Evidence-based practice and policy: Are we making legislation or sausage?

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Questions for today

1. What is evidence-based public health policy and practice and why does it matter?
2. How might we better connect science with practice and policy (both Big P and small p)?
3. What should be the role of a scientist or practitioner?
What is evidence?

Definition
“The available body of facts or information indicating whether a belief or proposition is true or valid.”

Sources
• Scientific literature in systematic reviews
• Public health surveillance data
• Advice from a friend or colleague

Audiences
• Practitioners
• Policy makers
• The general public
• Researchers

Like beauty, it’s in the eye of the beholder…
The metaphors abound...
Leaky pipes

Original research evidence

Original research/peer review

Research synthesis

Guidelines

Implementation

Benefits to patients & populations

17 years

14% success
“We have the best medical schools, the most sophisticated labs, and the most advanced training of any nation on the globe. Yet we are not doing a very good job harnessing our collective knowledge and experience on behalf of better medicine. Less than one percent of our health care spending goes to examining what treatments are most effective. And even when that information finds its way into journals, it can take up to 17 years to find its way to an exam room or operating table.”

--Barack Obama, 2009 speech to the AMA
The gap: scurvy

What progress have we made in getting evidence into practice?

Total elapsed time from Lancaster to adoption: 264 years

- **1497**: Vasco da Gama: 100 of 160 crew died of scurvy; citrus suspected as cure
- **1601**: Capt James Lancaster sails with 4 ships: crew on Ship #1 given 3 tps of lemon juice daily; 0% mortality. 40% of crew on other 3 ships perish.
- **1747**: James Lind, British Navy physician conducts random trial of 6 treatments for scurbutic sailors on HMS Salisbury: citrus again proves effective against scurvy
- **1795**: British Navy orders that citrus fruits become the diet on all navy ships.
- **1865**: British Board of Trade adopts the innovation, ordering proper diets on merchant vessels.
Broken pipes

'Got an elbow joint?'
Unequal access/opportunities
“If you build it...”
Making sausage

...THE SAUSAGE MAKERS OF AMERICA ARE DEMANDING AN APOLOGY...
A few important patterns and trends
People are living longer

In 1900, 47 years

In 2015, 79 years

Remarkable progress!!
Policy matters:
Top 10 public health achievements

• Examples
  – Vaccination
  – Motor-vehicle safety
  – Safer workplaces
  – Fluoridation of drinking water
  – Recognition of tobacco use as a health hazard
• Each of these advances involved policy and public health

What would you do with an extra 18 years?

Average life expectancy, 2010
Zip code 63105 (Clayton)
85 years

Least Advantaged

Average life expectancy, 2010
Zip code 63106 (N StL City)
67 years

Most Advantaged

Source: For the Sake of All
Consider types of policy

- Formal laws, codes, regulations (Big P)
  - ACA
  - Clean indoor air policy

- Organizational policy (small p)
  - Often quicker in private sector
  - Actions of a public health agency leading to science-based practice
    - Local policy change, use of evidence-based interventions, effective partnerships
### Domains of evidence-based public health policy

<table>
<thead>
<tr>
<th>Domain</th>
<th>Objective</th>
<th>Data Sources</th>
</tr>
</thead>
</table>
| Process (the “how”)  | To understand approaches to enhance the likelihood of policy adoption                                                                  | • Key informant interviews  
|                      |                                                                                                                                             | • Case studies                                                                                         |
| Content (the “what”) | To identify specific policy elements that are likely to be effective                                                                      | • Systematic reviews  
|                      |                                                                                                                                             | • Content analyses                                                                                     |
| Outcome (the “why” & | To document the potential impact of policy                                                                                               | • Surveillance systems  
| “how much”)          |                                                                                                                                             | • Natural experiments tracking policy-related endpoints                                               |
The policy paradox

• Perhaps the largest impact on population health
  – Learn from smallpox, tobacco, seat belts (as victories)
  – Learn from gun violence, refugee displacement, inequalities (as ongoing challenges)

• Yet we may have the fewest skills
  – The inverse evidence law
  – Out of comfort zone (esp. for the politics part)
  – Requires some new thinking and actions
  – Limitations in government agencies
How well do researchers and policy makers connect?
Where am I?
You must be a researcher

You’re 30 yards above the ground in a balloon

Because what you told me is absolutely correct but completely useless
Yes, how did you know?

