

PROSPERO

International prospective register of systematic reviews

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The need for prospective registration

- ▶ Systematic reviews usually provide the evidence base upon which health and social care decisions are made so they should be robust and free from bias
- ▶ Health research resources are finite so need to be allocated carefully: avoiding unnecessary duplication

Why register systematic reviews: publication bias

- ▶ Likely that just as for clinical trials there may be publication bias associated with systematic reviews
- ▶ Evidence that unpublished systematic reviews exist (*Tricco et al J Clinical Epidemiology 2009*)
 - ▶ 248 survey respondents reported 12% of 1604 completed reviews as unpublished
 - ▶ Respondents reason for non-publication was lack of time
- ▶ 2009 PRISMA statement advocated registration

Why register systematic reviews: reporting bias

- ▶ Emerging evidence that reporting biases similar to those observed for clinical trials were also operating for systematic reviews (*Kirkham et al PLoS ONE 2010*)
 - ▶ New reviews from 3 consecutive issues Cochrane Library
 - ▶ 22% of 288 review/protocol pairings were discrepant in at least one outcome
- ▶ Prospective registration of systematic reviews could guard against bias - in the same way as for prospective registration of clinical trials

How registration can help avoid bias

- ▶ Registration facilitates transparency
 - ▶ Provides permanent public record of key features of a systematic review even if the completed review is never published
 - ▶ Enables comparison of what was planned with what is reported:
 - ▶ can assess if any discrepancies likely to have introduced bias
 - ▶ encouraging clear reporting of any changes with justifications
 - ▶ Reviews registered prospectively with audit trail of amendments (not unreasonable to make changes, but need to know why they were made and at what stage)
 - ▶ Unique registration number to enable linkage between the record and review publications

Duplication of reviews

- ▶ Unplanned duplication of reviews is a waste of resource
 - ▶ 73 meta-analyses: two thirds had at least one overlapping meta-analysis (*Siontis et al BMJ 2013*)
 - ▶ Call for sources to identify research in progress (*Chalmers et al Lancet 2014*)
- ▶ Registration allows those planning reviews to check whether there are any ongoing reviews that address their topic or specific question of interest
- ▶ Offers opportunities for collaboration

Requirements of a register

- ▶ Searchable and accessible to all
- ▶ Free to use
- ▶ Accept registrations from anyone
- ▶ Require provision of a minimum data set
- ▶ Validate entries (within scope and complete)
- ▶ Provide a unique identification number for each record
- ▶ Permanent entries

Criteria established by the ICMJE for clinical trial registers

Developing PROSPERO

- ▶ International advisory group
- ▶ Establishing a minimum dataset
 - ▶ Should not be overly burdensome
 - ▶ Aim to collect sufficient information to
 - ▶ enable informed judgement about potential risk of bias
 - ▶ determine whether reviews already in 'pipeline' meet identified need without undertaking a new review
 - ▶ Not to capture wider information that should be included in a full protocol for a systematic review

International consultation

- ▶ Inform register design
- ▶ Reach consensus on data items required for registration
- ▶ Generate support for registration
- ▶ Raise awareness of the forthcoming register
- ▶ Modified Delphi
 - ▶ *(Booth A et al. PLoS ONE 2011; 6(11): e27319)*

Registration minimum dataset: Review design fields (19/40)

- Review question(s)*
- Searches*
- URL to search strategy
- Condition or domain being studied*
- Participants/population*
- Intervention(s), exposure(s)*
- Comparator(s)/control*
- Types of study for inclusion*
- Context
- Main outcome(s)*
- Additional outcomes*
- Data extraction (selection and coding)*
- Risk of bias (quality) assessment*
- Strategy for data synthesis*
- Analysis of subgroups/sets*
- Type and method of review*
- Reference/URL to full protocol
- Dissemination plans
- Details of final report/publication (*added over time*)

** these fields are mandatory*

Registration minimum dataset: Administrative fields (21/40)

- Review title*
- Original language title
- Anticipated or actual start date*
- Anticipated completion date*
- Stage of review*
- Named contact*
- Named contact email*
- Named contact address
- Named contact phone number
- Organisational affiliation*
- Review team members and affiliations*
- Funding sources/sponsors*
- Conflict of interests*
- Collaborators
- Language
- Country*
- Other registration details
- Key words
- Existing review by same authors
- Current review status*
- Any additional information

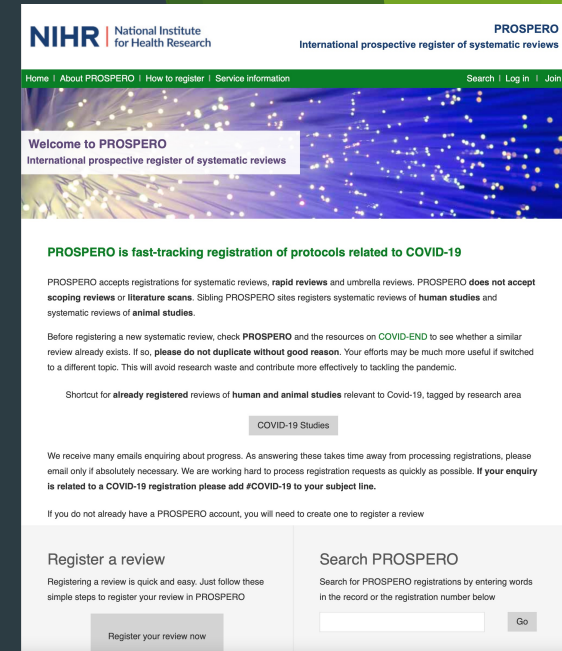
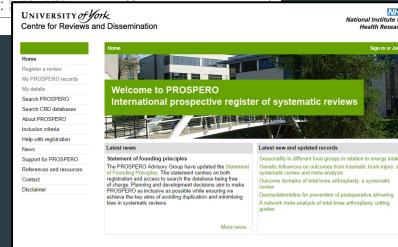
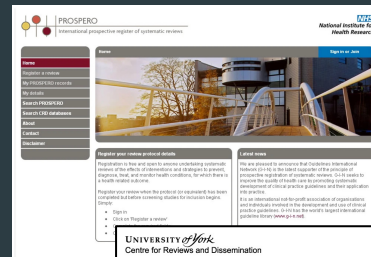
** these fields are mandatory*

