



Behavior change to prevent arboviral disease

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Behavior change matters...
because it has to do with
implementation of novel and
evidence-based strategies in
diverse...

- Epidemiologic contexts
- Geographic contexts
- Cultural contexts
- **ONE SIZE DOES NOT FIT ALL!**

What works?

Theories of Behavior Change

- Health belief model, Transtheoretical model
- Capability + Opportunity + Motivation → Behavior change

Community Interventions for Arboviral Disease Prevention/Control

- COMBI (strategy) to mobilize communities for dengue prevention
- Singapore - banner to intensify behaviors, fines for not complying
- Camino Verde - uniquely demonstrated effectiveness of community engagement

What works?

Theories of Behavior Change

- Knowledge → Attitude/Perception/Intention → Behavior change?
- Capability + Opportunity + Motivation → Behavior change?

We don't need more RCTs for behavior change – we need to fund studies focusing on implementation, and evaluation over time.

- COMBI? (strategy)
- Camino Verde?

Implementation Science perspective:

context matters

different levels and stakeholders matter

processes matter

Consolidated Framework for Implementation Research (CFIR) 2.0



Figure adapted by The Center for Implementation

Damschroder, L.J., Reardon, C.M., Widerquist, M.A.O. et al. The updated Consolidated Framework for Implementation Research based on user feedback. *Implementation Sci* 17, 75 (2022). <https://doi.org/10.1186/s13012-022-01245-0>

The WHAT (Innovation)

- Source
- Evidence-Base
- Relative Advantage
- Adaptability
- Trialability
- Complexity
- Design
- Cost

Most of our arboviral disease prevention and control trials...

test and generate evidence of “the WHAT” - the intervention (and much is focused on vector control)

* Outer Setting

Critical incidents

Values and beliefs

Systemic conditions

Policies and laws

- Partnerships and connections

- Financing

- External pressure

Policies and laws

- Role of WHO and international guidance, expert groups → recommendations
- How does evidence get integrated?
By whom?

Political and health authorities

- Turnover
- Scapegoats

* Outer Setting

Critical incidents

Values and beliefs

Systemic conditions

Policies and laws

- Partnerships and connections

- Financing

- External pressure

Policies and laws

- How does evidence get integrated?
- Role of WHO and international guidance

Political and health authorities

- Are systematic reviews or Cochrane reviews sufficient to guide policy makers in making decisions?
- Are Expert Group recommendations sufficient to generate change?

- Who decides?

* Outer Setting

Critical incidents

Values and beliefs

Systemic conditions

Policies and laws

- Partnerships and connections

- Financing

- External pressure

Policies and laws

- How does evidence get integrated?
- Role of WHO and international guidance, expert groups

Political and health authorities

- Turnover

News

Peru's health minister resigns as country reels from worst dengue outbreak in history

BMJ 2023 ; 381 doi: <https://doi.org/10.1136/bmj.p1431> (Published 21 June 2023)

Cite this as: *BMJ* 2023;381:p1431

- Who decides?



Inner Setting

- Structural characteristics
- Relational connections
- Communications
- Culture
- Tension for change
- Compatibility
- Relative priority
- Incentive systems
- Mission alignment
- Available resources
- Access to knowledge about the Innovation



Decisions may be set at national level

- Who adapts evidence to context?
 - What is their capability, opportunity, motivation?
 - Whose guidance do they receive?
 - What additional resources?
 - Relative priority?
 - Readiness for change?
 - Conflicts of interest?
- Who engages with community perception/ reaction about actions?

