Sharing Data through the YODA Project: Early Experiences and Lessons Learned

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Potential Conflicts of Interest

• YODA Project funded by research grant through Yale from Johnson & Johnson, formerly funded by Medtronic, Inc.

• Research grant funding through Yale from:
  • Food and Drug Administration (FDA)
  • Centers for Medicare and Medicaid Services (CMS)
  • Blue Cross Blue Shield Association
  • NIH/NHLBI, AHRQ
  • The Laura and John Arnold Foundation
• ~50% of clinical trials are never published, many after 2 years
• Even when published, limited portion of collected data are reported
  • Particularly secondary endpoints, safety details
• Patients and physicians frequently make treatment decisions based on a fraction of potentially available clinical data
• Need ways to improve publication and reporting of research …
Strengthening Science through Data Sharing

• Ensures all data can be used to inform clinical decisions
• Positions research as a public good
• Respects contributions of participants:
  • maximizing value of collected data, while
  • minimizing duplicative data collection
• Facilitates secondary studies of existing data
• Promotes transparency and reproducibility:
  • sample, design, and analysis
Principles of the YODA Project

• Promote sharing of clinical research data to advance science and improve public health and healthcare
• Promote responsible conduct of research
• Ensure good stewardship of clinical research data by external investigators
• Protect rights of research participants
Medtronic Partnership

• Initiated in 2011
• Patient-level data for 17 clinical trials of Infuse (rhBMP-2)
• Early effort devoted to competitive RFP, 2 independent reviews
  • Both high-quality, conducted in tandem; published simultaneously in Annals of Internal Medicine, along with 4 editorials
  • Provided public assurance via independent evidence review
• Afterwards, established data access policy, required registration, public reporting, publication: 4 requests, 2 completed projects
Johnson & Johnson Partnership

• Initiated in 2014

• Effort focused on promoting, facilitating access to clinical trial data:
  • All pharmaceutical products (including legacy trials)
  • Device and diagnostic products as of 2015
  • Consumer products as of 2017

• Maintained governance structure with formal Steering Committee, engaged experts, stakeholders, and public (via comment)

• Launched YODA Project website to provide trial info, meta-data
Discovery consists of looking at the same thing as everyone else and thinking something different.

Albert Szent-Györgyi
Trials By Therapeutic Area

Below is a list of trials that have been identified as available. This is not a complete list of the trials that are available for sharing. Before a trial can be shared, partnered Data Holders must confirm data location and availability in an electronic format, and confirm that data availability conforms to any applicable partner agreements. All trials listed below have gone through this process. We continue to add trials to this list on a regular basis.

Don’t see the trial(s) you are looking for?
Submit an Inquiry

GENERAL NAME  PRODUCT CLASS  THERAPEUTIC AREA  CONDITION STUDIED  ADVANCED SEARCH

Behaviors and Mental Disorders
Blood and Lymph Conditions
Cancers and Other Neoplasms
Digestive System Diseases
Heart and Blood Diseases
Immune System Diseases
Mouth and Tooth Diseases
Muscle, Bone, and Cartilage Diseases

VIEW TRIALS  VIEW TRIALS  VIEW TRIALS  VIEW TRIALS
A Phase 3, Randomized, Double-Blind, Placebo-Controlled Study of Abiraterone Acetate (CB7630) Plus Prednisone in Patients With Metastatic Castration-Resistant Prostate Cancer Who Have Failed Docetaxel-Based Chemotherapy
Requests Submitted Online

- Investigator name, affiliation, co-investigators, funding statement
- Narrative summary / public abstract
- Scientific abstract
- Detailed research proposal, including:
  - Project background
  - Significance/objectives
  - Data sources and sample criteria
  - Primary and secondary outcomes
  - Statistical analysis plan
- Purpose: meta-analysis, validation ...
- Timeline and dissemination plan

within 2 weeks
YODA Project Review

The YODA Project reviews proposals to ensure that each proposal has scientific merit, specifically verifying:

• The scientific purpose is clearly described

• The data requested will be used to create or materially enhance generalizable scientific and/or medical knowledge to inform science and public health

• The proposed research can be reasonably addressed using the requested data
Data Partner Review

Requests for data undergo a Due Diligence Assessment by the Data Partner to evaluate their ability to make the data available to be shared, including assessment of:

• Patient privacy
• Required variables
Post Approval

• Execution of Data Use Agreement, signed by researcher and institution
• Data access- either via a password-protected personalized account on a secure data sharing platform or via a secure electronic data transfer
• Public posting of data request and registration information ...
# Approved Requests to Use Johnson and Johnson Data*

