Breakthrough ACTION

SBC Flow Chart: Jamaica Spotlight

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Breakthrough ACTION
FOR SOCIAL & BEHAVIOR CHANGE

RESEARCH QUESTIONS

*How might we improve **water storage** in urban/peri-urban areas of Jamaica with inconsistent access to piped water to reduce* **Aedes aegypti** ***breeding sites?***

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BACKGROUND AND CHALLENGE

Catalyst

The Zika virus is primarily transmitted by the vector *Aedes aegypti*. This mosquito particularly thrives in urban and peri-urban areas where rapid population growth has not always been accompanied by the necessary infrastructure expansion, such as piped water. As a result, residents in urban and peri-urban areas often store water in various containers to supplement their water supply and inadvertently create breeding sites for the *Aedes aegypti* mosquito.

Challenge

Forty-five and fifty-five-gallon drums are one of the primary breeding sites for *Aedes aegypti* mosquitoes in Jamaica. One often promoted solution is covering these water storage containers. Challenges in drum cover design and usage, however, prevent their proper implementation. Drums covers are often missing, unused, or used for other purposes. Not all drum covers are designed to effectively seal water drums, and in many cases, households prefer to keep their drums uncovered to catch and store rainwater.

Objective

The objectives of the activity were to use the SBC Flow Chart to

1. Establish a shared vision for the activity's intent, a common understanding of challenges and opportunities, and a shared vision of success.
2. Obtain a deep understanding of the environmental, structural, social, and behavioral barriers and facilitators to changing behavior related to improved water storage.
3. Prototype and test potential solutions to the design challenge and make recommendations for the way forward.

METHODS

Jamaica's use of the SBC Flow Chart involved creating a diverse, multi-disciplinary Expert Advisory Committee (EAC) to solicit a wide range of expertise and ideas. Members of the EAC participated at key points in the process. Jamaica's SBC Flow Chart application also allowed for the creation of structural solutions. This project was designed to stop at the Design & Test Phase, after which the Ministry of Health and Wellness (MOHW) would carry promising solutions forward.

Literature Review

The team reviewed existing data related to the environmental, structural, social, and behavioral challenges associated with water storage practices and the resultant *A. aegypti* breeding sites.

Stakeholder Interviews

Informal interviews with the MOHW and USAID implementing partners Zika AIRS Project (ZAP) and Jamaica Red Cross (JRC) helped identify context-specific barriers and data gaps. Partners provided recommendations for the research methodology, including key audiences and geographic areas of focus.

Intent Workshop

MOHW departments at the national and regional level (Health Promotion and Protection, Health Education, Environmental Health, Vector Control) and representatives from the National Water Commission, ZAP, and JRC participated in a one-day intent workshop.

Discovery Research

Breakthrough ACTION recruited and trained nine researchers to conduct informal, semi-structured interviews in five urban/peri-urban communities around Kingston. 84 research participants were interviewed in nine locations from four user segments.

Insights Harvesting and Validation

Breakthrough ACTION facilitated a two-day Insights Harvesting workshop to synthesize the raw findings into meaningful and actionable opportunities for intervention. Outputs included ten insights and six personas/journey maps.

Imagine and Prototyping Workshop

A three-day Imagine Workshop used "How might we?" questions and design prompts to elicit a range of possible solutions. The initial set of raw ideas was clustered into seven broad themes: Lids, Larvicide, Container Infrastructure, Community Infrastructure, Calls to Action, Identification, and Government Intervention. Small groups built tangible prototypes to physically take to communities to test.

Testing and Iterating

The research team tested the prototypes in areas with inconsistent access to piped water, conducting one full iteration of the Design and Test cycle per day for prototypes to be built and tested rapidly. This process allowed ideas to be discontinued, refined, and/or improved in a very short time frame.

Recommendations and Ministry Handover

After synthesizing the results, the team presented its findings and final recommendations on discontinuation, continued testing, and/or implementation of each prototype. This information was compiled into a "manager pack" for each intervention and given to the MOHW for further inquiry.

KEY INSIGHTS

1

Perceptions of mosquito life cycle and breeding sites

People's understanding of the life cycle of the mosquito is limited, which makes it difficult for them to manage all the various locations and times around the home where mosquito breeding might occur.

2

Perceptions of mosquito-borne diseases

Community members' knowledge of Zika, how it is transmitted, and the perceived risk of exposure are limited, and belief that mosquito-borne diseases are man-made is widespread.

3

Prevention Practices

Recommendations about mosquito prevention practices are many and varied; individuals find identifying and consistently using appropriate prevention methods difficult.

4

Water storage containers

Water is stored in many different types of containers, in various locations around the home, and used for many purposes. Larger tanks are preferred in most situations; however, the use of tanks is limited by cost and space availability.

5

Covers and lids for water containers

People cover their water containers with whatever they have on hand to keep mosquitoes and other things out; however, reducing the spread of disease is not an influencing factor on covering.

