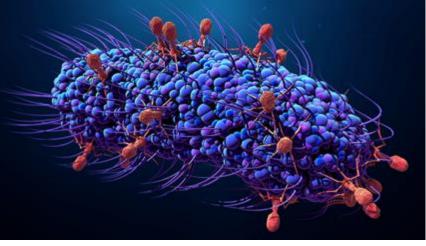
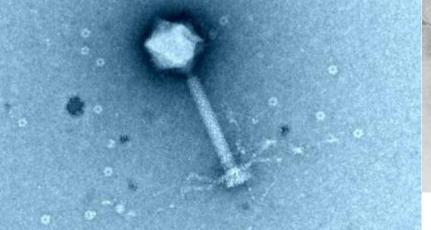
# PhagePro

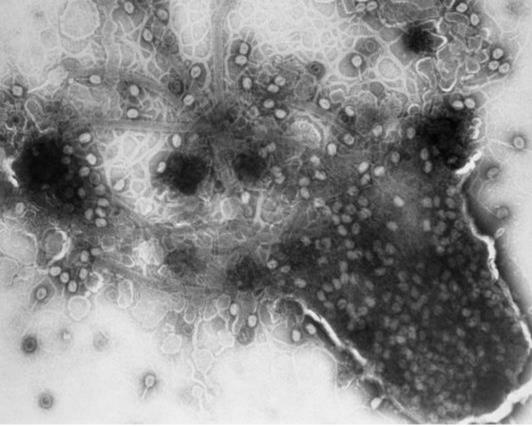
#### **Phages for a Healthier World**

#### 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*.

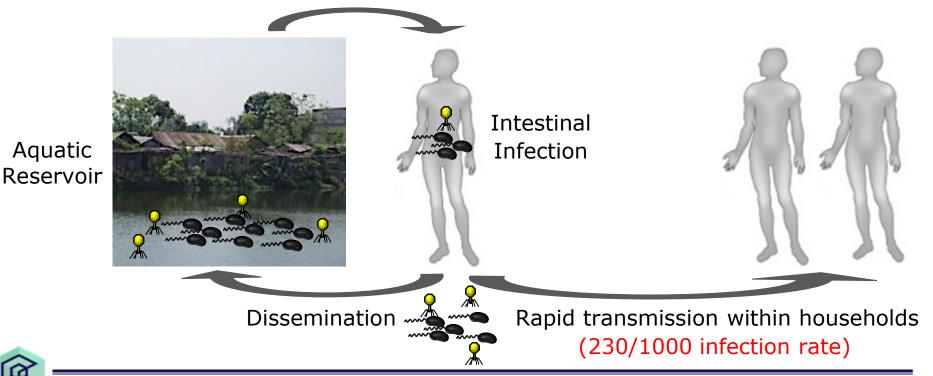


Azeen Ghorayshi BuzzFeed News Reporter



## 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?



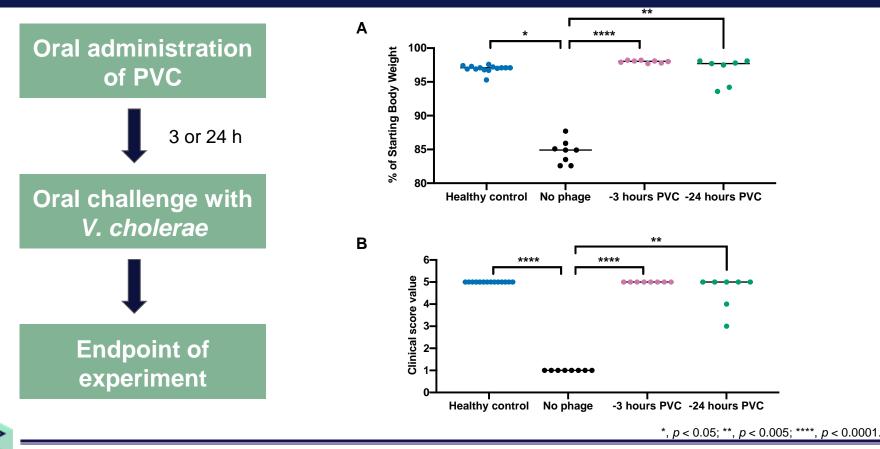
## **PVC** can reduce the spread of cholera

- 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



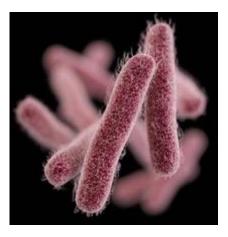


## WHO strategy for controlling cholera

- 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

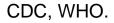


**Shigella** 80 – 165 million cases 600,000 deaths per year



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

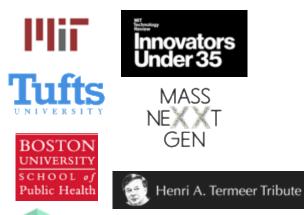




#### Who We Are



Minmin Yen, PhD, MPH Chief Executive Officer





Andrew Camilli, PhD Scientific Advisor

Tufts hhmi





Howard Hughes Medical Institute



Gabrielle Grandchamp, PhD Principal Scientist





#### **Our Team**

#### **Strategic Advisory Board**



Milka Bedikian Marketing

**U** NOVARTIS

Organogenesis

Empowering Healing



Tobi Nagel, PhD Product Development

Phages for

Genentech

**Global Health** 



Alice Pomponio Company Strategy

AstraZeneca

SANOFI



John Tagliamonte, MBA Business Development







Shawna McCallin, PhD Clinical Trial Strategy, Consultant



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# **Phages for a Healthier World**



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