www.freewebs.com/edward_jenner/the_cow_pock_large_cartoon.jpg

The Complex Problem of Vaccine Hesitancy

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Conflicts of Interest

No financial conflicts to declare

My Biases:

-Consultant to Canadian Peadiatric Society
Imm/ID Cmt

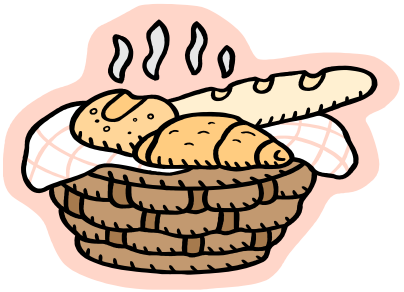
-Consultant/Advisor to WHO HQ
Immunization/Vaccines and Biologicals

-Canadian Centre for Vaccinology:
Health Policy and Translation Group

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

Simple

Following a Recipe



- Recipe essential
- Reliable recipes
- No expertise
- Standard products
- Certainty of same result

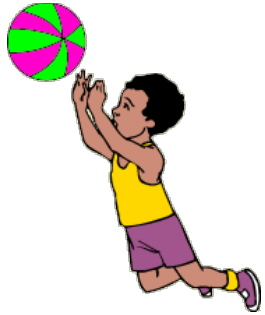
Complicated

A Rocket to the Moon

- Formulae essential
- Success leads to more success
- Need many experts
- Rockets similar
- High degree of certainty

