

Project:
Magnetic Resonance Imaging Compatible Infusion Pump

Team Members:

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Client:

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Date: 3-23-04 thru 3-30-04

Problem Statement: MRI compatible infusion pump for gadolinium and saline solutions has pumps that are syringe driven but limited in their sequence capability and in the amount each can hold. The client wants two new pumps that are programmable and can effectively control the infusion rates of gadolinium and saline independently without having to refill the syringes. New pumps will not only save client's time, but it will also save money since refilling the syringes wastes a lot of gadolinium.

Restatement of Team Goals from Last Week:

We have a lot of work ahead of ourselves. Over this week we will:

1. Contact five more companies and price quotas.
2. After finding the actual price of the pump and its functions, we will set up an appointment with our client, Dr. Newman.
3. Since Aman and Prakash have yet to go see the scan, they will need to find time sometime next week to go see the scan.

Summary of Accomplishments:

1. Aman has contacted seven companies but has not received a price quota from any. He contacted the following companies: Gilson Equipment, Water-Cannon Inc., Mu Shield Inc., Harvard Apparatus, Harvard Clinical, Saint-Gobin and Cole Palmer. Aman was able to get in touch with the sales representative from Gilson Equipment who is working on finding a right type of pump for our design. The sales rep hopes

to give us a price range by tomorrow. The sales representative from Water-Cannon hasn't been able to find a suitable pump for our design; however, he did tell us that the type of pump we are looking for would cost at least \$1500. Mu Shield sales representative assured us that if we needed a motor to be shielded, his company would be able to do it. He wasn't able to tell us the details of his product because of company policies, but he did tell us that there is a kit to shield ferrous materials that can be purchased from his company. Harvard Apparatus and Saint-Gobin don't sell pumps for clinical purposes; therefore, we were not able to find anything of our interest from these companies. Harvard Apparatus did tell us about another company, Harvard Clinical. Despite several emails, we still haven't heard anything back, and we are waiting for a response. Saint-Gobin Company advised us to contact Cole Palmer that sells pumps for clinical applications. The sales representative is still working on finding us the right pump.

Can emailed Watson-Marlow Company yesterday. We have not yet gotten a response back.

Prakash and Miguel tried looking for peristaltic pumps on e-bay but didn't have any luck. Most pumps on e-bay weren't able to deliver flow rates our client desired. Moreover, they were not programmable.

2. We were not able to meet Dr. Newman last week, because he is very busy. We have sent him another email and we are waiting for a response. His colleague, Frank, said he may have some time on Friday to see us, but we are not sure. When we meet him, hopefully on Friday, we will tell him about our financial situation and ask for more money.

3. Frank, the technician, holds scanning sessions only on Monday's and Wednesday's in the afternoon. Aman went to see the scan yesterday; Can saw it last week. Prakash was not able to go due to a class conflict. Since Miguel has already undergone the MRI procedure, he doesn't need to go see the scan. Seeing the scan was helpful in understanding how the infusion pump really works and the limitations it poses.

Individual Goals:

2. Aman Ghotra: Finish Progress Report 9; Contact more companies; See Dr. Chesler
3. Can Pi: Contact companies; Set up an appt with Dr. Newman
4. Prakash Rao: Contact companies; Update the website
5. Miguel Benson: Attend BSAC; contact companies

Statement of Team Goals:

1. We will have to go see Dr. Newman this week by Friday.
2. Aman will go talk to Dr. Chesler about other pumps that can be used to solve our problem. Aman has emailed her and is waiting for her response.
3. We will continue contacting companies and talking to sales representatives to find a good product for our problem.

Rough Project Schedule:

1/23/04: Made teams and assigned roles

1/29/04: Meet our client
1/30/04: Develop PDS
2/13/04: Brainstorm possible designs
2/24/04: Sketch out the three designs
2/27/04: Evaluate Ideas and work on power point
3/05/04: Mid-Semester Presentation
3/05/04: Choose final design
3/05/04 – 4/23/04: Work on final design
4/23/04: Work on final power point, final paper and PDS
4/30/04: Poster Presentation

Difficulties: We are having a hard time getting a response back from the companies we've contacted. After talking to several salesmen, we get the feeling that most of the peristaltic pumps on market will be expensive. Since we only have \$200 to work with, we don't know what to do. Hopefully, our client will agree to give us more money.

Activities:

Aman Ghotra: Progress Report 8; Contacted companies; class time (3.5 hours)
Can Pi: Saw the scan; class time (1.5 hour)
Prakash Rao: searched on e-bay; class time (2.0 hours)
Miguel Benson: Class time; BSAC (1.5 hours)

Running Total: 111.0 Hours

Aman Ghotra: 42.5 hours
Can Pi: 36.5 hours
Prakash Rao: 39.0 hours
Miguel Benson: 31.5 hours