The problem

Because you don’t know where you are, you don’t know where you’re going, and now you’re blaming me

You must be a policy maker

Yes. How did you know?
How well do researchers and practitioners connect?
Preferred methods for disseminating or learning about the latest research-based evidence

<table>
<thead>
<tr>
<th>Method</th>
<th>Researchers % (rank)</th>
<th>Local practitioners % (rank)</th>
<th>State practitioners % (rank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic journals</td>
<td>100 (1)</td>
<td>33 (4)</td>
<td>50 (2)</td>
</tr>
<tr>
<td>Academic conferences</td>
<td>92.5 (2)</td>
<td>22 (5)</td>
<td>17.5 (6)</td>
</tr>
<tr>
<td>Reports to funders</td>
<td>68 (3)</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Press releases</td>
<td>62 (4)</td>
<td>12.5 (7)</td>
<td>--</td>
</tr>
<tr>
<td>Seminars or workshops</td>
<td>61 (5)</td>
<td>53 (1)</td>
<td>59 (1)</td>
</tr>
<tr>
<td>Face-to-face meetings with stakeholders</td>
<td>53 (6)</td>
<td>11 (6)</td>
<td>15 (7)</td>
</tr>
<tr>
<td>Media interviews</td>
<td>51 (7)</td>
<td>1 (9)</td>
<td>--</td>
</tr>
<tr>
<td>Policy briefs</td>
<td>26 (8)</td>
<td>17 (6)</td>
<td>30 (4)</td>
</tr>
<tr>
<td>Email alerts</td>
<td>22 (9)</td>
<td>34 (3)</td>
<td>40 (3)</td>
</tr>
<tr>
<td>Professional associations</td>
<td>--</td>
<td>48 (2)</td>
<td>24.5 (5)</td>
</tr>
</tbody>
</table>
Some Remedies

Evidence-based practice and policy
1. Make better sausage
Leadership matters: Macro level priority setting

“Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed; those who are cold and are not clothed. This world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children.”

--Dwight D. Eisenhower, 16 April 1963
Better connect the message and the audience
Source: The effective persuader

Seen as

• Delivered by someone trusted
• Unbiased
• Relevant to constituent

Perceived reliability of source

Rank order

• University
• Constituents
• Other legislators
• Other government source
• Industry
• Media (lowest by far)

Dissemination preferences

• One size does NOT fit all

• Ideology drives dissemination preferences more than political party
  
  For example

  • The more ideological conservative a legislator is, the more they trust research from industry sources

  • Fiscally liberal legislators identify research telling a story as very important most frequently
2. Fix the broken pipes
Revisit metrics of impact in academia

• Need to understand the “push” vs. “pull” mismatch (including our choice of study topics)
Translational Science Benefits Model Domains and Indicators

Individuals shape organizations

Organizations facilitate the development of individuals

Individuals who practice evidence-based decision making

Evidence-based organizations

Funding environment

Political environment
Design for dissemination (D4D)

Survey question:
• Overall, how do you rate your efforts to disseminate your research findings to non-research audiences?

