Psychosocial influences on sick child care and treatment in Sokoto, Kebbi and Zamfara States

Breakthrough RESEARCH Nigeria
Behavioral Sentinel Surveillance (BSS)
Webinar Series - Key Baseline Results

Panelists:
Dele Abegunde
Chief of Party
Breakthrough RESEARCH

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Deputy Chief of Party
Breakthrough ACTION

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Deputy Chief of Party
Breakthrough RESEARCH
Webinar overview

• About Breakthrough RESEARCH

• What is the Behavioral Sentinel Surveillance (BSS) survey?

• Focus on care-seeking and treatment for sick children
  • How did formative research inform the BSS survey?
  • New ideational metrics
  • Key BSS findings
  • SBC program implications

• Future work
About Breakthrough RESEARCH
USAID’s flagship project for social and behavior change (SBC) research and evaluation

• Five-year project: August 2017 to July 2022

• B-R Nigeria activity start: January 2019
  B-R Nigeria office opened: September 2019

• Close collaboration with sister project Breakthrough ACTION and other IPs
Breakthrough ACTION in Nigeria

Overall Result

• Increase 17 priority health behaviors in the areas of maternal, newborn, and child health plus nutrition (MNCH+N), family planning and malaria

Intermediate Results

• Improved individual and social determinants of health
• Strengthened SBC coordination and collaboration among USG partners
• Strengthened SBC capacity of national and sub-national public sector entities
Priority Behaviors for Integrated SBC

Milestones

**Pre-pregnancy**
- Use a modern contraceptive method, including long-acting reversible contraceptives (LARCs), to avoid pregnancy for at least 24 months after a live birth

**Pregnancy**
- Attend a complete course of ANC
- Take intermittent preventive treatment of malaria (IPTp) during ANC visits

**Childbirth**
- Attend a health facility for delivery and/or deliver with a skilled attendant
- Provide essential newborn care immediately after birth
- Initiate exclusive breastfeeding within 1 hour after delivery

**First 6 months**
- Breastfeed exclusively for six months after birth

**6 - 24 months**
- Feed adequate amounts of nutritious, age appropriate foods to children from 6 to 24 months of age, while continuing to breastfeed
- Complete full course of timely vaccinations for infants and children under 2 years
- Caregivers provide appropriate treatment for children with diarrhea at onset of symptoms
- Seek prompt and appropriate care for signs and symptoms of malaria
- Accept and adhere to the full course of seasonal malaria chemotherapy for eligible children

**2 - 5 years**
Coordinated Multi-Channel Approach

- Community Mobilization
  - Community Social Behavior Change (SBC)
  - Community Capacity and Sustainability
- Mass Media
- Mobile/Digital
- Advocacy: Religious, Traditional and Opinion Leaders
- Provider Behavior Change
Breakthrough ACTION implements SBC programs in 11 States and FCT.

Breakthrough RESEARCH will implement the study in Kebbi and Sokoto (integrated) and Zamfara (malaria-only).
What is the Behavioral Sentinel Surveillance (BSS) Survey?
What does the BSS measure?

- Aims to assess the effectiveness of integrated vs. malaria-only SBC on malaria, family planning and MNCH+N behaviors and ideations among pregnant women and women with a child under 2 years in program areas

- BSS measures priority behavioral outcomes including:
  
  *Malaria* (LLIN use, IPTp, fever treatment/diagnosis); *family planning* (modern contraceptive use, postpartum family planning); *MNCH+N* (ANC, facility-based delivery, newborn and postpartum care, routine immunization, breastfeeding/nutrition, childhood illness care-seeking and treatment)