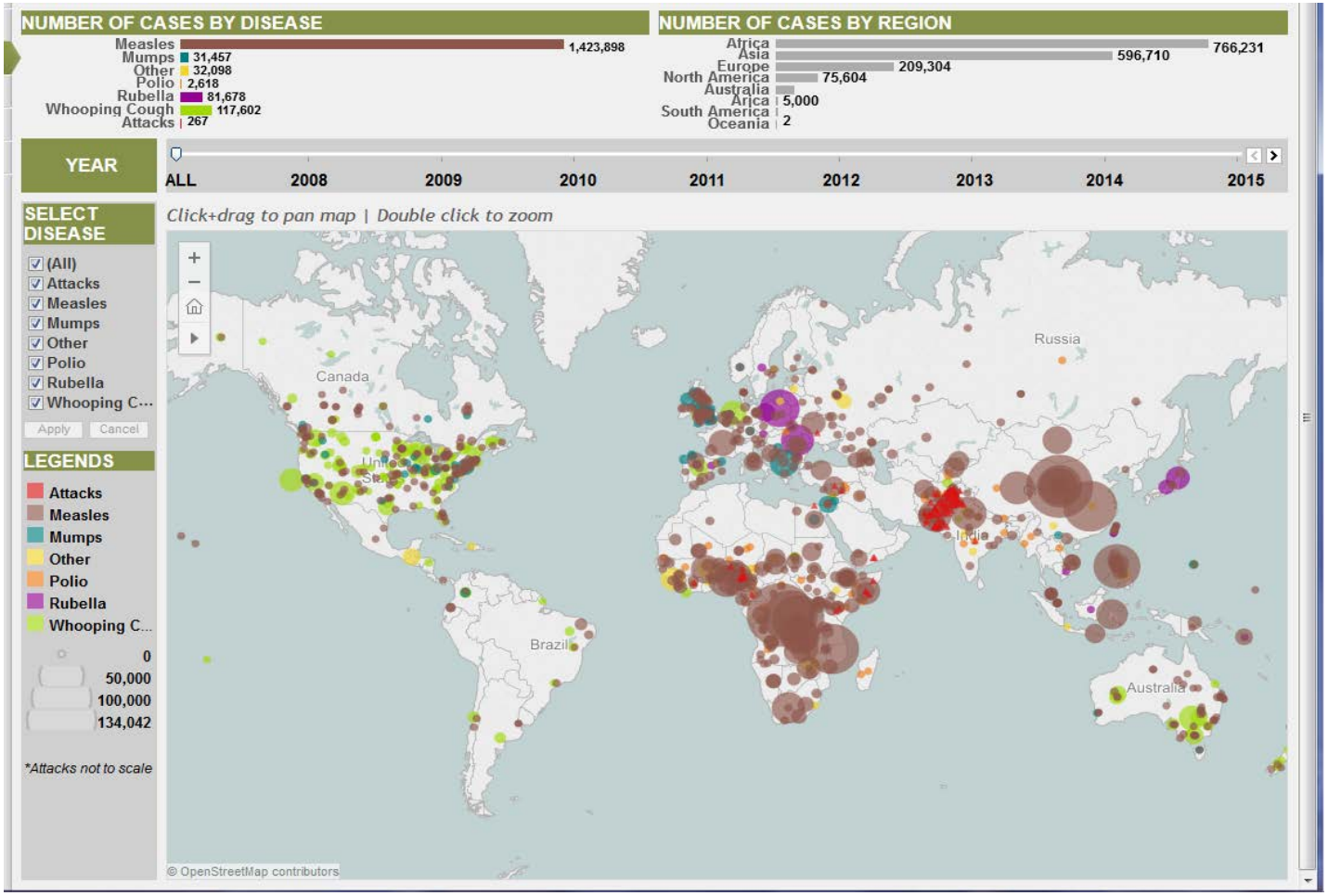
Complex

Raising a Child



- Formulae: limited application
- Success unpredictable
- Relationships key
- Each child unique