🕒 JANUARY 31, 2015

GMO mosquito plan sparks outcry in Florida



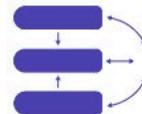
Individuals

Roles

- High-level leaders
- Mid-level leaders
- Opinion leaders
- Innovation recipients
- Implementation facilitators
- Implementation leads
- Innovation deliverers
- Innovation beneficiaries
- Implementation team members
- Other implementation support

Barriers and Facilitators

- Need
- Capability
- Opportunity
- Motivation



Community or individual level

- What behavior change is realistic day-after-day?
- “Fatalism” in endemic areas
- Expectations of govt vs. individual responsibility

COVID-19 LOCKDOWN TRAFFIC LIGHT SYSTEM

RED

- No social contact with anyone outside your household
- Hospitality and leisure businesses to close
- Amateur sports and hobbies banned

AMBER

- No social contact in private homes outside your bubbles
- Avoid visiting care homes
- Only make essential journeys

GREEN

- 'Rule of six' for gatherings
- Face masks in shops and pubs and on transport
- 10pm curfew on hospitality

The “HOW” (who, what, where, when...)

- Adaptation to context
- Pre-implementation preparation
- Data streams and information
- Monitoring and evaluation

Implementation Process

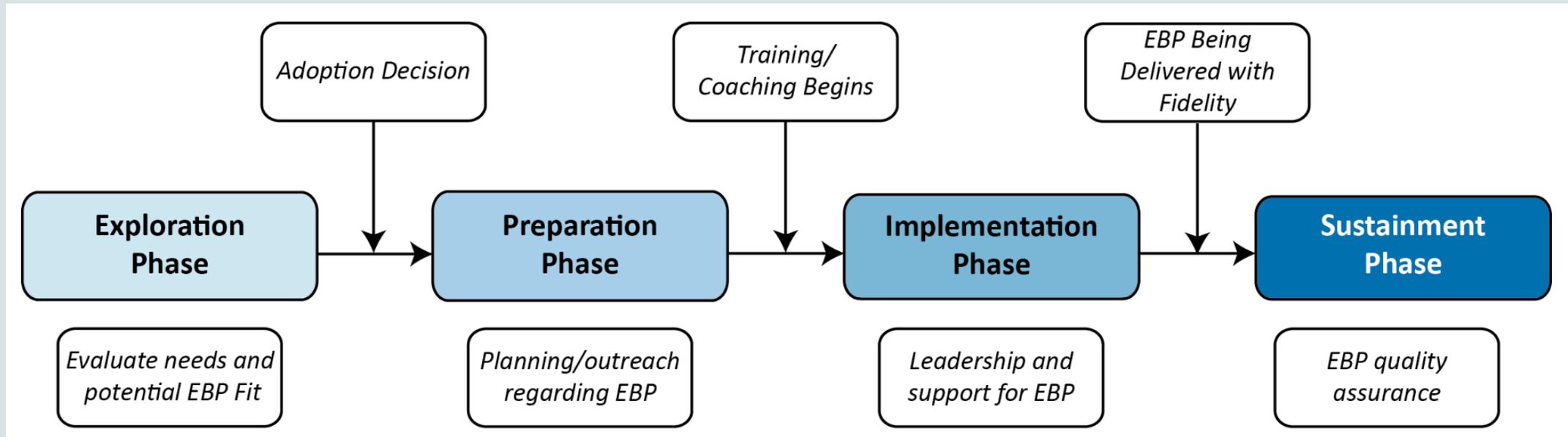
- Teaming
- Assessing Needs
- Assessing Context
- Planning
- Tailoring Strategies
- Engaging
- Doing
- Reflecting & Evaluating
- Adapting



- Whose responsibility is it to plan, adapt, and implement new strategies?
- How can they obtain the facilitated and guided support to do this RIGHT?

EPIS (Exploration, Preparation, Implementation, Sustainment):

We must consider the **processes** for adoption of an evidence-based intervention



<https://episframework.com/what-is-epis>

Things don't "just happen".

Conclusion

- Behavioral/ social scientists MUST be part of individual community and system level behavior change for arboviral disease prevention and control; we must reduce siloed work
 - At all system levels: MOH, communities
- Funding for behavior-related trials for arboviral disease prevention and control strategies or innovations is necessary
 - Behavior change matters as it focuses on implementation of evidence
- We must build career fields and paths for social scientists in arboviral disease prevention and control
 - Within schools of public health, anthropology, sociology, public policy...



If you want to go fast, go alone;
If you want to go far, go accompanied.

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