



# Increasing public confidence in vaccines using social media - barriers and opportunities from a policy perspective

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“By now, governments to some extent *are* their electronic presence -- the only bit of government that many people see” (Margetts, 2009)

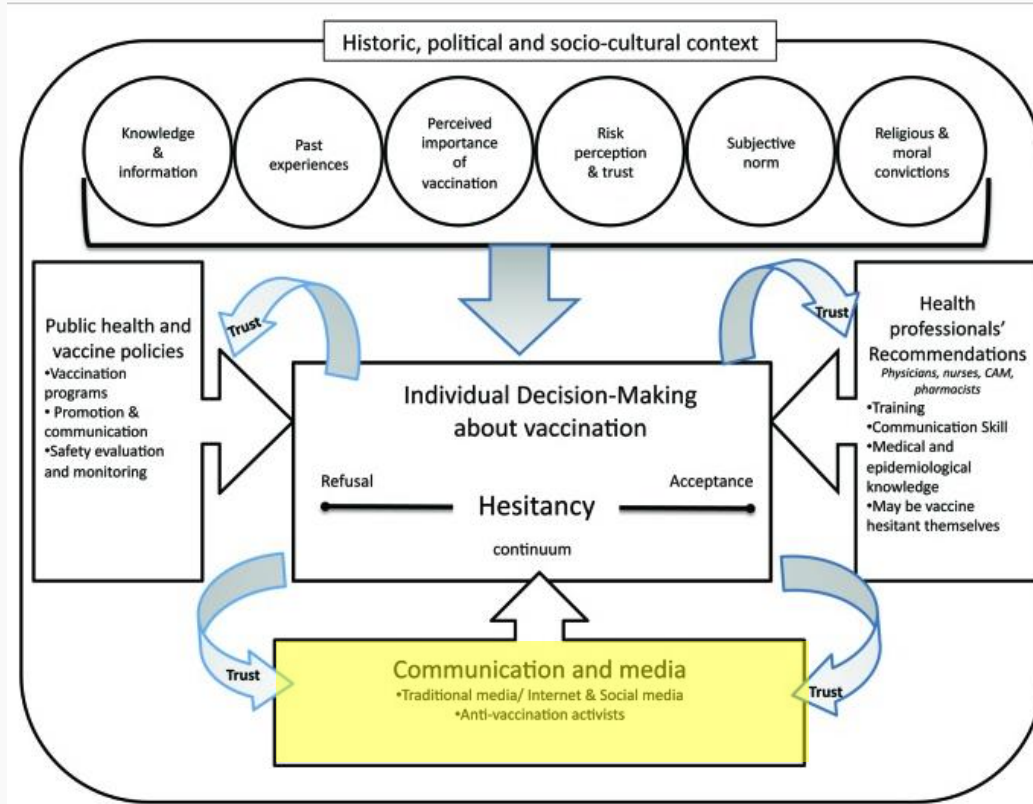