- Uncertain outcome

Vaccination not Vaccines Save Lives



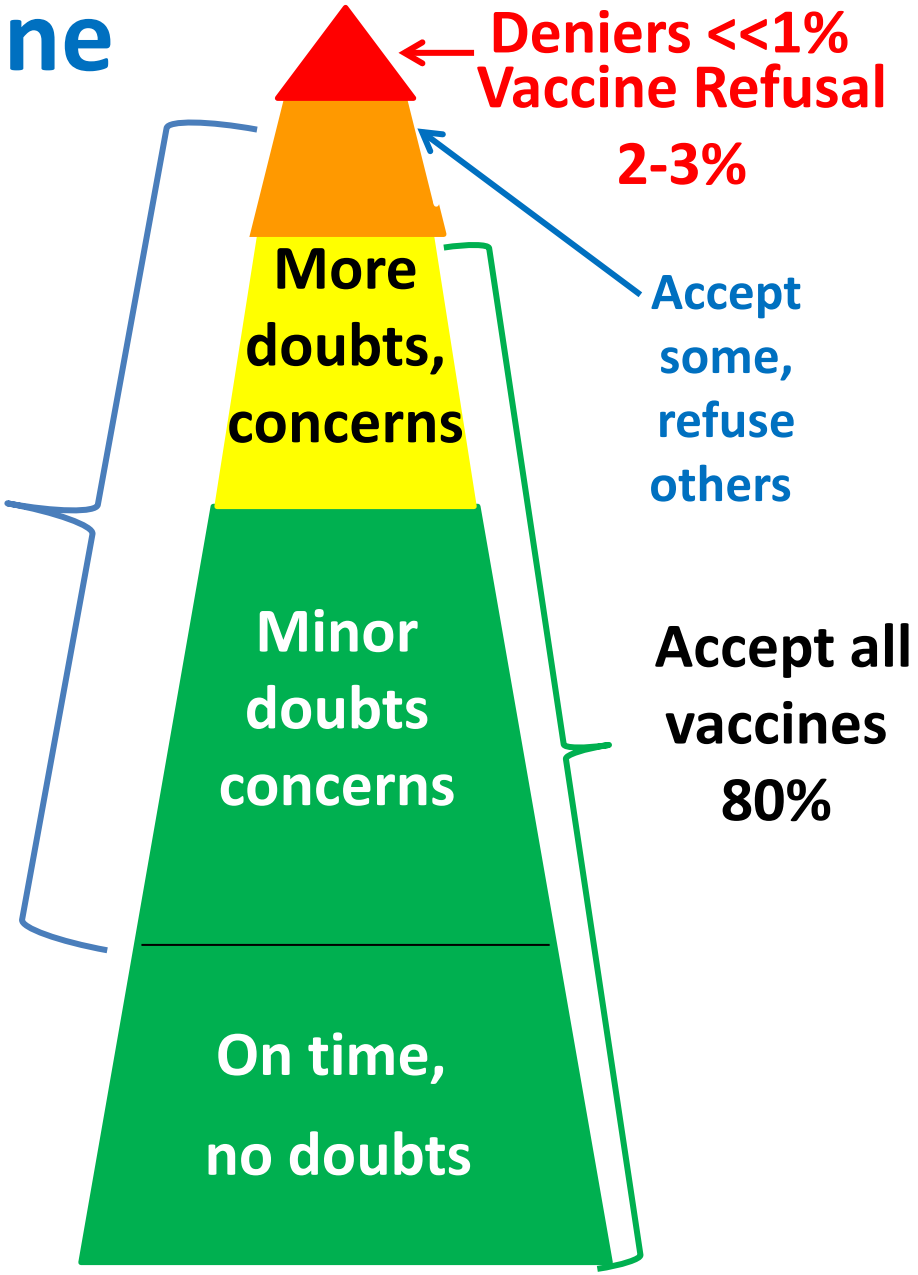
http://www.cfr.org/interactives/GH_Vaccine_Map/index.html#map

