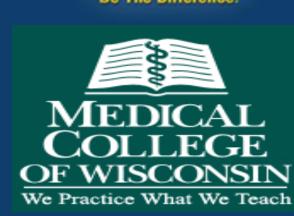# Mobile Based Learning Architecture for Expectant Parents of Premature Baby

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> Overwhelmed and intimidated since she doesn't know how to take care of the premature infant

> Bear emotional and financial consequences of premature birth and don't have enough knowledge to take right treatment choice

Parents face these issues because

- This is the first time
- Anxious, uncertain
- Mourning loss of normal pregnancy
- Inconsistent information
- Information in Books and Internet are not personalized
- Reluctant to share the situation with others
- Don't like traditional learning system

Web version
- Desktop
- Android
- iOS
- Others

Mobile app version
- Android
- iOS

Preemie Prep For Parents

http://www

Available on the App Store

ANDROID APP ON Google play

Challenges
- Passive learner at hospitalization
- High bandwidth internet
- Round the clock data connection
- Space in local memory
- Different mobile OS
- Various browser capabilities
- Different language support
- Users expertness to use the app
- Satisfaction and user friendliness
- Usage, feedback and comments
- Information presentation

Application Benefits
- Web based and mobile based
- Easy to install and carry
- Audio visual information
- Personalized notification
- Gestational age based data
- App for both mother and father/partner
- Infant's risk and outcome
- Short and long term complexities
- Feedback and bookmark
- Personal journal entry

> How to prepare yourself and your husband/partner when you are expectant mom of premature infant?

> Hello Mom, do you know how to take care of premature baby?

Introduction
- About 135 infants are born premature in a week in Wisconsin
- Critical decision: whether to resuscitate premature infant or not
- Effective participation: decisions requires parental knowledge
- Outcome is not discussed during routine prenatal care due to risk factors
- Most infants born before 34 weeks of gestation require intensive care
- Despite intensive care, all premature infants do not survive later

Motivation
- Survivors are at increased risk of significant morbidities in the long run
- Parents receiving information may be inconsistent, inaccurate, and biased (by the practitioner's own values and beliefs)
- Current inadequacies results:
  - tokenistic parent involvement
  - devalued parental input
  - increase in "parenting disorders"
- Truly involve parents in the care of their child
  - To share medical decision-making between parents and clinicians
- Obstetric providers "struggle" to answer parental questions regarding premature infants
- Parents spend very few time prenatally with the neonatal counselor
- Consistency of information are important for parental learning
- Clinician should initiate parental education by supplying relevant information

References:
[1] Kim, U. Olivia, and Mir A. Basir. "Informing and Educating Parents About the Risks and Outcomes of Prematurity." *Clinics in perinatology* 41.4 (2014): 979-991.
[2] Fanaroff AA, Kennell JH, Klaus MH. Follow-up of low birth weight infants—the predictive value of maternal visiting patterns. Pediatrics 1972;49(2):287–90.
[3] National Institutes of Health mHealth National Institutes of Health mHealth. Google term "NIH mobile Health" to get to this site: http://obssr.od.nih.gov/scientific_areas/methodology/mhealth/

Poster presentation: HotMobile 2016

Challenges
- Reliability and availability
- Credentials are compromised
- Data backup and recovery
- Feasibility of cloud server
- Access limitation
- Switching host to another

Solution
- Microsoft Azure
  - HIPAA Compliant
  - Protected Health Information (PHI)
- Database table stores data that is non identifiable
- Unique id (not understandable by outsider)
- Store users data: feedback, response, usage time, navigation rout, bookmark page list, like/dislike
- Share previous experiences for new users

Cloud Server Storage
- HIPAA Compliant
- Reliable and Secured
- Secure connectivity
- Available data (round the clock)

Preemie Prep for Parents
Administration

Username
kamrul

Password
●●●●●●

Login

Challenges
- Data synchronization
- Database connectivity
- Users authenticity
- Installation and usage
- Data privacy & security
- Data administration
- User management
- Online and offline support
- Training to the health care specialist
- Technical support

Solution
- Web based admin panel
- Train to the neonatologist (or health Worker)
- Update Content
- Add more audio visual data
- Update all the versions

Benefits
- Everybody get latest information
- Easy to track users app usage
- Follow up process
- Users personalization setup
- Response and feedback analysis
- App usage history
- Learning curve analysis