



Research Questions for Engineering Resilience in Healthcare

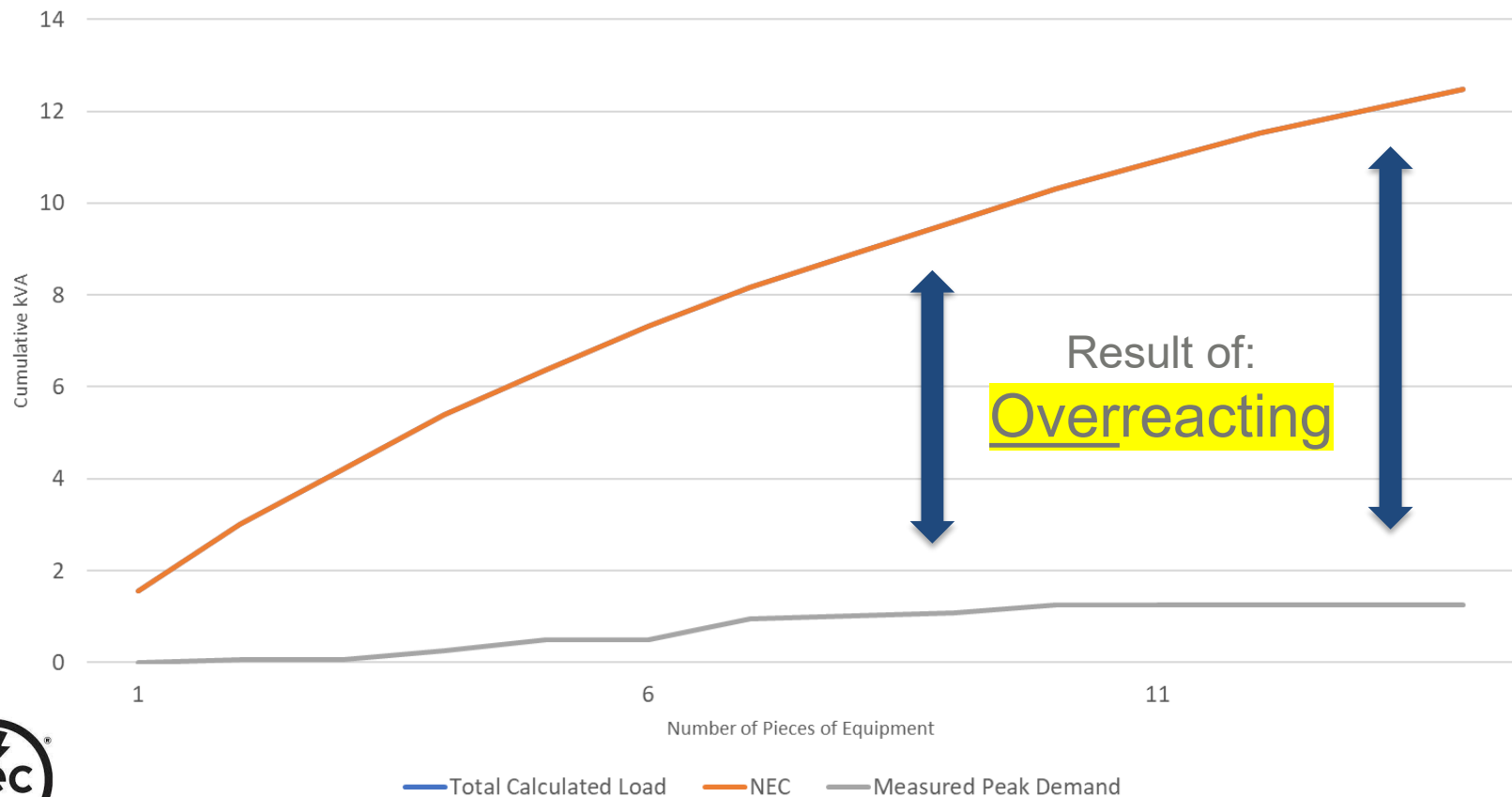
March 17, 2022

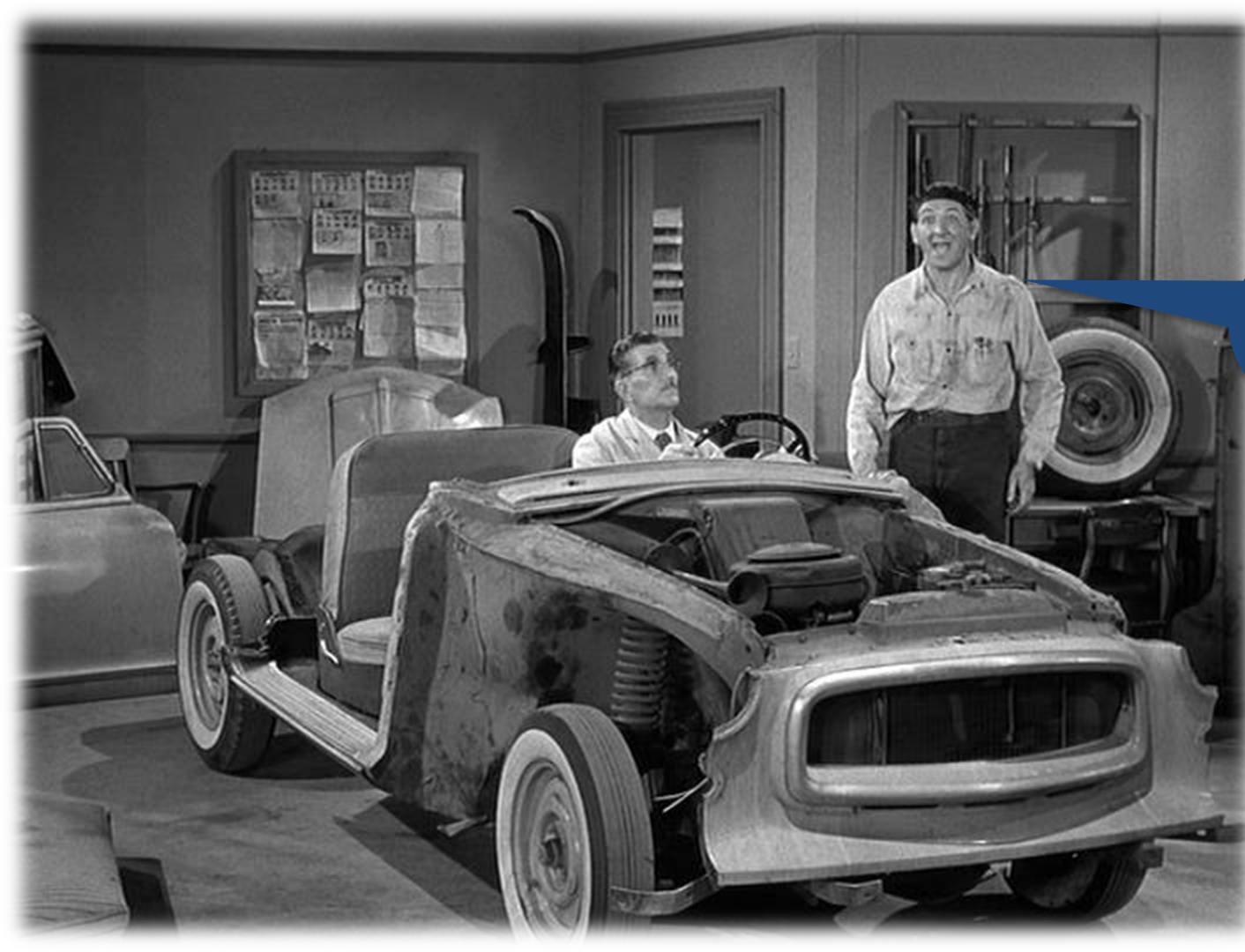


Investing in resilience is an...

insurance/actuarial dilemma

Westcoast Hospital 1 Cumulative Loads vs Number of Pieces of Equipment (circuits) for Dedicated Receptacle Circuits





You want it
to work?!



Emergency Conditions – White Paper

The Cold, Hard Work of Delivering Oxygen to Ventilators

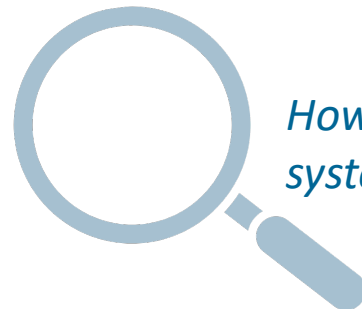
Oxygen is in the air. Getting it to a Covid-19 patient struggling to breathe can be trickier than it seems.



