

# **Project HATCH**

## **Healthy After Childbirth**

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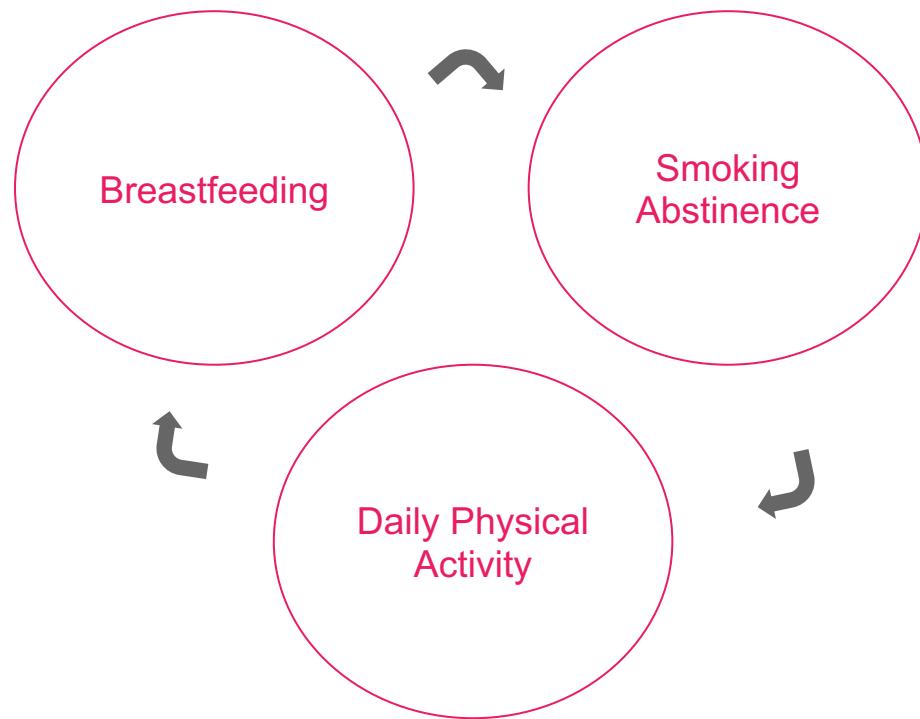
## Effects of Cancer

- Fatigue<sup>[12]</sup>
- Infertility<sup>[12]</sup>
- Nausea<sup>[12]</sup>

# Interactive Cancer Preventative Behaviors

- Mothers who relapse to smoking are 50% more likely to stop breastfeeding early<sup>[11]</sup>
- Physical activity may help to reduce cigarette cravings and prevent relapse to smoking<sup>[10]</sup>

All three of these behaviors together could impact long-term cancer rates.



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Unfortunately, there is a gap of support  
for postpartum mothers who are  
practicing smoking abstinence.

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Although, 45% of women stop smoking while pregnant...<sup>[5]</sup>

Increased risk of postpartum smoking relapse

90% in UK<sup>[5]</sup>

80% in US<sup>[6]</sup>

Low Rates of breastfeeding

35% in UK at 6 months<sup>[7]</sup>

49% in US at 6 months<sup>[8]</sup>

Low Rates of physical activity

65% in US irregular  
postpartum<sup>[9]</sup>

# Aims

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1. To understand how women participate in these behaviors as a new mother
1. To motivate the women to participate in these behaviors

Mom's Meet<sup>TM</sup>

mapmy**X**fitness

Parents



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In the past, self monitoring were effective with other cancer preventative behaviors such as daily exercise and abstinence of smoking but...

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# Challenges with self monitoring...

**Self monitoring is error prone with breastfeeding mothers.**

- Self-efficacy is less effective for mothers who have never breastfed before.<sup>[4]</sup>
- Mothers tend to have lower confidence and may have trouble being consistent with tracking their activity.<sup>[4]</sup>

So how would researchers get accurate results if self-reporting is not accurate?

