Vaccine Risk Communication
An Overview

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Conflicts of Interest

No financial conflicts to declare

My Biases:
- Consultant to Canadian Peadiatric Society Imm/ID Cmt
- Consultant to WHO Immunization/ Vaccines and Biologicals
- SAGE Working Group on Vaccine Hesitancy
- Canadian Centre for Vaccinology: Health Policy and Translation Group

I believe vaccines are safe, effective, serious diseases can occur if not immunized
Premise

• An **informed** individual is not necessarily a behaviorally responsive one...

• Many factors influence immunization decisions

• To increase uptake of vaccination services, we need to
  • - understand these factors
  • - develop savvy strategies to convince an individual i.e. trigger the desired response to want and accept immunisation.
194 countries endorsed the Global Vaccine Action Plan (GVAP)

**Strategic objective 2:**
individuals and communities
1) understand

   **value of vaccines**

2) demand **immunization as both their right and responsibility**......

Includes addressing "hesitancy"
**Vaccine Hesitancy**

Vaccine attitudes
a continuum ranging from total acceptance to complete refusal.

Vaccine hesitant individuals
a heterogeneous group:
middle of the continuum
may **refuse** some vaccines
but agree to others,
may **delay** vaccines
or may **accept** vaccines
**but are unsure** in doing so.

WHO SAGE Working Group on Vaccine Hesitancy, 2012
Vaccine Hesitancy Not New……..

- Pertussis – SIDS
- Hep B – demyelinating dis
- MMR- autism
- Thimerosal- ASD
- Alum- inclusion myositis
- HPV-lowers sexual debut; more sexually active
- Multiple vaccines as cause of – cancer, diabetes, multiple sclerosis
- Multiples vaccines overwhelm immune system
- Natural infection is better than immunization
Importance and Effectiveness of Vaccine

“Do you agree or disagree with the following statements?”

- **Childhood vaccines are important for my child’s health**
  - Agree (5-7): 88%
  - Disagree (1-3): 5%
  - Neither (4): 7%

- **Childhood vaccines are effective**
  - Agree (5-7): 86%
  - Disagree (1-3): 5%
  - Neither (4): 10%

EKOS Vaccine Survey 2011,
http://resources.cpha.ca/immunize.ca/data/1792e.pdf
Relative Importance of Different Vaccines

“How important do you think the following vaccines are in preventing disease in children?”

- Tetanus/diphtheria/Hib/pertussis/polio vaccine: 80% highly important, 15% moderately important, 3% not important
- Vaccine to prevent meningococcal disease: 76% highly important, 17% moderately important, 4% not important
- Measles/mumps/rubella (MMR) vaccine: 75% highly important, 19% moderately important, 5% not important
- Hepatitis B: 68% highly important, 25% moderately important, 5% not important
- Vaccine to prevent pneumococcal disease: 67% highly important, 23% moderately important, 5% not important
- Vaccine to prevent Human Papillomavirus: 52% highly important, 30% moderately important, 11% not important
- Vaccine for chicken pox (Varicella): 51% highly important, 35% moderately important, 14% not important
- Flu vaccine (influenza): 26% highly important, 46% moderately important, 27% not important

n=1745
Vaccine Safety Survey, 2011
Public Perspective of Risk: 

*Personal not Sci/Evidence Based*

“What does it mean for me and my family—what should I do about it?”

“Even when believe vaccines imp for protection—may still be issues”

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Benin et al Pediatrics 2006;117:1532-41
Freed et al Pediatrics 2010;125:654-659
WHO Euro 2011
Reasons for Receiving Influenza Vaccination among HCP US Survey
Nov 2011

- To protect myself: 81.5%
- To protect my friends & family: 54.8%
- To protect patients: 42.6%
- Vaccine was offered free of charge: 19.9%
- To avoid missing work: 19.6%
- My employer requires me to be vaccinated: 17.3%
Risk Perception Problem: Impact of Heuristics

“Hard wired” to deal with life threatening situations with reflexive reactions

Heuristics: cognitive shortcuts - simplify complex decisions & judgments ... “automatic intuition”

MacDonald NE et al. Risk perception, risk management and safety assessment: What can governments do to increase public confidence in their vaccine system? Biologicals 2012 ;40(5):384-8
Cognitive Shortcuts-1

Omission

*Actions* more harmful than inactions

Reluctance to be immunized- *wait and see*……..

