

Communicating Risk to Motivate Individual Action

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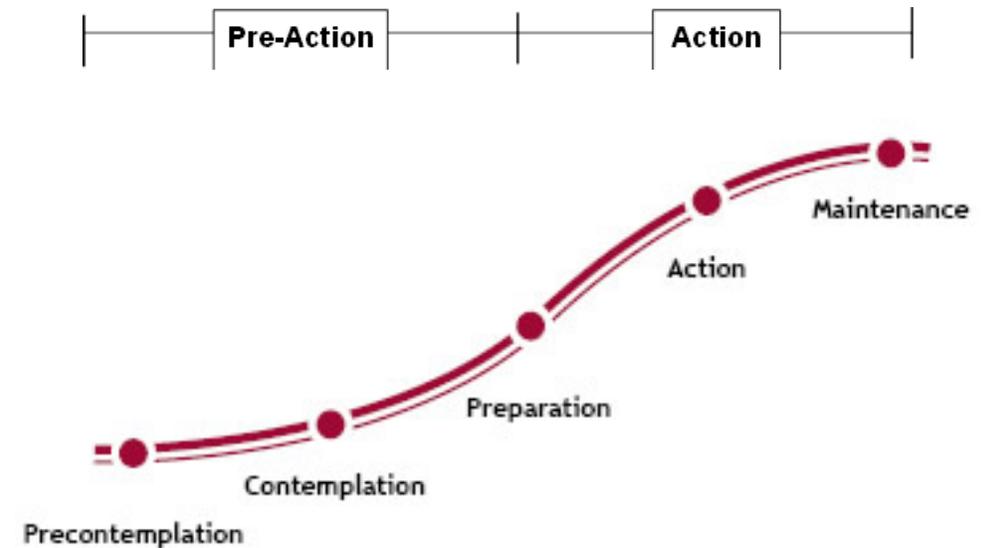
Figure 1. Separate and Combined Impacts of URI Projects on Preparing Populations for Severe Storms

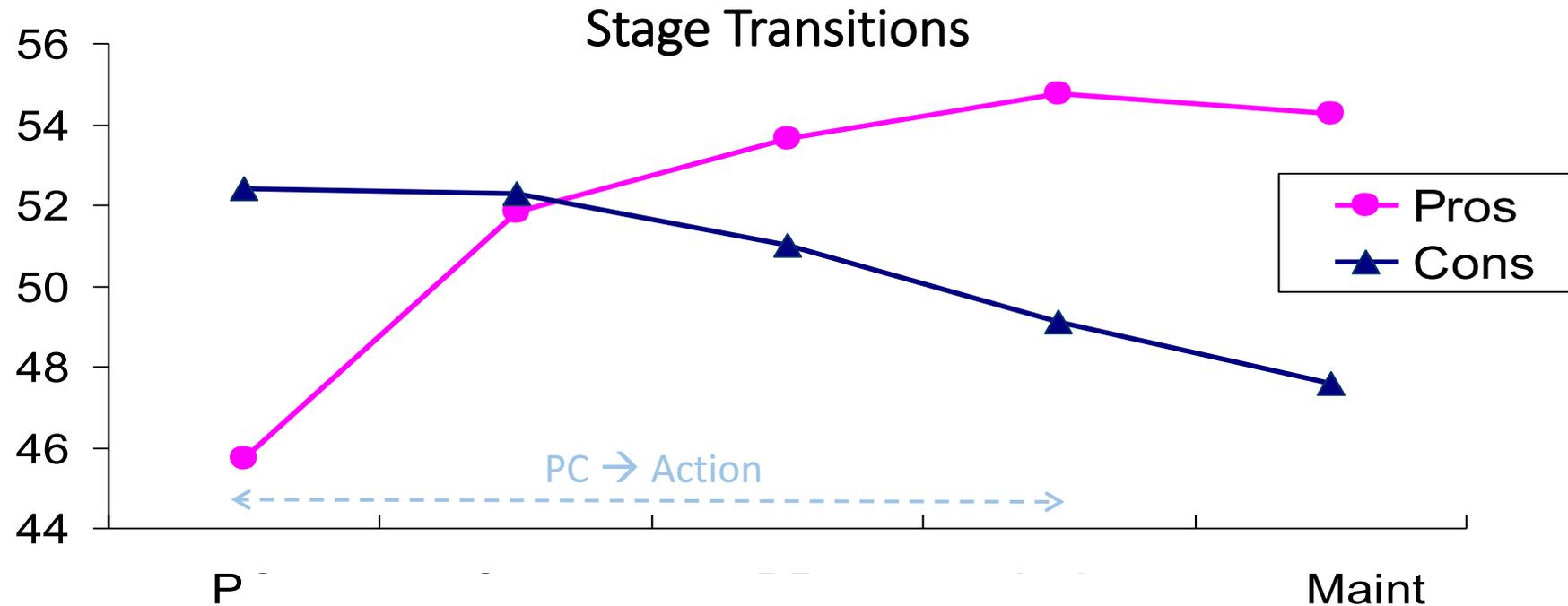
Project Goal: Apply the Transtheoretical Model (TTM) to develop and test computer tailored interventions (CTIs) via text messaging designed to facilitate and accelerate coastal residents (NE and FL) through the stages of change to take action to prepare for and mitigate impacts of coastal storms.

