

Wii Remotes in Rehab

1) Lower rehab costs in stroke, spinal cord injury

The wii remote is approximately \$40 USD and contains sensitive enough accelerometers and IR pointer to replace or compete with existing technologies. All a lab or rehab center needs is a PC or Mac with web applications. (the \$300 game console is not required)

2) Increase exercise compliance

Use game like reward systems to make rehab fun. An enjoyable game that rewards and encourages friendly completion is useful incentive to exercise. If web based, the compliance information can be monetized and giving an incentive with social networking (redeemable points) will grow the user base. No lab, use global community to create virtual mountains of usage data.

3) Efficient use of treatment time

Hospital tests sometimes require long waits or "down time". This is an opportunity to do something else, like do a wii based pointer game while being forced to be on your back. Some tests and procedures are very boring and/or painful -- an opportunity to do something useful. (*personal experience with this even as early as acute ICU*)

Community:

- create open source community of masters/grad students
- leverage existing open source for wii and heart rate
- * opensoundcontrol.org
- * OSClator (osx, iphone)
- * zephyr open (brad)
- * motej

Game Design Influences:

- * making choices is rewarding, wagers is addicting (risk/reward as in poker)
- * wii active -- fitness games with social networking (shame/pride points)
- * battleship -- two web based players with shared screen
- * tone matrix -- musical feedback from movement
- * tettris -- time limits and pattern matching
- * mine sweeper -- revealed information is addicting and rewarding
- * <http://en.wikipedia.org/wiki/Electroplankton>

Monetize Outcome Measures:

- Add on a service to measure usage and outcomes per user (gmail)
- anonymous search and summaries for community
- monetize all aspects of the data (use uploaded data as a redeemable credit)

Questions:

- current costs in rehab? (margins required for given volume)
- stroke numbers growing but at age they will play games?
- retrain movement with visual and auditory feedback?
- will a reward system game increase use? or is fatigue the barrier?
- possible to make fun exercise game?
- wheelchairs on wii fit to play existing games?
- cooperate and compete at the same time in two player games??