# Disclosure Statement

- I have no affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

# Background

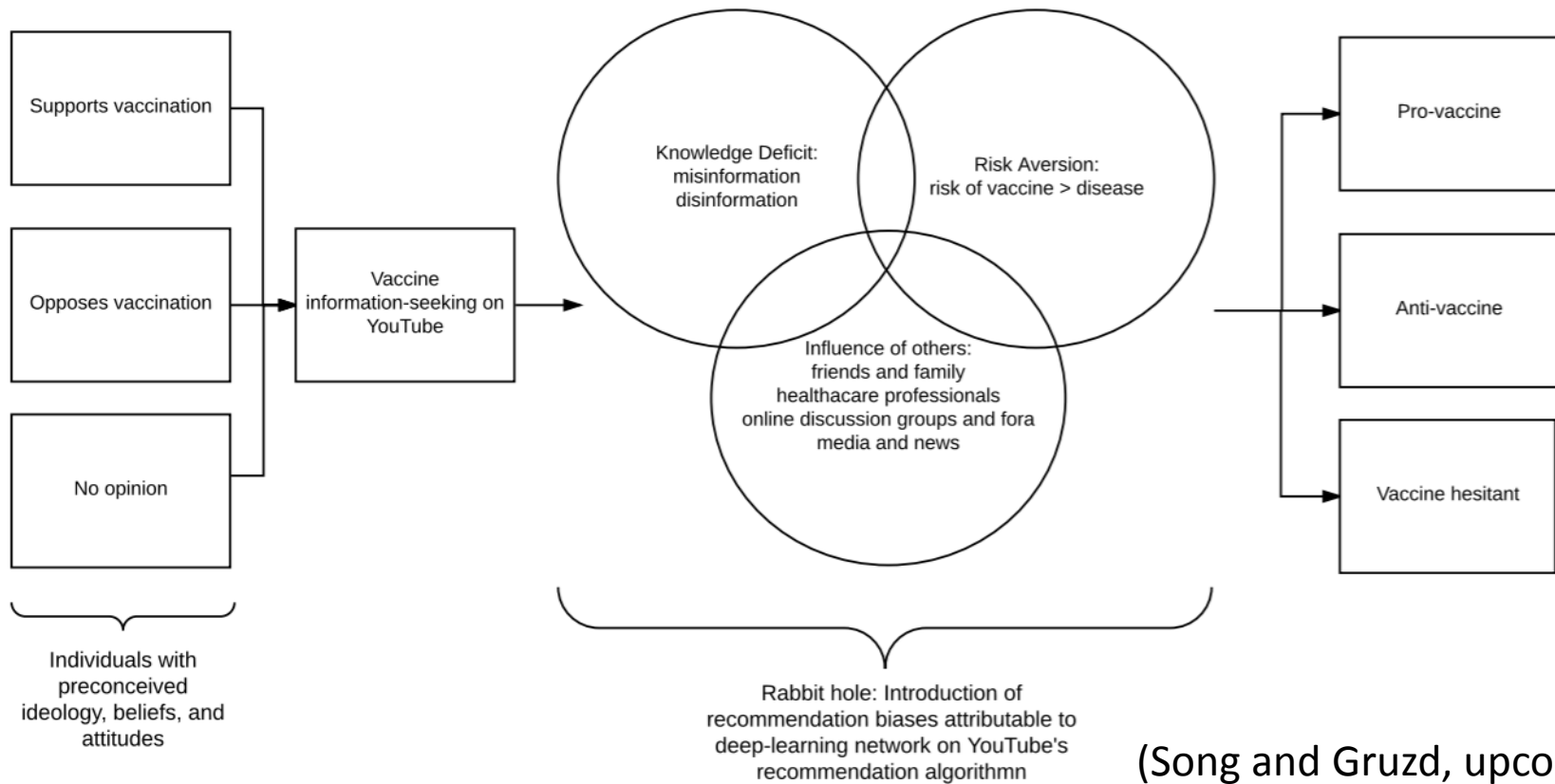
The Internet provides a vast source of health information that *can* empower the public to inform their individual health care decisions and health system decision making more broadly; however, its unmediated, acritical features can also be misinforming to the public.