Relevance to Homeland Security

Relevance to Homeland Security. This research will strengthen national preparedness and improve the resilience of coastal communities in the face of coastal storm hazards.

- Coastal residents who are not ready or do not see the benefits of becoming prepared will be hit the hardest and will eventually cost the most money.
- By engaging the entire population, we are able to make larger impacts on the community and conform to the core guiding principles of the DHS Whole Community Approach:
 1. understand and meet the needs of the Whole Community
 2. engage and empower all of the community
 3. strengthen what works well in communities on a daily basis.





The pros and cons of changing across stages of change from PC to Action

	48 behaviors	Preparedness
Pros	↑ 1.00 S.D.	↑ .92 S.D.
Cons	↓ .54 S.D.	↓ .49 S.D.

Intervention Targeting and Tailoring

One Size Fits All



Intervention Targeting and Tailoring

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Stage of Change

Targeted (Stage-Matched)



Intervention Targeting and Tailoring

One Size Fits All



Stage of Change

Targeted (Stage-Matched)



Pros & Cons

Self-Efficacy

Processes

Tailored (Individualized)



Waves of Change Program

To prepare for a potential disaster, you should:

Get a Kit

Put together a disaster kit with enough supplies to meet the needs of everyone at your home for at least three days. Store your supplies in a sturdy, easy to carry container such as a backpack, duffle bag or plastic bin.

Make a Plan

Planning ahead will help you have the best possible response to a disaster. Discuss the types of emergencies that could occur in your area with your family and loved ones. Explain what to do in each case. Be sure to plan for children, pets, those with disabilities and other special needs, such as the elderly.

Be Informed

Learn what disasters or emergencies may occur where you live, work, and play. These events can vary from those affecting only you and your family, like a home fire or medical emergency, to those affecting your entire community, like a hurricane or flood.

Weigh the Pros & Cons

It's great that the benefits of taking the necessary steps to prepare for a disaster are important to you! Here are even more reasons why many people like you have chosen to get a kit, make a plan and be informed:

- I will know how to keep my family safe and recover faster in a disaster
- I will know how to stay in contact with my family when a disaster happens.
- I have peace of mind knowing that I am helping to protect my family and pets.

Which of these benefits sound best to you?

Pros & Cons

How important are the following statements in your decisions? If you disagree with a statement, then it is probably not very important in your decision.

My actions will help decrease risk of damage or loss for others living on my property.

It would be a hassle to make the changes to my home or property.

