

# Understanding How Clinical Teams and Parents Will Respond to *BabyNoggin*

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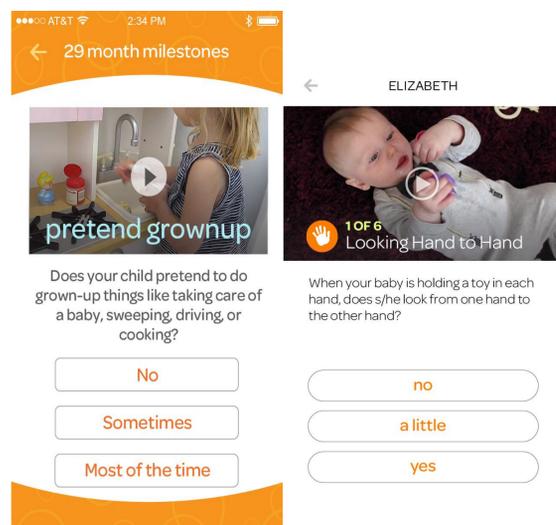
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## BACKGROUND

- Potential of mHealth apps in clinical settings to improve clinic workflow
- *BabyNoggin*: app designed to collect standard developmental screening tools typically collected via paper forms
- Pre-implementation observational phase designed to understand:
  - Clinic workflows prior to incorporating *BabyNoggin*
  - Provider perspectives of integrating *BabyNoggin* into clinic workflows
  - Potential facilitators and barriers of implementing *BabyNoggin* into clinics
  - Parental attitudes towards the use of apps for child development and screening
- Importance of engaging the clinical teams and parents in the study process to increase the potential for successful uptake of *BabyNoggin*

## BABYNOGGIN SCREENSHOTS

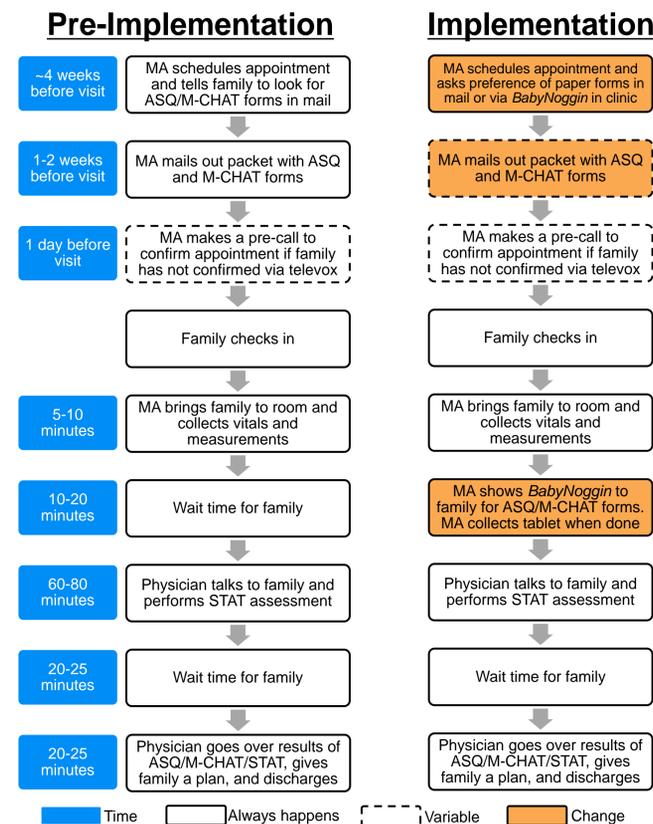


## METHODS

- Pre-implementation clinical observations of workflow in three clinics at Riley Hospital for Children
- Semi-structured interview informed by the Consolidated Framework for Implementation Research (CFIR) with each clinical team
- Parental Attitudes Towards Apps for Child Development and Health survey
  - Parents with children aged 0-5
  - 26-item survey
  - Recruited from study clinics and social media