# A proposed framework of vaccine hesitancy

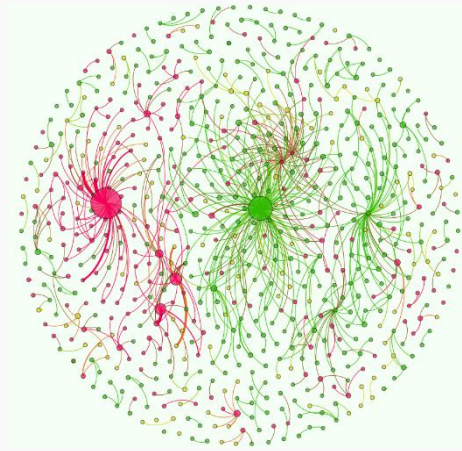
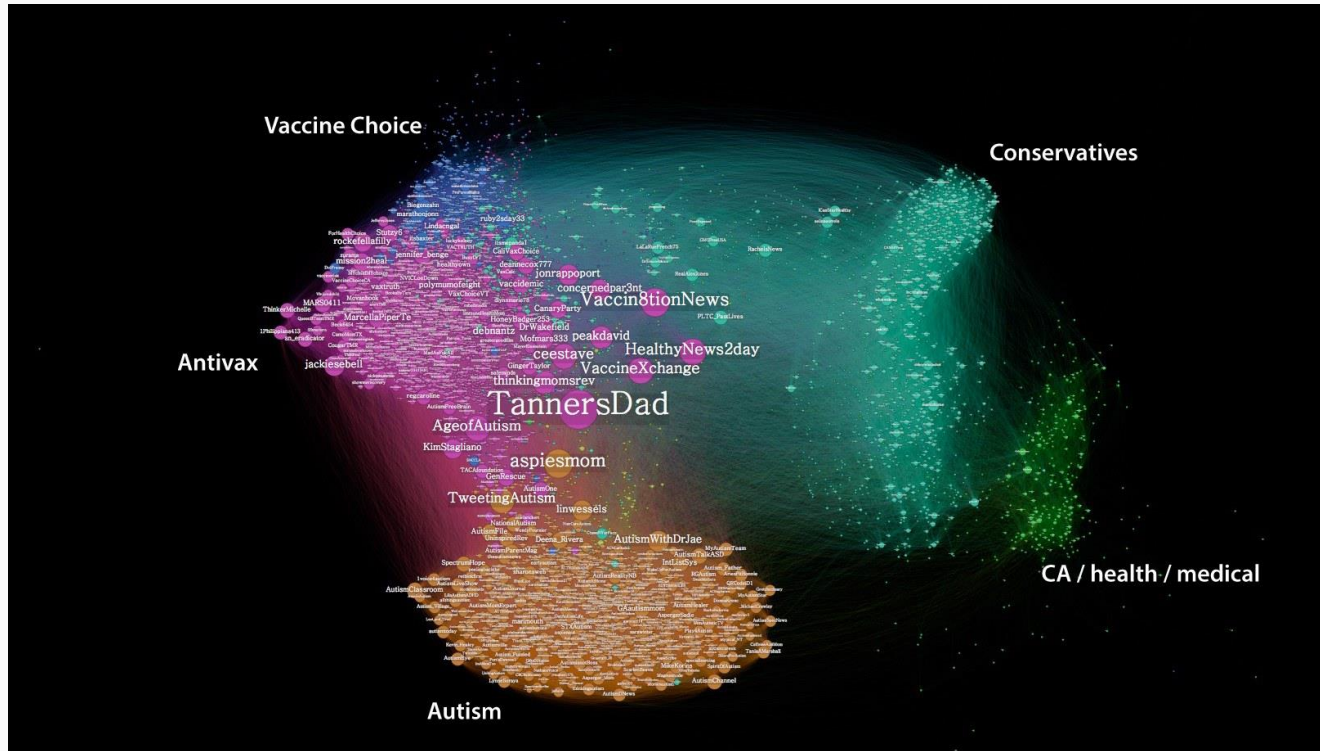


(Dube et al, 2015)

# A proposed framework for vaccine hesitancy on social media



# Silo 1 – social media



(Song et al, upcoming)

(Lotan, 2015)

# Silo 2 - hyperlinks

**Table 2.** The Top 10 Sources From the Network of Publishers on Vaccines Overall and by Each of the Four Social Communities, Based on Hyperlink Indegree Centrality (the 10 Sources Receiving the Most Inlinks).