# Approach

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Wearable  
Computing



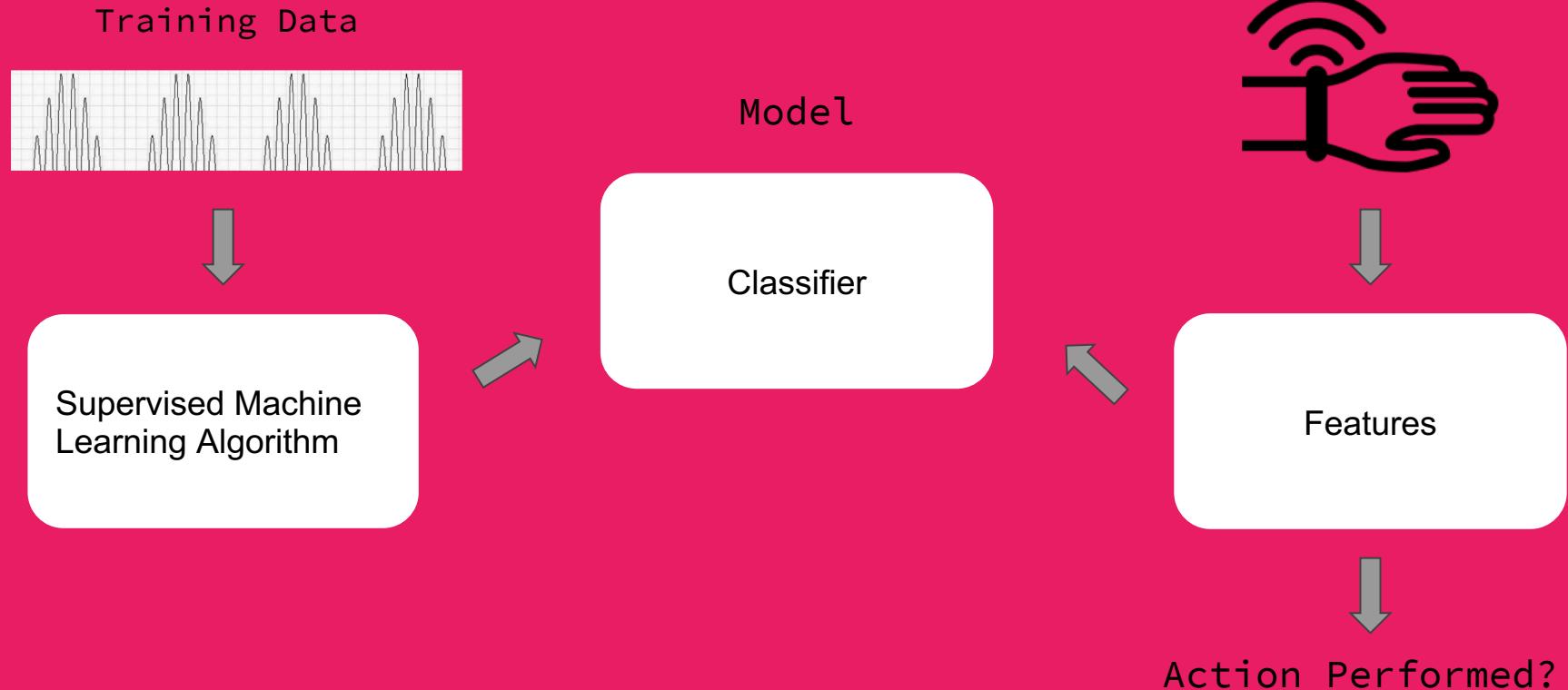
Wearable  
Computing

Behavioral  
Change  
Techniques

*Understand*

*Motivate*

# Activity Recognition Approach



# Classified Actions

## Activities of a Caregiver:

- Bottle Feed
- Breastfeeding Left & Right
- Cuddling
- Burping
- Pick up & Down

## Activities of Daily Living:

- Putting on and off a backpack
- Scrolling and Talking on Phone
- Walking
- Standing up and Sitting down
- Drinking water