"……. high vaccine coverage is required to have a positive impact on the burden of disease." Baker L. SAMJ 2015; 105: 881-2

Continuum of Vaccine Acceptance

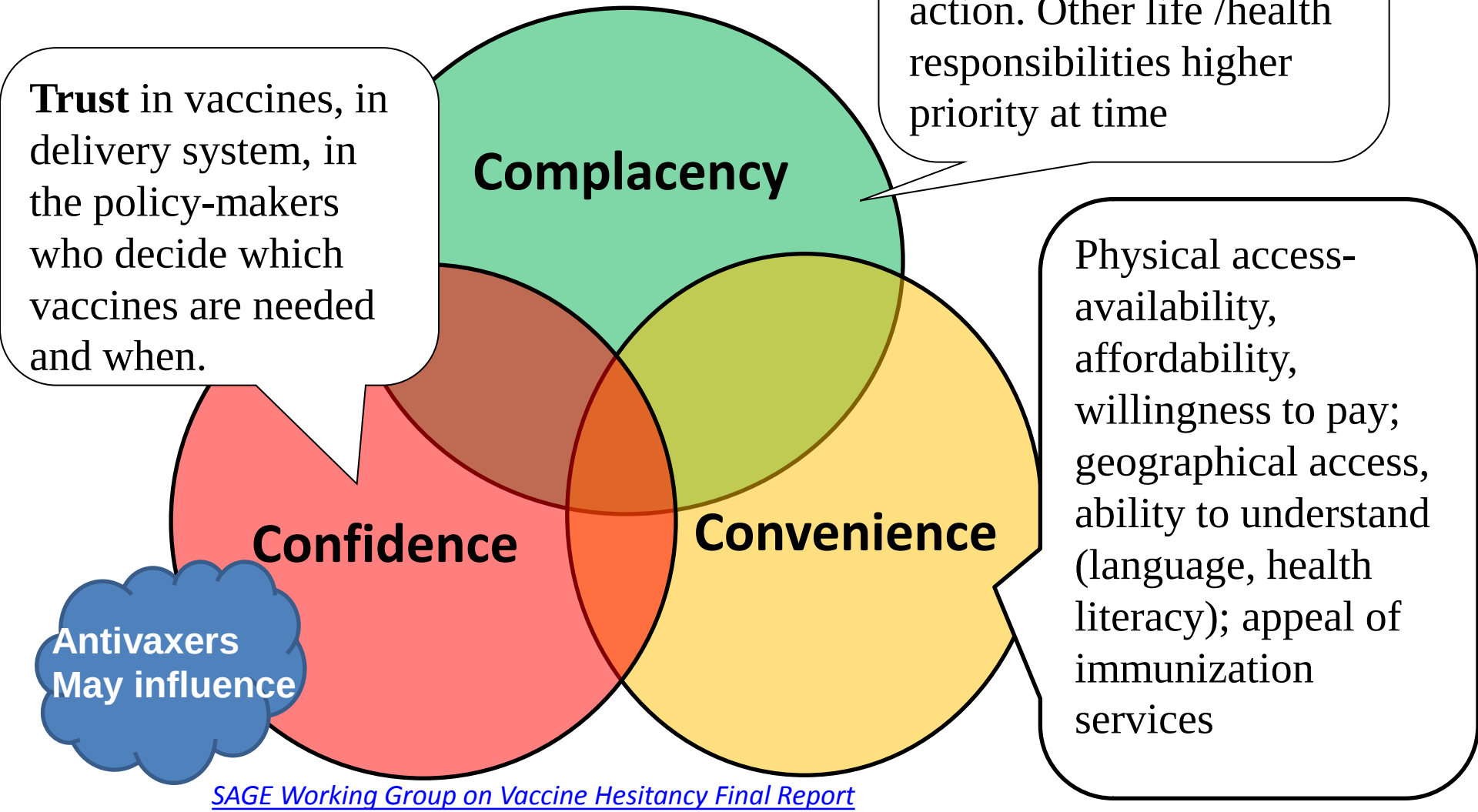
Vaccine Hesitancy (WHO)