Source rank	Overall	Provaccine	Vaccine-hesitant	Health and science	Mainstream media
1	<a href="http://cdc.gov">cdc.gov</a>	<a href="http://scienceblogs.com">scienceblogs.com</a>	<a href="http://ncbi.nlm.nih.gov">ncbi.nlm.nih.gov</a>	<a href="http://sciencedirect.com">sciencedirect.com</a>	<a href="http://nbcnews.com">nbcnews.com</a>
2	<a href="http://ncbi.nlm.nih.gov">ncbi.nlm.nih.gov</a>	<a href="http://sciencebasedmedicine.org">sciencebasedmedicine.org</a>	<a href="http://nvc.org">nvc.org</a>	<a href="http://chemport.cas.org">chemport.cas.org</a>	<a href="http://msnbc.com">msnbc.com</a>
3	<a href="http://Wikipedia.com">Wikipedia.com</a>	<a href="http://Wikipedia.com">Wikipedia.com</a>	<a href="http://mercola.com">mercola.com</a>	<a href="http://cdc.gov">cdc.gov</a>	<a href="http://livescience.com">livescience.com</a>
4	<a href="http://ageofautism.com">ageofautism.com</a>	<a href="http://leftbrainrightbrain.co.uk">leftbrainrightbrain.co.uk</a>	<a href="http://naturalnews.com">naturalnews.com</a>	<a href="http://apps.weofknowledge.com">apps.weofknowledge.com</a>	<a href="http://nytimes.com">nytimes.com</a>
5	<a href="http://scienceblogs.com">scienceblogs.com</a>	<a href="http://rationalwiki.org">rationalwiki.org</a>	<a href="http://whale.to">whale.to</a>	<a href="http://springer.com">springer.com</a>	<a href="http://washingtonpost.com">washingtonpost.com</a>
6	<a href="http://youtube.com">youtube.com</a>	<a href="http://braindeer.com">braindeer.com</a>	<a href="http://youtube.com">youtube.com</a>	<a href="http://who.int">who.int</a>	<a href="http://npr.org">npr.org</a>
7	<a href="http://nytimes.com">nytimes.com</a>	<a href="http://pediatrics.aappublications.org">pediatrics.aappublications.org</a>	<a href="http://greenmedinfo.com">greenmedinfo.com</a>	<a href="http://jid.oxfordjournals.org">jid.oxfordjournals.org</a>	<a href="http://latimes.com">latimes.com</a>
8	<a href="http://sciencedirect.com">sciencedirect.com</a>	<a href="http://feeds.feedburner.com">feeds.feedburner.com</a>	<a href="http://medalerts.org">medalerts.org</a>	<a href="http://nature.com">nature.com</a>	<a href="http://huffingtonpost.com">huffingtonpost.com</a>
9	<a href="http://naturalnews.com">naturalnews.com</a>	<a href="http://oracknows.blogspot.com">oracknows.blogspot.com</a>	<a href="http://healthimpactnews.com">healthimpactnews.com</a>	<a href="http://jama.jamanetwork.com">jama.jamanetwork.com</a>	<a href="http://twitter.com">twitter.com</a>
10	<a href="http://fiercevaccines.com">fiercevaccines.com</a>	<a href="http://theness.com">theness.com</a>	<a href="http://sanevax.org">sanevax.org</a>	<a href="http://tandfonline.com">tandfonline.com</a>	<a href="http://cnn.com">cnn.com</a>

(Getman et al, 2017)



