







## Determinants of vaccine hesitancy (WHO SAGE, 2014)



# Vaccine & vaccination specific issues

- Scientific risk/benefit
- Vaccination schedule
- Mode administration or delivery
- Introduction new vaccine
- Vaccine supply
- Healthcare professionals
- Costs
- Tailoring vaccines

### Individual & social group influences

- Perceived risk/benefit
- Social norm, individual need
  - Beliefs, attitudes and motivations about health
- Knowledge, awareness
- Trust in health system or provider
- Experience with past vaccination

# Contextual influences

- Influential individuals or leaders
- Politics, policies (mandates)
- Religion, culture
- Socio-economics
- Communication and media
- Pharmaceutical industry
- Historical influences
- Geographic barriers

# 2016 Vaccine Confidence Index<sup>TM</sup>

### Key findings from a 67-country survey

#### **Overall results**

Overall vaccine confidence is positive, though responses differ between countries

#### European region

Lowest confidence in the safety of vaccines in the world 7/10 countries in the world with lowest confidence levels in Europe, including France, Italy, Greece and Slovenia

#### Education

Education increases confidence in vaccine importance and effectiveness but not safety

#### France

Country with the lowest level of confidence in the safety of vaccines

### Changes in public confidence between 2015-2018



Larson, 2018

### The VCI in context: the cost of broken trust in the Philippines

## Sanofi at DOH

H CALOGRAM

GUTIN

SANOFI AT DON PANAGUTINI -GABRIELA CALOOCAN-

METRO

AR

73.58 DENGVAXIA FUND IMBESTIGAHAN!

Olonolo

### Confidence in importance decreased from <u>93%</u> to <u>32%</u>

Confidence in vaccine safety decreased from <u>82%</u> to <u>21%</u>

Confidence in effectiveness decreased from <u>82%</u> to <u>22%</u>

#### I think vaccines are important for children to have





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vactruth.com 30 juillet. 14:34 · 🚱

The science is on our side to reject vaccines. Not one vaccine has had the individual contents tested for safety, when injected or given orally, or when combined, to claim any vaccine is safe. If you support vaccinations, we ask why? What is your reason? If you are willing to hold your child down while this is injected into them, what is your reason? We appreciate your honest response.

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Search

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Autism Debate with Jenny McCarthy on 'The Doctors' (Part 1)

WHAT'S IN A VACCINE? THIS IS WHAT A 2-MONTH OLD RECEIVES IN ONE DR. VISIT: aluminum phosphate, formaldehyde, glutaraldehyde, 2-phenoxyethanol, Stainer-Scholte medium, casamino acids, dimethyl-beta-cyclodextrin, Mueller's growth medium, ammonium sulfate, modified Mueller-Miller casamino acid medium without beef heart infusion, complex fermentation media, amorphous aluminum hydroxyphosphate sulfate, sodium chloride, aluminum hydroxide, yeast protein, sodium chloride, disodium phosphate dihydrate, sodium dihydrogen phosphate dihydrate, Eagle MEM modified medium, calf bovine serum, M-199 without calf bovine serum, vero cells (a continuous line of monkey kidney cells), phenoxyethanol, formaldehyde, neomycin, streptom sucrose, sodium citrate, sodium phosphate monobasic mor hydroxide, polysorbate 80, cell culture media, fetal bovine IDNA from porcine circoviruses (PCV) 1 and 2 has been dete peptone broth, casamino acids and yeast extract-based m carrier protein, polysorbate 80, succinate buffer, alumin



Frontpage > Life > Health & Families

Thousands of teenage girls report feeling seriously ill after routine school cancer vaccination



#### Age of Autism Daily Web Newspaper of the Autism Epidemic

Black Friday fo he Environmen ames Lyons-We	r Those Who Deny the Autism Epidemic - tal and Genetic Causes of Autism, Dr. iller, PhD	♥ Th
	Check back at AofA and on social media for a Black Friday	- 40
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AND GENETIC CAUSES		T
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	scientific, political and societal dialogue. The Environmental	
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nvironment, Silent Spring Lyons Weiler's work will be controversial, and may well anger some of his colleagues in the

The Ea of Auti

### Reported trust in the internet in Europe Why it's not as simple as it looks

?

What do we mean by trust in the *Internet?* 



Not trusting the internet does not always mean not *using* the internet to look for information online - we do not always act in a rational manner



The way the Internet influences our decision is complex and not always obvious



(a) Where respondents would go to find medicines information (%)

■(b) Trustworthiness of the same sources (%)

Bouder, 2015. Transparency and trust in the European pharmaceutical sector (Journal of risk research)



2014: 59% of participants in the EU Barometer survey used internet to search for health-related information within the last year

### The use of the internet for healthrelated information in the EU

Countries with highest use of internet for health information



*Most* commonly reported sources of health information online

47%

33%

26%

85%

While 89% of respondents in the EU are satisfied with the health information they found on the internet and 81% agree they can distinguish high- from low-quality information, 39% say they do not trust the information they find

