katie Pollock (Leader)

Becca Clayman (Communicator)

Kim Safarik (BWIG)

Paul Fossum (BSAC)

March 13 to March 26, 2009

Problem Statement

In patients who have had a tracheotomy performed, a major post surgery problem is discomfort from the tracheotomy collar. The collar must be secured tightly to keep the tracheotomy tube in place so the patient can breathe. However, if the collar is kept at the proper tension, it can cause ulcers on the patient's skin. Our goal is to design a tracheotomy strap that is comfortable, easy to clean, and equipped with monitoring devices to ensure that proper pressure is exerted on the tube and neck.

Last Week's Goals

- Look up pricing information and begin the ordering process
- Meet with our client again to ensure we are on the right track

Summary of Accomplishments

- Spring break was this week and our group didn't really get a chance to meet or talk about the project while we were outside of school.
- Each individual member did research on material purchasing and pricing. Katie purchased the mesh for the design, and we have decided which valve we would like to use, we just need to place the order for it. We may have to switch our design from hat snaps to the belt design since it is difficult to obtain long lengths of hat snap holes. We need to get purchasing permission from Dr. McCulloch's office as well.
- We were supposed to meet with our client on Wednesday afternoon, but he got stuck in surgery and could not make our meeting time. We are in the process of emailing him to reschedule, or just email him our current plans and having him critique them that way.

This week's goals (for after spring break)

- Order remaining materials
- Obtain client feedback on current project status
- Begin fabrication

Project Difficulties

We had issues this week meeting with Dr. McCulloch. We plan to remedy this by setting up another meeting or corresponding with him via email.

Activities –Team total should be added to each individual total

| Member | Activity | Hours | Cumulative |
|---------------|--|--------------|-------------------|
| Katie Pollock | Got fabric Progress report | .75 .25 | 7 |
| Becca Clayman | Hat snap pricing research Communication | 1.5 .25 | 5.75 |
| Kim Safarik | Bag material research Update website | 1.5 .25 | 5 |
| Paul Fossum | Valve research Driving | 1.5 .5 | 5 |
| TEAM | Client meeting(which we went to, but didn't happen) | 1 | 20.075 |

Project Schedule

| Number | Task | Start | End | Duration | 1/23 | 1/30 | 2/6 | 2/13 | 2/20 | 2/27 | 3/5 | 3/13 | 3/20 | 3/27 | 4/3 | 4/10 | 4/17 | 4/24 | 5/1 | 5/8 | |
|--------|---|---------|---------|----------|------|------|-----|------|------|------|-----|------|------|------|-----|------|------|------|-----|-----|--|
| 1 | Assign teams and duties | 1/23/09 | 1/21/09 | 1 | █ | | | | | | | | | | | | | | | | |
| 2 | Research project statement and contact client | 1/23/09 | 1/30/09 | 7 | █ | █ | | | | | | | | | | | | | | | |
| 3 | Initial Brainstorming Client meeting, obtained basic materials | 1/30/09 | 2/13/09 | 14 | | █ | █ | | | | | | | | | | | | | | |
| 4 | Refined brainstorming | 2/4/09 | 2/5/09 | 1 | | | █ | | | | | | | | | | | | | | |
| 5 | PDS | 2/5/09 | 2/20/09 | 22 | | | █ | █ | | | | | | | | | | | | | |
| 6 | Design Matrix | 2/13/09 | 2/20/09 | 7 | | | | █ | | | | | | | | | | | | | |
| 7 | Select final idea | 2/21/09 | 2/27/09 | 5 | | | | | █ | | | | | | | | | | | | |
| 8 | Work on mid semester presentation | 2/27/09 | 3/5/09 | 7 | | | | | | █ | | | | | | | | | | | |
| 9 | Mid semester report | 3/5/09 | 3/11/09 | 7 | | | | | | | █ | | | | | | | | | | |
| 10 | Mid semester presentation | 3/5/09 | 3/11/09 | 1 | | | | | | | | █ | | | | | | | | | |
| 11 | Order materials | 3/11/09 | 3/14/09 | 4 | | | | | | | | | █ | | | | | | | | |
| 12 | Spring break | 3/14/09 | 3/22/09 | 8 | | | | | | | | | | | | | | | | | |
| 13 | Fabrication of strap | 3/22/09 | 4/10/09 | 18 | | | | | | | | | | | | | | | | | |
| 14 | Comfort testing/safety evaluation | 4/10/09 | 4/14/09 | 4 | | | | | | | | | | | | | | | | | |
| 15 | Redesign | 4/14/09 | 4/24/09 | 9 | | | | | | | | | | | | | | | | | |
| 16 | Final testing | 4/24/09 | 4/25/09 | 1 | | | | | | | | | | | | | | | | | |
| 17 | Final presentation | 4/24/09 | 5/1/09 | 4 | | | | | | | | | | | | | | | | | |
| 18 | Report | 5/2/09 | 5/8/09 | 5 | | | | | | | | | | | | | | | | | |

We are currently slightly behind schedule. We haven't obtained client approval of our design yet and haven't finished ordering all of our materials.

Expenses

| Item | Amount | Price |
|--------------------|---------|--------|
| Jersey mesh fabric | 0.5 yds | \$1.50 |