6

Water systems and access to supply

The national water supply generally meets high quality standards, but not everyone has consistent access to that supply. Even when they do have access, they practice many different treatment methods because they either don't like the taste or don't trust the water they get.

7

Social norms, motivation, and behavior

Most people are concerned about their own health, but social norms around privacy and reluctance to share information with others have an impact on the health of the community as a whole.

8

Challenges in providing health information and education

Health personnel may have difficulty gaining access to homes to conduct health promotion activities, and communities lack confidence in the information they receive from available sources.

9

Government involvement and intervention

Community leaders and health workers are committed and passionate about change, but lack of community cohesion makes it difficult to achieve sustainable change.

10

Partnerships and collaboration

There are numerous organizations in both the private and public sector with different roles, responsibilities, expertise, and resources active in water management and vector control, but they don't work together to effectively prevent mosquito-borne diseases.

Insight: Covers and lids for water containers

People cover their water containers with whatever they have on hand to keep mosquitoes and other things out; however, reducing the spread of disease is not an influencing factor on covering

People almost always try to cover their water storage containers to keep things out of their water, particularly leaves, bugs, snails, lizards, and mosquitoes. Parents with young children were concerned about covering for safety reasons and to stop kids from putting items into the containers. People's desire to have fewer mosquitoes around their homes was due to reduced biting, not reducing disease risk.

Reusable lids that create an air-tight seal are not always sold or sourced with the 45/55-gallon drums. Lids that come with the drum, either those made for a drum or leftover lids provided by a reseller, often collect small amounts of water and create secondary breeding sites for *Aedes*.

Most people prioritized their "best" covers for drinking water to ensure it is clean and free from algae, mosquito larvae, and other organisms. Containers for all other water uses, e.g., gardens, cleaning and flushing toilets, were often covered with any materials that could be found around the house, including metal drum lids, corrugated iron, plastic, or tarps, which keep out larger objects, but were usually not effective against mosquitoes.

"

You only need to cover drinking water.

If this water was for drinking, I would get a better cover.

My water is covered because my kids put things in it.

Water for domestic purpose is left open sometimes.

Those ones don't come with a proper cover; you can use a metal one.

How might we eliminate the need for lids altogether?

Insight: Prevention practices

Recommendations about mosquito prevention practices are many and varied; individuals have difficulty identifying and consistently using appropriate prevention methods

People know many of the behaviors promoted by the MOHW to prevent mosquitoes, but they are not usually practiced in an efficacious manner. Messages are vague and provide little to no information on what constitutes, for instance, a properly-covered container, or why practicing the behavior is important for the prevention of mosquito breeding and disease transmission.

In most cases, people are motivated to prevent mosquito presence in and around their homes due to nuisance rather than disease transmission. As a result, they rely on techniques like ceiling fans, cutting grass, and using oil in water, to varying degrees of success. The mosquitoes that people notice most do not appear to be *A. aegypti*.

Individuals frequently mentioned mosquitoes that appear at dusk and into the night and referred to seeing large black mosquitoes; they noted that they close their windows and doors in the evening to keep them out. As a result, their mosquito prevention methods do not necessarily prevent *Aedes*-borne transmission.

> *We have ceiling fan so we don't really feel them.*
>
> *Keeping the yard clean and grass cut helps stop mosquitoes.*
>
> *Using oil [to prevent mosquitoes] is not safe enough.*
>
> *Repellent don't kill mosquitoes.*

How might we capitalize on nuisance and other non-health reasons for reducing mosquitoes?

PRIORITIZED SOLUTIONS

Snapper Locker Lid

A specially designed hinged mesh lid that allows easy access to water and multiple methods of water collection.

Bansquito

A spatial repellent designed to hang from the side of a drum and repel mosquitoes for up to three months.

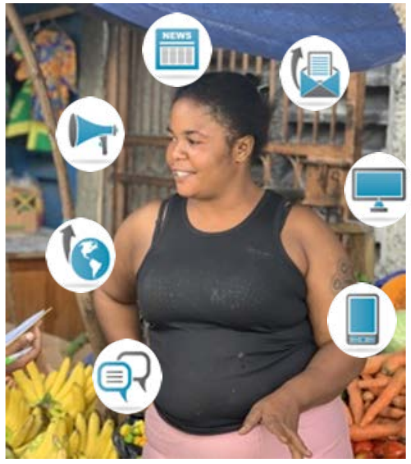
Natty Ban

A waterproof adhesive strip lined with larvicide (Natular) placed on the inside of a drum; provides a safe and continuous dose for up to three months.

Vector Control Workflow

A re-designed workflow for MOH Vector Control workers (VCW) that incorporates behavior change in a consistent and standardized way to take advantage of face-to-face dialogues between VCW and householders.

SBCC Campaign



A Jamaica-wide campaign to improve collective understanding of mosquito-borne disease and how to avoid it. Inspires preventive action and creates long-lasting changes to social norms.

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