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Edinburgh Open Research Conference | Lightning Talk

# Can we measure research in a more meaningful way?

## A quick look at the 2025 PLOS Open Science Indicators dataset

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# PLOS Open Science Indicators dataset and analysis methodology

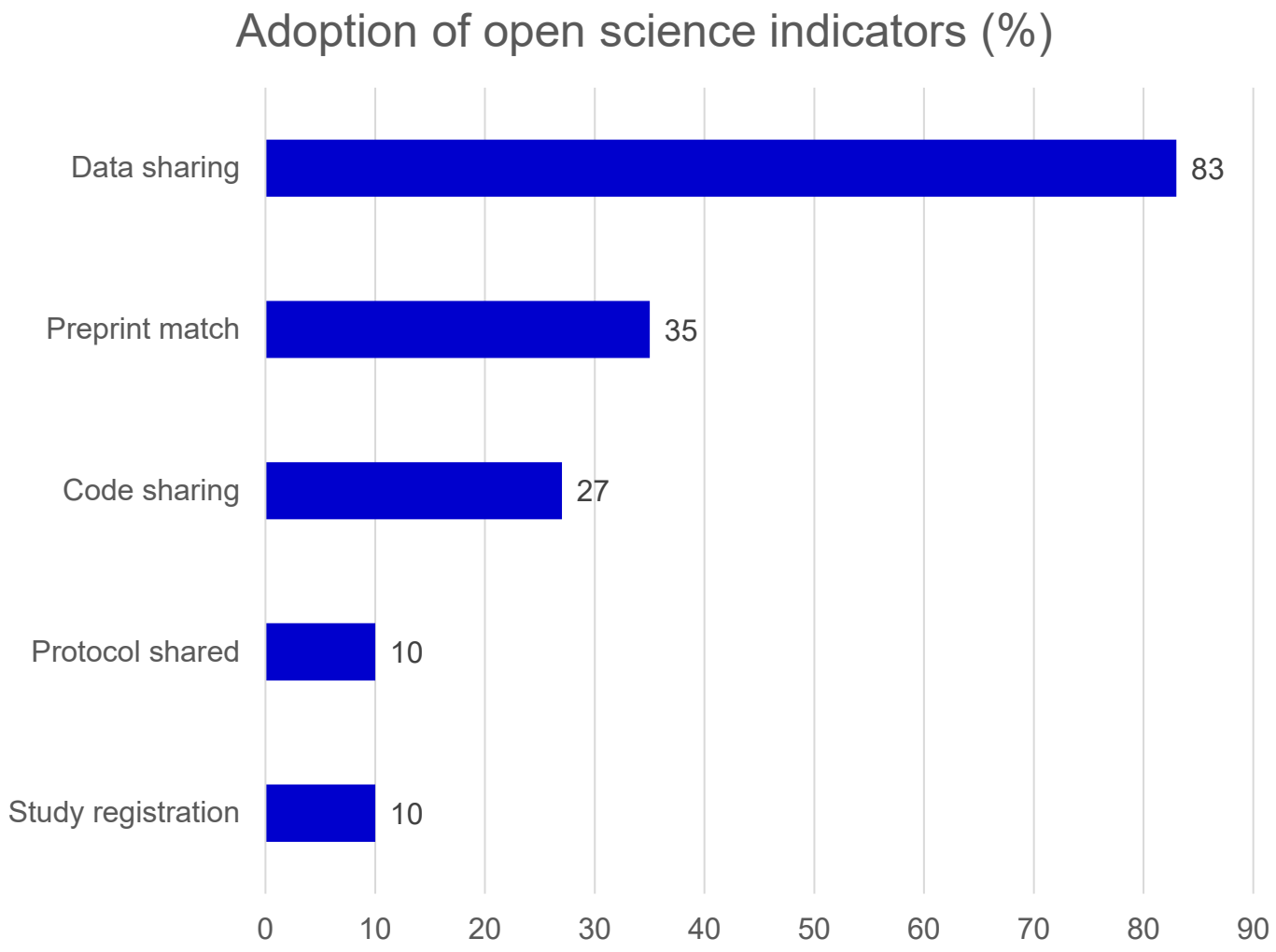
- Demonstrating different open research practices within PLOS publications
- Data availability/share, code availability/share, preprint matching, protocol sharing, and study registration
- Released since 2022 | latest version in July 2025 (including 140K outputs)

**138,995**
PLOS articles in the OSI dataset

**1,368**
Imperial articles matched by DOI

**1%**
Of the PLOS set and 1.45% of Imperial outputs

# PLOS Open Science Indicators dataset snapshot




- **Data sharing is mature**
  - Thanks to data management policies
- **Code is the weak link**
  - Only 56% of code-generating papers share the code
- **Preprints are climbing fast**
  - From 13% in 2018 to nearly 50% in 2024
- **Protocols and registration lag**
  - 10% each. Newer practices, and more common in some fields than others

# Open research practices reinforcing one another

| PLOS Dataset (Imperial) | Dynamic | Default |
|---|---|---|
| | 473 # Items | 1,368 # Items |

| | % Data shared (Imperial) | % Code shared (Imperial) | % Preprint match (Imperial) | % Protocol shared (Imperial) | % Registration shared (Imperial) |
|---|---|---|---|---|---|
| Dynamic | 89.85% | 46.09% | 100.00% | 11.84% | 7.40% |
| Default | 82.75% | 27.05% | 34.58% | 9.80% | 9.87% |

# What this means

**Data sharing is strong**
- High adoption of data sharing
- Data policies important

**Code sharing needs a push**
- Code that underpins research needs to be shared more widely

**Indicators reinforce each other**
- Open science indicators are not independent
- Importance of training of all principles together

Caveats

One publisher, certain disciplines

Some indicators don’t work for some disciplines

Journal-centric: works backwards from publication

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