



Postpartum Hypertension Monitoring

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Problem

Hypertension is a leading cause of death postpartum

- 9%–26% of global maternal mortality
- Can present postpartum first time
- 32-44% of all preeclampsia occurs postpartum
- Accounts for a majority of hospital readmission after giving birth



https://www.google.com/search?q=hospital+bed&source=inms&tbm=isch&sa=X&ved=0ahUKewjB3MX-7tWAhWk5IMKHcHsBilQ_AUICigB&biw=1536&bih=735#imgrc=RVABJU6mmnCRoM:



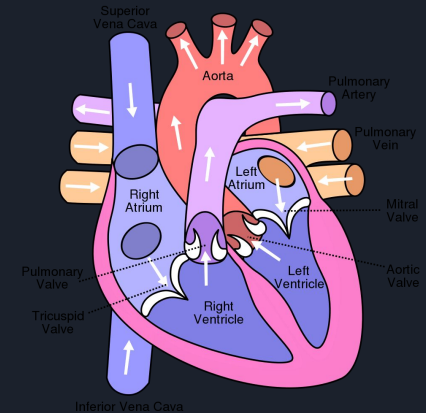
Background

How Hypertension is Categorized?

- Elevated Blood Pressure
- Excess proteins in urine
- Postpartum Hypertension between 48 hours-6 weeks
- Symptoms minimal: can include nausea, headache, shortness of breath, abdominal pain.



http://americanpregnancy.org/app/uploads/2012/04/preeclampsia_toxemia.jpg




<http://www.interactive-biology.com/75/show-me-a-diagram-of-the-human-heart-here-are-a-bunch/>



Big Picture

- Eliminate readmission
- Track vital signs
- Communication between practitioners and patients
- User friendly





Currently Meriter Hospital utilizes a package for postpartum monitoring through Honeywell, a major technology company


- However, a survey of patients and nurses found this system left much desired.



Honeywell




Design



The features suggested by our client and generated by the team were evaluated based on the following criteria:

- (20) HIPAA Regulation and Compliance
- (20) Accuracy and Precision
- (20) User Friendliness
- (10) Data Entry: App to Hospital
- (10) Data Entry: Monitor to App
- (10) Feasibility (Time and Skill)
- (5) Aesthetics
- (3) Safety
- (2) Cost