- BSS measures psychosocial influences or ideations – cognitive, emotional, social – theorized as intermediate determinants of behavioral outcomes
Kincaid’s Theory of Strategic Communication and Behavior Change
<table>
<thead>
<tr>
<th><strong>BSS design</strong></th>
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<tbody>
<tr>
<td><strong>Study population</strong></td>
</tr>
</tbody>
</table>
| **Study design** | Cross-sectional and cohort components  
Quasi-experimental and dose-response designs  
Conducted in September 2019, midline and endline planned |
| **Sample size** | 3,032 pregnant women  
3,043 women with a child under 2 years |
| **Sampling method** | 108 wards across three states; census of pregnant women and random selection of women with children under 2 years |
| **Data analysis** | Predicted probabilities of outcomes were derived using mixed-effects logistic regression models adjusted for ideational and sociodemographic variables: wealth, age, education and employment (respondent and spouse) |
Highlights

- Describes theory, rationale and study methods
- Summarizes results for ~500 questions by state (Kebbi, Sokoto and Zamfara)
- Estimates standard DHS indicators by state across malaria, family planning and MNCH+N
- Presents new ideational metrics by state across malaria, family planning and MNCH+N

Sick Child Care and Treatment: Formative work and literature reviews
How did formative research inform the BSS?

• Breakthrough ACTION conducted formative research and literature reviews to inform SBC programs in Nigeria

• Breakthrough RESEARCH used this work to inform BSS ideational questions:
  • Low rates of formal care-seeking and appropriate treatment of sick children
  • Factors associated with not seeking care or poor treatment practices: healthcare costs, facility distance, negative views of health services, low awareness of common pediatric illnesses (e.g., pneumonia, diarrhea)
  • Gender dynamics and socio-cultural norms may pose barriers including restrictions in women’s movements and a need for spousal permission for activities
Sick Child Care and Treatment: New ideational metrics
Innovative MNCH+N ideational metrics

• Limited ideational research for MNCH+N in contrast to FP and malaria

• Need to develop new MNCH+N ideational questions for BSS using theory-based design and by adapting questions from other settings or health areas

• Previous malaria ideational research in Nigeria and elsewhere, but limited studies related to pneumonia and diarrhea

• BSS ideational questions were reviewed by B-A, USAID, and other experts

• BSS asked a limited set of ideational questions within each health area
# Malaria ideational metrics

Applied previous malaria ideational research from northwestern Nigeria

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Domain</th>
<th>Likert-scale statement or question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Knowledge</td>
<td>What do you think causes malaria?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What are some things people can do to stop them from getting malaria?</td>
</tr>
<tr>
<td></td>
<td>Beliefs about malaria</td>
<td>A blood test for malaria is the only way to know if someone really has malaria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Even if the malaria test is negative, I always worry that it may still be malaria</td>
</tr>
<tr>
<td></td>
<td></td>
<td>When a child develops fever, it is almost always caused by malaria</td>
</tr>
<tr>
<td></td>
<td>Beliefs about health services</td>
<td>A health provider is the best person to talk to when a child is sick</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health facilities in my community frequently have the treatments that are needed to treat a sick child</td>
</tr>
<tr>
<td>Emotional</td>
<td>Self-efficacy</td>
<td>How confident are you that you could convince your husband/partner to let you seek advice or treatment for a sick child?</td>
</tr>
<tr>
<td>Social</td>
<td>Social influence</td>
<td>Besides yourself, who else may influence your decision about whether to seek advice or treatment for a sick child?</td>
</tr>
<tr>
<td>Intentions</td>
<td>Intentions</td>
<td>How likely is it that you would seek care the same day or next day if your child developed [insert symptoms]?</td>
</tr>
</tbody>
</table>

Main references:

## Diarrhea ideational metrics

Applied previous diarrhea ideational research from Zambia and theory-based design

