Weill Cornell Medicine

Evaluation of a Geographic, Community-Focused Infodemiology Intervention Addressing COVID-19 Vaccine Misinformation on Social Media Using an Implementation Science Framework

David Scales MPhil, MD, PhD
Assistant Professor, Division of General Internal Medicine
Chief Medical Officer, Critica

VACCINATION ACCEPTANCE RESEARCH NETWORK
SABIN VACCINE INSTITUTE

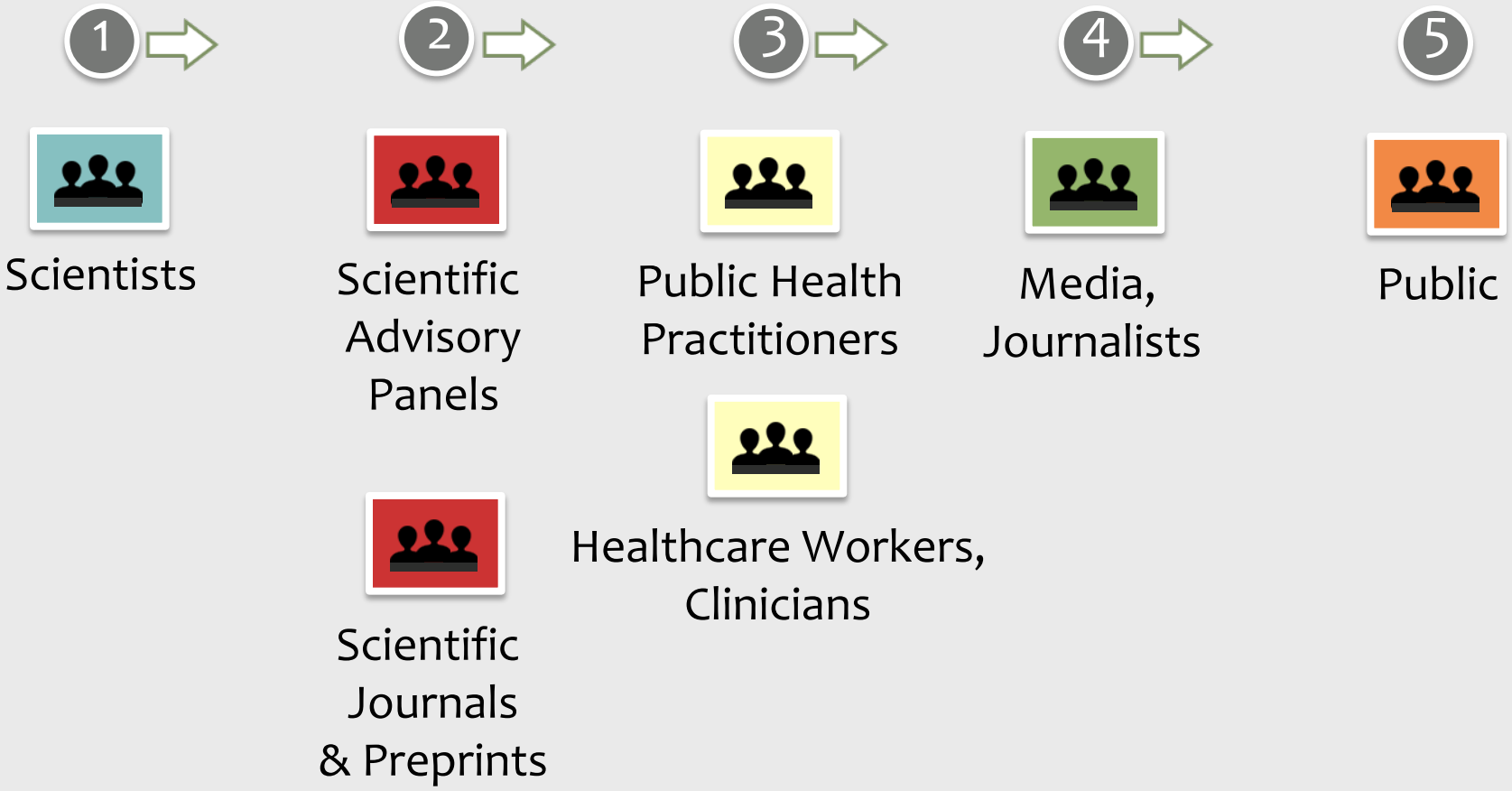
Outline

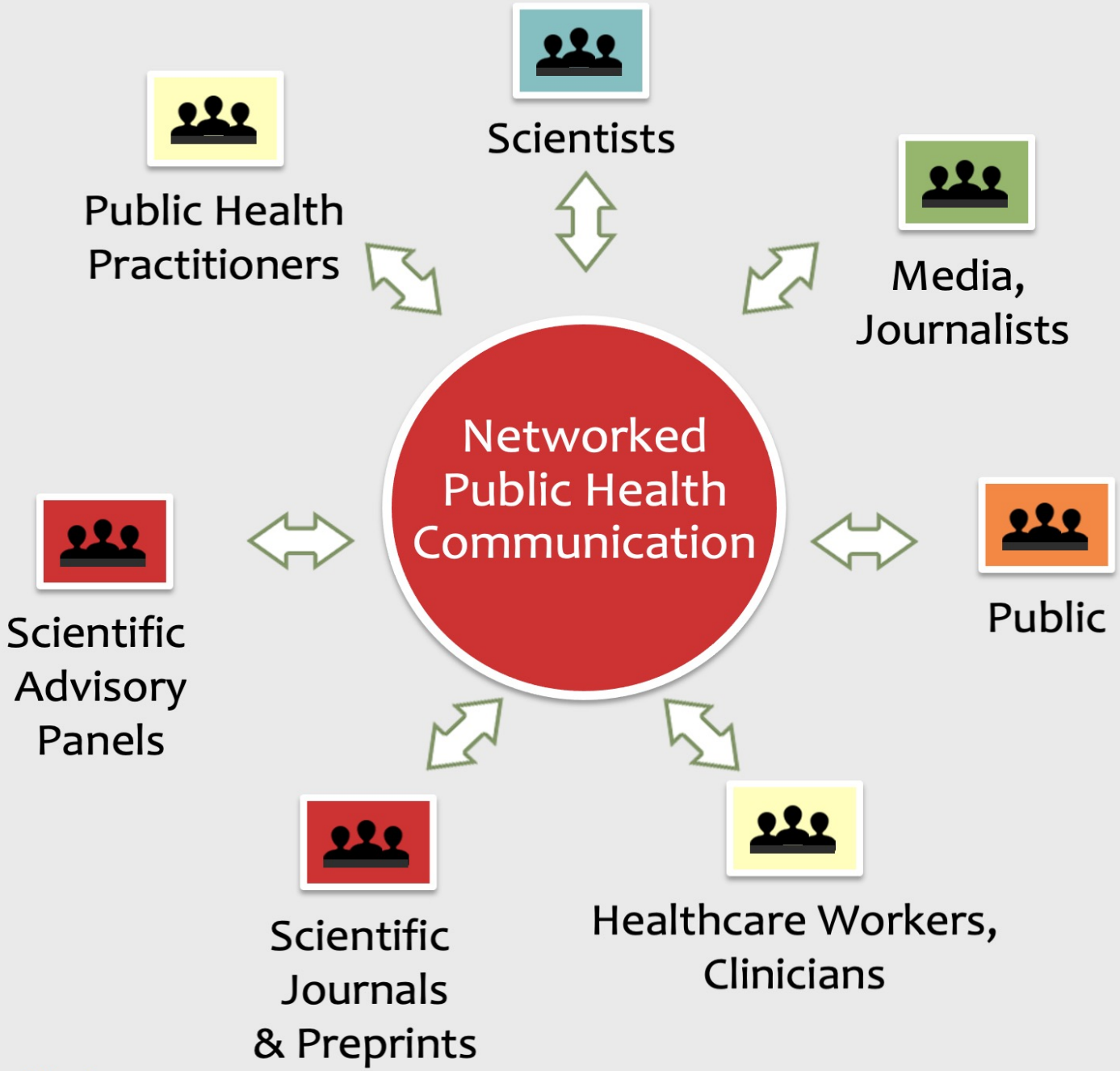
Our new communication ecosystem

“Infodemiologists”

