Registration of experimental studies and systematic reviews

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Overview of presentation

- Principles and practice of registration
- Barriers and facilitators to registration
- Development and evaluation of utility of PROSPERO
- The future
Principles of registration

- Availability of evidence to inform health care decisions
- Avoidance of publication bias and selective reporting bias
- Requirement of The Declaration of Helsinki
- Avoid unnecessary duplication
- Identify gaps in research
- Facilitate recruitment
- Promoting collaboration
- Early identification of potential problems

WHO ICTRP: www.who.int/ictrp/en/
Practice of registration

- Accessible to the public at no charge
- Accept registrations from anyone (unduplicated, eligible and complete)
- Managed by a not-for-profit organisation
- Validate entries (within scope and complete)
- Electronically searchable
- Provide a unique identification number for each record
- Require provision of a minimum data set
- Permanent entries

ICMJE criteria for clinical trial registers: www.icmje.org/update_june07.html
Publication bias and selective reporting of outcomes

- **In animal studies**

- **In clinical trials**

- **In systematic reviews**
How registration can help

• Records key planned features of the research
  • randomisation/inclusion criteria
  • primary and secondary outcomes and measures

• Allows comparison of published results with what was planned in the corresponding registration record
  • readers can judge whether any discrepancies are likely to have introduced bias

• Registration should allow amendments and maintain audit trail (not unreasonable to make changes, but need to know why)
Avoiding unintended duplication

- Research can be invasive/time consuming and costly
- Often duplicate or very similar studies are undertaken
- Unintended duplication is economically wasteful

- Registration should allow those planning research to check whether there are any studies already in the ‘pipeline’ that address their topic of interest

- They can then decide whether or not to proceed
Practical barriers to registration

• Availability of a registry

• Process for process sake
  • no legal or ethical imperative: ? value to registrant

• Safeguarding privacy
  • focus/topic of investigation
  • researchers carrying out the investigation

• Timing
  • too soon – lots of amendments
  • too late – fails to fulfil purpose of registration

• Costs
  • time, effort and money
Benefits of registration

• Researchers
• Commissioners and funders
• Guideline developers
• Journal editors and peer reviewers
• Methodologists
• The public
Prospective registration of systematic review protocols

- Importance increasingly recognised
- PRISMA 2009 advocated registration
- No open access facility to formally register systematic review protocols
  - Cochrane and Campbell Collaboration protocol registration limited to their own organisations
Development of PROSPERO

- CRD initiated development of PROSPERO in 2010

- International Advisory Group

- Minimum dataset agreed by international consultation
  - 22 required fields
  - 18 optional fields

Inclusion/exclusion and timing

- Ongoing systematic reviews that have a health related outcome in the broadest sense
  - Systematic reviews of reviews
  - Reviews of methodological issues with an outcome that can be used in health care practice
- Scoping reviews – excluded as are not systematic reviews
  - Reviews of animal studies – excluded as outcomes not of direct relevance in health care practice
- Registered before screening against eligibility criteria commences (currently accepted as long as they have not progressed beyond the completion of data extraction)
PROSPERO launched
February 2011

- Web based
- Free to register, free to search
- Users create and **update** their own records
- Record content is responsibility of review author
- Administrators check for “sense” **not** peer review
- An audit trail of amendments is maintained
- Registration record indexed by the PROSPERO team
- As many administration tasks as possible are automated
- Minimum data set
One year evaluation of utility

- Based on 232 responses from users (response rate 22%)
  - 80% found registration fields relevant to their review
  - 99% found joining and navigation was easy/very easy
  - 96% found turn round time was good/excellent
  - 80% found supporting materials helpful/very helpful
- 99% rated their overall experience of registering with PROSPERO as good or excellent
- 79% completed the registration form in 60 minutes or less
- Conclusion: registration of systematic review protocols is feasible and not overly burdensome for those registering their reviews

Booth et al. Systematic Reviews 2013;2:4
Criticisms of the dataset

• ‘Form bias towards reviews that involve statistical data analysis rather than narrative or qualitative reviews’

• ‘Some leaders assert that systematic reviews are exploratory in nature and should not have pre-determined primary outcomes’

• Legitimate reasons why data extraction, risk of bias (quality) assessment and data analysis all started but not completed
Cumulative totals for new registrations
March 2013: PROSPERO contains details of 1260 reviews being carried out in 57 different countries.
The future

- Improve functionality of form and search interface
- Expand the scope to include all systematic reviews for which there is a health related outcome in the broadest sense
- Continue to encourage registration and use of the database
- Work on a programme of methodological research

- Potentially help support development of satellites (*X-3 or Miranda?*)

- With the right support and flexible pragmatic approach - setting up a register is possible
Thank you

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