# Silo 3 – accessibility of evidence

Researchers

The Public



Cochrane

THE LANCET



nature



# Silo 3 – accessibility of evidence

Researchers



Cochrane  
THE LANCET



Vaccine

nature



The Public



Cochrane  
THE LANCET



Vaccine



nature

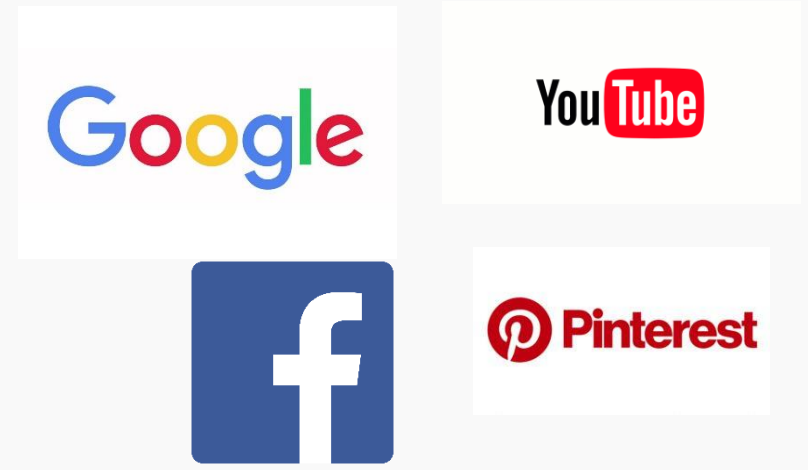


# Silo 3 – accessibility of evidence

## Researchers



## The Public



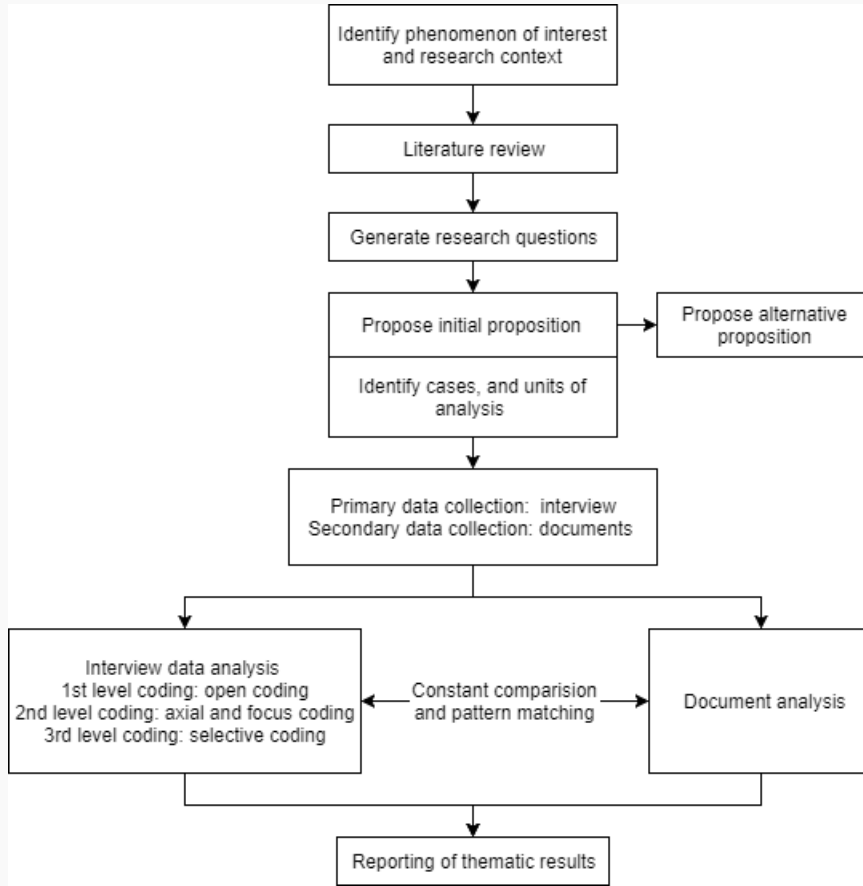
> 60% of information on social media are anti-vaccine. Heavily image and video-based.

# Research question

How are public health policymakers in Ontario making sense of this change?

**Q1** What are their perception towards social media, and the use of social media in increasing vaccine confidence in Ontario?

**Q2** How can policy makers respond to the Internet as a source of health information that shapes public opinion and individual decisions regarding health policies broadly and public health policies in particular?

