How to Save Lives with effective messaging - Looking ahead to pandemic resilience (Suellen Hopfer, Ph.D.) April 20, 2020

The COVID-19 pandemic outbreak spreading rapidly around the world is placing an overwhelming burden on health systems, authorities, and institutions of higher education like UCI to respond with effective and appropriate public health messaging, policies and interventions. Harvard ethicist Danielle Allen discusses pandemic resilience as a way to move forward integrating public health and economic responses to the pandemic to combine scaled testing with targeted quarantine. This commentary however focuses for now on behavior change and public health message acceptance as critical elements in tackling the COVID-19 crisis to save lives. Four risk communication theories, below, highlight elements to consider to design and adapt effective public health messages as the crisis unfolds. When people perceive public health messaging as consistent, competent, fair, objective, empathic, sincere this increases trust and in turn increases message acceptance. Monitoring and tailoring public health messaging over time will be important as will be acknowledging the economic and psychological ripple effects. Disseminating messages through trust social networks and network opinion leaders or influencers will facilitate dissemination and acceptance of public health messaging.

Questions to evaluate risk

- How do we make sense of the numbers?
- What do risk and crisis communication theories tell us about how to communicate risk?
- How might we think about this evolving public health threat for the protection of our community, our families, and our own health?

Making sense of the numbers

While the numbers keep changing, there are some principles we can consider when evaluating

- Case fatality rate (CFR) – the risk that someone who develops symptoms will eventually die
- R-naught (R0) – how many people a given infected person is likely to infect

CFR

For COVID-19, the CFR has been estimated to be between 0.5 and 2% (if averaged about a 1%). The CFR for young is estimated at 0.1% and for those 60+ it is estimated at 10-18%. Compared to influenza, which has a CFR of 0.1%, COVID-19 (1%) is about 10-fold higher.

R0

Four things go into calculating R0: duration, opportunity, transmission probability, and susceptibility. According to WHO experts, both influenza and COVID-19 cause respiratory symptoms and are spread through small droplets from the nose or mouth.

- Duration – how long someone is infectious, and currently, it is estimated individuals with COVID-19 are infectious for 1-2 weeks.
- Opportunity – the number of people an infected individual comes into contact with every day they are sick.
- Transmission probability – the measure of chance that the infection will actually get across during an interaction.
• **Susceptibility** – the chance the other person will actually acquire the infection and become infectious themselves.

Multiplying these four components yields the R-naught. From a public health perspective, the goal is to reduce $R_0$ to be less than 1. Without a vaccine, reducing opportunities through social distancing, encouraging hand-washing, sneezing into your elbow, staying home if you are sick, and reducing unnecessary travel are all public health recommended actions.

How social aspects & communication networks help us understand emerging public health risk threats & reactions

Four risk communication are important to consider to understand spread of information:

- **Crisis and emergency risk communication (CERC)** - a risk communication framework that recognizes pandemic crises of this nature unfold over time with different phases characterizing the crisis that warrant different public health messaging depending on the phase
- **Social trust theory** - when perceived control of risk is not at the individual level, trust becomes a major and perhaps one of the most important variables in public acceptance of risk management and recommendations
- **Social amplification of risk framework (SARF)** - examines how media coverage, institutions, and social groups amplify or attenuate risk perceptions
- **Social network contagion theory** -

Each of these risk communication frameworks explains public reaction and the role of risk perception but also explains and suggests approaches and communication strategies to public health risk communication

**Crisis and Emergency Risk Communication (CERC)**

In a crisis, people may process information differently. A pandemic disease outbreak like COVID-19 calls for continued public health messaging that will change over time. Crisis and emergency risk
communication occurs unexpectedly, may not be in an organization’s control, requires an immediate response (i.e., is time sensitive), and, if communication is mishandled, may cause harm to an organization’s reputation. Broadly speaking, CERC unfolds in phases over time with unique needs and strategies for each phase (as well as short and long term strategies) and has two components: (a) the process by which those involved craft a response and (b) the content, or messages crafted to communicate with the public. The framework offers best practices to guide the process and content of a risk communication approach.

