The Cost-Effectiveness of Pandemic Response and Preparedness: What Do We Know?

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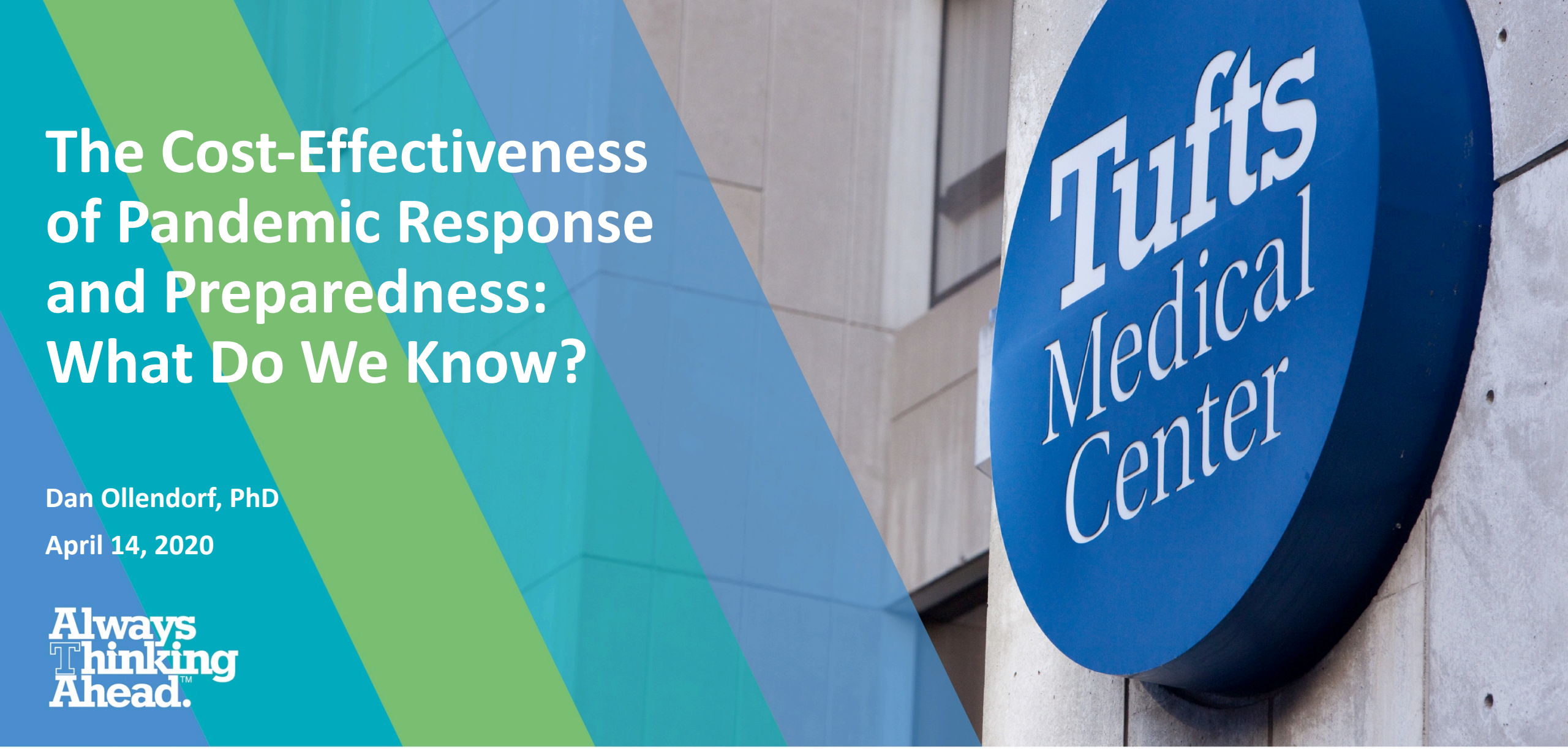
Always Thinking Ahead.™



