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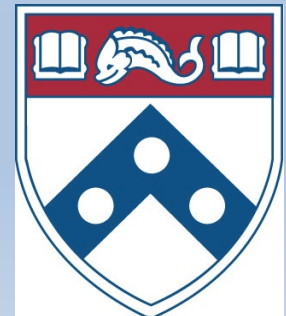
◆ Use of Media to Communicate Site Risks and Potential Future Use: The Ambler and Bo-Rit case study

Bioremediation Symposium, Baltimore, MD

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Ambler, PA

Suburban Philadelphia, 18 Miles from City
1897- Dr Mattison's lab accident –insulation & strength of Milk of Magnesia + Asbestos
Asbestos Sectional Pipe Coverings –instant success, more products.

1910-1920- Worlds largest producer of asbestos products “The BEST in asBESTos”

Ambler-Quintessential company town. 1970s decline, leaving 65 +acres asbestos-containing waste



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Family Photo - Ambler 1960s Credit: Joe Marincola



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Ambler playground after fence c.1984



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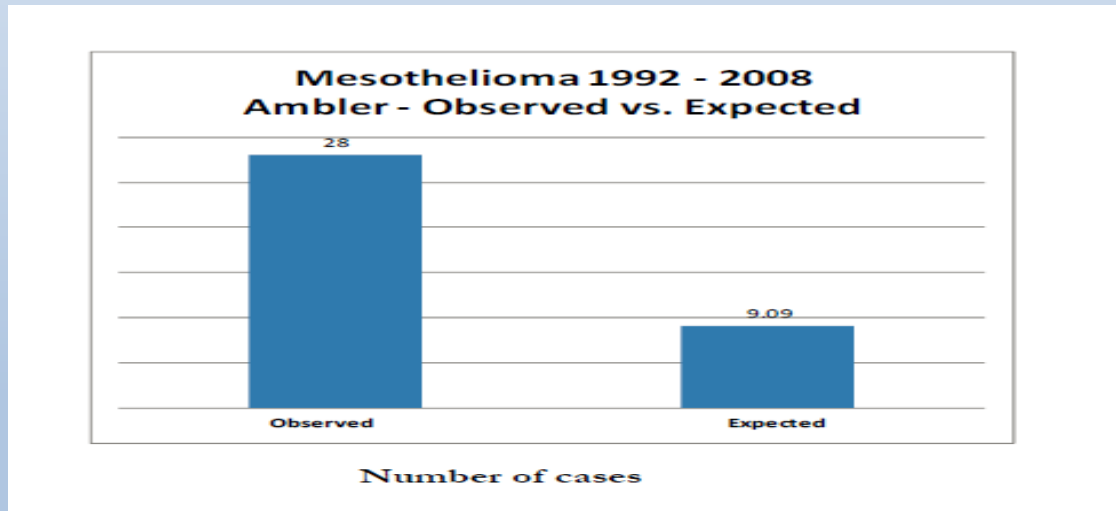
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Ambler, PA – The Mesothelioma Legacy

PA Cancer Registry Mesothelioma in Ambler 2.7x higher incidence in men

4.5x higher incidence in women

- No elevation in neighboring zip-codes



Ambler, PA - the Asbestos Legacy

Ambler South

“White Mountains” 24 acres, 30 meters high, ~ 800,000 cu meters of ACM & other wastes

1984-1996- EPA “Superfund Site” capped, graded, seeded, fenced with signs.

Subsequent erosion, uprooted trees, animal burrows, unauthorized access

Current- Remains fenced off



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The BoRit Asbestos Superfund Site 2009-

- ◆ **1984- fenced off**, no access to park/playground, 22% asbestos in soil.
- ◆ **2005 Proposal to build 17 story High Rise**
 - Provokes concern asbestos waste hazard “discovered”
- ◆ **2009 Declared Superfund Site** ~ 32 acres EPA program
Remove immediate hazard: grading, tree removal, capping waste, stream bank protection.
- ◆ **Issues included**
 - Disadvantaged residents/community closest to site
 - Flooding from Tropical Storm Lee 2011, requires reworking, widening streams
 - **Permanent Solution and use?**



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Oral History Interviewees

- Residents - several neighborhoods
- Local Government officials
- EPA official
- Community Advisory Group
- Other groups in the community
- Diverse backgrounds and professions: real estate agent, developer, environmental scientist, local business owner, urban planner...