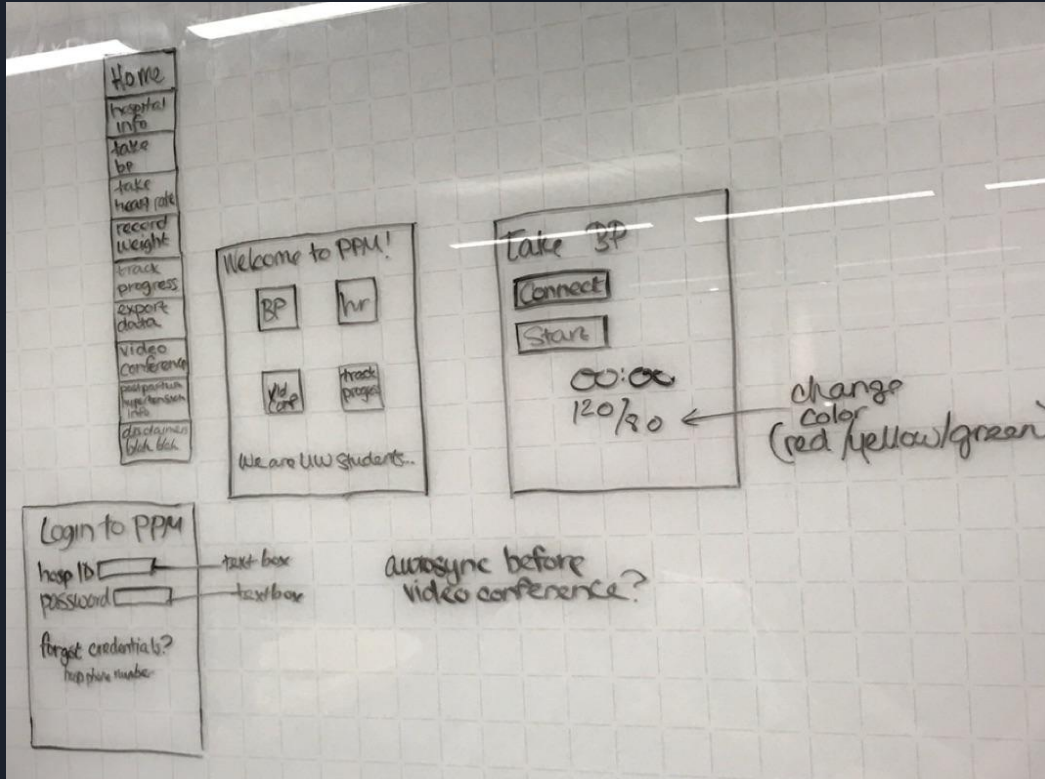


Our team selected features deemed most feasible and necessary for overall success this semester.

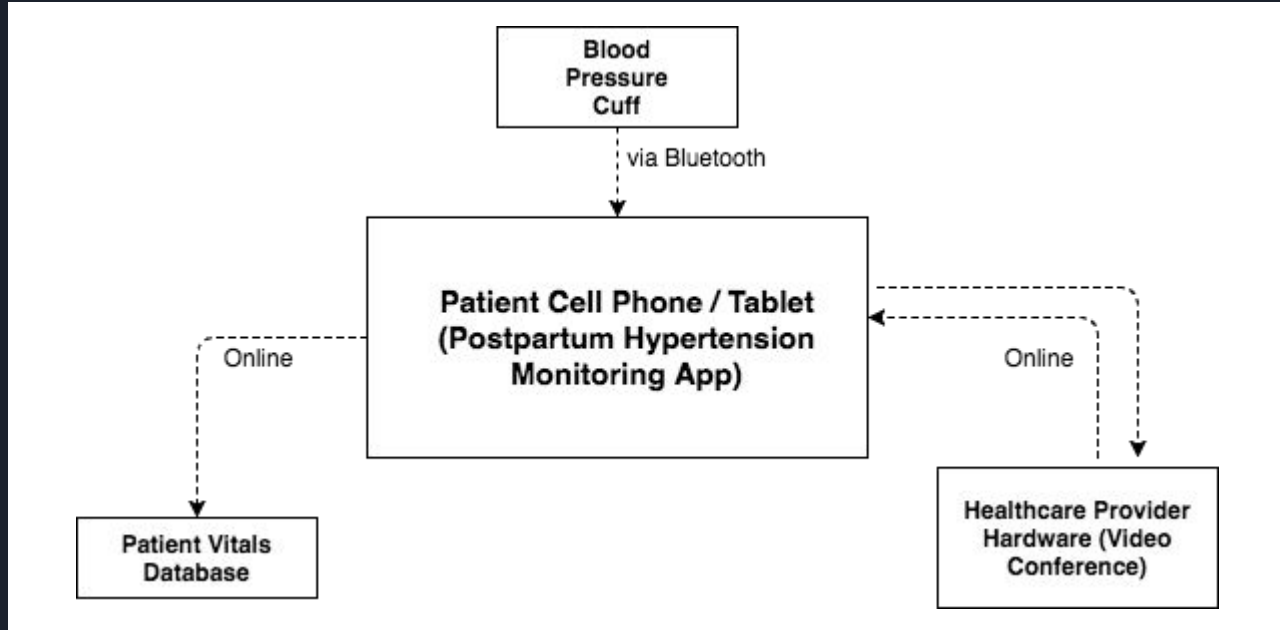
- Bluetooth Enabled for device connection and data input
- Secure data transfer to physicians and nurses
- Freedom to navigate



