

# **Arsenic in Food: Rice – A Case Study**

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# Introduction



University of Kentucky

- Doctoral Candidate



University of Maryland

- Researcher and Project Manager



International Food Information Council

- 2012 Sylvia Rowe Fellow



# Presentation Agenda

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Arsenic

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The case

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RQs

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Theory

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Media

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Discussion

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# Arsenic

## Chemical Element

Organic

Inorganic

Contact

Effects

Mitigation



# Regulation

## FDA



- Monitored since 1991
- Oct. 2011 follow up sample
- Dec. 2008 23 ppb level of concern

## EPA



- 1974 Safe Drinking Water Act
- Drinking water standard of 10ppb
- Changed from 50ppb in 2001





# Dr. Oz: One Bad Apple

- “We have discovered that apple juice can contain arsenic. Yes, arsenic.”
- “We launched an extensive investigation, testing dozens of samples from three different cities across America.”
- “Some of the best known brands in America have arsenic in their apple juice”
  - Dr. Oz Show September 2011



# Consumer Reports: Arsenic in Your Juice

- 10% have arsenic levels that “exceeded federal standards for bottled and municipal water”
- Blamed on pesticides and agricultural practices
- Call for FDA to set levels to 3ppb
- Children most vulnerable
  - Consumer Reports January 2012



# Consumer Reports: Arsenic in Your Food

- “In virtually every product tested, we found measurable amounts of total arsenic in its two forms”
- Warnings concerning rice from Arkansas, Louisiana, Missouri, and Texas
- Higher levels in brown rice
- People who ate rice had arsenic levels that were 44% greater than those who had not
- No federal limits exist for arsenic in most foods
  - Consumer Reports November 2012





# Research Questions

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If the FDA and EPA have regulated these threats for years, what has changed?

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Why is this reemerging as a public health threat?

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H1: Media exposure to misinformation generates concern



