

FLOODED HOMES

RISK COMMUNICATION THROUGH THE LENS OF THE SALT FRAMEWORK



Strategy

Introduction

Hurricanes, severe storms, and flooding due to climate change cause billions of dollars of losses every year. After these disasters, people want to get back into their homes quickly to assess damages and begin to put their lives back together. Flooded homes contain dangers including lead, asbestos, mold, toxic chemicals, and bacteria from the flood water. EPA is tasked with providing technical advice and guidance to state and local authorities on proper risk mitigation strategies for these indoor air hazards.

Action

Why use the SALT Framework?

The SALT Framework applied to the Flooded Homes research project enabled the team to conduct research to understand our audience so that we could provide assistance and guidance that was valuable for individuals who had experienced flooding in their homes. This research project tested social science techniques for developing risk communication tools.

Learning

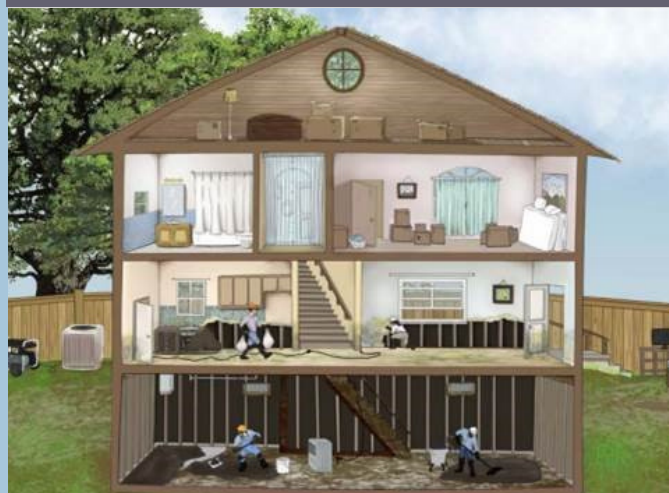
Goal:

Protect public health and support recovery in the aftermath of flooding.

Objectives:

- Improve audience understanding of health risks following flooding.
- Provide meaningful, understandable, and actionable information that meets audience needs, while combatting misinformation.
- Increase feelings of control over potential risk.
- Empower people to take informed action.

Tools



Risk Communication Challenge

EPA has produced in-depth technical guidance on how to safely clean, decontaminate, and reoccupy flooded homes. However, the information is targeted for the scientific community and cannot easily be translated and shared with households who have experienced flooding. EPA researchers wanted to understand and test methods and practices to communicate health and safety risks associated with indoor air hazards from flooding in a format that community individuals preferred and recommended based on their personal experiences with flooding.



Action Oriented

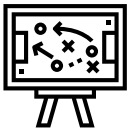
Video scripts and website language were reviewed specifically to provide a DIY or action-oriented approach.



“Throw away items that can’t be cleaned and dried”



“Keep and clean items that don’t absorb water like glass, plastic... throw away things that easily absorb water like cushions, drywall...”



Strategy



Taking Stock

The team consisted of 25 individuals from various federal, state, and local agencies. The diversity provided insight into knowledge gaps that EPA was missing and leveraged experience from other partners.

Example: Local County Housing Extension offices brought up the negative impacts of misinformation during a recent natural disaster. This led the group to change objectives to include both providing information and combatting misinformation.



Modern Platforms

YouTube Videos, Instagram stories, Pinterest Style DIY graphics, and a contemporary website design are all final products based upon findings from the research.



Address Emotions

The team drew on social science theories to make sure the website shows empathy, encourages learning, and boosts self-efficacy.

Example: Prioritizing items a person can save, focusing on what they can control, and addressing the challenges they may experience

“The team flipped EPA’s traditional risk communication strategy. Instead of telling people what to do, we asked them what they wanted to hear.”

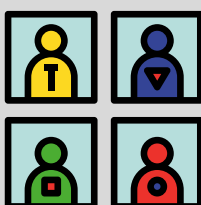
- Dr. Keely Maxwell, EPA Office of Research and Development (ORD)

What We Did

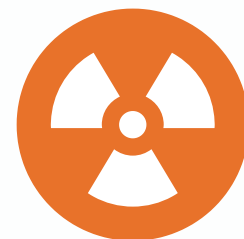
A team of EPA researchers created a website that contains short, how-to videos based on technical guidance on how members of the public can safely re-enter their home, remove contaminated materials, clean it out, and begin repairs. They can also learn more about flooding, indoor air quality, and human health risks. The website architecture, video content, and multiple infographics were designed based on social science research practices from Human-Centered Design and disaster anthropology. The project also completed usability testing with their intended audience to further refine and improve technical content.

End User Personas

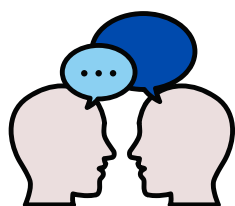
Created different personas to understand the factors involved with low-risk perception of asbestos and lead compared to mold in some audiences.



Example: Individuals with low risk perception for lead and asbestos did express concerns about mold concerns, so the website combined these hazards into one section on environmental health risks in flood recovery versus EPA's.