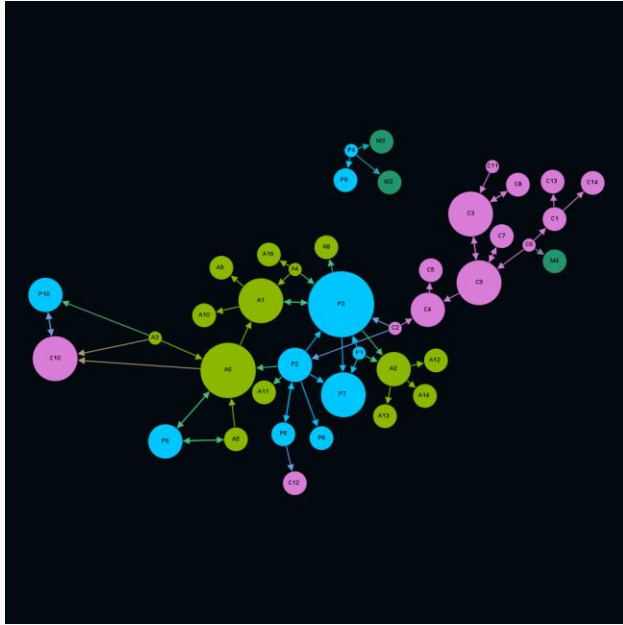


## Data Collection and analysis

- Cases study and grounded theory integrated approach (Halaweh, 2008)
- Context – Ontario advisory committee recommendations to use social media to promote public confidence in vaccines
- Unit of analysis – content contributors
- Proposition – 4 dimensions of social media use for governance in public health (Tursunbeyava et al, 2016)
- 23 key informants. 18 from ON, 2 from NS, 2 from BC, 1 from Quebec.

# Polycymakers in immunization

## Policy network



## Interpretation

- A tight knit community
- Consists of policy, communications, and academic content contributors
- Larger nodes indicate more references by others

# Theme 1:

key informants see vaccine hesitancy differently

	Provincial	Local
Policy Content contributor (PCC)	Address vaccine hesitancy through health protection	Address vaccine hesitancy through health promotion
Communications Content Contributor (CCC)	Vaccine hesitancy is complex	Vaccine hesitancy is a knowledge deficit

## Theme 2: Social media is...

- a. Not useful for informing policy
- b. A wildcard
- c. An app
- d. An interactive website
- e. Just “one more thing”
- f. All of the above



## Theme 3:

### Barriers to giving social media further consideration

1. Competing public health interests and heavy focus on fulfilling the Ontario Public Health Standards
2. Lack of provincial and federal guidance
3. Outdated framework recommended for evaluating immunization delivery and policy capacity adopted by NACI, CIC, PIDAC
4. Centralized decision-making and lack of collaboration from MOHLTC-ON
5. Social media is mainly the responsibility of communications experts
6. Uncertainty on the Return On Investment of social media (“backfire” effect)
7. Legal, financial, ethical constraints of using social media in government

# Two elephants in the room

- Elephant 1: Ontario's patchwork immunization information system (IIS)
- Elephant 2: Incongruent policies across provinces makes increasing public confidence difficult

# What key informants are considering going forward

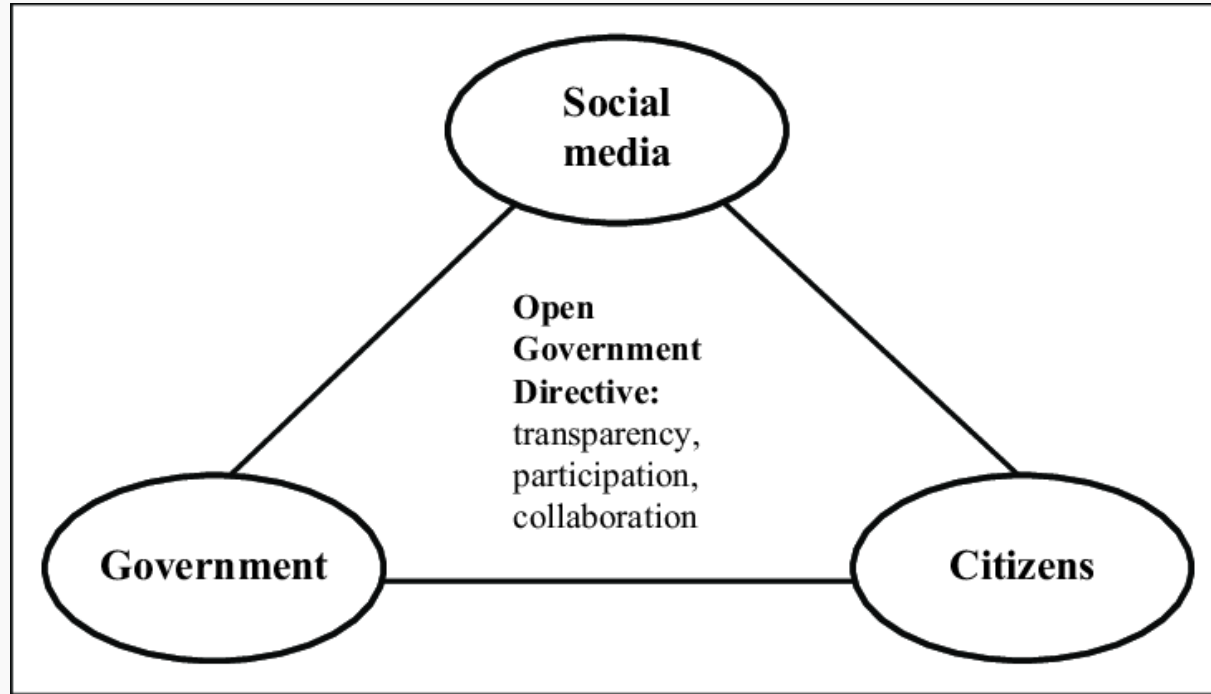
“There is no silver-bullet”