# Constructing Risk



- Actual
- Emotional
- Political
- **Misconstrual**



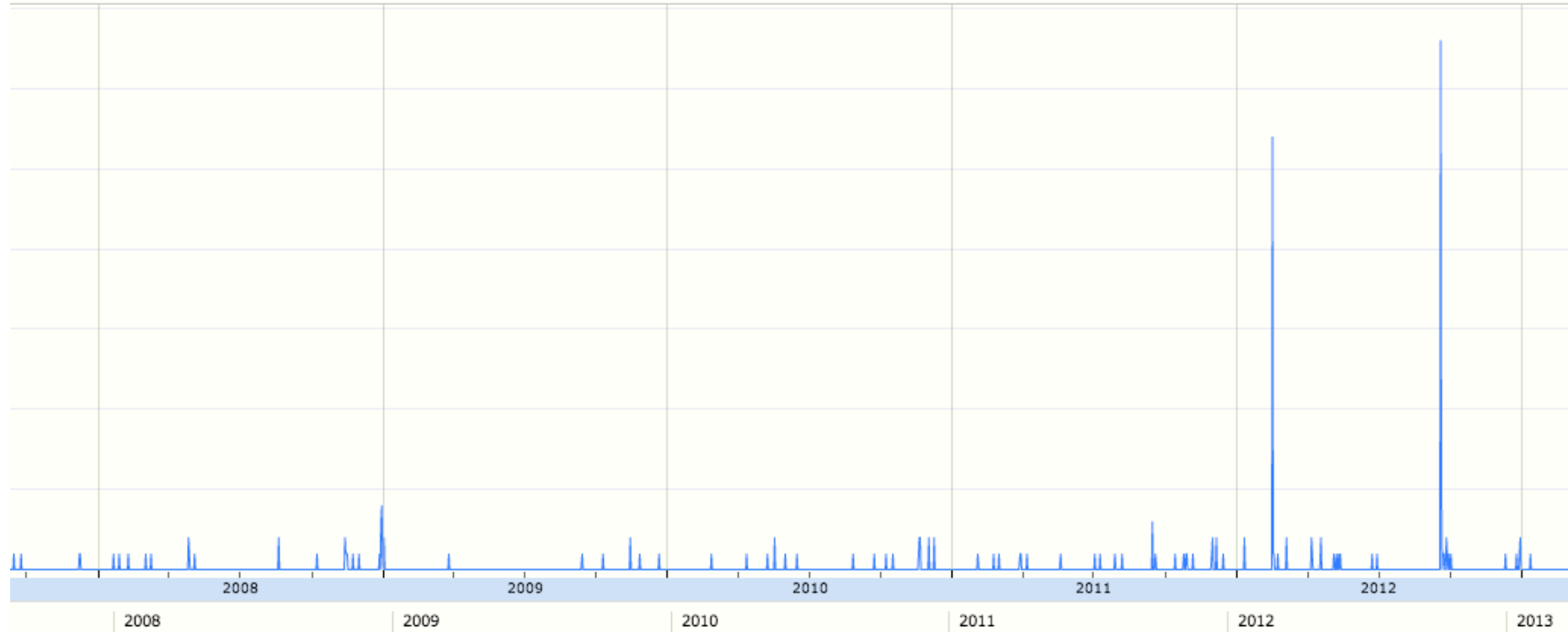
# Television Media 2008-13

Frequency of key terms in U.S. Television coverage

1d 5d 1m 3m 6m 1y Max

April 11, 20

• Arsenic + ric



February 16, 2012





September 19, 2012





# LexisNexis Academic

2010

- All news
- 5 hits

2011

- All news
- 10 hits

2012

- All news
- 100 hits



# Discussion

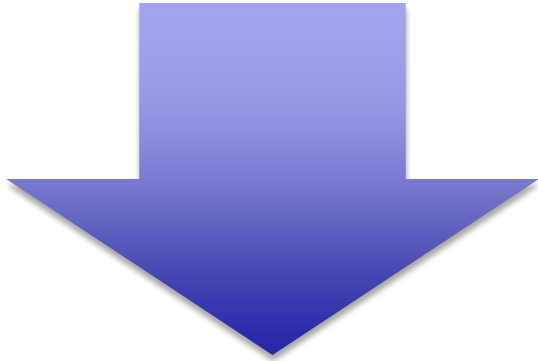


Health **misinformation**  
impedes decision  
making

Subject matter experts need  
to effectively message  
about true risks

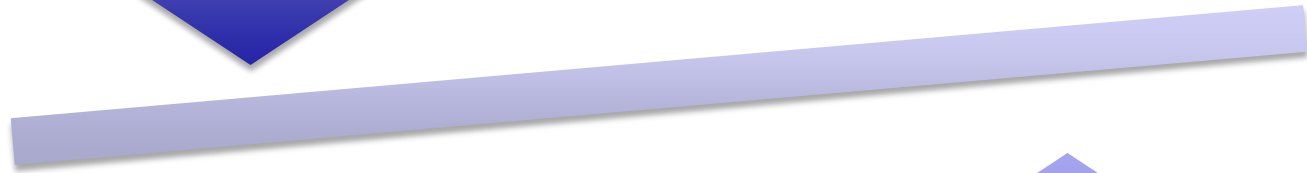


# Competing Messages



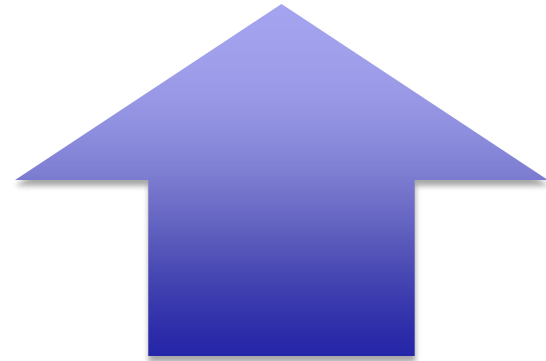
## Media Messages

- Sensationalistic
- Incomplete
- Accessible



## Government Messages

- Technical
- Lacking trust
- Inaccessible



# Best Practices in Risk Communication

*National Center for Food Protection and Defense*

*www.fpd.umn.edu*



# Conclusion

- Arsenic can be present in grains, fruits, and vegetables (hence, not only present in juice or rice)
- Threshold levels matter
- Not all issues warrant policy action
  - Changes come at a cost and do not guarantee desired outcomes
- Media is a policy influencer





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