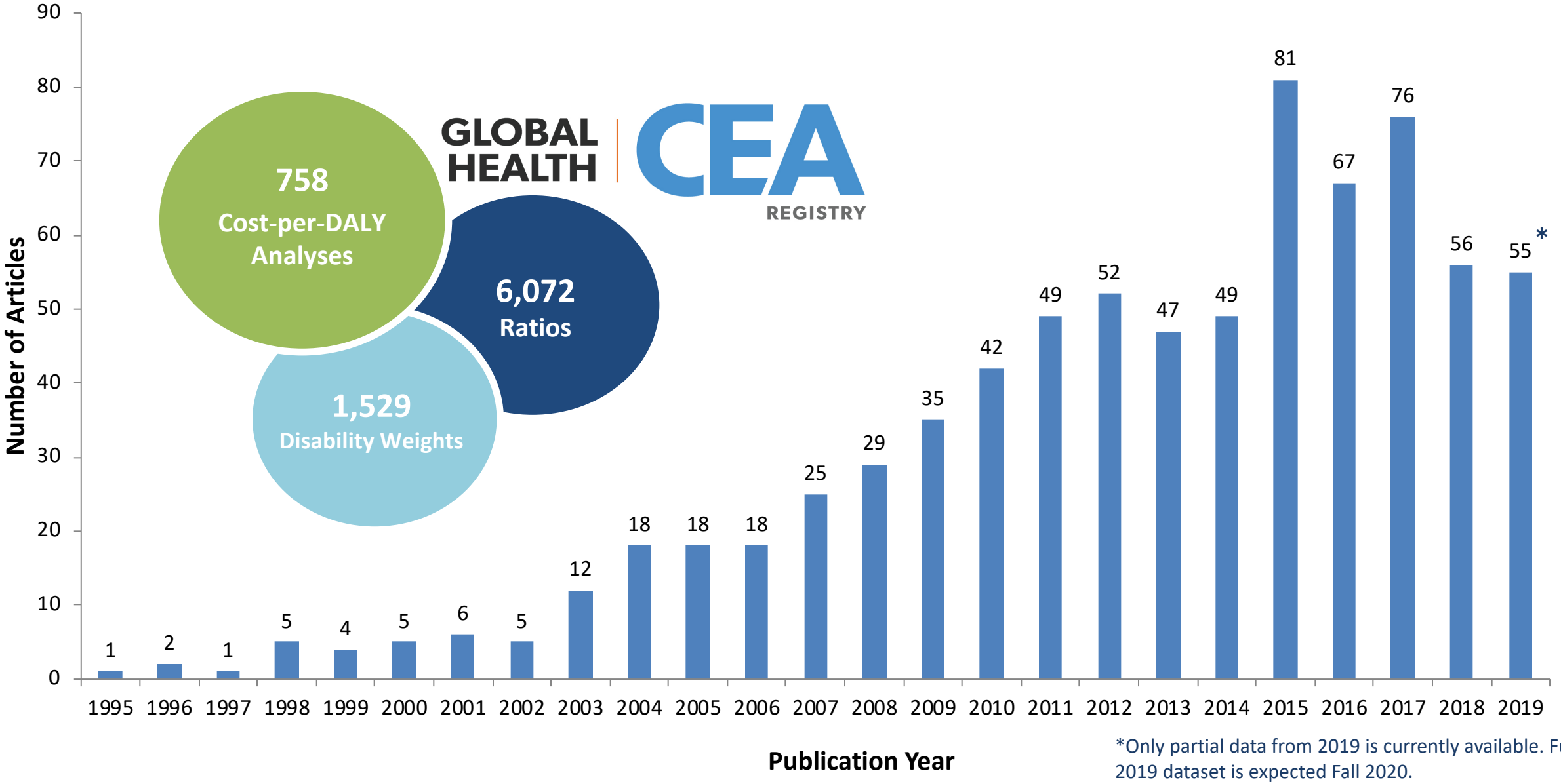
Proudly wellforce

CEVR
Center for the Evaluation of Value and Risk in Health

Tufts Medical Center

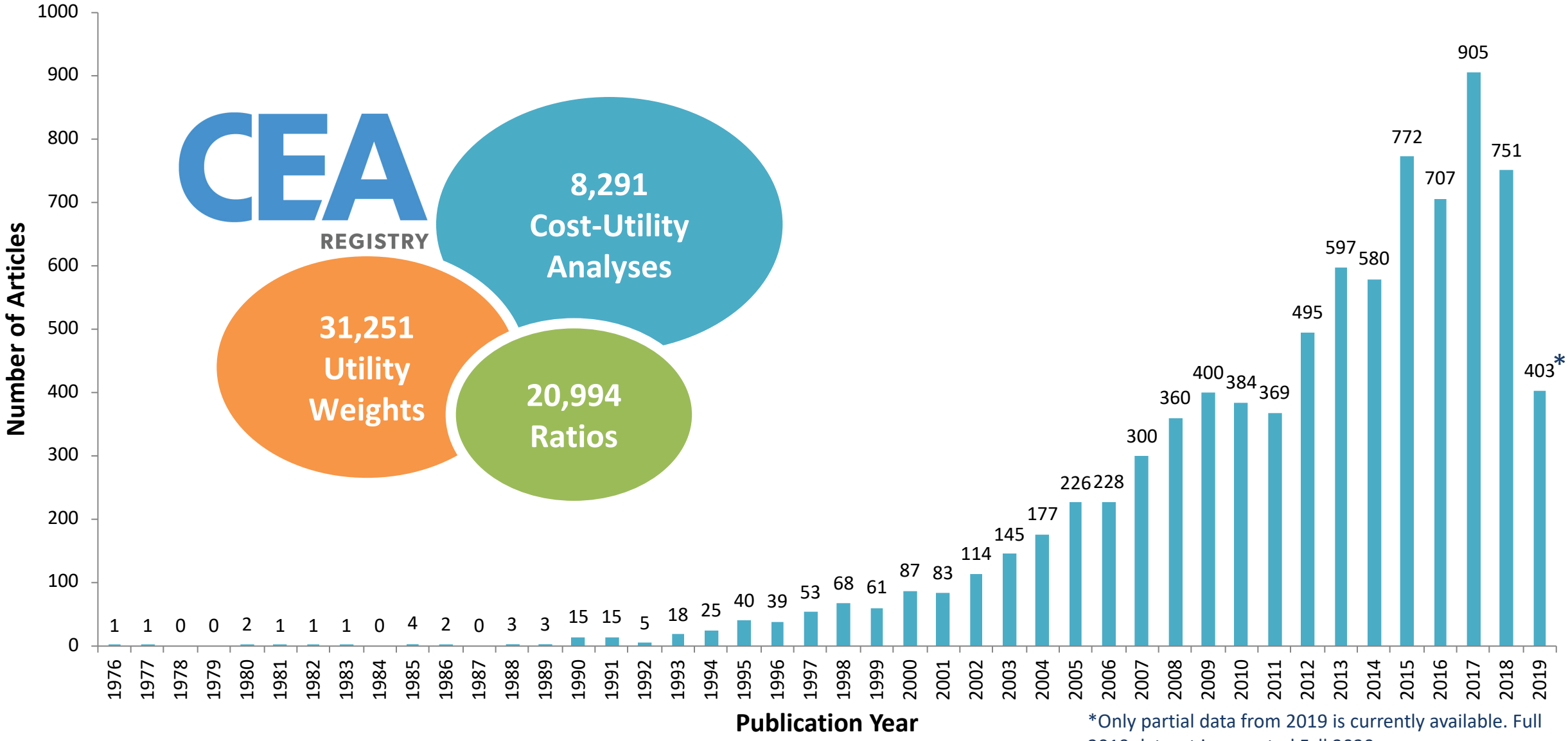
Floating Hospital for Children at Tufts Medical Center

Tufts Global Health CEA Registry ($DALY)



*Only partial data from 2019 is currently available. Full 2019 dataset is expected Fall 2020.

Tufts CEA Registry ($/QALY)