In depth interviews/oral histories

Methodology

- Purposive Sample & snowballing
- Interviews recorded, transcripts edited/ approved by interviewee
- Nvivo software for coding/analysis
- Codes for key themes developed by discussion.
- Environmental Scientist and an Anthropologist applied codes, compared till consensus

An inductive process differs from surveys



Interview Domains/Themes

Bo-Rit Superfund Site

All Environmentally Literate -Understood Asbestos caused Cancer

- Time
- Space
- Activities and Asbestos Exposure
- Community Input and CAG
- EPA and other Agencies/Authorities
- Research Needs/Information Gaps
- Lessons for Other Communities
- **Attitudes to Asbestos/Risk**
- **Choice of Remediation Remedy**





Attitudes to Asbestos and Risk

- Large range of individual risk perceptions.
- Healthy residents, grew up in the area, perceived lowest risk. “because of playing in it as a youngster it is personally hard to see it as dangerous” “Most of the residents of South and West Ambler do not see it as a problem because we are still here”. “I have thought about but never worried about my own exposure, in the 1980’s we looked back on exposures and would say ‘Oh I guess that is why Mr So & So died’.

Generally comfortable with “acceptable risk levels”, containment as remedy.

This group as looking at reality, including the money available.



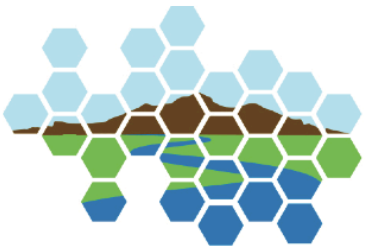
Attitudes to Asbestos and Risk

- Other end of the spectrum residents concerned that any asbestos fiber could create a risk, “acceptable did not equate with safe”, agencies were contradictory about risk: the Surgeon General never stated that an asbestos fiber is safe. “..I would not live in West Ambler-not sure it is safe”. “Cost should not be the overriding concern”. These residents had mostly moved to Ambler in the last 20 years.
 - Others saw this group as having a heightened perception of risks, intensified concerns.
- In between were those who did not see the need to get rid of every fiber but who wanted reuse without serious risk, and with effective future monitoring.



The Optimum Remediation Solution

- Divisive issue
 - complete removal, or if feasible thermal or chemical treatment in situ?
 - especially residents adjacent to the site concerned about disruption, potential hazards of massive removal effort. “1 large truck every 25 minutes for 10 years”. Prefer containment
- Fencing off the area unacceptable to almost all.
- 1980s remediation of adjacent site “a failure”, no longer acceptable.
- Reuse, long term controls necessary



Implications of Differing Risk Perceptions

- Environmental Literacy not the issue in this community
 - All could identify someone who died from asbestos
- Are the differences resolvable by science?
 - e.g. “can a single fiber cause cancer?” *A question for science or a question of right or wrong which science cannot answer?*



Implications of Widely Differing Risk Perceptions

- Risk Communication
 - Single assessment and communications needed to defend EPA decisions about cleanup, “safe” levels
 - Decision making by other stakeholders requires options to support decisions in those with differing perceptions of risk
- Why such large differences in risk perception?
- How do we facilitate resolving differences?
 - Led to multimedia, theatrical performances

Theatre: For Risk Communication & Discussion

The White Mountains



Photo by the Montgomery County Planning Commission

**An Evening of Short Plays
About the Continuing
Legacy of Ambler's
Industrial Past”**

Seven Short Plays
85 Minutes
plus post-show discussion



Creating the “White Mountains” Plays

- ◆ **Bill D’Agostino**
Director of Communications and Education, Act II Playhouse in Ambler, PA **Producer/playwright**
- ◆ Built plays based on oral histories
- ◆ Reflecting multiple voices/perspectives
- ◆ Hired multiple writers for 12 short plays/various viewpoints
- ◆ **All Writers Received Three Oral Histories**
- ◆ *Also had access to entire online database for additional research*
- ◆ **Oral Histories/Writers Paired based on interest**
- ◆ **Also some degree of randomness**



The White Mountains



Theatre Aids Risk Communication

- **Use of Metaphor**
- **Making the Abstract Concrete**
- **Revealing the Collision of Ideas and Forces**
- **Showing Processes over Time**



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**PROCESSES
OVER TIME**

***Mary Runs
to the Wreck***



METAPHOR



**COLLISION OF
IDEAS**

Effectiveness of Theatre

Current Limitations of Argument and Discussion:

Exchanges designed to persuade that our point of view is correct not to understand the other persons point of view

Effectiveness of theatre

Well attended

Allowed audience to appreciate and understand how and why others see things differently

Facilitated community to develop a commonly supported vision of future use of remediated site.

EPA awarded BoRit CAG inaugural “National Notable Achievement Award for Citizen Excellence in Community Involvement”.



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Risk Communication

Risk Communication is a process of understanding, and then informing, a target audience to help their decision-making.

It is not merely an exercise in writing a statement about risks.



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