## RESULTS

### STAT CLINIC IMPLEMENTATION PLAN



### POTENTIAL FACILITATORS AND BARRIERS

	Facilitators	Barriers
<b>Provider</b>	<ol style="list-style-type: none"> <li>1. Automatic Scoring</li> <li>2. No risk of family forgetting paper forms</li> <li>3. More accurate responses due to video demonstrations</li> <li>4. Less time clarifying questions for families</li> <li>5. Can print results directly from app</li> <li>6. Parents more likely to answer all questions on a tablet</li> </ol>	<ol style="list-style-type: none"> <li>1. Technical difficulties</li> <li>2. Surveys not being completed before the patient-provider encounter</li> <li>3. ASQs taking longer due to built-in videos</li> <li>4. Manually putting <i>BabyNoggin</i> data into charts/EMRs</li> <li>5. Logistical issues with follow-up responses after discharge from clinics</li> <li>6. Having to wait for an available tablet</li> <li>7. Financial support to pay for ongoing use of <i>BabyNoggin</i></li> </ol>
<b>Parent</b>	<ol style="list-style-type: none"> <li>1. Helpful 10 second videos built into the ASQs</li> <li>2. Multiple languages available</li> <li>3. Each question read out loud</li> <li>4. Not having to fill out ASQs before visit</li> <li>5. Bigger font on the iPad to read</li> <li>6. Children may be entertained by the videos</li> <li>7. More convenient to fill out (tap instead of paper, pen, and a hard surface)</li> </ol>	<ol style="list-style-type: none"> <li>1. Technical difficulties</li> <li>2. Having to fill out forms both on <i>BabyNoggin</i> and some still via paper intake packet (mostly for STAT clinic)</li> <li>3. ASQs taking longer due to built-in videos</li> <li>4. Unfamiliarity with iPads and app technology</li> <li>5. Child being distracted by iPad and interfering with completion of the forms</li> </ol>

## PARENTAL ATTITUDES TOWARDS APPS

### Demographics: N=250

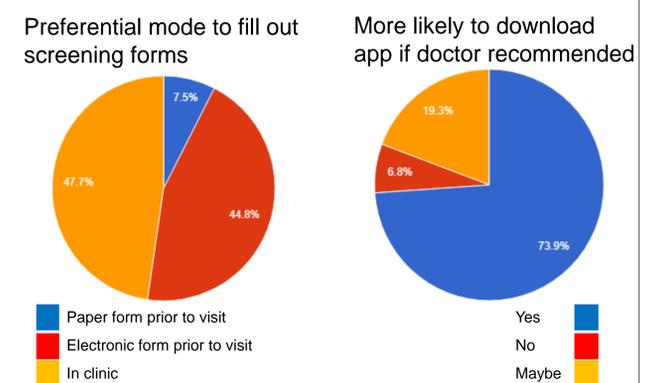
	n (%)
<b>Gender</b>	
Female	239 (96.4%)
<b>Age</b>	
18-21	12 (4.8%)
22-29	96 (38.6%)
30-39	120 (48.2%)
40-49	19 (7.6%)
<b>Race</b>	
White	220 (89.1%)
Black or African American	15 (6.1%)
Native American	5 (2.0%)
Asian	7 (2.8%)
<b>Ethnicity</b>	
Hispanic or Latino	25 (10.0%)

	n (%)
<b>Education</b>	
Did not complete HS	2 (0.8%)
High school	24 (9.6%)
GED	6 (2.4%)
Some college	48 (19.3%)
2-year college	28 (11.2%)
4-year college	76 (30.5%)
Trade school	5 (2.0%)
Graduate school	60 (24.1%)
<b>Marriage</b>	
Married	199 (79.9%)
Divorced	4 (1.6%)
Separated	1 (0.4%)
Never been married	45 (18.1%)

### Current Child Health App Usage

- 66.8% (n=167) of respondents have at least one app related to child health and/or development
- The top reason for downloading child health apps was for a convenient way to track development (62.6%, n=139)
- Top reasons for not downloading apps included uncertainty of which app to download (32.0%, n=47), didn't think about apps for this purpose (29.9%, n=44), and was not willing to pay (25.9%, n=38)

### Opinion on Clinical Use



## CONCLUSIONS

- Provider teams have enthusiasm for implementation of *BabyNoggin* but share concerns about technology and logistics. Proposed workflows for implementation should not increase visit length but will need to be monitored.
- Healthcare providers considering implementation of 3<sup>rd</sup> party apps are encouraged to plan ahead given the need to work closely with data security and HIPAA concerns.

## LIMITATIONS

- Majority of the survey sample was white, female, married, and college educated due to the sampling method

## FUTURE RESEARCH

- Collect responses to Provider Attitudes Towards Apps for Child Health and Development surveys
- Implement *BabyNoggin* into all three clinics
- Conduct clinical observations with *BabyNoggin*
- Do CFIR interviews with clinical teams post-implementation
- Determine facilitators and barriers post-implementation
- Begin *BabyNoggin* phone-app Pilot Study
  - REDCap survey 2 weeks after clinic visit
  - Phone-call interview 4-weeks after clinic visit
- Determine impact of *BabyNoggin* on both parents and providers

## ACKNOWLEDGMENTS

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