<table>
<thead>
<tr>
<th>Dimension</th>
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<th>Likert-scale statement or question</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>What medicines are effective to treat diarrhea?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>In your opinion, how does ORS [zinc] help a child with diarrhea</td>
<td></td>
</tr>
<tr>
<td></td>
<td>I know how to prepare ORS</td>
<td></td>
</tr>
<tr>
<td>Beliefs about diarrhea</td>
<td>In young children, diarrhea can lead to dehydration and even death</td>
<td></td>
</tr>
<tr>
<td></td>
<td>It is very common for children to get diarrhea in my community</td>
<td></td>
</tr>
<tr>
<td>Beliefs about health services</td>
<td>A health provider is the best person to talk to when a child is sick</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Health facilities in my community frequently have the treatments that are needed to treat a sick child</td>
<td></td>
</tr>
<tr>
<td><strong>Emotional</strong></td>
<td></td>
<td></td>
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<tr>
<td>Self-efficacy</td>
<td>How confident are you that you could convince your husband/partner to let you seek advice or treatment for a sick child?</td>
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<td><strong>Social</strong></td>
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<td></td>
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<tr>
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<tr>
<td><strong>Intentions</strong></td>
<td></td>
<td></td>
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<tr>
<td>Intentions</td>
<td>How likely is it that you would seek care the same day or next day if your child developed [insert symptoms]?</td>
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Main references:
Pneumonia ideational metrics

No previous pneumonia ideational research; used theory-based design

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Domain</th>
<th>Likert-scale statement or question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Knowledge</td>
<td>What medicines are effective in treating a child with pneumonia?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>What are the signs and symptoms of pneumonia?</td>
</tr>
<tr>
<td></td>
<td>Beliefs about pneumonia</td>
<td>Young children can get severely ill from pneumonia, they could be hospitalized or even die</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Only weak children die from pneumonia</td>
</tr>
<tr>
<td></td>
<td>Beliefs about health services</td>
<td>A health provider is the best person to talk to when a child is sick</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Health facilities in my community frequently have the treatments that are needed to treat a sick child</td>
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<tr>
<td>Emotional</td>
<td>Self-efficacy</td>
<td>How confident are you that you could convince your husband/partner to let you seek advice or treatment for a sick child?</td>
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<td>Besides yourself, who else may influence your decision about whether to seek advice or treatment for a sick child?</td>
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<tr>
<td>Intentions</td>
<td>Intentions</td>
<td>How likely is it that you would seek care the same day or next day if your child developed [insert symptoms]?</td>
</tr>
</tbody>
</table>

Main references: Not applicable
Pneumonia-related ideations, care-seeking, and treatment behaviors among children under 2 years with pneumonia symptoms in northwestern Nigeria

Udochisom Anaba MPH1,2, Paul L. Hutchinson PhD1,2, Dele Abegunde MD1,3, Emily White Johansson PhD1,2

Abstract

Background: Prompt treatment of pediatric pneumonia symptoms is a cornerstone of child survival programs but remains a challenge in Nigeria. Psychosocial influences, or ideations, directly influence pathways to care but have not been previously measured or examined for pediatric pneumonia.

Methods: A two-stage cluster-sample cross-sectional population-based survey was

Pediatric Pulmonology

Special issue: “Pediatric Pneumonia in Nigeria”

Launched at Global Forum for Childhood Pneumonia with FMoH in January 2020
Sick Child Care and Treatment:
Key findings
Key findings by SBC program priorities

1. Behavioral patterns
   How frequently do respondents practice the promoted health behaviors? What are the key behavioral patterns by geography or sociodemographic characteristics?

2. Knowledge and Beliefs
   Are respondents aware of promoted health behaviors, e.g. how to prevent disease? Are certain beliefs held by respondents that could impede progress?

3. Barriers
   How do respondents view health services in their communities? What are the main reasons for choosing certain treatment locations or for not using services at all?

4. Social Influence and Decision-Making
   How do health decisions get made in households? Who mainly influences women’s healthcare practices?