Guidance for Designing Health and Residential Care Facilities that Respond and Adapt to Emergency Conditions

FGI EMERGENCY CONDITIONS COMMITTEE

- Process to define risks
 - Probability of risks
 - Mitigation for each
 - Cost for mitigation
-
- Prepare for those that matter



*How to quantify risks of
systems?*

March 2021



Infectious Aerosols Position Document





ASHRAE Position Document on Infectious Aerosols

Approved by ASHRAE Board of Directors
April 14, 2020

Expires
April 14, 2023



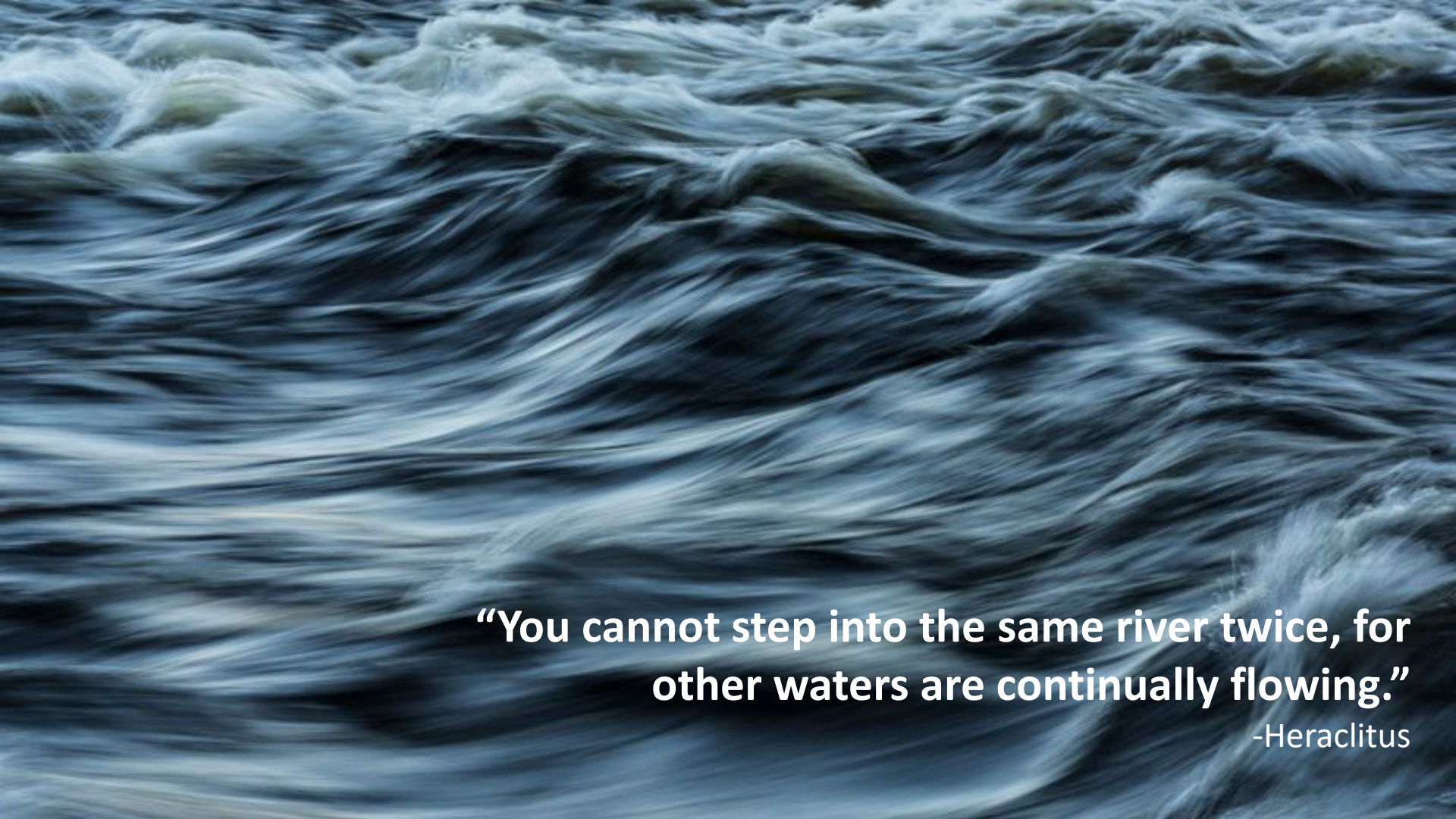
- Maintenance is key!!!
- Risk management
- How much??