Public

New vaccine – wait to see if VPD is very bad and if vac safe –
Wait to immunize my baby- “too small now”

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Co-incidence

*After this, therefore because of this*

Coincidence Dragon

Public

MMR vaccine: autism

HCP

HBV: UKR-neonatal jaundice
Cognitive Shortcuts-2

**Anchoring**
Estimate by starting from a value known (anchor)
Judge probability future event by what occurred in past

**HCP**
Hear/see a serious AEFI - estimate AEFI as "more common" than reality

**Availability**
Judge an event as frequent or likely to occur if can easily imagine or recall it

**Public/HCP**
Not recall serious vac preventable dis e.g. measles
Have seen autism
Access to Vaccine Information

• Canada, US, UK – 1 in 2 people who use internet – use it to seek health information
• 2010 >80 % households in US, Can, UK internet access......
• Matters what term search for.......vac vs imm
• Google™ provides personalized search results based on user’s previous browsing habits
• Critics concerned-infringe on users' privacy

• Immunization problem – if find anti vaccine sites in searches and use them – will appear on first pages next searches...
Influence Vaccine Critical Websites: Vaccine Risk Perception

Websites
Accessing vaccine critical websites for 5 to 10 minutes
- ↑ perception of risk of vaccination
- ↓ perception of risk of omitting vaccination and changes intention to vaccinate.  
  Betsch C et al J Health Psychology 2010 15:446-455

Blogs
Accessing vaccine critical blog on HPV: “stories”
- ↑ perception of risk of vaccination
- ↓ changes intention to vaccinate
HPV vaccine supportive blog +ve; less effect: “facts”  

HPV on YouTube:
2008 review majority +ve
2011 review 1/2 now -ve, 1/3 +ve, rest neutral  
Trust = Competence + Caring

Diagnose if there is a Vaccine Hesitancy Problem

Individual

Do not assume!

First understand *if* any vaccine concerns......

*Do not plant new concerns did not have*

Population/subpopulation

Analysis of your uptake data-may unmask a problem

Need to determine if confidence complacency convenience

WHO EURO: The Guide to Tailoring Immunization Program- TIP

“For all vaccines, the attitude of the physician is very influential in the decision to vaccinate a child.”


Ansari M et al. Reducing resistance against polio drops. JRSH 2007;127:276-9

Favin et al. Why children are not vaccinated: a review of the gray literature International Health 2012; 4:229-238

Beware: Health Care Professional’s Imm Status impacts on program uptake.......

- If HCP not up to date their patients less likely up to date
Individual-Decision making partnership (HCP & Parent/Patient)

- Motivational interviewing: engage and motivate to change if hesitant about vaccines
- **First understand *if any vaccine concerns*...... vary with parent/youth/adult Validate why might believe this............esp if misinformation and/or misunderstanding
- **Listen, listen, listen**
  
  Be patient but consistent in message:

  **Vaccines safe, effective, serious diseases can occur if not immunized**

Make Good Use of Evidence

Address concerns:
With evidence – shaped to fit
Want vaccine schedule variation
e.g. IOM 2013 The Childhood Immunization Schedule and Safety: Stakeholder Concerns, Scientific Evidence, and Future Studies http://www.nap.edu/catalog.php?record_id=13563

KEEP IT SIMPLE

VPD-risks, consequences
Vaccine benefits not just risks!
 www.cdc.gov/vaccines/vac-gen/default.htm
 www2.aap.org/immunization/families/ResourcesFamilies.html

www.bccdc.ca/NR/rdonlyres/DADA3304-7590-48AC-8D2C-65D54ADFC77E/0/CDC_IC_Tool.pdf
Emphasize: Safety Monitoring for Vaccines

1. Pre-licensure review and approval
2. Good manufacturing procedures
3. Lot assessment before release
4. Post marketing surveillance AEFI –
5. Causality assessment review: serious AEFI
6. Process for action if vaccine performance issue
7. Vaccine recommendations based upon epidemiology, vaccine effectiveness and efficacy (NITAGs)
8. International collaboration (WHO/GACVS)

Vaccine Safety Throughout the Product Life Cycle. Pediatrics 2011;127 Supplement 1
MacDonald N, Pickering L. Canadian Paediatric Society, Infectious Diseases and Immunization Committee. Canada’s eight-step vaccine safety program: Vaccine literacy. Paediatr Child Health 2009;14(9):605-8
Exploit Cognitive Shortcuts–