Evaluating infodemiologists’ work with Implementation Science

Traditional Public Health Communication



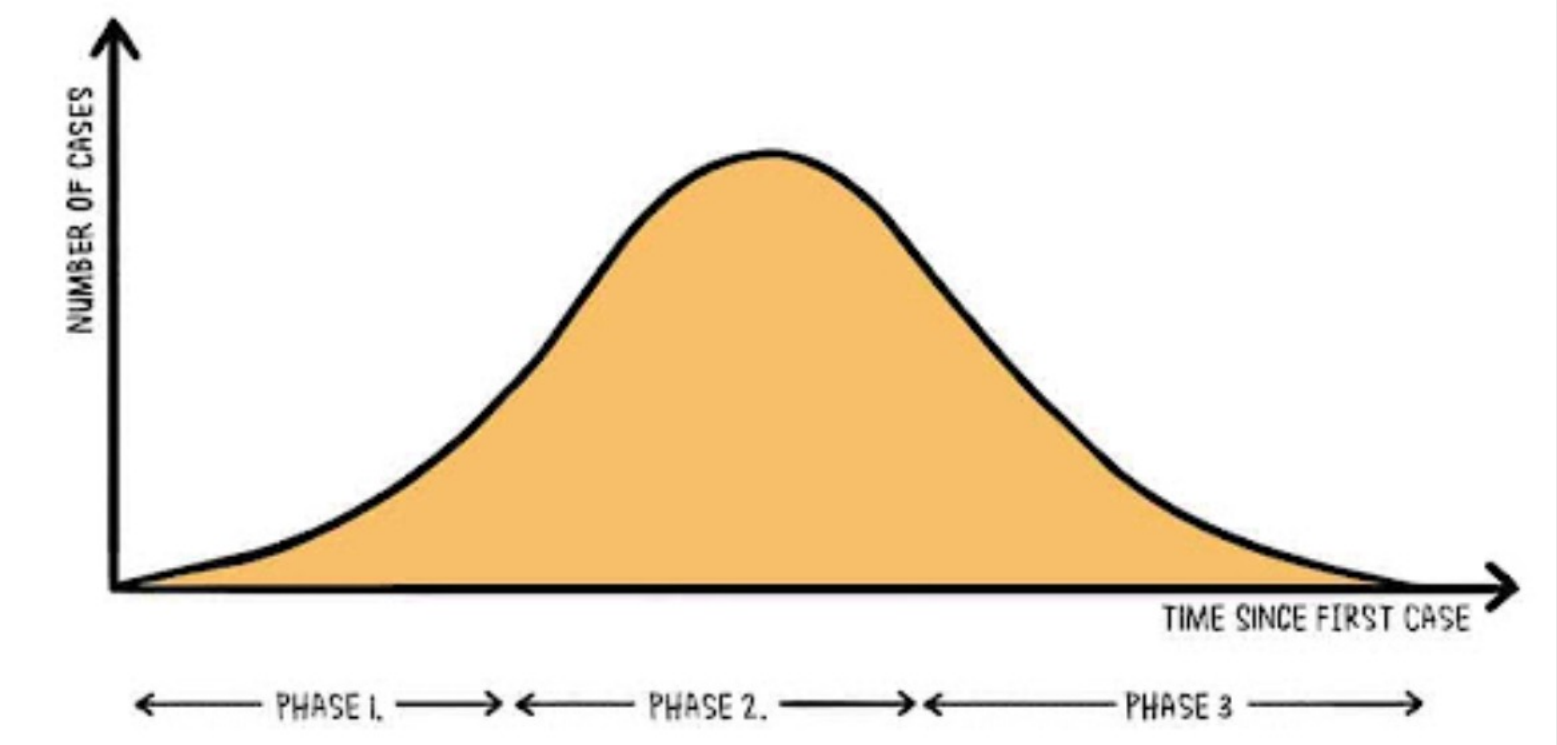

Scientists
Public Health Practitioners
Media, Journalists
Networked Public Health Communication
Scientific Advisory Panels
Public
Scientific Journals & Preprints
Healthcare Workers, Clinicians

What type of communication interventions are needed that reflect the dynamic structure of the new communication ecosystem?