*How to quantify risk of
failure to maintain?*



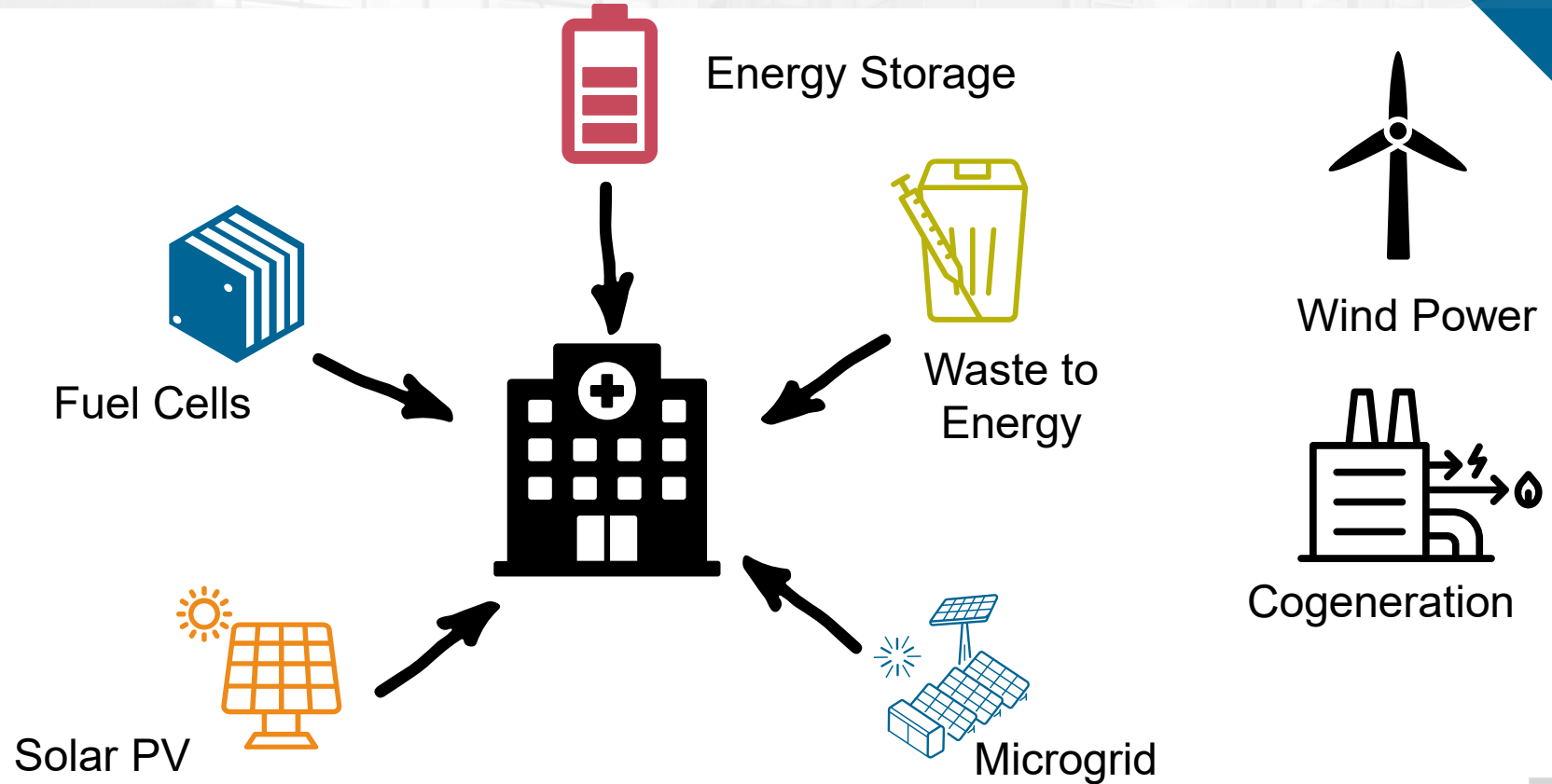
Microgrids – a new paradigm



**“You cannot step into the same river twice, for
other waters are continually flowing.”**

-Heraclitus

Options & Technology





- Evolving thinking
- Appropriate per facility circumstances



*Need methodology for
MODELING the resilience
of various microgrid
designs*




Resilience in Low-Resourced Settings



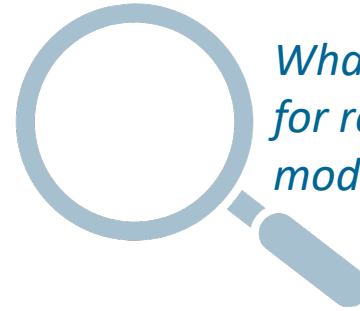




A photograph of a white building with a corrugated metal roof. Several solar panels are mounted on the roof. In the foreground, a clothesline with laundry is visible. The text is overlaid on the image.

"I left the hospital with so many smiles and thanks from the staff, and I am just so happy that we were able to do this project. I can't think of anyone more deserving than those little babies."

Kait Mendenhall, Volunteer



*What infrastructure is required
for resilience of different
modalities?*



*How do we build a culture and
skillset of repair?*



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