# Preliminary Results

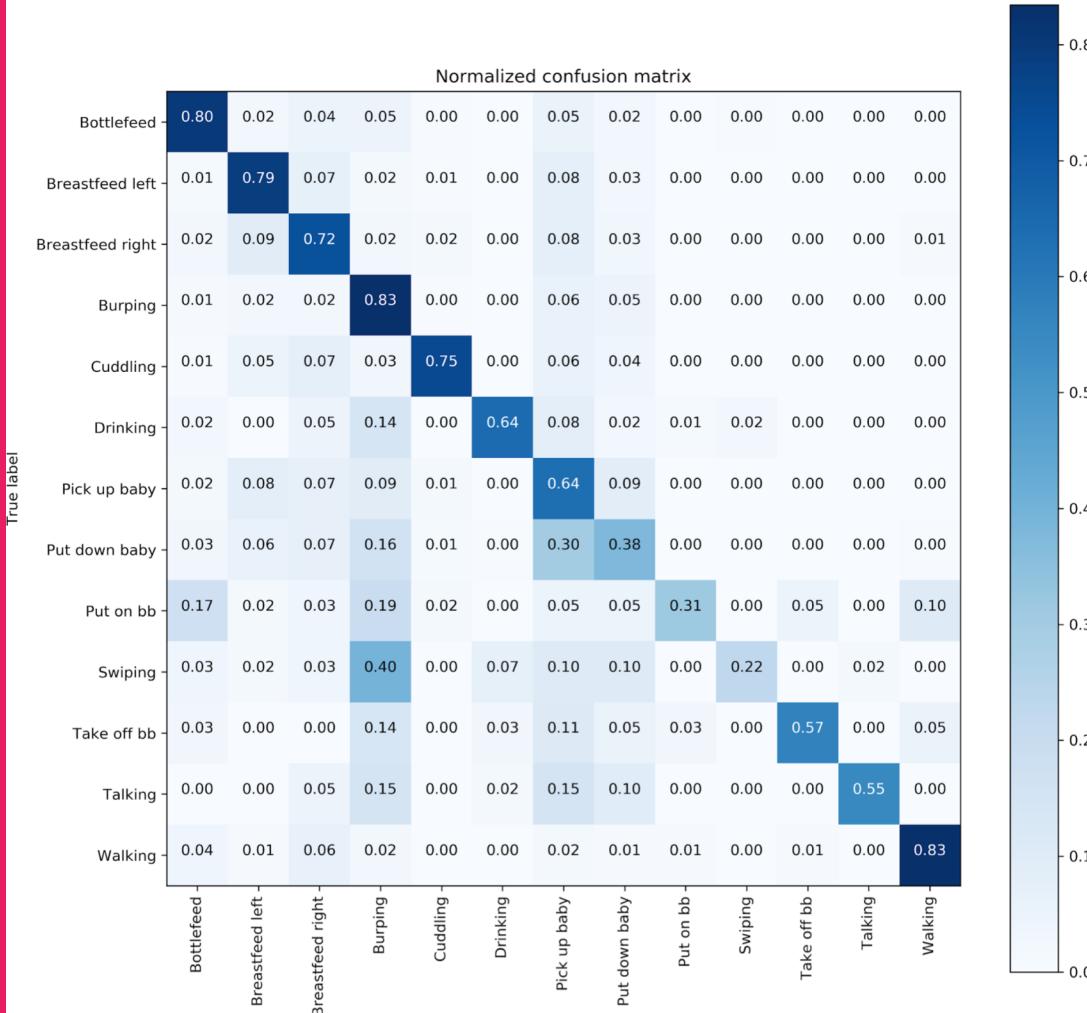
## Simulated Actions

- Two users
- Number of times acted: 12x



# Data Results

71% Accuracy



# Aims

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1. To understand how women participate in these behaviors as a new mother
1. To **motivate** the women to participate in these behaviors

