The Jointness Box—Evaluating Individualized Care Potential from Traditional Trial Data

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BACKGROUND

• Individualization of care is valuable when a patient can gain (receive more benefits or avoid additional harm from receiving treatment that is not the better treatment on average.)
• Presence of heterogeneity in the comparative effects of treatment, by itself, is not enough to call for investments in Patient Centered Outcomes Research.
• Even in the presence of heterogeneous effects individual outcomes from one treatment can stochastically dominate outcomes from an alternative.

GOAL

Develop a simple metric based on the concept of the Jointness Box (JB) that may be used to:
- Contemplate the value of PCOR based on marginal distributions of counterfactual outcomes obtained in traditional studies.
- Prioritize PCOR studies.

SIMULATIONS

1. Assume Joint Distribution
2. Create J-Box based on marginal distribution
3. Measure J-Box prediction vs. Truth

RESULTS

• JB Metric may provide useful information about the potential value of individualized care.
• It does NOT estimate the expected value of individualized care.
• But it does provide a proxy for ascertaining the Pr(Trt B is better for an individual | Trt A is winner on average).
• Future Work: Applying JB Metric to different distributions and clinical trials.

CONCLUSION

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