Climate Health through an Informatics lens

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Climate Change leads to Resilient Systems.

Sustainable Healthcare contributes to Climate Drivers & Exposure Pathways, which impact Resilient Systems.

Climate Drivers:
- Extreme weather events
- Rising sea levels
- Heat

Exposure Pathways:
- Air and water quality
- Food access
- Vector borne illness

Resilient Systems

Healthcare Systems:
- Emergency departments and hospital systems
- Urgent care and walk-in clinics
- Primary care and outpatient facilities

Public Agencies:
- Public health system
- Federal, state, and local government agencies
- Public resources (e.g., libraries and schools)

General Public:
- Communities and community health leaders

Advancing Knowledge

Adaptive Care
People — Process — Technology

Illustrative Example of the Informatics Lens

Technology Example
- Electronic Health Records
  - Heat data warning
    connected to patients at risk
- Public health data systems
  - Heat index data standardized
    and shared with all agencies
- Digital health apps and services
  - Heat data coming into digital health app

Process Example
- Flow of information
  - Who is this data going to?
- Timeliness of information
  - Time information arrives
    impacts actionability
- Who is empowered to act
  - What actions can be taken?

People Example
- Administrators
  - Decision makers
  - Community leaders
- Clinicians
  - Agency heads
  - Individuals
- Front line staff
  - Front line staffers
An informatics lens enables

**Scenario Scoping, Sizing, and Scaling**
- Breaking down the complex interactions of climate and health into a more tangible scope
- Scaling impact, developing interventions and connections that allow for a multiplicative effect.

**Connecting the dots, doers, and data**
- Doers - Connecting clinicians and builders along with the investor, government, and advocacy communities.
- Data - Bridging data silos between environmental health and human health

**Measuring micro + macro**
- Micro - quantifying small shifts, data standards
- Macro - aggregating trends to understand greater collective impact

**Catalyzing change-makers**
- Part of the power of technology is to connect for greater impact.
- Visibility of work across fields from climate and health which are often separate sectors and not as directly linked.
<table>
<thead>
<tr>
<th>Opportunity Area</th>
<th>Description</th>
<th>Core Informatics Challenges and Opportunities</th>
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<tr>
<td><strong>Sustainable Healthcare</strong></td>
<td>Reducing the greenhouse gas (GHG) impact of the healthcare system</td>
<td>• Data standards around GHG emissions&lt;br&gt;• Nudges (ie: clinical decision support) for sustainable care choices&lt;br&gt;• Dashboards to display broader progress</td>
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<td><strong>Adaptive Care</strong></td>
<td>Utilizing environmental data and predictive analytics to personalize care guidance (ie: care optimization for heat waves, poor air quality, etc)</td>
<td>• Data standards around environmental information&lt;br&gt;• Interoperability of environmental information and health information&lt;br&gt;• Predictive model creation, validation, implementation&lt;br&gt;• Personalization of models with care delivery recommendations either through CDS (clinician facing) or digital health tools (patient facing)</td>
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<td><strong>Resilient Systems</strong></td>
<td>Connecting public health and healthcare systems</td>
<td>• Data standards around environmental information with a greater eye towards interoperability across systems from public health to individual clinics&lt;br&gt;• Connectedness of emergency preparedness plans to how data is used in warning systems for healthcare systems and individuals</td>
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<td><strong>Advancing Knowledge</strong></td>
<td>Research to identify and better link healthcare outcomes to climate driven change</td>
<td>• Utilizing existing code sets (ICD, SNOMED, etc) for better identifying environmental factors&lt;br&gt;• Developing new code sets with existing data standards&lt;br&gt;• Training on how coding of these environmental factors impact health in documentation and assessments</td>
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Thank you

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