How can we evaluate them?

“Infodemic” = Epidemic of misinformation

- Surveillance
- Diagnosis
- Response
- Prevention



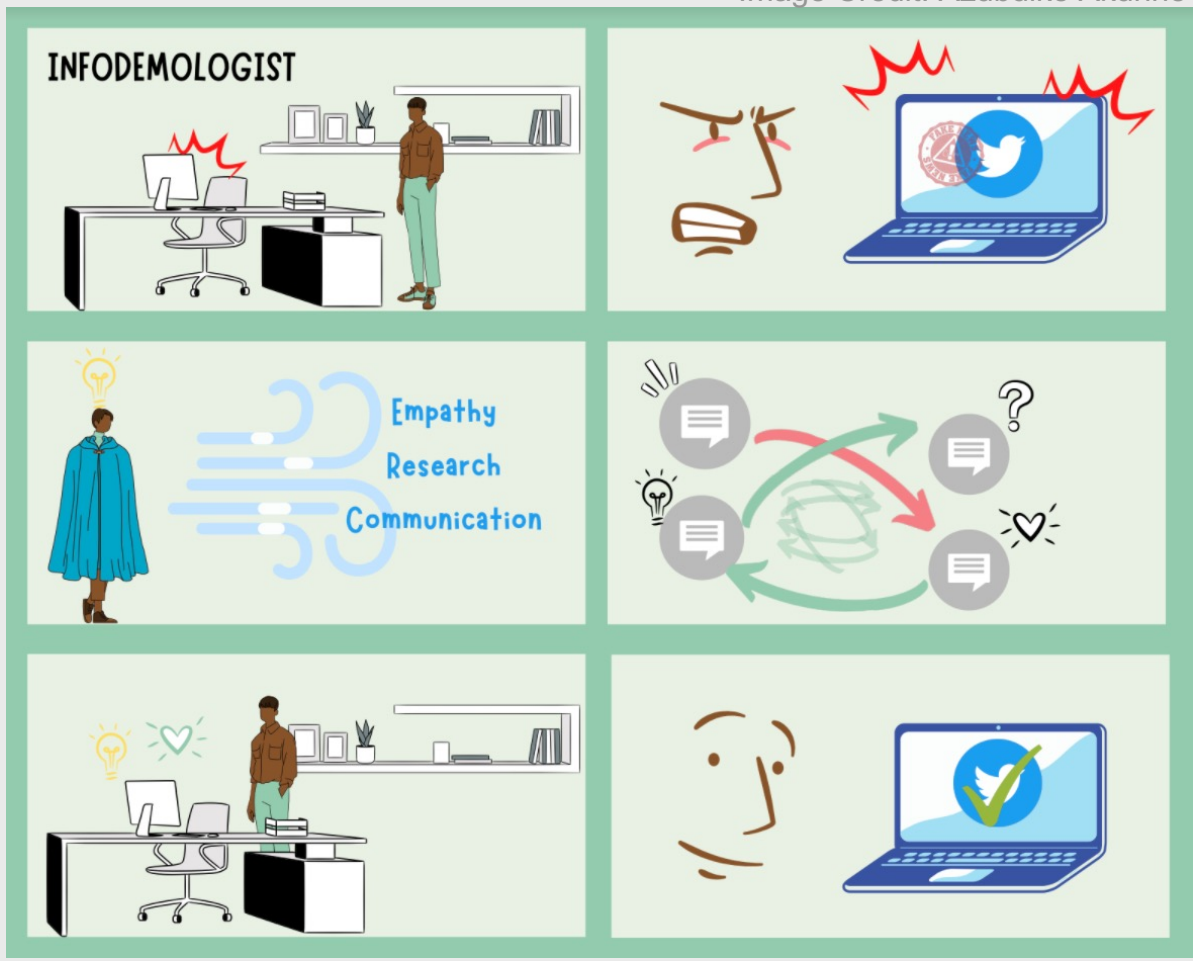
Scales, David, Jack Gorman, and Kathleen H. Jamieson. "The Covid-19 Infodemic—Applying the Epidemiologic Model to Counter Misinformation." *New England Journal of Medicine* (2021).