Tell compelling stories–HCPs own
Or
• www.immunize.org/reports/ *
• www.cdc.gov/CDCTV/PersonalFluStories/index.html
• www.cdc.gov/polio/stories/india4.html
• Vaccine Preventable Diseases: The Forgotten Stories–Texas Children’s Hospital

anchor and recall

HCP can provide resources if appropriate concern–unsure evidence - answer later

Address Pain Mitigation

Vaccine Pain Concerns

patient, parent, HCP
44% parents*
measures to mitigate

*Kennedy et al. Pediatrics 2011;127 suppl S92-99

perception of benefit
anchor and recall

**Use Clear Language**

1. Standard vocabulary
2. Consistent denominator
3. Present risks/benefits fairly
4. Explain single event probability (rain, not rain) visual aides
5. Absolute numbers not relative risk or %
6. Frame your message

**1000 Children**

Tetanus Disease
10% die even with ICU care = 100 in 1000

Frame the Message: HCP, Immunization Programs

What is framing?
Presenting information of the equivalent outcome in terms of gains (positive) or losses (negative)

Ground Beef 25% fat

Ground Beef 75% lean

Frame Vaccine Message

Anxious about negatives:

vaccine 99% safe

better /more effective

than 1 % side effects

Often focus discussions: side effects not emphasize safety!


Gerend MA, Shepherd MA, Shepherd JE. The multidimensional nature of perceived barriers: Global versus practical barriers to HPV vaccination. Health Psychol. 2011 Nov 7; epub

Rustam Haydarov MSc Thesis http://krex.k-state.edu/dspace/handle/2097/3886
WHO EURO – working with major health bloggers Eastern Europe esp to educate about VPD, vaccines- aim vaccine positive information in blog
Collaborate with Community

GVAP Strategic objective 2: *individuals and communities understand the value of vaccines and demand immunization as both their right and responsibility*

Politicians: Fed/Prov/State /Municipal

Community leaders
Business leaders
Religious leaders

“*Calgary bishop’s HPV vaccine ban putting thousands of girls at risk: MDs*”
National Post June 26, 2012

Work with organizations
  Peds, PH, NGOs etc

Public “power”

saves time, resources, adds voice, enhances credibility

Others who influence***
www.unicef.org/ceecis/building_trust_immunization.pdf
WHO EURO: Vaccine Safety Events: Managing the Communications Response

• Step by step practical guide for response to real or perceived AEFI
  

• Increasing public attention to event and increasing impact on public trust dictates need for response

• What, when, where, why, how and who steps
  
Goethe....

“Belief is not the beginning but the end of all knowledge”...

“We are so constituted that we believe the most incredible things; and, once they are engraved upon the memory, woe to him who would endeavor to erase them”
Websites

WHO: www.who.int/immunization/en/

List websites meet WHO quality criteria


www.unicef.org/ceecis/resources_1462.html
Vaccine Communication Resources

Websites

www.cdc.gov/vaccinesafety
www.immunizationinfo.org (Nnii)
www.immunize.org (IAC)
www.dovaccinescausethat.com
www.fda.gov/cber/safety
www.vaccinateyourbaby.org
www.voicesforvaccines.org
www.caringforkids.cps.ca/handouts/immunization_information_on_the_internet
www.vaccineinformation.org/
Helpful References


Paling J. Strategies to help patients understand risks. BMJ 2003;327: 745-748


Davis TC et al. Vaccine risk communication: effect of an educational package for public health nurses. Health Educ Behav 2006; 33:787-801


MacDonald NE, Picard A. A plea for clear language on vaccine safety. CMAJ 2009; 180: 697 – 698

MacDonald N, Pickering L. Canadian Paediatric Society, Infectious Diseases and Immunization Committee. Canada’s eight-step vaccine safety program: Vaccine literacy Paediatr Child Health 2009;14(9):605-8


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Gerend MA, Shepherd MA, Shepherd JE. The multidimensional nature of perceived barriers: Global versus practical barriers to HPV vaccination Health Psychol. 2011 Nov 7


Rustam Haydarov; C4D Specialist, UNICEF Pakistan, MSc Thesis Effects of attribute framing and goal framing on vaccination behaviour: examination of message content and issue involvement on attitudes, intentions and information seeking http:// krex.k-state.edu/dspace/handle/2097/3886


Objectives/Outcomes

Following this presentation, the learner will be able to

• outline factors that influence parental acceptance of vaccines
• list current common parental vaccine safety concerns
• describe effective approaches to parents with differing views on vaccines to improve uptake
• Identify resources for parents and providers on vaccine safety topics