The Intersection of Culture Politics and Research

Adrian S. Banning, MMS, PA-C
Assistant Clinical Professor
Drexel University, Philadelphia, PA
Librarian or Farmer?
Agenda

1 Culture

2 Politics and Agendas

3 Why it happens and what we might do
1 Culture
• Celebrity influence (gluten)
  Internet influence (vaccines)
  Media influence (Ebola, Zika, Dr. Oz)
  Payer/Insurance influence (}
100% stroke risk increase from oversleeping

STATINS INCREASE DIABETES RISK BY 50%

Bacon increases bowel cancer risk 20%

Why a big percentage increase in risk isn't always so scary...

For example, if the usual risk of getting bowel cancer is 6 in 100, a 20% increase in risk from eating bacon now makes that a 7 in 100 chance:

The normal risk

Increased risk from eating bacon

Always look for the real numbers.
Lawmaker who opposed universal helmet law dies in motorcycle crash
(CNN) — A Michigan state lawmaker who voted to repeal universal helmet laws has died in a motorcycle crash, according to Michigan State Police.

Rep. Peter Pettalia was riding southbound on M-33 in northern Michigan late Monday afternoon when a pickup truck turned left into his lane. His motorcycle broadsided the pickup. Pettalia was wearing a helmet at the time of the crash, police said. The driver of the truck, a 59-year-old woman, was not injured, police said.
2 Politics and Agendas
Industry influence
Political/Group agendas
(Breast Cancer, PSA)
Publication problems
Influence/agenda/opinion of a group
## Estimates of Benefits and Harms of Annual Mammography Screening Over 10 Years of 10,000 50-Year-Old Women

<table>
<thead>
<tr>
<th>Normal Mammograms</th>
<th>False-Positive Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>3568 will have normal mammogram results for all 10 years</td>
<td>6130 will have at least 1 false-positive result during the 10 years</td>
</tr>
</tbody>
</table>

### Impact on Women

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosed as having breast cancer</td>
<td>302</td>
</tr>
<tr>
<td>Survive breast cancer regardless of screening</td>
<td>173</td>
</tr>
<tr>
<td>Deaths averted</td>
<td>10</td>
</tr>
<tr>
<td>Overdiagnoses</td>
<td>57</td>
</tr>
<tr>
<td>Deaths despite screening</td>
<td>62</td>
</tr>
<tr>
<td>Unnecessary biopsy</td>
<td>940</td>
</tr>
</tbody>
</table>

\[ \approx 10 \text{ 50-year-old women} \]
Historically, if someone has had a financial gain, they were less critical of safety or efficacy.

Financial conflict influence can’t seem to be avoided when you have one, even with disclosure.
How do researchers control for bias?
Who critically appraises study results?
What biases in thought are used?
How do we communicate results with each other?

With the public?

What avenues do they have to fact-check/appraise?
Error/Fabrication/Gain
Are findings reported and used without bias?

Searching for items that support your point of view is biased.
Abstract

“A detailed review of all 2,047 biomedical and life-science research articles indexed by PubMed as retracted on May 3, 2012 revealed that only 21.3% of retractions were attributable to error. In contrast, 67.4% of retractions were attributable to misconduct, including fraud or suspected fraud (43.4%), duplicate publication (14.2%), and plagiarism (9.8%). Incomplete, uninformative or misleading retraction announcements have led to a previous underestimation of the role of fraud in the ongoing retraction epidemic. The percentage of scientific articles retracted because of fraud has increased \(~10\)-fold since 1975. Retractions exhibit distinctive temporal and geographic patterns that may reveal underlying causes.”
Damage done
High impact journals hit hardest.
Practice guidelines

Should be a thorough review of evidence on a body of knowledge and should fairly make recommendations to healthcare providers

A “rule of thumb” to know the standard of care and make informed medical decisions

Needed for care decisions, documentation, setting practice/hospital policy and reimbursement
Catch 22

Well done guidelines are evidence-based and elevate patient care

You are supposed to follow them, but what if badly done?

Do you follow and provide lesser or harmful care to a patient or not follow and risk professional/legal ramifications?

Microalbumin example
3 Why it happens and what we might be able to do
Unintentional bias in thinking
This is not a drill. Repeat: This is not a drill. Read safely: confirmation bias threat level is EXTREME.
Solutions?

Create/support a culture
One that supports a “continuously learning health system”
Agencies and institutions support systems

Peer Review

IRB

COI disclosure

Trial Registration
Is transforming into a learning health system different that transforming into a learning society?
Generating Knowledge from Best Care: Advancing a Continuously Learning Health System

A National Academy of Medicine Discussion Paper

"Enhanced linkage of the research enterprise to care delivery, and of care and operational challenges to research questions, can increase the relevance of research questions, accelerate knowledge transfer, and lead to care and outcome improvement."

Priorities for Action to foster the growth of continuously learning health environments

- Enhanced Bidirectional Relationship Building
- Networks for Evidence Generation
- Embedded Learning Activities
- Involve a Variety of Stakeholders
- Prioritize Training
- Focus on Implementation and Dissemination of Results
“BOX 1 Transforming to a Learning Health System: Priorities for Action”

• Emphasize the bidirectional relationship between health operations and research;
• Participate in networks and relationships that facilitate a faster, more relevant research process and better use of finite resources;
• Embed learning activities (especially pragmatic clinical trials, systems/management studies, and quasiexperimental studies) within delivery systems;
• Involve a broad range of stakeholders;
• Prioritize training for stakeholders while identifying and increasing opportunities for learning; and
• Focus on implementation and dissemination of results.
Awareness

Ask for relevance in research, collaborate with researchers, other disciplines

Support productive research agendas

Retraction Watch

Transparency Index vs Impact Factor?

Alltrials.net
Teach critical appraisal/thinking earlier
Guideline Bias and Red Flags  
(Lenzer, 2013)

“Box 1: Red flags that should raise substantial skepticism among guideline readers (and medical journals)

• Sponsor(s) is a professional society that receives substantial industry funding;
• Sponsor is a proprietary company, or is undeclared or hidden
• Committee chair(s) have any financial conflict*
• Multiple panel members have any financial conflict*
• Any suggestion of committee stacking that would pre-ordain a recommendation regarding a controversial topic
• No or limited involvement of an expert in methodology in the evaluation of evidence
• No external review
• No inclusion of non-physician experts/patient representative/community stakeholders
• *Includes a panelist with either or both a financial relationship with a proprietary healthcare company and/or whose clinical practice/specialty depends on tests or interventions covered by the guideline”
Hold media accountable
YOU CALL THIS NEWS?
THIS ISN'T INFORMATIVE!

THIS IS A SOUND BITE!
THIS IS ENTERTAINMENT!
THIS IS SENSATIONALISM!

Fortunately, that's all I have the patience for.
Checking Stats and Reporting

“Guardian” “9 point Guide to Spotting a Dodgy Statistic”

Julia Belluz, Show Me the Evidence Series, “Vox”
Improve Communication
For best knowledge transfer
Involve communication experts
Better graphics and communication
Have Neil deGrasse Tyson explain everything.
Agenda

1 Culture

2 Politics and Agendas

3 Why it happens and what we might do
References