- refers to delay in acceptance or refusal of vaccines *despite availability of vaccine services*
- *Hesitancy is **complex** and **context specific** varying across **time**, **place** and **vaccines***
- *HIC, MIC, LIC problem*



MacDonald NE and SAGE Working Group on Vaccine Safety. Vaccine hesitancy: Definition, scope and determinants. Vaccine 2015; 33:4161-4.

Vaccine Hesitancy Determinant Categories



SAGE Working Group on Vaccine Hesitancy Final Report
www.who.int/immunization/sage/meetings/2014/october/SAGE_working_group_revised_report_vaccine_hesitancy.pdf?ua=1


2 Vaccines FULLY VACCINATED
7 Vaccines FULLY VACCINATED
14 Vaccines FULLY VACCINATED
69 Vaccines BY Age 18 With 200+ more being tested!


My generation saw the end of smallpox.
My generation saw the end of polio.
My generation stopped vaccinating their kids.
My generation will see the return of deadly childhood diseases.

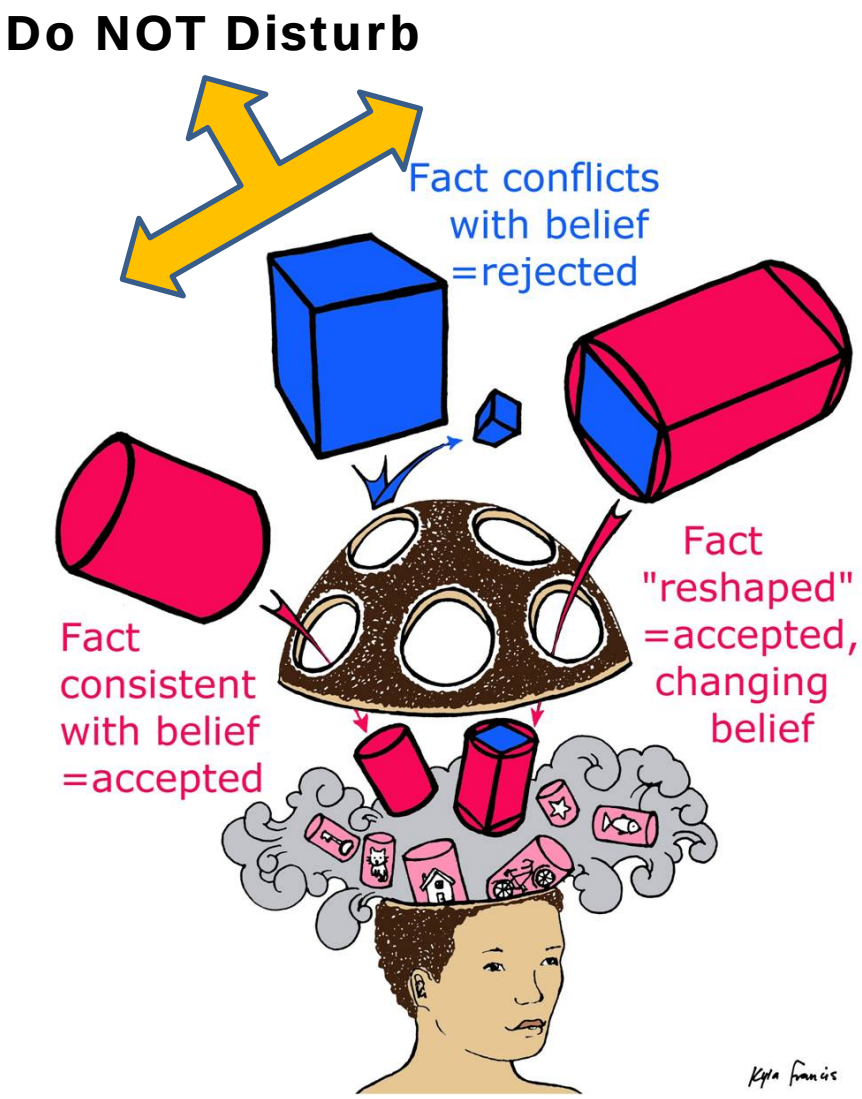
Vaccine Concerns & Reluctance to Immunize Outweigh VPD Concerns

- 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
- POTS, Chronic regional pain complex - HPV vaccine

Not New

Poland GA, Jacobson RM. The clinician's guide to the anti-vaccination galaxy. Hum Immun 2012;73:859-66. Tafuri et al Addressing the anti-vaccine movement and role of HCWs. Vaccine 2014 - http://dx.doi.org/10.1016/j.vaccine.2013.11.006

Vaccination is Counter Intuitive



Vaccination: encompasses

-a) acceptance of being vaccinated – **beliefs key**

- b) actual performance of vaccination

spread of vaccination chiefly depends on the ***spread of beliefs about vaccination and vaccine preventable diseases***

Assimilation Bias & Heuristics

Smith, Appleton, MacDonald. Adv in Exp Med Biol 2013; 764: 81-98.
Miton H, Mercier H. Trends Cog Sci 2015;19: 633-6

Post Modern Town Square: Social Media

Web2.0 "everyone, anyone is an expert" now big audience for "fringe" views

Websites, Blogs

Accessing *vaccine critical* websites, blogs *changes risk perception*

Exposure to conspiracy theories: hidden impact on beliefs

Kata A. Vaccine 2012; 30:3778–89
Betsch C et al J Health Psychology 2010 15:446-455
Nan X, Madden K. Health Commun. 2012 27(8):829-36 .
Douglas KM, Sutton RM. J Soc Psych 2008;148:210-222

twitter

- HPV - 30% users exposed to a majority –ve tweets.
- Leads to > probability post – ve tweet