Hazard
Factors



Communicator
Factors

Meaningful Messages

Communications were reviewed by various technical and social science experts, website architecture designed by User Experience (UX) designers, videos and infographics created by specialized multi-media team.



Action

Visual Learning Style



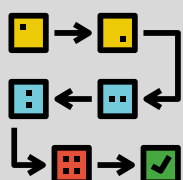
Guidance included images and videos to provide greater clarity and meet a wider audience need.

Example: We created a graphic to address renter concerns based on the information we learned from interviews.



Audience
Factors

Action Sequence



Technical language was broken down into a step by step process to help the public identify and reduce risks from flooded homes.

Example: "Check for loose power lines or gas leaks" vs. "If you smell natural gas like rotten eggs, hear hissing...leave the area immediately and call your utility company... signs of explosive levels of gas"

Learning

The project team met on a weekly basis after conducting focus groups and interviews to reflect on insights from the research and how to improve the products to improve the risk communication.

Focus Groups



Focus groups brought new ideas and methods to convey information.

Example: Added a “Know Before You Go” statement for emergency issues (electrocution, lead, etc.) to ensure that the most important message from the videos and infographics was brought to the front.

Interviews



Over 15 different individuals who experienced flooding shared their stories so the team could understand what areas to focus on and what information needed to be created to meet their needs.

Agile Development



The team also utilized agile development which allowed for flexibility and easier revisions to the workflow with small, continued changes, then large-lengthy efforts. Agile development gives projects the opportunity to pivot quickly once an issue is determined and provides for better reflection and learning throughout the communication development.

Tailored Content



Research findings determined that individuals desired content specific to their situation (renters, elderly, volunteers) even if the information was consistent across various groups.

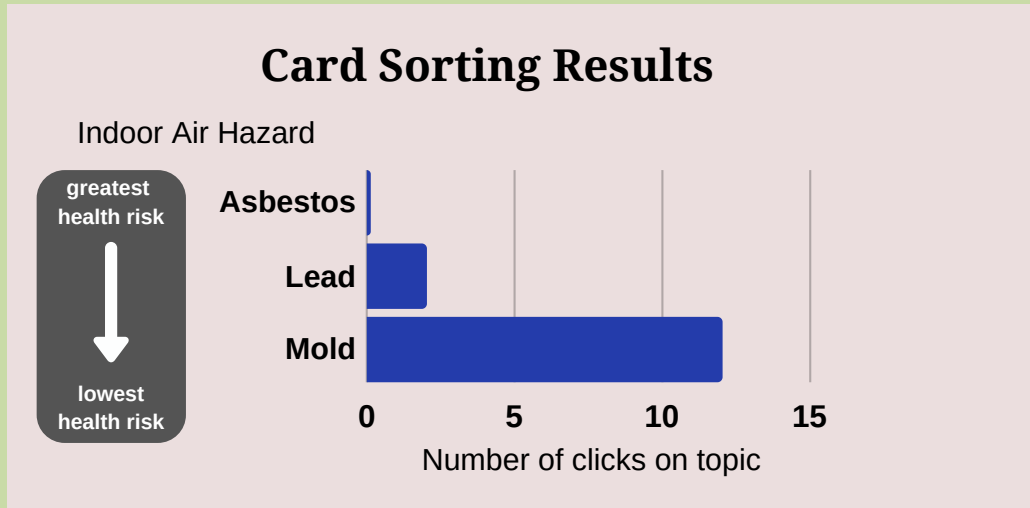
Example: After interviews, the team added a new section to the website specifically tailored for resources about getting additional assistance and how to take care of family members or friends who were with them during the flooding experience.

Tools

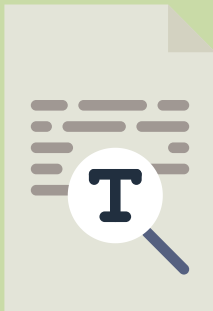
A variety of tools from social science theories were utilized in the development of the project. Specific tools that can be used for future risk communication projects include:

Card Sorting

Card sorting is a tactic used in User Experience design to understand hierarchy of information and content that is considered useful for the end user. The research team gave interviewers a variety of topics to choose from and asked them which they thought would be most important to their health during flood cleanup. Surprisingly, lead and asbestos received the fewest “clicks” even though EPA considers these hazards to pose a greater health risk to individuals than mold.



Language Review



Expert social scientists utilized multiple theories to validate language for the video scripts and website content.

Example: The word containment may intimidate homeowners, using language like “separating clean spaces from damaged areas” to encourage safety and discourage cross-contamination.

Usability Testing



Draft products were provided to internal and external partners to provide insight on improvements before final deployment.

Questions asked were divided into two stages:

1

A base level of understanding if the information presented to the participants seemed clear and interesting (i.e. What topics presented here interest you? Based on the topic chosen, what information would you expect to see associated with it?)

2

Understanding if the communication presented accurately covers the needs of the end user (i.e. Based on the video provided, can you explain how you would safely remove drywall that has lead-based paint on it?)