The Market for mHealth

• mHealth is the use of mobile technology (phones, tablets, wearables, etc) to track and/or collect health data

• Analysts estimate the current value of the mHealth market as $4.6 billion and growing
mHealth: Emerging Technologies

Apple Watch

Soft contact lens encapsulates electronics
Sensor detects glucose in tears
Chip & antenna receives power and sends info

Where Does It Hurt?

ADAM

Click the Body Part Where the Pain Is

VIEW LABELS
VIEW ALL SYMPTOMS
mHealth: Emerging Technologies

• The source of data is diverse

• The content of these datasets may be deeply personal

• We pursue large sets of data for extremely varied purposes
The Potential: Clinical Workflow

- mHealth Apps can allow HIPAA-compliant communication between clinical teams
- Untethers clinicians from desktops, increases flexibility of care delivery
- Streamlines patient charting
- Portable reference and diagnostic tool
The Potential: Remote Patient Monitoring

• Continuous monitoring leads to better data gathering

• Increases patient compliance by reducing need for clinical visits

• Save clinicians times and allows fewer providers to serve more patients

The Potential: Patient Self-Tracking

Horacio Salinas for The New York Times
http://www.nytimes.com/2010/05/02/magazine/02self-measurement-t.html
mHealth and Compliance

Self-reporting and Inaccuracy

Observation and Behavior Modification

Behavioral Reporting and Intentional Deception
mHealth Applications Currently in Trial

- Google Glass and Dietary Tracking
- Google Glass and Addiction
- Activity Monitors and Smoking
- Continuous Glucose Monitoring
- Pulse Tracking and Stress
- Text Reminders and Compliance
Tracking the Stake-Holders

- Clinicians and biomedical researchers
- Engineers and designers
- Commercial entities
- Government
- Public interest
- Data subjects

http://www.pd4pic.com/computer-computing-information-technology-it-chip-2.html
The Ethics
Ethical Concerns

Data Access
Ethical Concerns

Data Ownership
Ethical Concerns

Data Profits
Ethical Concerns

Third Parties
Ethical Concerns

Security
Ethical Concerns

Compliance
The Challenges

Privacy
“Data can be useful or anonymous, but never both.”

Reframing Challenges

Privacy

Informed Consent

UCLA
Reframing Challenges

• Consent and Feasibility
• Proxy vs Actual Consent
• Consent and the Benefit
Solutions: Untangling Obligations
Moving Forward
Solutions: Untangling Obligations

Researchers and Clinicians ↔ Data Subjects

- Recognizing that more (or better) data does not take precedence over patient autonomy
- Surveillance and trust
- Medical data and intimacy
Solutions: Untangling Obligations

Engineers and Designers

- Anticipating legal restrictions and applications
- Taking intentional reductions in utility seriously

Data Subjects

- Data curators and data guardians

Government
Thank You