Translating Science to the Public: key to gain buy-in for health behavior change
OVERVIEW

• Public understanding vs. Public participation in science
• Understanding the audience
• The media as an obstacle to translate science to the public
• The communication imperative for public health: how we can do it better
Public involvement in science

Which do we aim for?
- Public interest in science
- Public support for science
- Public understanding of science
- Public engagement with science
- Public participation in science

Arnstein, 1969. Ladder of Citizen Participation
Avoiding a Deficit model

• Public “understanding” of science can be seen as a deficit model
  • Blame lack of knowledge, bad journalism for public’s lack of trust in science
  • Assumes the public must not care because they don’t UNDERSTAND
  • However this is not necessarily the case. If so, we could solve problems with factsheets and documentaries.
• Science literacy DOES NOT EQUAL public support of science
• A person’s knowledge, opinions, attitudes, values and worldview will shape how they interpret scientific information (e.g. evolution)
• It’s a matter of TRUST
Understanding the audience

- Lay people in the audience also have their own personal experiences and “lay” knowledge based on their personal experience, culture and conventional wisdom (Wynne 1992).
  - Science communicators must take this knowledge into account.
  - Discounting it feed the distrust

- Feeling ignored by the media, the “audience” is using social media and other user-generated content platforms to develop their own frames and interpret scientific issues.
Understanding of risk and CVD

- Patients generally have insufficient knowledge about CVD or CV risk factors and often tend to have a dichotomous understanding of risk rather than understanding risk as a continuum.
- Patients show optimistic bias when considering their own risk and consistently underestimate it.
- They also tend to compare themselves to patients who are worse off than themselves when judging their personal risk rather than another average person like themselves.
- Although CVD is preventable, it can be prevented only if patients have an accurate perception of their risk of CVD.

Which brings us to .... Risk communication

- The way in which individuals assess risk has a potentially huge impact at a societal level.
  - e.g. micro decisions about cyber-crime, national health costs
- Everyone assess risk on a daily basis (crossing the road, eating bacon, second glass of wine, going on a date)
- We often feel more fear things with low probability (terrorism), than high probability (HIV, heart disease).
  - Sunstein (2006) uses the term “misfearing”
  - WHY? Media, framing, prevention funding.

- We need more understanding of the way in which individuals assess risk, to enable them to make decisions in their own best interest, or at least “value-congruent”. i.e. The risk fit their value structure.
Risk communication in the context of uncertainty

- Uncertainty is part and parcel of scientific information and the various disciplines (e.g., medical, management and social and environmental sciences)
  - But we are not good at communicating uncertainty. It requires communicating probabilities, i.e., statistics.
- In a study of perceived severity based on media coverage, there was no relationship between salience of the severity as covered in the media and public risk perceptions (Rim, Ha, & Kiousis, 2014).
- “Humans are very bad at understanding probability. My hope would be, if we understood probability perfectly, then we would be less open to manipulation: people trying to sell things, scare others, or even falsely reassure someone. But it may not change behavior. All the studies show that, even with good risk communication, people carry on doing what they did before.”

-- David Spiegelhalter. Winton professor for the public understanding of risk at the University of Cambridge since 2007.
Cause of death rankings
Coverage vs. perceived threat

“Science” also causes uncertainty

Everything we eat both causes and prevents cancer

SOURCE: Schoenfeld and Ioannidis, *American Journal of Clinical Nutrition*
The quality of public communication of science is highly dependent on the quality of research produced and published in specialized contexts.

With 24 hour news cycle, “science” is pushed out to the public without proper filtering for quality.
The media, and its diminishing credibility

**Trust in Mass Media, Gallup Poll**

- Great Deal/Fair
- Not Much/None

In general, how much trust and confidence do you have in the mass media -- such as newspapers, TV and radio -- when it comes to reporting the news fully, accurately and fairly -- a great deal, a fair amount, not very much, or none at all?
Why.....?

- “I saw it on the news” or “I read it in the newspaper” no longer guarantees that it is accurate
  - “Post truth”
  - Social media
- Scientists sent to talk to the public, are not always prepared...and it does not always go well. (CRISIS OF MEDIATORS)
- Corporate scientists now speak directly to the public
- This creates a Crisis of Mediators
Crisis of Mediators

Digital media allow research institutions and actors to supply to end-users an unprecedented amount and variety of materials, for example, videos, interviews with scientists, selected news items.

