Strategies for Responsible Sharing of Clinical Trials Data

The View from the Institute of Medicine

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Data sharing advances the science that is the foundation of medical care
Data sharing is in the public interest

Potential to improve patient care and public health

Results from many trials are not published in a timely manner

Large amounts of data from published trials are never analyzed

Momentum for data sharing among many pharmaceutical companies, EMA, NIH, Wellcome Trust, Gates Foundation, etc…

Question is not whether to share, but what types of clinical trial data to share, when to share and how to share
Charge to Committee

• An ad hoc committee of the Institute of Medicine will conduct a study to develop **guiding principles and a framework** (activities and strategies) for the responsible sharing of clinical trial data…

• …Based on the public comments received and further deliberations, the committee will prepare a **final report with its findings and recommendations**
Study Sponsors

- National Institutes of Health
- U.S. Food and Drug Administration
- Medical Research Council (UK)

- AbbVie Inc.
- Amgen Inc.
- AstraZeneca Pharmaceuticals
- Bayer
- Biogen Idec
- Bristol-Myers Squibb
- Eli Lilly and Company
- EMD Serono
- Genentech

- GlaxoSmithKline
- Johnson & Johnson
- Merck & Co., Inc.
- Novartis Pharmaceuticals Corporation
- Novo Nordisk
- Pfizer Inc.
- Sanofi-Aventis
- Takeda
Committee Members

- **Bernard Lo, M.D. (Chair)**, The Greenwall Foundation
- **Timothy Coetzee, Ph.D.**, National MS Society
- **Dave DeMets, Ph.D.**, University of Wisconsin
- **Jeffrey Drazen, M.D.**, *New England Journal of Medicine*
- **Steven Goodman, M.D., M.H.S., Ph.D.**, Stanford University School of Medicine
- **Patricia King, J.D.**, Georgetown University Law Center
- **Trudie Lang, Ph.D.**, University of Oxford
- **Deven McGraw, J.D., M.P.H., L.L.M**, Manatt, Phelps & Phillips LLP
- **Elizabeth Nabel, M.D.**, Brigham and Women's Hospital
- **Arti Rai, J.D.**, Duke University School of Law
- **Ida Sim, M.D., Ph.D.**, University of California, San Francisco
- **Sharon Terry, M.A.**, Genetic Alliance
- **Joanne Waldstreicher, M.D.**, Johnson & Johnson
Principles

• Maximize the benefits of clinical trials while minimizing the risks of sharing clinical trial data

• Respect individual participants whose data are shared

• Increase public trust in clinical trials and the sharing of trial data

• Conduct the sharing of clinical trial data in a fair manner
Application of Principles

• Goal of data sharing is to **maximize benefits** to science and public health

• In order to do so, **legitimate interests of stakeholders need to be recognized and balanced**
Application of Principles (continued)

Data sharing policies should aim to:

• **Protect and maximize** participants’ contributions

• **Increase access to data** and ease of use for other investigators

• **Protect against harm** from invalid analysis

• **Give appropriate incentives and credit** to researchers for sharing data

• **Protect Intellectual Property** and Commercially Confidential Information (CCI)
Key Benefits of Sharing Include:

- Allows other investigators to **carry out additional analyses** and reproduce published findings
- **Strengthens evidence base** for regulatory and clinical decisions
- **Increases scientific knowledge** gained from investments by funders
- **Maximizes contributions of participants** and avoids unnecessary duplicative trials
- **Stimulates new ideas** for research
Key Risks and Challenges Include:

The need to:

• **Protect participant privacy** and honor consent
• Safeguard **legitimate economic interests** of sponsors
• Guard against **invalid secondary analyses**
• Give researchers **time to conduct analyses and credit for sharing**
• Avoid **unfunded mandates**
Clinical Trial Life Cycle: When to Share Data

**When to Share**
- At trial registration
- 12 months after study completion
- 6 months after publication*
- 18 months after study completion
- 18 months after product abandonment OR 30 days after regulatory approval**

**What to Share**
- DATA SHARING PLAN
- SUMMARY-LEVEL RESULTS
- POST-PUBLICATION DATA PACKAGE
- FULL DATA PACKAGE
- POST-REGULATORY DATA PACKAGE
Stakeholders in clinical trials should foster a culture in which data sharing is the expected norm, commit to responsible strategies aimed at maximizing the benefits, minimizing the risks and overcoming the challenges of sharing clinical trial data for all parties.
Recommendation 1: Examples of Responsibilities for Each Stakeholder

- **Funders and Sponsors**—provide funding to investigators and promote sustainable infrastructure

- **Disease Advocacy Organizations**—provide guidance and educational programs on data sharing for participants

- **Regulatory and Research Oversight Bodies**—work with industry to harmonize new CSR templates
Recommendation 1:
Examples of Responsibilities for Each Stakeholder

- **Research Ethics Committees and IRBs**—provide guidance for clinical trialists and templates for informed consent to enable data sharing

- **Investigators and Sponsors**—make clinical trial data available at times and under conditions recommended in this report

- **Research Institutions and Universities**—make sharing of data a consideration in promotion of faculty members
Recommendation 1:
Examples of Responsibilities for Each Stakeholder

