A failed attempt to conduct an individual patient data network meta-analysis (IPD-NMA)

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Case introduction

- **Context**: a systematic review and individual patient data (IPD) network meta-analysis (NMA) on competing treatments for advanced prostate cancer
  - To examine how treatment effects vary by patient characteristics for two tumor types: metastatic castration-sensitive prostate cancer; and nonmetastatic castration-resistant prostate cancer
  - Doctoral thesis proposal of Lin Wang, a PhD candidate at Hopkins
- **IPD sources**: Vivli, YODA, clinicalstudydatarequest, and projectdatasphere
- **Key challenges encountered**:
  - IPD availability
  - Cross-platform compatibility
  - Timeframe and practicality
Challenges encountered – IPD availability

• IPD available for 2/6 and 1/7 eligible trials respectively for the two tumor types of interest.

• IPD may not be sharable when:
  • The trial is ongoing or was completed within 18 months (or 24 months).
    ➢ This could be a completed trial with full results published or an ongoing trial with interim results published.
  • The product and relevant indications have not been approved by regulators in the US and/or EU.
  • The trial sponsor is not a data contributor; is a data contributor but the trial of interest is not yet listed; declines the request because of similar research questions (trial data monopoly).
Challenges encountered - **cross-platform compatibility**

An integrated meta-analysis cannot be done for IPD curated from different platforms because:

- Most IPD are in non-downloadable format
- Cross-platform data transmission is not allowed (can’t merge data)
- Inconsistent data quality, incomplete meta-data, lack of standardization
- Data may not be there (e.g., outcomes, covariates)
Challenges encountered – *timeframe and practicality*

- Timeframe from the IPD inquiry to approval:
  - ProjectdataSphere, NCI sponsored trial: 1 month (4/18-5/18, 2019)
  - YODA, Janssen sponsored trial: 4 months (1/28-5/21, 2019)
  - Vivli, Pfizer sponsored trial: 8 months (2/19-10/15, 2019)

- Navigated through different data sharing models; multiple user accounts, access policies, and procedures.
A few things are needed

**Data sharing platforms:**

- More IPD should be made available
- One single searchable database that catalogues all IPD available across different platforms
- Simplified, harmonized, and tiered data request procedures
- A mechanism to allow data merging across platforms

**IPD meta-analyses:**

- Need proper funding, resources, and skills
- Consider meta-analysis with both IPD and aggregate data