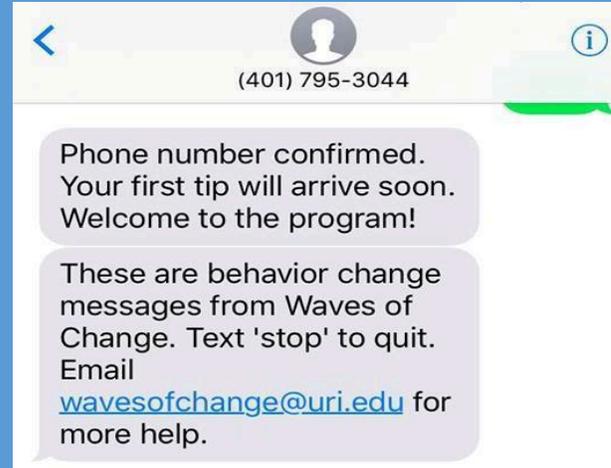
I would feel good about protecting my property.

Not at all Important
Not Very Important
Somewhat Important
Very Important
Extremely Important

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Waves of Change Sample Texts

After completing the program, participants OPT-IN to the text messages and receive welcome messages



Each stage of change receives a different number of texts per month over the course of the year

Precontemplation

Contemplation

Preparation

Action



Research Work and Accomplishment

Activities, findings and outcomes to date

1. Fully functioning program is now available. This involved incorporating changes based on advice from end-users and widened the content to include all of New England, Alabama, and Florida residents, and now includes text messaging that will be delivered to 3, 000 participants over the next year.

Expected activities, findings, and outcomes for remainder of project

1. Cross-sectional Model for Tailoring Disaster Preparedness Communications Based on 3,000 participants
2. Longitudinal Model for Tailoring Disaster Preparedness Communications Based on 3,000 participants
3. Intervention Impacts of Tailored Communications Comparing Intervention and Control Groups at 12 months.
4. Expect at least 2 x greater preparedness in intervention group and 10 x secular trends.

Research Work and Accomplishment

Technical Activities and Milestones – 1/1/2016 to 12/31/2017

Research Activity	Start/Completion
Update/customize Internet CTI; Develop statistical decision rules for text-based CTIs.	Completed 6/30/16
Create TTM-based text messages; Program and test text system.	Completed 12/31/16
Complete updated CTI system, including text messages, ready to disseminate.	Completed 12/31/16
Recruit census-based sample of 3,000 coastal residents (NE, AL, and FL)	In progress
Analyze and report baseline data on 3,000 coastal residents recruited into the study.	2/15/17- 3/15/17
Deliver Internet CTI and first 12 months of text messaging with frequency tailored to stage.	1/15/17 – 11/30/17
Analyze and report data on 12 month outcomes of 1,000 coastal residents recruited into the study.	12/01/17 –12/31/17

