Observations of Daily Living

Personalized Health Monitoring & Feedback

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Problem
How can parents collect important information about their newborn and share it with their pediatrician in a manner that improves the quality of care?
Our Solution!

- iPhone Application
- Web Application
- Integrated Platform

We designed and built Functional Prototypes
Observations of Daily Living

A Parent’s Story

Analysis

KidOoDL

Building a Platform
Observations of Daily Living

- Relation to Medicine
  - Vital Signs
  - Biometrics
  - Patient History

- Thinking about the Data
  - Sensors vs. Observations
  - Quantitative vs. Qualitative

- Weight
- Heart Rate
- Blood Pressure
- Blood Glucose
- Brain Waves
- Medication
- Diet
- Exercise
- Sleep
- Mood
- Pain
Personal Health Tracking

- Patient Care
  - Chronic Illnesses / Preventative Medicine
  - Patient Narrative / Recall Bias

- Social Health
  - Sharing similar experiences
  - Social motivation / peer pressure

- Research
  - Epidemiology, Clinical Trials
Observations of Daily Living

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KidOoDL

Building a Platform
Max!
Observations of Daily Living
A Parent’s Story
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KidOoDL
Building a Platform
Field Research

- Parents
  - Face-to-Face Interviews (5 couples)
  - Email Interviews (2 couples)
  - Survey (10 responses)

- Physicians
  - Face-to-Face Interviews (4 physicians)
  - Focus Group
  - Survey (10 responses)
User Needs

Hard to get the data from the parent to the physician in a meaningful, useful way.

Parents
• Types of ODLs
• Data Entry
• Sharing
• Understanding Data

Physicians
• Comprehensive information
• Include in very busy work flow
• Milestones!
Competitive Analysis

For the iPhone,
- Baby Brain
- BabyConnect
- iTrackBaby
- Baby Activity Logger
- NursingLog
- Total Baby
- Baby Geek
- Bant
- Weightbot

For Android,
- Baby ESP

For the web,
- Trixie Tracker
- Keas
- theCarrot
- PatientsLikeMe
- Project HealthDesign
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Building a Platform
Personas

- Rick – gadget-loving working father
- Angela – tech-shy mother, primary persona
- Scott – academic pediatrician
- Emma – community pediatrician
- Susan – entrepreneurial babysitter
Paper Prototypes
Usability Testing Results

- Single-click data entry doesn’t work
- “Charts” are for physicians and developers
- Parents object to treating children differently
- Cross-platform consistency is expected
iPhone Application
iPhone Application
Visualizations
Visualizations

[Chart showing developmental milestones for Sammy, 39 Months, with a focus on colors denoting different skills]

[Inset diagram showing motor, language, and social development across 3 months and 7 months, with 'missing' indicated]

[Legend for colors representing different skills: blue for Hand and Finger Skills, green for Language, purple for Cognitive, brown for Movement, orange for Social and Emotional, and red for Vision and Hearing and Speech]
Graphic Design

KidOoDL is a new approach to active parenting. Busy moms and dads have enough to worry about with feeding, diapering, and helping baby establish healthy sleep cycles. Why spend even more effort tracking it all? With KidOoDL, you can track your child’s activities with the touch of a button. No more piles of paper notes, no searching for the journal or the pen. KidOoDL is here online or on your smartphone, or on your spouse’s (or sitter’s) smartphone. It can even save customized reports for your pediatrician. Now you have a bit more time to spend with your small wonder. Learn more.
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Building a Platform
P2P Platform Architecture
Scalable Implementation
Demo
Wrap-Up

- Our solution helps parents and physicians communicate to better infant health via our
  - iPhone and Web Applications
  - Scalable and Flexible Data Model
  - Synchronization with Google Health

“This is some really cool stuff. I'm very impressed. You're taking this beyond where anyone in medicine has ever thought of going..... I really think that you have a chance to change the way medicine is practiced and the way patients relate to their health.”

Dan Imler, Lucile Packard Children's Hospital, Stanford University
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