

Pervasive Healthcare
Class 4

Agenda

- 3:00-3:05 Announcement
- 3:05-3:15 Quiz 1
- 3:15-3:40 Example of Research Paper Presentation/Discussion
- 3:40-3:50 Questions about rubric, presentation, discussion

Announcements

- Readings posted by as soon as possible (usually be beginning of week)
- Research Paper Presentations
 - Rubric

Announcements
Research Paper Presentation Rubric

- **Organization**
 - Logical sequence
 - Engaging beginning/middle/end
 - Smoothly move from one idea to the next
- **Content Knowledge**
 - Information correct
 - Can answer questions
- **Style**
 - Relevant information appropriate for class
- **Delivery**
 - Speak clearly with confidence and good eye contact
- **Timeliness**
 - Do not go under time

Announcements
Research Paper Presentation Rubric for CAETE

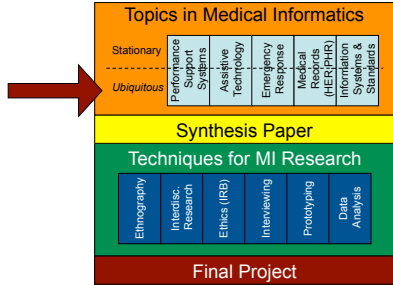
- **Organization**
- **Content Knowledge**
- **Style**
- **Delivery**
- **Timeliness**

} Presentation or report
you send me

} Only considered if you
are here

Quiz 1

Where are we?

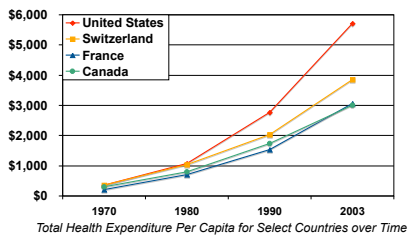


Pervasive Healthcare

Varshney, U., "Pervasive Healthcare," *Computer*, vol. 36, no.12pp. 138- 140, Dec. 2003

Presented by Katie Siek

Healthcare costs are expensive



- US healthcare costs grow by 3.6% per year - exceeds more than half of the world's countries

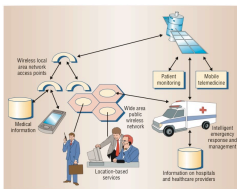
Organisation for Economic Co-operation and Development. OECD Health Data 2006, from the OECD Internet subscription database updated October 10, 2006. Copyright OECD 2006. <http://www.oecd.org/health/healthdata>

Pervasive Technology can improve healthcare costs

- Decrease costs (\$)
- Decrease workload (Wkld)
- Increase efficiency (Eff)
- Increase convenience (Con)
- Improve quality of service (QoS)
- Increase feelings of empowerment (MPwr)

\$	Wkld	Eff	Con	QoS	MPwr	P Patient C Clinician S Staff

Mobile telecommunications gets information to places *faster*



- Transmit critical information
- Decrease errors
- Enter information easier
- Share data easily

\$	Wkld	Eff	Con	QoS	MPwr	P Patient C Clinician S Staff
-	+C,S	+C	+C	+P	+P	

Patient monitoring allows for automatic data collection



- Collect real-time data from anywhere
- Avoid false positives with context-aware applications
- Patients can be transferred sooner

\$	Wkld	Eff	Con	QoS	MPwr	P Patient C Clinician S Staff
+	+/-C	+C	+P,C	+P	+P	

Portable Telemedical Monitoring Using Wireless Sensors on the Edge of the Internet. Emi Zovarov, University of Alabama in Huntsville Electrical and Computer Engineering Dept., Huntsville, AL 35899

Patient monitoring allows for automatic data collection

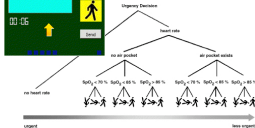


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\$	Wkld	Eff	Con	QoS	MPwr	
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Portable Telemedical Monitoring Using Wireless Sensors on the Edge of the Internet. Emil Jovanov, University of Alabama in Huntsville Electrical and Computer Engineering Dept., Huntsville, AL 35899

Location-based services can help decision making for efficient care



- Clinicians can locate people easier
- Eliminate redundant 911 calls
- Plan best emergency driving route

\$	Wkld	Eff	Con	QoS	MPwr	
+/-	+C	+C	+P,C	?	?	P Patient C Clinician S Staff

Applying Wearable Sensors to Avalanche Rescue: First Experiences with a Novel Avalanche Beacon. Florian Michahelles, Peter Matter, Albrecht Schmidt and Bernd Schiele, In: Computers & Graphics, Vol. 27, No. 6, 2003.

Location-based services can help decision making for efficient care

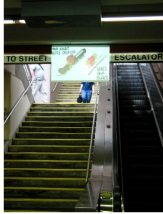


- Clinicians can locate people easier
- Eliminate redundant 911 calls
- Plan best emergency driving route

\$	Wkld	Eff	Con	QoS	MPwr	
+/-	+C	+C	+P,C	?	?	P Patient C Clinician S Staff

www.nextbus.com

Lifestyle incentive based care can improve general health

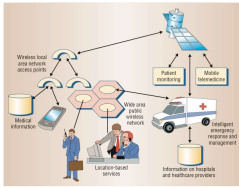


- Can help patients make better health decisions
- Reward instead of fat tax

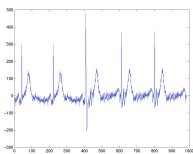
\$	Wkid	Eff	Con	QoS	MPwr	P Patient
+	?	?	?	?	?	C Clinician
						S Staff

S. S. Iftiller, "Ubiquitous Computing Technology for Just-in-Time Motivation of Behavior Change (Position Paper)," in Proceedings of the Ubiquitous Computing Workshop, 2008.

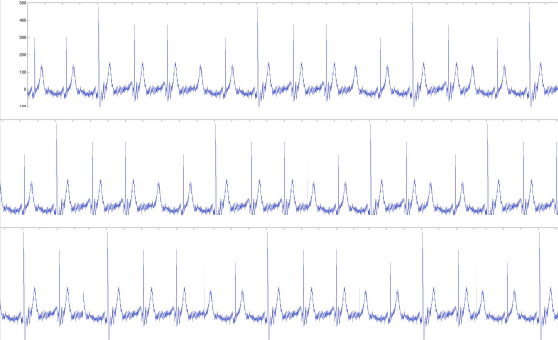
Discussion: How to build an infrastructure? Or do we have it already?



How will clinicians benefit?



How will clinicians benefit?



What rewards will we need for adoption?

- If patients have records; patients can change hospitals easily
- Doctors may have too much to evaluate based on their time
- Towns would need better infrastructure
- Patients would have to input a lot more into devices

Pervasive Technology can improve healthcare costs

- Decrease costs
- Decrease workload
- Increase efficiency
- Increase convenience
- Improve quality of service
- Increase feelings of empowerment

Must have reward structure clearly defined for all parties

Discussion about presentation/
rubric

Looking forward

- Week 2: Pervasive Healthcare
 - Friday: Overview of PH; Meeting an expert
- Week 3: Assistive Technologies
 - Quiz: Friday – September 12
- Week 4: Qualitative Field Methods
 - September 17 **NO CLASS – Field Exercises**

Next Week

- Sign up for your top three picks for class participation presentations on the wiki *if you have not already done so*
- Come to class prepared to discuss
 - How do you find research papers?
 - What resources do you use?
 - Have you been to the library?