<table>
<thead>
<tr>
<th>Date of Approval</th>
<th>YODA Project Protocol Number</th>
<th>PI and Affiliation</th>
<th>Research Proposal</th>
<th>Product(s) of Interest</th>
<th>YODA Project Review and Data Holder Due Diligence Assessment</th>
<th>Project Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 26, 2014</td>
<td>2014-0333</td>
<td>Guru Sonpavde, MD; University of Alabama, Birmingham (UAB) School of Medicine</td>
<td>RECIST response as a surrogate endpoint in metastatic castration-resistant prostate cancer: Retro-spective analysis of COU-AA-303 and COU-AA-301</td>
<td>ZYQIA</td>
<td>YODA Project Review Due Diligence Assessment</td>
<td>Unknown; data access revoked, investigator has not reported results as requested.</td>
</tr>
<tr>
<td>Nov. 26, 2014</td>
<td>2014-0334</td>
<td>Raymond Cross, MD, MS; University of Maryland, Baltimore</td>
<td>Gender differences in weight gain in patients with inflammatory bowel disease treated with Infliximab</td>
<td>REMICADE</td>
<td>YODA Project Review Due Diligence Assessment</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>
Number of Data Requests Submitted

Median No. Trials Requested: 3 (IQR: 1-9)

*As of January 29, 2019
Status of Data Requests

*As of January 29, 2019

- Manuscript Submitted for Publication
- Incomplete with Preliminary Results
- Incomplete without Results
- Data Access Enabled
- DUA/Data Preparation in Progress
- Under Review/Revisions Requested
- Withdrawn/Closed

Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1*


*As of January 29, 2019
Use thus far ...

- Of 305 trials currently listed on the site, 63.6% have thus far been requested (8 have only been available for the past month)
- Of 111 applications submitted, 100 (91.7%) approved, 2 (1.8%) remain under review; 9 (8.3%) withdrawn/closed (usually data not available/cannot be adequately de-identified)
- Nearly all require some administrative revision, but 38 (34.2%) required scientific revision after review for clarity
- Most common: new 2⁰ aim (n=57), meta-analysis (n=53), validation (n=22)
How YODA Project is Different

• Not our data – we are an independent third party without interests, removing perception of influence over access

• YODA Project has full decision-making jurisdiction

• However, collaboration with data partners means frequent communication and contact, establishing trust

• Policies and procedures established via public comment in the best interests of:
  • Scientific profession and investigators
  • Patients and research subjects
  • Data generators / partners
  • Broader public
Overview and experience of the YODA Project with clinical trial data sharing after 5 years

Joseph S. Ross1,2,3,4, Joanne Waldestreicher5, Stephen Bamford6, Jesse A. Berlin5, Karla Childers7, Nihar R. Desai6,7, Ginger Gamble6, Cary P. Gross1,2,4,8, Richard Kuntz9, Richard Lehman10, Peter Lins5, Sandra A. Morris5, Jessica D. Ritchie6 & Harlan M. Krumholz2,3,4,7

The Yale University Open Data Access (YODA) Project has facilitated access to clinical trial data since 2013. The purpose of this article is to provide an overview of the Project, describe key decisions that were made when establishing data sharing policies, and suggest how our experience and the experiences of our first two data generator partners, Medtronic, Inc. and Johnson & Johnson, can be used to enhance other ongoing or future initiatives.
Lessons Learned

• Establish an iterative policy for data sharing that includes:

  • Transparency
  • Full authority and independence
  • Independent Steering Committee
  • Public list of available trials
  • Supporting documentation
  • Research proposal submission and public posting
  • Blinded request review by the YODA Project and partnering company
  
  • Opportunity for collaboration with partnering company
  • Data Use Agreement
  • Secure data access or transfer
  • Results dissemination
  • Data access fee
Challenges Ahead for Data Sharing

• What are best practices among data sharing platforms? What about data analytic servers? What meta-data are needed?
• What about older data, in older formats? Informed consents?
• Engaging research community to use data (and knowing it’s complicated)
• Data Use Agreements ...
• How long should data be available?
• Maintaining public input, transparency
• Large pharma companies are far ahead, what about everyone else?
• What incentives for sharers, users will promote greater success?
• What about the costs?
http://yoda.yale.edu

@YODAProject
Data sharing and data transparency are quickly becoming the new standard in pharmaceutical and medical device science and in clinical research more broadly. Many national and international organizations are adopting policies to advance scientific and medical knowledge through data availability and transparency that will ultimately improve public health and healthcare delivery, advancing scientific understanding of disease diagnosis and prognosis through the development of novel tools and approaches, while also improving existing knowledge of treatment safety and efficacy. The early experiences of the YODA Project can be used to inform the field and other data sharing initiatives.