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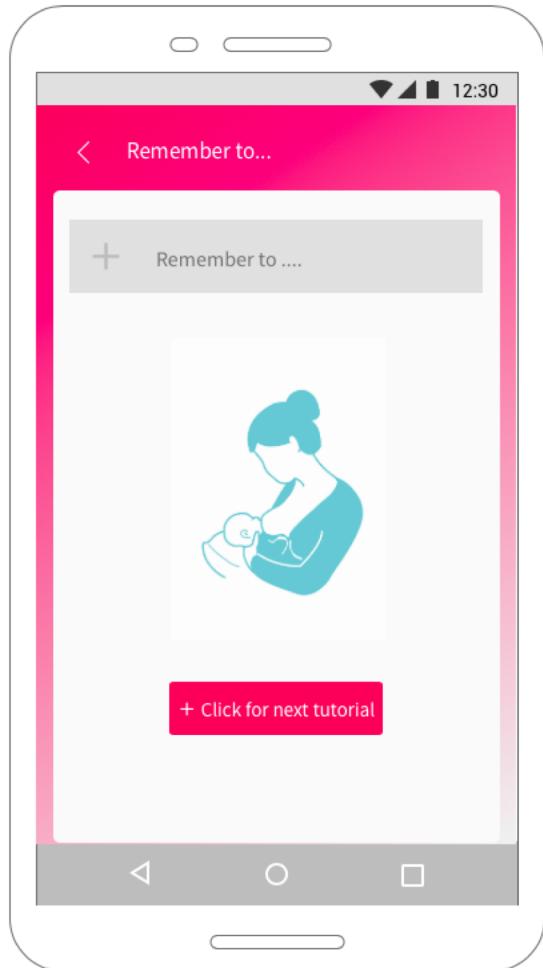
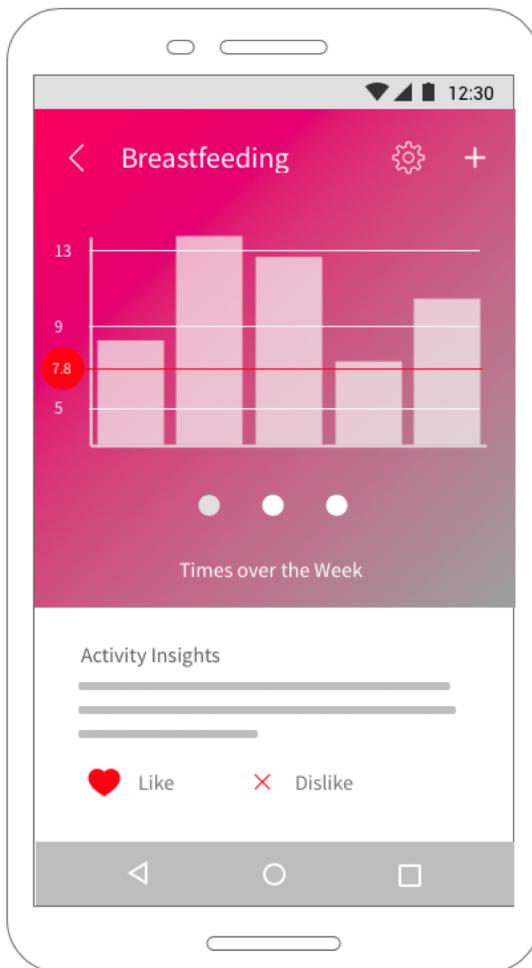
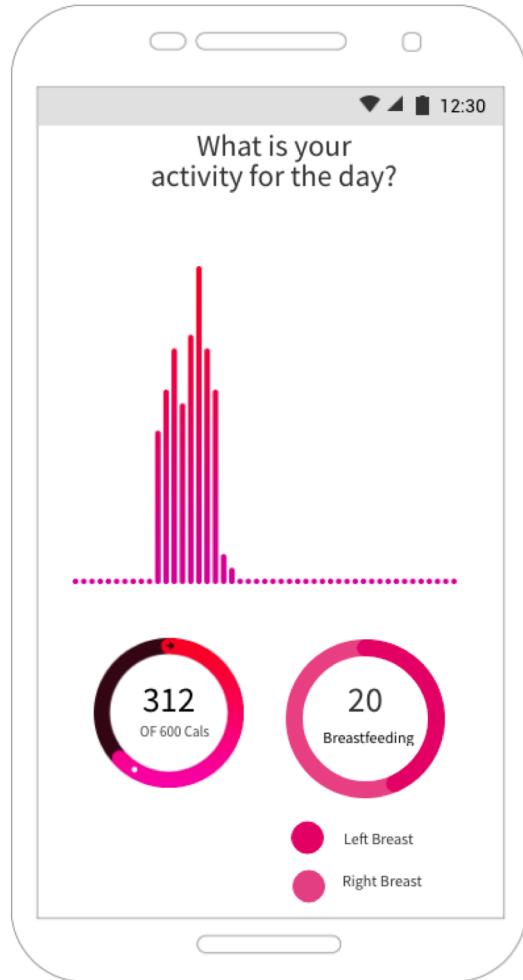
# Behavior Change Techniques (BCTs)

These components of an intervention that are designed to change behavior. They may be used alone or in combination with other BCT's.

Examples of Techniques:

- Instructional Support [4]

# Preliminary BCT Development



# Future Work

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1. Increase users for data collection.
2. Real world data
3. Find a solution to collecting authentic data from mothers during data collection.

# Questions?



# References

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