Ever-stronger public relations efforts by research institutions

Traditional mediators of science communication like newspapers, magazines, television and radio programs and science museums and centers are losing their traditional centrality as filters and guarantees of the quality of information
When science advances but medical care doesn’t.
Are Eggs Healthy or Safe to Eat?

Studies show an increase in arterial plaque build-up for people that consume eggs.

EAT YOUR EGGS

@SYATTFITNESS

17 calories
3.6g protein
- Potassium
- Selenium
- Folate
- Riboflavin
- Magnesium
- Niacin

55 calories
2.7g protein
- Choline
- Vitamin A
- Vitamin D
- Vitamin E
- Vitamin K
- Lutein
- Zeaxanthin
- Folate

FACT
EGGS HAVE CHOLESTEROL, BUT EATING CHOLESTEROL DOES NOT RAISE YOUR CHOLESTEROL BECAUSE OF YOUR BODY'S NEGATIVE FEEDBACK LOOP.
Trends Health Information Seeking

- Increased direct-to-consumer style advertisements for statins and other pharmaceutical products
- Growing use of social media for health information (e.g., online community; peers)
- New opportunities for social support for reinforcing lifestyle behaviors (e.g. behaviors for controlling hypercholesterolemia)
Direct-to-Consumer Advertising (DTCA) Via Social Media

- While not legal in many countries, DTCA has generated billions of dollars in the U.S.
- Pharmaceutical companies are beginning to use the full spectrum of social media around the world to promote products (including statins)
- YouTube, Facebook, Twitter, Apple I-Tunes, and a variety of other platforms regularly feature advertisements for statins
- Sponsored content “cholesterol news” stories as new form of advertising
Side Effects of Cholesterol-Lowering Statin Drugs

Statin Scam Exposed:
CHOLESTEROL DRUGS CAUSE
Rapid Aging
Brain Damage
& Diabetes
Direct-to-Consumer Advertising (DTCA) Via Social Media

- Social media platforms make it easier for pharmaceutical companies to reach global audiences
  - Such practices are increasing and will not wait for global regulation
  - Rapidly changing media environment—newer platforms and media convergence makes DTCA easier to accomplish, even in places where it is not legal
Online Opinion Leaders

- Research has found that people often rely on online opinion leaders for health information and help with health decision making.

- Opinion leaders are prominent person(s) in a person’s social media environment:
  - Bloggers
  - Individuals or organizations a person follows on Twitter
  - Information shared by trusted family members or friends on Facebook, Instagram, Pintrest, and/or other Platforms

- Online opinion leaders have the strong ties needed to legitimize health information.

- Health communicators and online opinion leaders should find ways to work together to reach target populations with important, evidence-based, and up-to-date health information.
Importance of sources influencing prescription medication decision

- Doctor (primary care specialists physician): 58% Extremely important, 33% Very important
- Pharmacist: 30% Extremely important, 49% Very important
- Nurse/Nurse practitioner: 28% Extremely important, 50% Very important
- Someone else with the same condition: 16% Extremely important, 47% Very important
- Disease associations/support groups: 11% Extremely important, 45% Very important
- Internet resources (Web sites, search engines, advertisements, blogs, forum, social networks): 11% Extremely important, 38% Very important
- Relatives/Friends/Co-workers: 11% Extremely important, 35% Very important
- Pharmaceutical companies (drug brochures, pamphlets, etc.): 10% Extremely important, 30% Very important
- Television (health-related programming): 6% Extremely important, 26% Very important
- Newspapers/Magazines (general or health-specific): 6% Extremely important, 26% Very important
The advent of the social media environment has made it easier for pharmaceutical companies to market hypercholesterolemia control products to an expanded global audience.

Online opinion leaders are becoming increasingly important to consumers who are trying to make sense of complex health information (including information about hypercholesterolemia).

Social media can provide a forum for social support with hypercholesterolemia control and health behavior change/maintenance.

We can’t win all argument simply with facts, or attacking faulty arguments.

We must understand what the barriers are. Perception of risk. Driving fears. What values are threatened?
Science communicators: we must know our audience

Research and practice in science communication needs to (continue to) focus on:

- What people want to know
- Implications of science issues on people’s daily lives
- Understanding people’s concerns about science
- Who people want to hear from (and who they believe)

Health expert should partner with communicators to provide accurate information to assess risk, frame messages and use relevant communication channels.
GRACIAS
THANK YOU