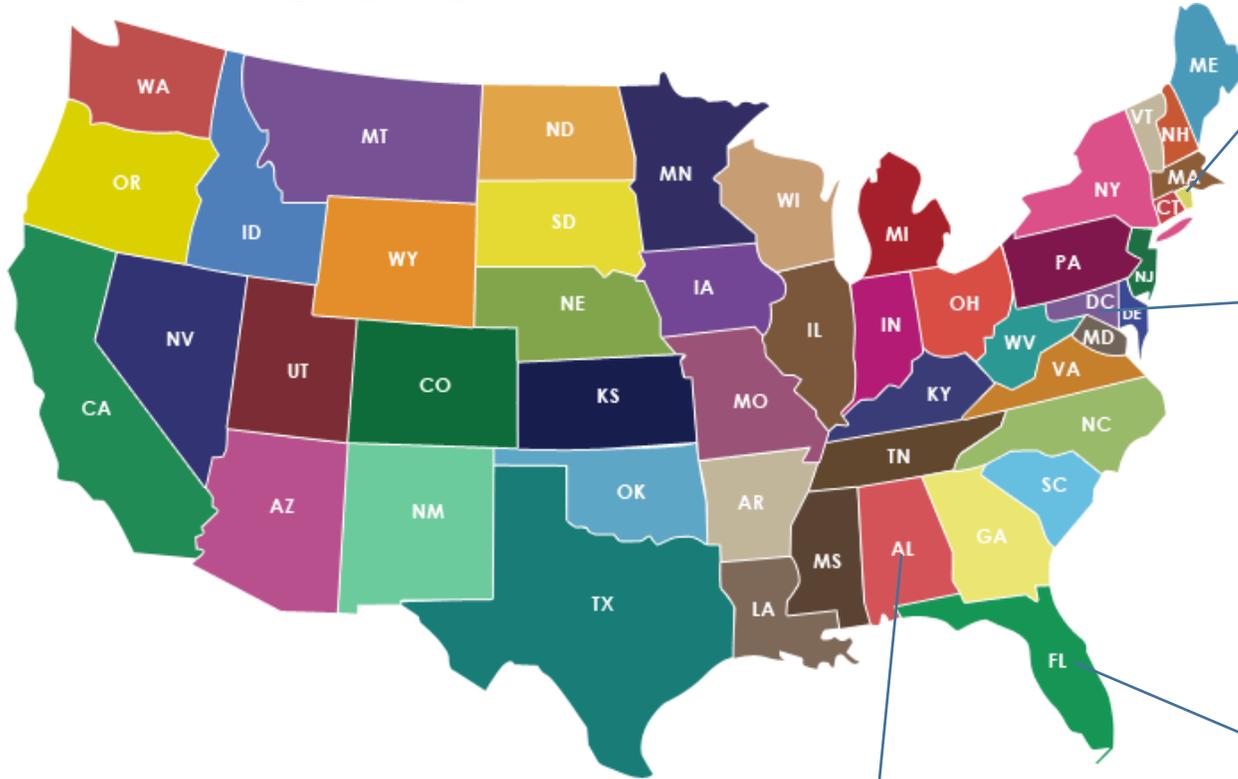
Anticipated Project Impact

1. Evidence-based tailored digital communication will be ready for dissemination by end-users.
2. Cross-sectional results will be amongst the highest impact studies of risk communications and behavior change for population preparedness.
3. Longitudinal results will be amongst the highest impact studies for population preparedness.
4. Empirical model for tailoring digital communications will be amongst the highest impact studies for population preparedness.
5. Intervention vs. control preparedness outcomes will be amongst the highest impact studies for population preparedness.

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Engaging End Users



RI Red Cross, RI Emergency Management Agency

- Interest in expanding outreach programs to improve preparedness
- Model for other state chapters

FEMA Individual and Community Preparedness Division

- Research design , evaluation,
- Tool to increase and monitor behavior change nation-wide

IBHS – Insurance Institute of Business and Home Safety

- Research-oriented association, supports nationwide insurance industry partners

Smart Home America

- Tool for citizen outreach for preparedness.

Proposed Follow-on Work

Proposed Project Title: Digital Technologies Delivered in Schools to Increase Household Preparedness Behaviors to Reduce Risks for Natural Disasters

Objective: Adapt our CTIs and text messages to prepare high school students to become change agents in helping their households make behavior changes needed to reduce risks. Enhance impact of CTIs by integrating visual representations of virtual models of storms and barriers to community action from the two URI companion studies.

Design: Randomized population trial comparing 300 students in each condition with intervention group receiving at least two CTIs and text messages delivered in one semester and followed up in next semester.

Expected Outcome: The adapted and enhanced CTIs and testing will produce significantly larger effect sizes compared to controls than were found in our current trial.

Benefits to End Users: End users would have a high-impact, evidence-based program that can be delivered as part of science or health and safety education that could be delivered at low cost and could be combined with the current adult program that could impact on parents to produce increasing percentages of prepared households.

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