“Infodemiologists”

- “Field epidemiologists” for infodemic response
  - **Part time, community embedded**
  - **Liaisons between experts and their community**
  - **Communication skills: Motivational Interviewing**
  - **Infodemiologist network**

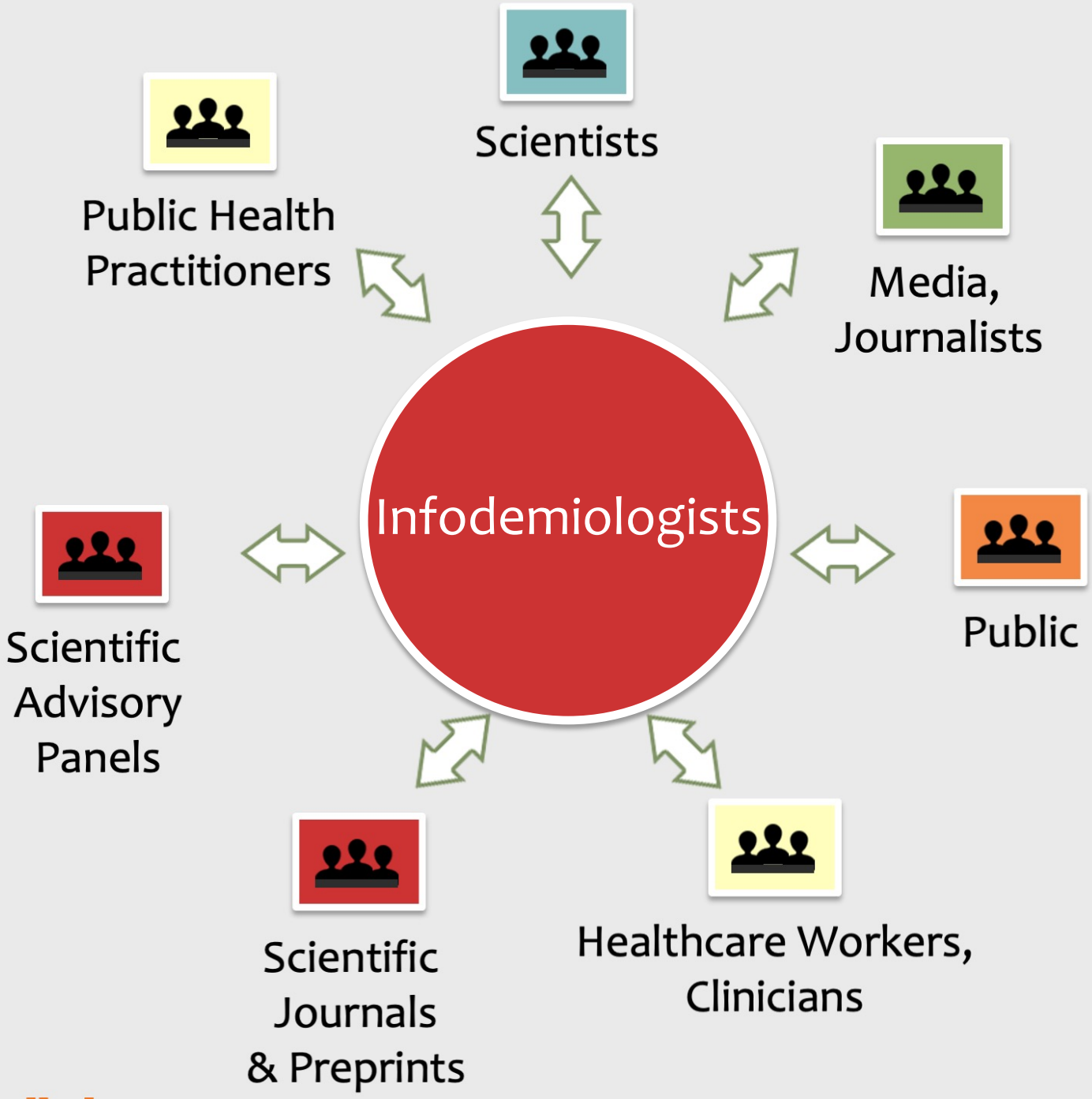
- Who?
  - **HCWs: CHWs, GPs, NPs**
  - **Specialist societies**
  - **Trusted community leaders**
  - **You?**