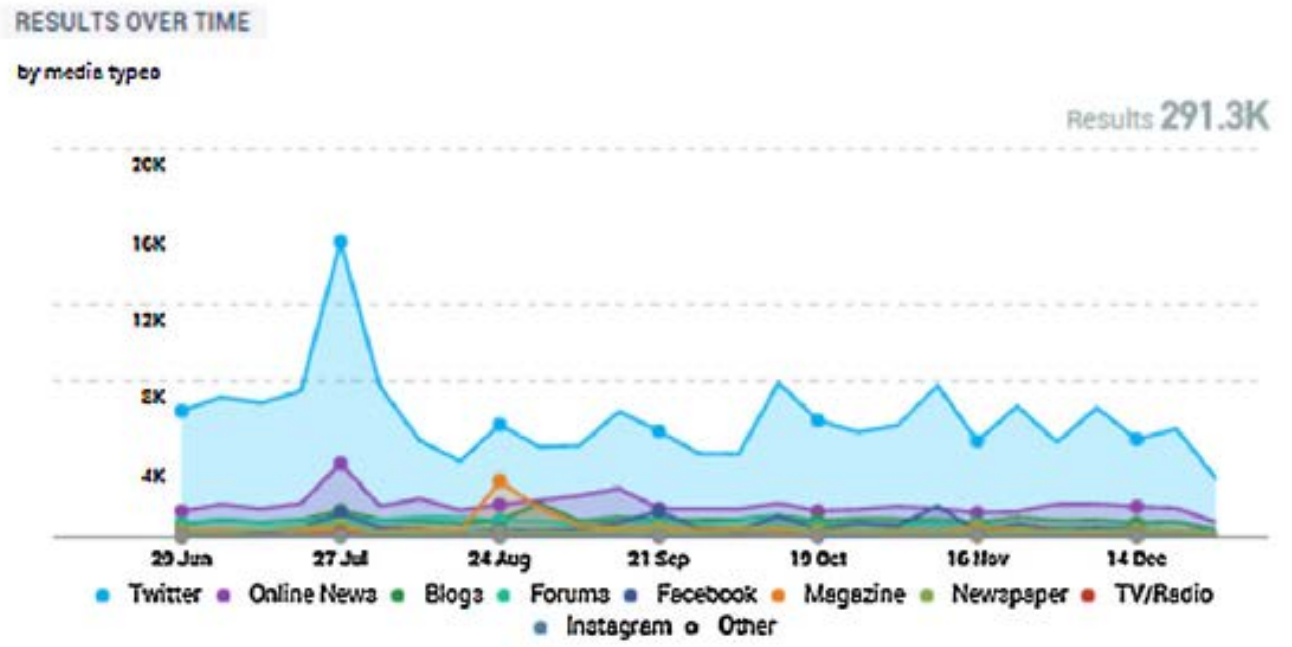
Dunn AG et al J Med Internet Res. 2015 ; 17: e144

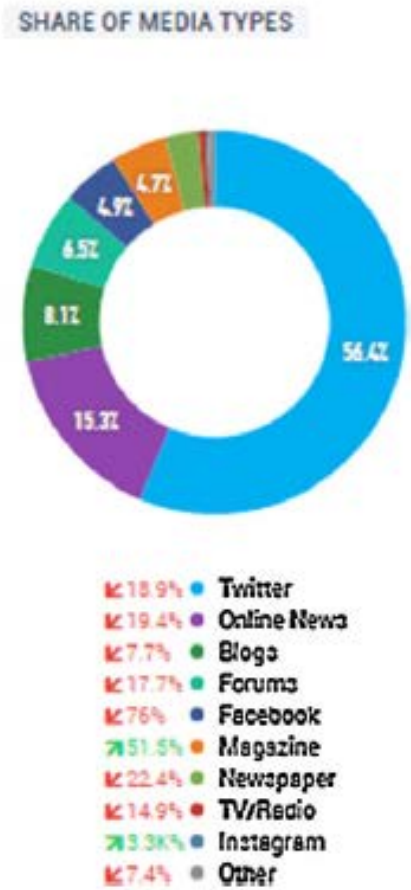
Pinterest

- analysis 800 vac related pins over 3 d in 2014- 74% anti-vaccine most linked to non medical website