Eurobarometer 2014: European citizens' digital health literacy

### Experts; healthcare professionals

Changing dynamics in communication and interactions Public: more empowered, engaged, informed

# The problem of misinformation and the spread of unverified concerns online



Type of misinformation online: antivaccination movements vs public concerns

Key themes: safety (incl. autism, MS, other side effects), lack effectiveness, conspiracy theories (ingredients, sterilisation, vaccines not tested), link cancer Increased incidence of cervical cancer in Sweden: Possible link with HPV vaccination

LARS ANDERSSON

Abstract

The Centre for Cervical Cancer Prevention in Sweden has noted in its annual report a substantial increase in the incidence of invasive cervical cancer, especially during the two years 2014 and 2015. I have sub-grouped the data according to age, using the same statistical database of the National Board of Health and Welfare as used by the authors of the above-mentioned report. The

Table 1								
Age-standardised (according to the standard Swedish population in								
2000) incidence of invasive cervical cancer (per 100,000 women)								
County	2006 -2009	2010 -2013	2014 -2015	Average change 2005 – 2015 expressed as percentage	p value for trend			
Sweden, total	9.71	9.56	11.49	1.7	0.03			

Indian Journal of Medical Ethics Online First Published April 30, 2018

Where does misinformation circulate? We often think of social media when we think about misinformation, but we see a lot of misinformation on websites, blogs and news articles as well

*Effective style of communication for spreading concerns*: impact of videos, images, stories; very *rapid* style of communication



### 8 Crystals For Better Energy

From cell phones to satellites, crystals are critical elements of practically every tech-y item in the modern world. Colleen McCann, a certified shamanic energy medicine practitioner, emphasizes the importance of both the scientific and the more mystical aspects of crystals. Previously a fashion stylist (her appreciation for beautiful things is immediately apparent when you see her at work with crystals), McCann has traveled the world to research crystal traditions across cultures and history. Today, she divides her time between the coasts, conducting crystal readings, space clearing and balancing, shamanic healing, and intuitive business coaching sessions.

Here, she breaks down the eight significant crystals, inspired by a shaman's medicine bag. McCann personally clears every stone of previous energy it may have been carrying (more on a crystal's energy, below), and puts positive intentions and blessings into each one.

### Impact of social and digital media on vaccine confidence



### The spread of emotions: mass psychogenic illnesses and HPV vaccination in Colombia

May 2014: 15 girls from the same school develop the same symptoms after HPV vaccination: dizziness, nausea, difficulty walking, spasms →Transmission of videos via social media  $\rightarrow$ More than 600 girls in the country in a few weeks

No biological link identified with the vaccine

The government classifies the reactions as "mass psychogenic illnesses" > Public outcry: "The government doesn't take us seriously, despises our girls"

2016: vaccine coverage drops to 15%, with impacts seen on other vaccines

Gouerno Nacional, Departamental Y Municipal Abandonan 600niñas

### What do we mean by the "anti-vaccination movement"?

The "anti-vaccination movement"  $\neq$  public or parental concerns, vaccine hesitancy

*Communication strategies*: use of multiple sources of information (from blogs to Facebook groups, Twitter, news interviews but also scientific journals); extremely good communicators, well-organised and networked (psychology of communication, emotional stories with some "scientific" facts, (over)filling the gap when no positive information)

Bad science People with medical credentials fuelling exaggerated or unfounded fears (e.g. Wakefield)

People with goal of polarising society (e.g. trolls and bots both *for* and *against* vaccination; populism)

Financial gains People who see a financial opportunity for selling books, services or other products Super-spreaders People who propagate information to likeminded vaccinequestioners

Larson 2018, The Biggest pandemic risk? Viral misinformation (Nature)

Misinformation and rumours can have serious impacts and can persist over time

Now that Trump won, we can all feel safe in sharing that Mr Trump met with autism advocates in August. He gave us 45 minutes and was extremely educated on our issues. The Age of Autism antivaccine blog, 2016





tays\_way\_ • Follow



tays\_way\_ The past few days have been profoundly monumental for me, my family and for this movement to date.

I am deeply honoured to have been in the presence of a man I believe is, can and will change the course of history. This was a divinely timed, once in a lifetime opportunity and I will forever cherish the conversations and moments we shared together in Samoa, my homeland ws THANK YOU @robertfkennedyjr

#bebrave #dothestudy



2,821 likes

# The need for a continuous feedback and listening loop



ADVANCE (2017). Developing communication strategies on vaccine benefits and risks

If we want to be able to respond to misinformation and hesitancy, we first need to understand how it is created, what content is shared, and how it is shared and engaged with

Need for continuous listening to the public

### **Conclusions and implications**



Social and digital media have changed the dynamics between patients/the public and healthcare professionals Various ways social and digital media can influence confidence in vaccination, it's not only about trust in the information source

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Difference between public concerns circulating online and anti-vaccination movement spreading misinformation: our responses should reflect this

# 04

Important to keep listening to the public and monitoring digital and social media: not as a representative tool of what a population thinks but as an indicator of the information they may be exposed to