Image Credit: Azubuike Akunne



The online “Roles” of an Infodemiologist

- **Host** – Establish norms, set discussion agenda
- **Moderator** – Jump into & shape conversations veering outside community norms
- **Translator** – Reframing to promote engagement and understanding instead of divisiveness
- **Role Model** – Empathic, non-judgmental listening. Modeling how to manage scientific uncertainty according to community values.


Scientists
Public Health Practitioners
Media, Journalists
Infodemiologists
Scientific Advisory Panels
Public
Scientific Journals & Preprints
Healthcare Workers, Clinicians

Evaluation – Iterative process, not an event

- Qualitative & quantitative assessments to guide improvement cycles (Plan/Do/Study/Act cycles)
- Implementation science framework (RE-AIM)

Image Source: Arizona Health Information Network

Category	Qualitative & Quantitative Metrics
Reach	1. Percent of infodemiologist interventions leading to deliberation/discussion 2. Exposure – How many threads, posts, platforms, networks are reached? How frequently? 3. Saturation – Crowding out misinformation/distractions on relevant threads, posts, platforms, networks 4. Engagement – Popularity according to native metrics (likes, shares, retweets, followers)
Efficacy	1. Evidence of change in community commentator vaccine sentiment over time 2. Change in bystanders' vaccine sentiment over time 3. Change in architecture of anti-vaccine networks online (Media Cloud) 4. Backfire effect? i.e. vehement rejection of the intervention?
Adoption	1. Evidence the infodemiologist is considered a trusted/respected source by the online community 2. How do people who interact with the infodemiologist change their online behavior over time? 3. How do bystanders who viewed infodemiologist interactions change their online behavior over time? 4. Does the posting behavior in a network change over time as an infodemiologist becomes known there? 5. Burden of antivaccine sentiment on threads, posts, platforms, networks where we are not intervening
Implementation	1. Infodemiologists' fealty to Critica protocol 2. How common is there evidence of a backfire effect? 3. Are infodemiologists' reflections accurate assessments of impact on either commenters or bystanders? 4. Percentage of infodemiologists' interventions deemed effective (external evaluator) 5. Are infodemiologists intervening in high-value forums? 6. Are partnerships facilitating wide dissemination of messages into multiple networks?
Maintenance	1. Fealty to protocol over time 2. Signs of backfire at individual or network level over time? 3. Maintaining threshold of effective interventions over time? 4. Maintaining saturation of threads, posts, platforms, networks over time?

Lessons Learned

- Iterative cycles of evaluation are key to process improvement
- Complex system requires mixed methods than reductive evaluations
- The infodemiologists' impact on the overall information environment
- Vaccine knowledge and attitudes are not fixed in either direction

Thoughts? Questions?

Acknowledgements

Critica Team
- Jack & Sara Gorman
- Infodemiologists

Kathleen Hall Jamieson at U Penn

Funding

Robert Wood Johnson Foundation

Weill Cornell JumpStart

Cornell Center for Social Science