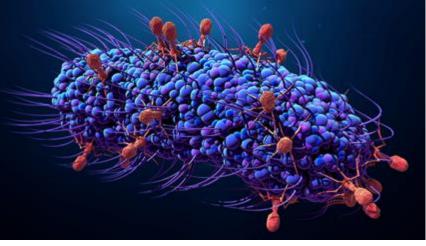
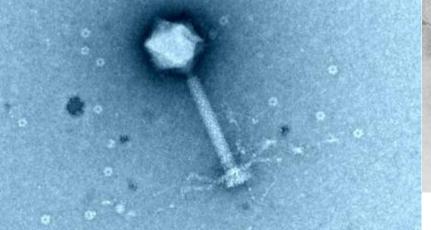
PhagePro

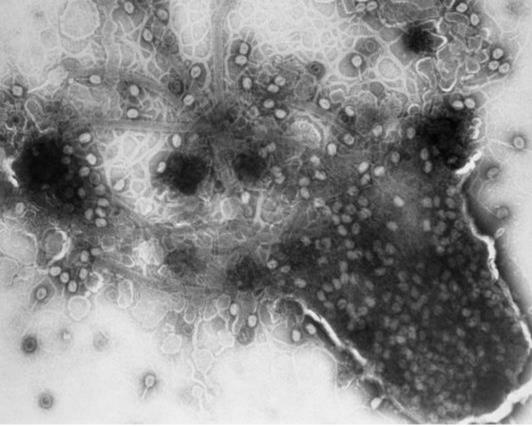
Phages for a Healthier World

Minmin Yen, Ph.D., MPH

WHO GTFCC Case Management Virtual Seminar October 1, 2020









HUFFPOST PERSONAL

I Inhaled Viruses As A Last-Ditch Effort To Fight A Drug-Resistant Bacterial Infection

By Ella Balasa, Guest Writer 04/06/2019 01:30 pm ET

Phage therapy: 'Viral cocktail saved my daughter's life'

By James Gallagher Health and science correspondent, BBC News

③ 8 May 2019

🛉 😒 😏 🖾 < Share

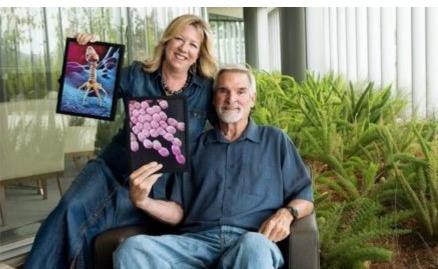
SCIENCE / FOLLOW THIS

This Scientist Used Live Viruses To Save A Woman's Life From A Superbug Infection

Once dismissed as fringe, phage therapy is gaining traction as a last resort when antibiotics fail. It's the subject of a new episode of the Netflix docuseries *Follow This*.

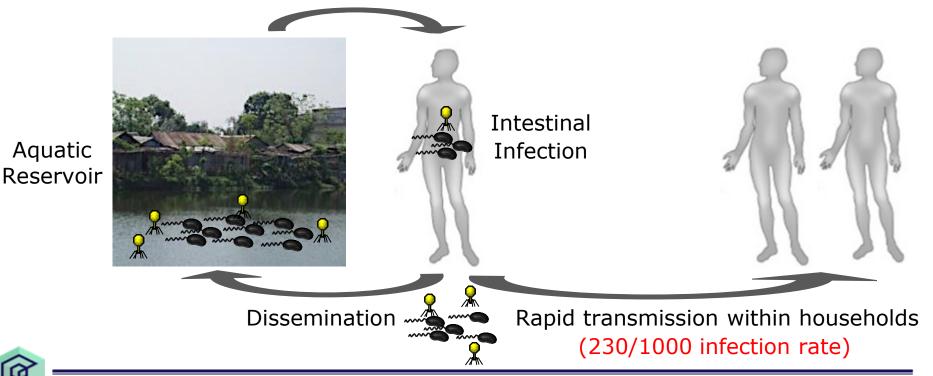


Azeen Ghorayshi BuzzFeed News Reporter



Vibrio cholerae life cycle

Water-borne transmission (2.5/1000 infection rate)



Harris, LaRocque, Chowdhury et al (2008) PLoS Negl Trop Dis 2:e221. Weil, Khan, Chowdhury et al (2009) Clin Infect Dis 49:1473-9

Are there *V. cholerae*-specific lytic phages that are virulent within the human small intestine?