Guidry JPD et al. Vaccine 2015; 33:5051–5056

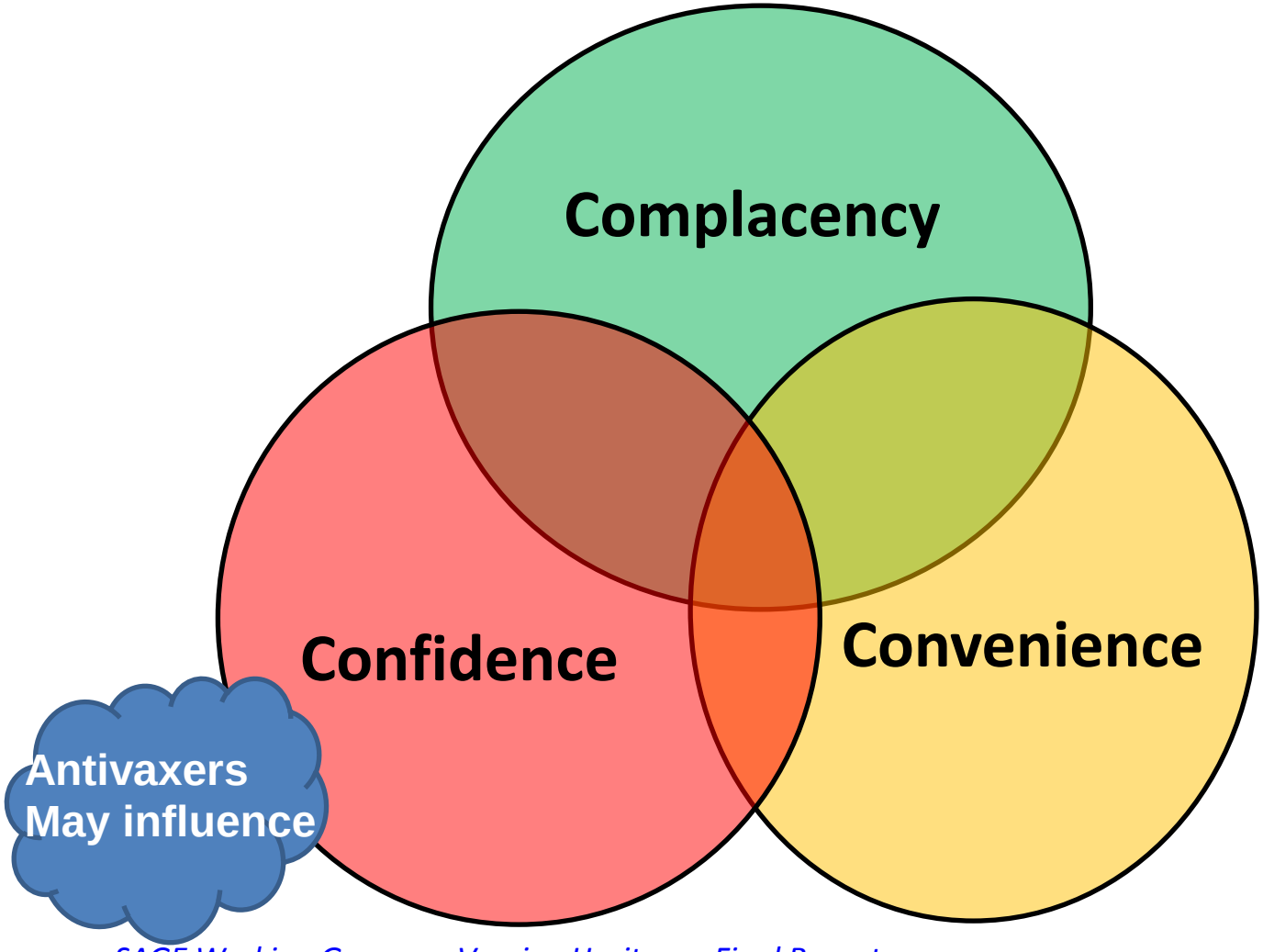
Media Content Related to Vaccination: France July1 –Dec 31 2015





Stahl et al Médecine et Maladies Infectieuses online March 2016

Vaccine Hesitancy Determinant Categories



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