

Using Technology to Measure Adherence of Complicated Medication Regimens

Progress Report 9

Client

Timothy Juergens, M.D.
UW/VA Hospitals
Geriatric psychiatrist/sleep specialist
Phone: 239-3030
timothy.juergens@med.va.gov

Advisor

Professor William L. Murphy Ph.D wlmurphy@wisc.edu

Team Members

Sujan Bhaheetharan	Communications	sbhaheethara@wisc.edu
Cara Dunn	BSAC	cddunn@wisc.edu
Farshad Fahimi	BWIG	ffahimi@wisc.edu
Nipun Yamdagni	Leader	nyamdagni@wisc.edu

Problem Statement

According to a recent study, almost 75% of patients, especially the elderly, do not adhere to their medication regimens for various reasons. This lack of adherence can prevent a patient's recovery. Additionally, the present state of affairs is such that if a patient reports no improvement, a physician does not definitively know whether to try a different medication or whether the patient is simply not taking the medication regularly. To improve general health of patients assigned complicated medication regimens, we are to make a device that keeps a record of when a patient takes their medication.

Project Schedule/Important Dates

March 9 th	Midsemester Presentation
May 4 th	Poster Presentation
May 9 th	Final Papers Due

Summary of Team Accomplishments

- Finished mid semester presentations
- Created computer interface
- Found prospective solutions for wiring all the switching
- Found a way to access time from the watch chip
- Found a way to get the microcontroller to sleep, and wake up from sleep using interrupts
- Were able to store time of when a button was pushed
- Completed outreach requirement

Current Difficulties

- Once again the bootloader needed to be reinstalled. However, this David Markovitch found that there was an error in our bootloader, and was able to repair the fault.

Activities

Sujan

Communications	.25 hr
Science Expedition	6 hrs
Team Meeting	3 hrs
Total:	9.25 hrs

Cara

Team Meeting	3 hrs
Science Expedition	6 hrs
Total:	9 hrs

Farshad

Team Meeting	3 hrs
Communications	.25 hrs
Total:	3.25 hrs

Nipun

Work on Microcontroller	4 hrs
Meeting with David Markovitch	1 hr
Team Meeting	3 hrs
Science Expedition	6 hr
Progress report	0.25 hr
Total:	14.25 hrs

Team Total Hours for this Week:	35.75 hrs
Cumulative Team Hours this semester:	174.75 hrs
Cumulative Team Hours to Date:	620 hrs

Expenses

• Microcontroller (PIC18F4685-I/P-ND)	\$027.44
• Watch chip (DS1307)	\$017.58
• USB to serial (TTL) interface (DLP-USB232M)	\$031.47
• Plexiglas	\$004.21
• Microcontroller (PIC18F4550)	\$030.50
• Pill box	\$004.16
Total:	\$116.36