- **Journals**—require authors to commit to releasing the analytic data set underlying tables, figures and results no later than times specified in this report

- **Membership and Professional Societies**—collaborate on and promote use of common data elements relevant to their members
Recommendation 2:
Sets Professional and Community Standards for “What” Data Should Be Shared and “When”

Sponsors and investigators should share the various types of clinical trial data no later than the times specified on the following pages. Sponsors and investigators who decide to make data available for sharing before these times are encouraged to do so.
Recommendation 2: Sets Professional and Community Standards for “What” Data Should Be Shared and “When”

**Milestone:**

1. **TRIAL DESIGN & REGISTRATION**

**When to share:** At trial registration

**What data:**
- Data Sharing Plan
- Registration Elements
Recommendation 2:
Sets Professional and Community Standards for “What” Data Should Be Shared and “When”

Milestone:

2 PARTICIPANT ENROLLMENT

What data: • Consent for Inclusion in Data Sharing Plan
Recommendation 2:
Sets Professional and Community Standards for “What” Data Should Be Shared and “When”

Milestone:

STUDY COMPLETION OR TERMINATION

When to share: Within 12 months after study completion

What data: • Summary-Level Results
• Lay Summaries
Recommendation 2:
Sets Professional and Community Standards for “What” Data Should Be Shared and “When”

Milestone: 4 PUBLICATION

When to share: Within 6 months after publication

What data: • Analytic Data Set Supporting Publication, with Full Protocol, Full SAP and Analytic Code
Recommendation 2: Sets Professional and Community Standards for “What” Data Should Be Shared and “When”

Milestone:

When to share: Within 18 months after study completion

What data: • The Full Analyzable Data Set
• The Full Protocol, Full SAP and Analytic Code

FULL DATA PACKAGE
Recommendation 2:
Sets Professional and Community Standards for “What” Data Should Be Shared and “When”

Milestone:

When to share: Within 30 days after regulatory approval or 18 months after product or indication abandonment

What data:
• The Full Analyzable Data Set
• Redacted CSR
• The Full Protocol, Full SAP and Analytic Code
Clinical Trial Life Cycle: When to Share Data

**Clinical Trial Milestone**
1. Trial Design & Registration
2. Participant Enrollment
3. Study Completion or Termination
4. Publication
5. Regulatory Application?
   - Yes
   - No

**When to Share**
- At trial registration
- 12 months after study completion
- 6 months after publication
- 18 months after study completion
- 18 months after product abandonment OR 30 days after regulatory approval

**What to Share**
- Registration Elements
- Summary-Level Results
- Post-Publication Data Package
- Full Data Package
- Post-Regulatory Data Package
Holders of clinical trial data should **mitigate the risks** and **enhance the benefits** of sharing sensitive clinical trial data by **implementing operational strategies** that include **employing data use agreements**, designating an independent review panel, including members of the lay public in governance and **making access to clinical trial data transparent**.
Recommendation 3: Open Access

• **No restrictions** on access, no conditions for use

• **Appropriate for sharing** clinical trial results (e.g., on clinicaltrials.gov)

• **IPD and CSRs present risks** that generally need to be mitigated through appropriate controls
Recommendation 3: Controlled Access

Not a single model, but a **spectrum of controls and conditions**

- De-identification
- Use of Registration and Data Use Agreements
- Sharing data in non-downloadable format
- Review of data requests (by sponsor or independent review panel)
Recommendation 4: Addresses How Stakeholders Should Begin to Tackle Remaining Challenges and Work Towards a Vision for Data Sharing in the Future

The sponsors of this study should take the lead, together with or via a trusted impartial organization(s), to convene a multistakeholder body with global reach and broad representation to address, in an ongoing process, the key infrastructure, technological, sustainability and workforce challenges associated with the sharing of clinical trial data.
Recommendation 4: Remaining Challenges

- **Infrastructure**—insufficient platforms to store and manage data
- **Technological**—current platforms are not consistently discoverable, searchable and interoperable
- **Workforce**—lacks skills and knowledge to manage operational and technical aspects
- **Sustainability**—current model costs are borne by small subset of sponsors, funders and trialists, and is unsustainable
Sustainable and Equitable Business Model

• Data users **bear fair share of costs**
  – Attention to low income regions

• Costs lower if data collection and management are **designed for sharing**

• **Analysis of costs and options for funding** would provide evidence base
Key Messages

- Responsible clinical trial data sharing will become the norm
- Stakeholders and institutions need to work together to agree on best practices, standards and incentives
- Evolution should be guided by empirical data, lessons learned and best practices
A Vision for Clinical Trial Data Sharing

- Culture of sharing with **effective incentives and protections**
- **Multiple interoperable platforms** with different models of data sharing
- **Best practices identified and modified** in response to evidence of what works
- **Sustainable, equitable business model** developed
It is time to embrace an era in which transparency and responsible data sharing are common values.

Francis S. Collins, M.D., Ph.D., Director, National Institutes of Health
How J&J Shares Clinical Trial Data

**Pharmaceuticals**

**Medical Devices**
Together, we will advance science, the foundation of medical care

Together, we will make a difference in the world