**CERC Best Public Health Risk Communication Practices include:**

1. explain what is known  
2. explain what is not known  
3. explain how or why the event happened  
4. promote action steps the public can take  
5. express empathy  
6. express accountability  
7. express commitment

CERC principles include: be first, be right, be credible. Additionally, steps for successful crisis communication:

a) have a communication plan  
b) be the first source of information  
c) express empathy early  
d) show competence and expertise  
e) remain honest and open.

Finally, building trust by providing and sharing consistent and transparent messaging is important for successful communication.

**CERC Public Health Risk Communication Practices to avoid:**

a) mixed and conflicting messages from multiple sources  
b) late release of critical information  
c) overly reassuring the public and delivering unrealistic communication  
d) advice without a reality check  
e) employing a paternalistic approach to communication  
f) unaddressed or uncorrected myths and rumors  
g) spokespersons who engage in poor behavior or who appear to not address emotional elements of the crisis (e.g., making light of a serious situation)  
h) public power struggles  
i) perception that certain groups are receiving preferential treatment

These are all communication elements that should be avoided in a risk or crisis situation.

**Social Trust Theory**  
Trust and confidence are increasingly important for how the public perceives risk and how they respond. Trust plays a significant role in individuals’ responses to public health crises. When people perceive a
risk, they only put into practice messages that come from sources they perceive as trustworthy and credible. The single biggest contributor to increasing trust is an organization’s ability to show empathy. Implications are that information alone will not communicate risk effectively if trust and credibility are not established first. There are many dimensions of trust ranging from expressions of transparency, objectivity (free of biases), perceived competence (degree of technical expertise), fairness (adequate representation of viewpoints), consistency (previous communication efforts), sincerity (honesty and openness), and faith (perception of good will, empathy expressions). These all factor into building trust and effective public health risk communication. Public health recommendations depend on trust in the message. Implications for public health messaging are that messages coming from trusted sources will have a higher chance of acceptance.

Social amplification of risk framework (SARF)

SARF focuses on examining how volume and tone of media coverage, story selection, and framing of the risk impact public risk perception and potentially stigmatization of information. SARF also highlights the potential for secondary ripple effects occur (e.g., impacts of preventive measures on economies) implying the need for an integrated public health and economic policy approach – one that Harvard Professor Danielle Allens has coined as pandemic resilience in the COVID19 era. [https://ethics.harvard.edu/covid-19-response](https://ethics.harvard.edu/covid-19-response)

In the case of COVID-19, SARF brings to light the potential stigma inherent in framing the COVID-19 public health threat by its location of origin (i.e., the Wuhan virus). Social activities can magnify the consequences of a risk event and risk framing often in unexpected ways. This can inadvertently result in groups of people, communities, or industries being stigmatized. Anticipating potential stigma, public health messaging can avoid stigmatizing messages.

Social Network Contagion Theory
As providers of information, the media play a vital response in COVID-19. Social media allow various stakeholders and the public to connect with each other online and share information, videos,
comments, opinions, and experiences. In the era of social media, this response gets magnified for better or worse. Public discussions include sharing experiences, information, articles, and updates about COVID-19 with various engagement strategies afforded by social media platforms.

Social media can be a valuable component of risk communication and a pulse on public reaction even used as a predictive tool. Public health agencies are increasingly turning to social media and online communities given their speed and nimbleness in disseminating relevant risk information. Social media gives organizations almost instant and continuous feedback on what people want to know about the emerging public health risk and what they are concerned about. Social media also allow organizations to respond more quickly and flexibly as situations change to offer dynamic responses. There is of course, the caveat that misinformation can be spread just as easily. There was some effort March 16th for many social media companies to crack down on the spread of fake news.


For assessing risk perception or shifts in risk perception over time, social media provides a signal of the public’s wants, needs, and perceptions. Faster response during emergencies and gaining a better understanding of audience needs and perceptions are major benefits of social media channels for public health messaging. Public health risk communicators who want to get out a message rapidly to potential audiences can share essential public health risk messages with network opinion leaders or influencers who are positioned to spread public health messages in real time and credibly. Knowing who the influencers are ahead of time helps. Audiences are more likely to accept and share messages coming from trusted social network opinion leaders.