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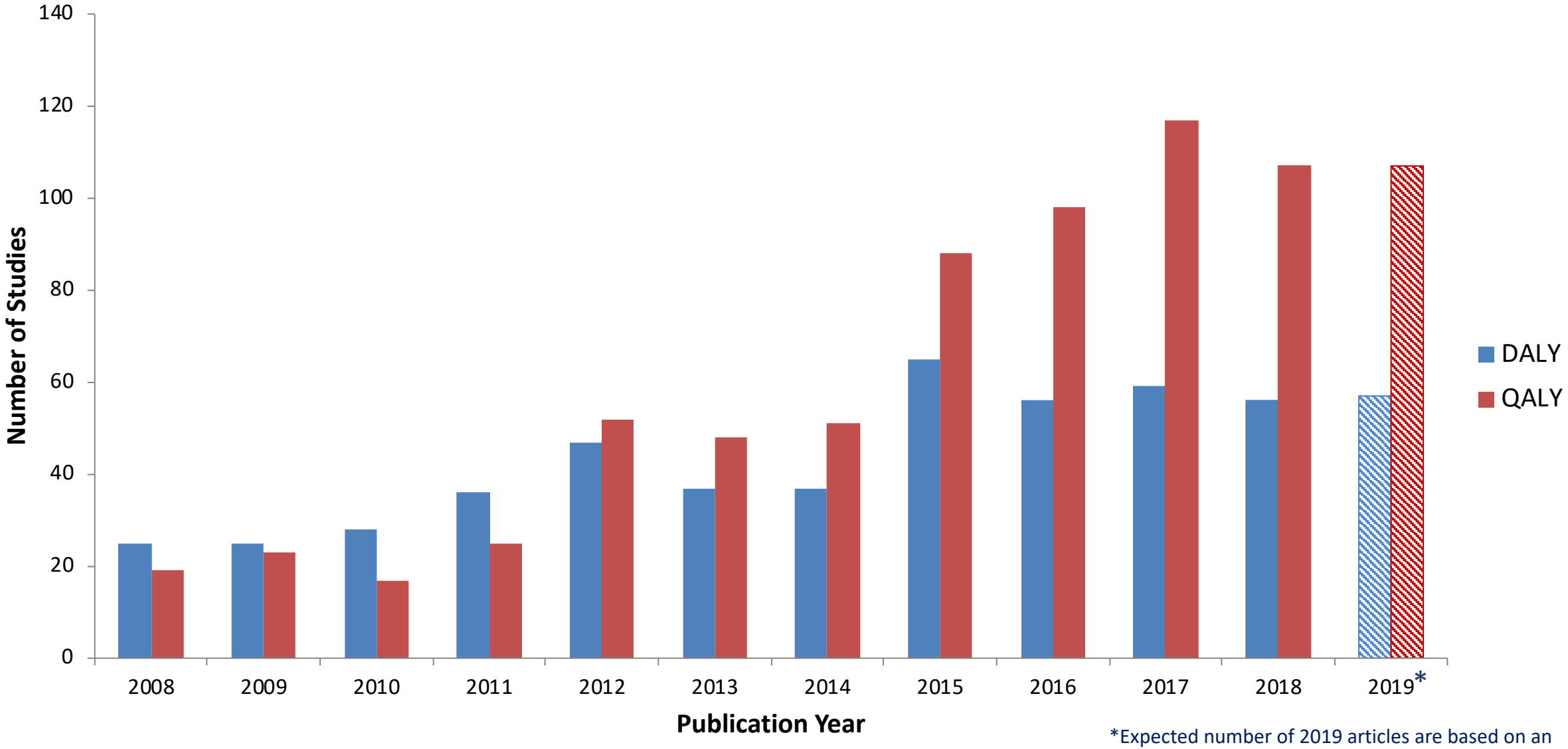
Growth of $/DALY vs. $/QALY Studies in LMICs



*Expected number of 2019 articles are based on an average of the prior 3 years (2016-2018)

Do Pandemic Response/Preparedness Studies Mirror These Trends?

- QALY-based studies assessing disease control/prevention: 38 (0.5%)
  - Over two-thirds were not policy-based (e.g., single drug or vaccine)
  - Studies of testing, stockpiling, suppression minimal
  - Highly variable results (range: $440 to $15m per QALY)
- DALY-based studies: 11 (1.6%)
  - 7/11 were policy-based
  - Systematic outbreak control, risk mitigation/prevention, etc.
  - Most highly cost-effective (<1x GDP), but…
  - Most missing implementation/monitoring costs

Thoughts on CEA in COVID-19 Context

- Gaps in clinical and public health preparedness play out daily
- No different for use of CEA to inform mitigation/control
- Clear need for further research
- Opportunity to build on disease modeling approaches to explore tradeoffs within local contexts given variability in estimates
  - E.g., for ~15,000 ventilators required for US today (95% UI: ~5,000 – ~40,000)*

*IHME (https://covid19.healthdata.org/united-states-of-America)