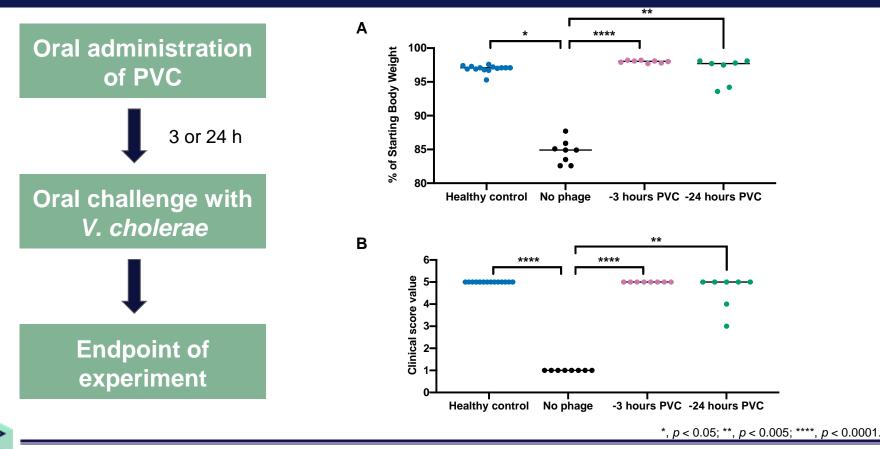
PVC can reduce the spread of cholera

- Immediate protection
- **Specific** for cholera bacteria no antibiotic resistance
- Simple

Image: Descent stateImage: Descent

- Oral tablet
- Self-administered

PVC is protective in rabbits



Yen et al. (2017), Nature Communications; Grandchamp, Camilli, & Yen (2020), unpublished.

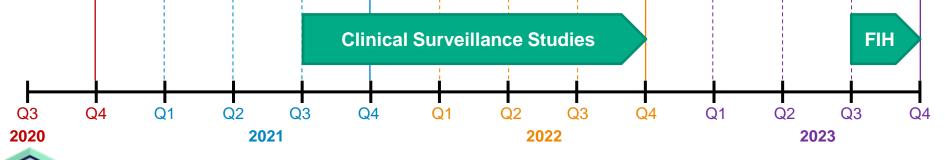
PVC Development Timeline

IND-enabling Studies

- Determine host range and optimize PVC ratio
- Demonstrate lack of general transduction and lysogeny
- Establish PVC efficacy in household transmission infant rabbit model

Manufacturing (Drug Substance and Product)

- Tech transfer of established Drug Substance (liquid) manufacturing protocols to CMO
- Optimize solid formulation and confirm stability at hot and humid conditions
- Produce Drug Product (solid) material for first-in-human (FIH) clinical trials



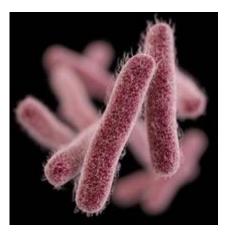


WHO strategy for controlling cholera

- Surveillance
- WASH
- Social mobilization
- Treatment
- Oral cholera vaccines
- Phages?

Future of PhagePro

Cholera success will be a platform to tackle more diseases using our phage treatments

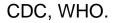


Shigella 80 – 165 million cases 600,000 deaths per year



E. coli 420,000 deaths per year 30% are children under 5 years old

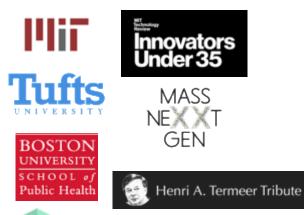




Who We Are



Minmin Yen, PhD, MPH Chief Executive Officer





Andrew Camilli, PhD Scientific Advisor

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Howard Hughes Medical Institute



Gabrielle Grandchamp, PhD Principal Scientist





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U NOVARTIS

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Empowering Healing



Tobi Nagel, PhD Product Development

Phages for

Genentech

Global Health



Alice Pomponio Company Strategy

AstraZeneca

SANOFI



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