5. Ideational Relationships
   How important are the individual components of behavioral change frameworks? What ideations should SBC programs target to maximize impact?
I. Behavioral patterns
Percent of children under 2 years with diarrhea, fever or respiratory symptoms taken to formal medical care, diagnosed or treated for the symptom complaint.
## ORS & zinc among under-2s with diarrhea

### Last-born children under 2 years with diarrhea in the past 2 weeks given ORS and zinc for treatment

<table>
<thead>
<tr>
<th></th>
<th>Kebbi</th>
<th>Sokoto</th>
<th>Malaria-Only (Zamfara)</th>
<th>Integrated (Kebbi/Sokoto)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>16.1</td>
<td>137</td>
<td>11.5</td>
<td>206</td>
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<tr>
<td></td>
<td>27.1</td>
<td>170</td>
<td>13.3</td>
<td>364</td>
</tr>
<tr>
<td><strong>Household wealth quintile</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lowest</td>
<td>32.2</td>
<td>38</td>
<td>12.6</td>
<td>67</td>
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<tr>
<td></td>
<td>8.2</td>
<td>31</td>
<td>4.6</td>
<td>75</td>
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<tr>
<td>Highest</td>
<td>(..)</td>
<td>32</td>
<td>(..)</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>33.9</td>
<td>56</td>
<td>15.5</td>
<td>59</td>
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<tr>
<td><strong>Maternal education, highest level attended</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>17.5</td>
<td>104</td>
<td>7.4</td>
<td>171</td>
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<tr>
<td></td>
<td>2.5</td>
<td>110</td>
<td>10.8</td>
<td>295</td>
</tr>
<tr>
<td>Secondary or higher</td>
<td>(..)</td>
<td>16</td>
<td>(..)</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>(..)</td>
<td>27</td>
<td>(..)</td>
<td>30</td>
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</table>
## Malaria testing among under-2s with fever

<table>
<thead>
<tr>
<th>Last-born children under 2 years with fever in past 2 weeks who were tested for malaria</th>
<th>Kebbi</th>
<th>Sokoto</th>
<th>Malaria-Only (Zamfara)</th>
<th>Integrated (Kebbi/Sokoto)</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>22.8</td>
<td>200</td>
<td>16.8</td>
<td>285</td>
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<tr>
<td><strong>Household wealth quintile</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lowest</td>
<td>14.9</td>
<td>48</td>
<td>10.1</td>
<td>81</td>
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<tr>
<td>Highest</td>
<td>22.5</td>
<td>42</td>
<td>26.5</td>
<td>38</td>
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<tr>
<td><strong>Maternal education, highest level attended</strong></td>
<td></td>
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<tr>
<td>None</td>
<td>19.0</td>
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<td>Secondary or higher</td>
<td>(..)</td>
<td>20</td>
<td>(..)</td>
<td>10</td>
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</tbody>
</table>
2. Knowledge and Beliefs
While nearly all respondents knew mosquito bites cause malaria and sleeping under nets helps to prevent malaria …

43% had never heard of or didn’t know how zinc helps for diarrhea

Only 31% knew antibiotics were an effective pneumonia treatment

Only 28% knew rapid or difficult breathing is a sign of pneumonia
61% agreed they always worry it may still be malaria even if the blood test is negative.

Nearly one-third (31%) strongly agreed indicating a firmly held misperception about malaria testing.

Even if the blood test is negative, I always worry that it may still be malaria.
3. Barriers
Among women who did not seek any care for their sick child...

One-third cited healthcare costs as a main reason for not doing so

Fatalism ("Up to God") and non-severe symptoms were other main reasons

Spousal opposition was not a key barrier unlike other health areas

<table>
<thead>
<tr>
<th></th>
<th>Diarrhea</th>
<th>Respiratory symptoms</th>
<th>Fever</th>
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</thead>
<tbody>
<tr>
<td>Too expensive</td>
<td>31.5</td>
<td>32.5</td>
<td>31.1</td>
</tr>
<tr>
<td>Fatalism (&quot;Up to God&quot;)</td>
<td>28.9</td>
<td>14.6</td>
<td>33.2</td>
</tr>
<tr>
<td>Non-severe symptoms / provided home care</td>
<td>24.8</td>
<td>25.4</td>
<td>20.7</td>
</tr>
<tr>
<td>Spousal opposition</td>
<td>2.7</td>
<td>9.9</td>
<td>10.0</td>
</tr>
<tr>
<td>Facility distance</td>
<td>5.5</td>
<td>1.0</td>
<td>3.3</td>
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<tr>
<td>Facility closed</td>
<td>2.9</td>
<td>8.7</td>
<td>0.6</td>
</tr>
</tbody>
</table>
Different reasons for treatment location choice

