Health in the face of global change – building community resilience

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Climate change influence on infectious disease dynamics

Climate change

Altered average climatic conditions

Increasing extremes

Sensitivity of pathogen, vector or zoonotic host to alterations in temperature, humidity, precipitation, etc.

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Compounding risks
- Food insecurity
- Water insecurity
- Crowding
- Migration to endemic area
- Increased contact with non-human hosts and vectors
- Lack of disease detection
- Reduced capacity for treatment

Livelihood loss

Individual: Home/shelter
Community: Public health surveillance, clinical capacity

Infrastructure loss

Individual: Home/shelter
Community: Public health surveillance, clinical capacity

Altered infectious disease dynamics

Established

Less studied
Complex Framework for multiple pathways of influence of extreme rainfall on mosquito borne diseases

Source: EHP 2021
Building resilience – redundancy across levels of action

- Operationalize early warning systems
- Invest in public health surveillance
- Laboratory capacity
- Training programs

- Community health worker training
- Community-based surveillance reporting
- Rapid testing capacity
- Address underlying built environment factors that facilitate transmission

- Move towards more holistic strategies – less bednets and more housing improvements
- Accessible updated information

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- Self-reports and surveillance
Potential role of mHealth

**Pros**
- Scalable solution
- Low-cost
- Increasingly accessible
- Dynamic
- Engaging
- Bi-directional exchange
- Data collection even in absence of centralized infrastructure

**Cons**
- Not accessible by all
- Interest wanes over time
- Most impacted not engaged
- Less effective than hands-on direct strategies
Thank you!