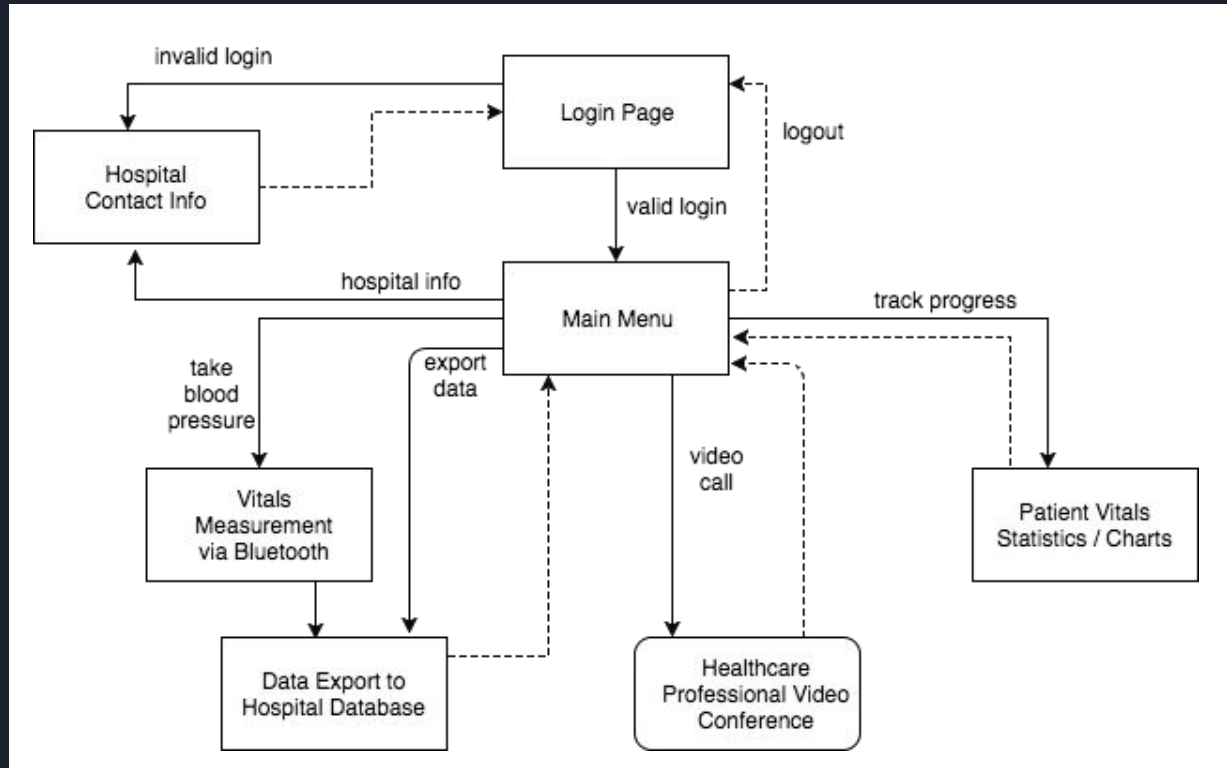
Interface



Hardware Block Diagram



Software Block Diagram





Future Work - Short Term Goals

- Alert patients to remind them to take their measurements
- Prompting user to enter vitals in physician-desired order (BP then weight)
- Include a short survey to assess patient status after taking measurements
- Connecting users to specific physicians they choose in an easy way

Future Work - Long Term Goals



<https://wpccanada.com/6-predictions-canadas-oil-gas-industry-future/>

- Data upload to Epic databases.
- Include an area for live chat between users and physicians (separate from video appointments)
- Utilize Fuze
- Test for data upload speed and data accuracy
- Allow user to change app background (color or image)



Acknowledgements

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References

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Obstet Gynecol. 2013;122(5):1122-1131.



Questions?