Provider trust, nearby location and perceived treatment effectiveness were common reasons for choosing the treatment location.

Women who attended pharmacies more commonly cited short wait time, nearby location and low cost than those attending government hospitals and PHCs who instead cited provider trust, effective treatment and respectful care.
Different reasons for treatment location choice

Provider trust, nearby location and perceived treatment effectiveness were common reasons for choosing the treatment location.

Women who attended pharmacies more commonly cited short wait time, nearby location and low cost than those attending government hospitals and PHCs who instead cited provider trust, effective treatment and respectful care.
Different reasons for treatment location choice

Provider trust, nearby location and perceived treatment effectiveness were common reasons for choosing the treatment location.

Women who attended pharmacies more commonly cited short wait time, nearby location and low cost than those attending government hospitals and PHCs who instead cited provider trust, effective treatment and respectful care.
4. Social influence and decision-making
Spouses are common influencers of decisions...

Most respondents (81%) cite spouses as main influencers of decisions to seek care for a sick child...

Yet regression analyses show that spousal influence is not significantly associated with sick child care-seeking, diagnosis or treatment behaviors.

Besides yourself, who else may influence your decision to seek care for a sick child?
5. Ideational Relationships
Health services views matter for care-seeking...

Women who believed a health provider is the best person to talk to for a sick child were 2.2x and 1.9x as likely to take a child with diarrhea or fever to formal care.

Women who believed health facilities often have medicines needed for sick children were 1.9x and 1.3x as likely to take a child with respiratory symptoms or fever to formal care.

Differences in likelihood are statistically significant at <0.05 level in mixed-effects logistic regression analysis adjusted for ideational and sociodemographic variables, e.g. wealth, age, employment and education (respondent and spouse).
Women who believed a health provider is the best person to talk to for a sick child were **2.5x** as likely to give ORS and zinc for diarrhea.

Women who cited health providers as influencing decisions to seek care for a sick child were **3.0x** as likely to give ORS and zinc for diarrhea.

Women who believed health facilities often have medicines needed for sick children were **1.6x** as likely to get a febrile child tested for malaria.

Differences in likelihood are statistically significant at <0.05 level in mixed-effects logistic regression analysis adjusted for ideational and sociodemographic variables, e.g. wealth, age, employment and education (respondent and spouse).
Pneumonia and diarrhea knowledge is key …

Women who know how to prepare ORS and know ORS/zinc are effective diarrhea treatments were 2.2x and 6.2x as likely to give ORS/zinc for diarrhea.

Women who know antibiotics are effective pneumonia treatments were 1.4x and 1.3x as likely to seek formal care or give antibiotics for respiratory symptoms.

Differences in likelihood are statistically significant at <0.05 level in mixed-effects logistic regression analysis adjusted for ideational and sociodemographic variables, e.g. wealth, age, employment and education (respondent and spouse).
Pneumonia beliefs may also hold back progress...

Women who believe young children can get severely ill with pneumonia were 1.7x as likely to seek formal care for respiratory symptoms.

Women who believe only weak children die from pneumonia were 50% less likely to give antibiotics for respiratory symptoms.

Differences in likelihood are statistically significant at <0.05 level in mixed-effects logistic regression analysis adjusted for ideational and sociodemographic variables, e.g. wealth, age, employment and education (respondent and spouse).
Malaria beliefs, self-efficacy to promote testing

Women who felt confident they could convince their husband to seek sick child care were $3.6\times$ as likely to have a febrile child tested for malaria.

