# Increasing research value, reducing waste

## Interventions to improve adherence to reporting guidelines in the context of the MiRoR project

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# Key message and questions to discuss

## Key message

Improving compliance with reporting guidelines in health research will enhance reproducibility. This will increase research value and reduce waste.

## Questions

1. How could authors of studies in health research improve the way they use reporting guidelines?
2. Should the e orts of improving compliance with reporting guidelines be focused on stricter journal policies or on better training for researchers?

# Outline

1. The **Methods in Research on Research** (MiRoR) Project
2. **Reporting guidelines**: the key for reproducibility
3. **My PhD project**: Assessing interventions to improve adherence to reporting guidelines in health research
4. **What has been done** to improve compliance with reporting guidelines?

# The Methods in Research on Research (MiRoR) Project

**Goals**: To increase research value and reduce waste in health research.

- In 2010, 200.000.000.000e wasted in the USA (85% of biomedical research investment) [1].
  - Main **reason**: lack of **reproducibility**

## Reproducibility

- Ability of a researcher to **duplicate the results of a prior study** using the same materials as were used by the original investigator.
- Minimum necessary condition for a finding to be **believable and informative**.

[1] Macleod, M. R. et al. Biomedical research: increasing value, reducing waste. Lancet. 2014; 383, 101{104

# The Methods in Research on Research (MiRoR) Project

- **Network** (45 members):
  - **15 students**
  - High level **senior researchers** with expertise on meta-research
  - **Partner institutions** (The BMJ, BioMed Central, Cochrane, EQUATOR)

- **Field**: 15 PhD transdisciplinary projects covering di erent areas of **meta-research**:
  - **Methods of research** (study design, statistics, or ethics)
  - **Reporting of research** (reporting standards)
  - **Evaluation of research** (peer review)

# Reporting guidelines (RGs): the key for reproducibility

- **What are RGs?** Sets of recommendations for reporting research methods and findings.

[2] EQUATOR Network. Library for health research reporting. 2011. www.equator-network.org/resource-centre/library-of-health-research-reporting

[3] Samaan, Z. et al. A systematic scoping review of adherence to reporting guidelines in health care literature. J Multidiscip Healthc. 2013; 6:169{88

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- **When to use them?** Nowadays, 362 RGs (and counting!) for different research areas and study designs[2].
  - **CONSORT** for reporting randomized trials (first RG, 1996).
  - **STROBE** for observational studies.
  - **PRISMA** for systematic reviews.

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  - **CONSORT** for reporting randomized trials (first RG, 1996).
  - **STROBE** for observational studies.
  - **PRISMA** for systematic reviews.
- **Have they improved the quality of reporting?** The use of a few RGs is associated with improved reporting. But the current levels of adherence to RGs are still suboptimal:
  - 86% of reviews assessing adherence to RGs concluded that reporting quality was inadequate, poor, or suboptimal[3].

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## Structure

1. **Sub-project 1**: To explore what interventions to improve compliance with RGs have been evaluated and to collect suggested ideas.
2. **Sub-project 2**: To identify and evaluate barriers and facilitators for the interventions identi ed in Sub-project 1.
3. **Sub-project 3**: To assess the most promising intervention.

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## Expected impact

To improve the reporting quality of studies in health research in order to improve reproducibility.

# What has been done to improve compliance with reporting guidelines?

- Di erent **initiatives** aiming to improve compliance with reporting guidelines assessed in recent years.

## Examples

1. **Writing aid tools** for authors.
2. **Statistician involvement** in the design of a study.
3. **Journal endorsement** of reporting guidelines: most popular and widespread action.

- Some of these actions have **not been shown to have a bene t**.
- Others show **better but still suboptimal levels of reporting**[4].

[4] Turner L, Shamseer L, Altman DG et al. Does use of the CONSORT statement impact the completeness of reporting of randomised controlled trials published in medical journals? A Cochrane review. Syst Rev 2012;1:60

# What has been done to improve compliance with reporting guidelines? Endorsement of reporting guidelines

**Journal endorsement of reporting guidelines**: Support of RGs by health care journals. Di erent degrees:

1. **Weak endorsement**: To write an editorial statement endorsing a number of reporting guidelines.
2. **Intermediate endorsement**: To recommend in journal's 'Instructions to Authors' to follow the relevant reporting guidelines.
3. **Strong endorsement**: Or to require authors to submit the relevant checklist and/or ow diagram together with their manuscript.
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    - Trials, Plos ONE, or BMJ Open follow this policy and make available the **original checklists** submitted by authors.

## Problem

There exist **discrepancies** between what authors say that they report (through the checklist) and what they actually report.

# What has been done to improve compliance with reporting guidelines? Endorsement of reporting guidelines

## Example on CONSORT Item 8a: **Method used to generate the random allocation sequence**

- **What authors claim**: CONSORT Item 8a is reported in pg. 7.
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- **Possible reasons**:
  - Authors do not pay enough attention to CONSORT.
  - Some items are not understood and therefore not properly reported.
  - Reviewers are not accurately looking for adequate reporting:
    ! They might not be inspecting the checklist because they might be wrongly reassured.

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  - Reviewers are not accurately looking for adequate reporting:
    ! They might not be inspecting the checklist because they might be wrongly reassured.
- **Possible implications**:
  - Lack of transparency and accuracy: no **reproducibility**!

# Thank you!

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