## The low-hanging fruits:

- Education (e.g., maternal, early education, professional training for healthcare professionals)
- Changes in the clinical setting (e.g., changing pamphlet wording, changing timing of vaccination, motivational interviews)
- Regulation (mandatory parental education for those opting out of vaccinating their children)
- Increasing accessibility to vaccination services

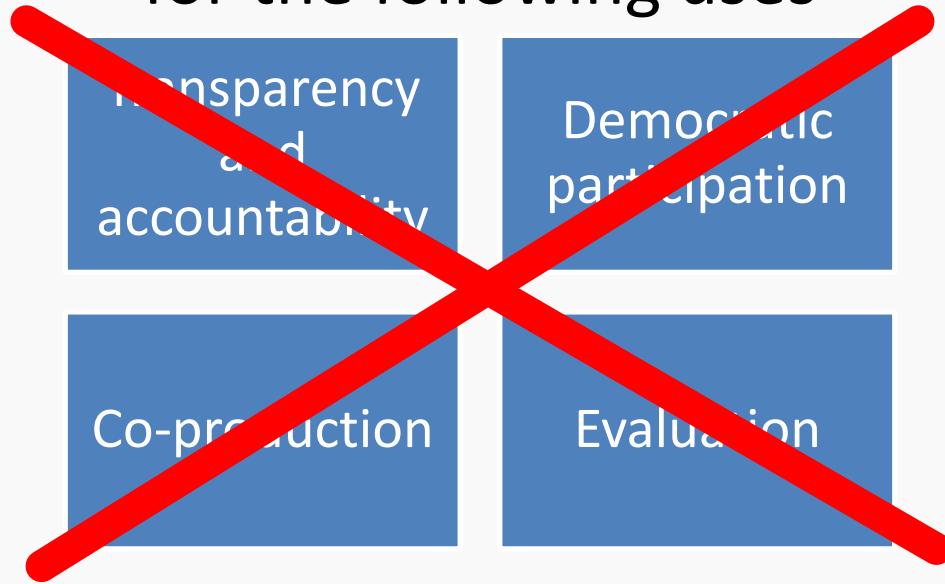
Harold Laswell once noted that “in societies where innovation is rapid, new structures are often needed to cope with claims of the expropriated” - Harold Lasswell, 1971

# Discussion: What are some opportunities that enables us to integrate social media as part of an accountable immunization policy?



(Lu et al, 2015)

# Policymakers have not fully considered social media for the following uses



(The 4 dimensions of social media use for public health; Tursunbayeva et al, 2017)

# Opportunities for change

- Disruptive Start-ups (e.g., CANImmunize)
- Integration of IIS with Digital Health Records
- Transparency and open data to hold immunization programs accountable to the public (e.g., AEFI, VIC)
- Robust evidence briefing + KT (Immunization Partnership Fund + CIRN)
- Inter-disciplinary collaboration in research and practice with informatics and network scientists, strategists in communications and marketing, and bridging the perception gap with young blood.

# Opportunities for change

- Open access of research articles to the public. They value the terms “research and evidence”
- Switching evidence-informed policymaking to addressing “matters of fact” to “matters of concern” (Latour, 2004).



# How health practitioners see anti-vaccine movement



# How anti-vaxxers see health professionals



The battle happens outside of the castle



Our policies are currently strengthening here