Women who believed blood tests were the only way to know if a person has malaria were $2.4\times$ as likely to have a febrile child tested for malaria.

Differences in likelihood are statistically significant at <0.05 level in mixed-effects logistic regression analysis adjusted for ideational and sociodemographic variables, e.g. wealth, age, employment and education (respondent and spouse).
Program Implications
Low formal care-seeking, diagnosis and treatment for sick children

- About one-third of children with symptoms were taken to a formal medical source
- Only 1 in 5 were given ORS and zinc for diarrhea, or given a malaria test for fever

Importance of health services quality to improve outcomes

- Focus on perceived (actual) health services quality to improve sick child outcomes
- SBC programs could tailor messaging to emphasize women’s desires in locations
  - Women attending pharmacies more commonly cited short wait time, nearby location and lower cost
  - Women attending government hospitals or PHCs cited provider trust, effective treatment and respectful care
- Healthcare costs were main reason for not seeking care, or for choosing pharmacies
Program implications

Focus on raising awareness about pneumonia and diarrhea

- While malaria knowledge was high, pneumonia and diarrhea knowledge was low
- SBC programs need to raise awareness about pneumonia and diarrhea prevention and treatment methods in order to improve outcomes

Dispel beliefs about pneumonia severity and malaria diagnostics

- SBC programs could reinforce messages about pneumonia severity in young children to improve care-seeking and treatment rates
- Doubts about malaria test accuracy are strongly held and may reduce testing rates
- Need further research to decide how best to tailor SBC messaging to dispel misperceptions about malaria tests including who holds these doubts and why
What’s next?
Next steps

• Conduct BSS analyses to inform SBC program adaption and scale-up
• Prepare manuscripts and research briefs to disseminate results
• Plan the BSS midline survey (although delays due to COVID19)
• Present BSS results by specific health area in our webinar series
# Future webinar events

<table>
<thead>
<tr>
<th>Webinar Topic</th>
<th>Date</th>
</tr>
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<tbody>
<tr>
<td>Global webinar – BSS results overview</td>
<td>June 11</td>
</tr>
<tr>
<td>National webinar – BSS results overview</td>
<td>June 25</td>
</tr>
<tr>
<td>Pregnancy and childbirth</td>
<td>July 23</td>
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<tr>
<td>Breastfeeding</td>
<td>August 6</td>
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<td>Vaccination</td>
<td>August 20</td>
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<tr>
<td>Sick child care-seeking and treatment</td>
<td>Sept 3</td>
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<tr>
<td>Malaria</td>
<td>Sept 17</td>
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<tr>
<td>Family planning</td>
<td>Sept 30</td>
</tr>
<tr>
<td>Inequalities</td>
<td>Oct 7</td>
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</table>
Future work and significance

• BSS baseline results are a first step for assessing the effectiveness and cost-benefit of integrated versus malaria-only SBC programs in Nigeria

• Highlight ideations and behaviors during this baseline period to inform SBC program scale-up and adaption

• Present new ideational metrics across MNCH+N areas and quantify their relationship with behavioral outcomes to test behavioral change theories

• Link BSS results with routine program data or health facility records to examine impact of supply- and demand-side factors on service use
Project Team

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Elizabeth Omoluabi, CRERD
Akanni Akenyemi, CRERD
Dele Abegunde, BR Nigeria/Population Council
Dominique Meekers, Tulane University
Udochisom Anaba, BR Nigeria/Tulane
Stella Babalola, Johns Hopkins University

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Breakthrough RESEARCH catalyzes social and behavior change (SBC) by conducting state-of-the-art research and evaluation and promoting evidence-based solutions to improve health and development programs around the world. Breakthrough RESEARCH is a consortium led by the Population Council in partnership with Avenir Health, ideas42, Institute for Reproductive Health at Georgetown University, Population Reference Bureau, and Tulane University.

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