- Excellent/Good: 30%
- Adequate: 35%
- Poor: 35%
Predictors of excellent dissemination

• Important for their department
  – OR=2.3; 95% CI=1.2-4.5
• Expected by funder
  – OR=2.1; 95% CI=1.3-3.2
• Worked in policy/practice setting
  – OR=4.4; 95% CI=2.1-9.3
• NIH least effective among settings

Start early

• Think about dissemination at the beginning of a research project
  — Structures
    • In a grant applications, are D4D principles embedded or a separate aim?
  — Processes
    • How to engage stakeholders early and often?
  — Products
    • How to frame messages, develop brief summaries?
    • How are interventions designed & packaged?
  — Systems changes
    • How to shift funder, academic priorities/incentives?
3. Level the playing field
Multi-level, policy challenges

• “Upstream” causes that are multilevel, interrelated and closely linked with social determinants (health equity)

• New skills are needed: advocacy, systems thinking, new methods of communication, policy analysis
Health equity commitment

• Social justice is underpinning of public health
• Formal commitment/resources for health equity appears to be limited
  • For example, among 537 state PH practitioners
    • Only 2% work primarily on health equity (9% as one of multiple areas)
    • Those in departments with high health equity commitment, 4X more likely to engage regularly with sectors outside of public health

Source: Furtado et al. Health departments with a strong commitment to health equity have a more skilled workforce and engage in higher quality, more diverse collaborations (in review).
What to measure (examples)

- Education
  - 3\textsuperscript{rd} grade reading proficiency

- Jobs
  - Unemployment rate

- Housing
  - Percent of households that pay over 30\% of income for housing

- Justice
  - Incarceration rate
What to do: policy solutions

1. Address social determinants of health through *state and local laws* (minimum wage laws, Medicaid expansion);

2. Public health *department policies and practices* for a workforce that is aware of the historical and structural barriers to achieving equity;

3. Departmental commitment of *resources* to carry out plans;

4. Departmental *capacity building* to facilitate the skill sets needed to advance health equity (e.g., cross-sectoral collaboration, community engagement);

5. Departmental *strategic plans and mission, vision, and value statements* that codify and publicize these commitments and guide public health priorities
The charge to us...

“There are those who believe that scientists should stay out of politics. This is not a luxury we have; in truth, it is a luxury we have never had. Each of us needs to be a partisan for science, to embrace a partisanship born of hope for the future. It is not partisanship based on party ideology but on concern over the possibility that the work of generations that has put us in the forefront of world science and technology could be undone in a few budget cycles. It is a personal partisanship based on conviction, and such partisanship is the moral calling of every citizen in a democracy.”

--John H. Gibbons, Former Director, White House Office of Science and Technology Policy
4. Make a personal commitment
Think of advocacy as a continuum

Participate & raise awareness on a topic → Communicate & interact with policy makers → Actively support a specific issue
## Advocacy (early stage)

<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>• Vote in an upcoming election</td>
</tr>
<tr>
<td>• Contribute to policy research/evaluation</td>
</tr>
<tr>
<td>• Speak to your family/friends about a policy issue</td>
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</table>
### Advocacy (middle stage)

<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>• Write a letter to the editor on a policy topic</td>
</tr>
<tr>
<td>• Write or call an elected official about a policy issue</td>
</tr>
<tr>
<td>• Attend a training to learn how to better advocate using the media</td>
</tr>
<tr>
<td>• Work with the media to advocate for or against a policy</td>
</tr>
<tr>
<td>• Blog about a policy issue of interest</td>
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</tbody>
</table>
## Advocacy (later stage)

<table>
<thead>
<tr>
<th>Activity</th>
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<tbody>
<tr>
<td>• Present at a city council meeting</td>
</tr>
<tr>
<td>• Meet with a staff person</td>
</tr>
<tr>
<td>• Meet with an elected official</td>
</tr>
<tr>
<td>• Work with another branch of government/NGO</td>
</tr>
<tr>
<td>• Draft legislation on a topic of interest</td>
</tr>
<tr>
<td>• Phone an elected official</td>
</tr>
<tr>
<td>• Work for an elected official</td>
</tr>
<tr>
<td>• Run for elected office</td>
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</table>
“We must make the healthy choice the easy choice.”

-- World Health Organization

Together, we can help make sure that every family that walks into a restaurant can make an easy, healthy choice.

— Michelle Obama —
THANKS!!

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