PROSPERO

Launched in Feb 2011

- ▶ Web based
- ▶ Free to search
- ▶ Free to register
- ▶ Registrants create, amend and update their own records
- ▶ Minimum data set to be completed
- ▶ Record content is the responsibility of the named contact
- ▶ Administrators check for “sense”: there is no peer review
- ▶ Provide a unique identification number for each record
- ▶ Entries are permanent

(Booth A et al. Syst Rev. 2012;1)



What will you find in PROSPERO

Systematic reviews of

- ▶ Interventions (including qualitative and IPD reviews)
- ▶ Diagnostic accuracy
- ▶ Prognostic factors
- ▶ Prevention
- ▶ Epidemiological reviews relevant to health and social care
- ▶ Public health
- ▶ Service delivery in health and social care
- ▶ Methodology
- ▶ Cochrane reviews automatically uploaded (technical issue in Feb 2020)
- ▶ Protocols for systematic reviews of animal studies for human health (separate form: administered by SYRCLE-CAMARADES team)

129,470

2,633

1,113

Searching PROSPERO

- ▶ No need to log in
- ▶ MeSH interface available
- ▶ PROSPERO search filters
 - ▶ Health area of review
 - ▶ Type and method of the review
 - ▶ Source of the review
 - ▶ Status
 - ▶ Restrict search to specific fields
 - ▶ Date added to PROSPERO

NIHR | National Institute for Health Research

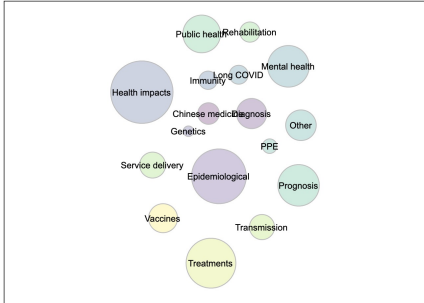
PROSPERO
International prospective register of systematic reviews

Home | About PROSPERO | How to register | Service information | Search | My PROSPERO | Logout: Alison Booth

PROSPERO Covid-19 filters

Click any of the keywords below to search PROSPERO for Covid-19 registrations or click [here](#) to see all Covid-19 human studies or [here](#) to see all Covid-19 animal studies.

Click to [hide the Covid-19 filters](#) and [go back to standard PROSPERO searching](#)



Tag	Count
Chinese medicine	185
Diagnosis	362
Epidemiological	1192
Genetics	44
Health impacts	1550
Immunity	134
Long COVID	142
Mental health	689
Other	373
PPE	84
Prognosis	685
Public health	566
Rehabilitation	162
Service delivery	268
Transmission	251
Treatments	988
Vaccines	334

- Health area of review
- Type and method of the review
- Source of the review **Exclude Animal**
- Status of the review
- Restrict search to specific fields
- Date added to PROSPERO

First Previous Next Last (page 1 of 3)

142 records found for "Long COVID":C19 NOT Animal:DB

Show checked records only | Export

Click to **show your search history and hide search results**. Open the **Filters** panel to find records with specific characteristics (e.g. all reviews about cancer or all diagnostic reviews etc)

Click to **hide the standard search and use the Covid-19 filters**.

Q social prescribing



Go

MeSH

Clear filters

Hide filters

+ Health area of review

+ Type and method of the review

- Source of the review **Exclude Animal**

- ☒ All protocols
 - ☐ Exclude Cochrane protocols
 - ☒ Exclude reviews of animal studies for human health protocols
 - ☐ Cochrane protocols only
 - ☐ Reviews of animal studies for human health protocols only

+ Status of the review

+ Restrict search to specific fields

+ Date added to PROSPERO

[First](#) [Previous](#) [Next](#) [Last](#) (page 1 of 2)

53 records found for **social prescribing NOT Animal:DB**

Show checked records only | [Export](#)

<input type="checkbox"/>	Registered	Title	Type	Review status
<input type="checkbox"/>	22/09/2020	A realist review of the impact on individuals' physical, mental, psychological or social health and well being through participation in Parkrun [CRD42020175448]		Review Ongoing
<input type="checkbox"/>	13/08/2019	A systematic review of social interventions for depression [CRD42019137185]		Review Completed published
<input type="checkbox"/>	09/03/2020	A systematic review of the effectiveness of gardening interventions for reducing mental ill health and increasing wellbeing in adults with mental health issues [CRD42020162187]		Review Ongoing

Searching PROSPERO

Export



Export the results of your search to a tagged text file. The file will be prepared and downloaded to your device when you click "Export now" below

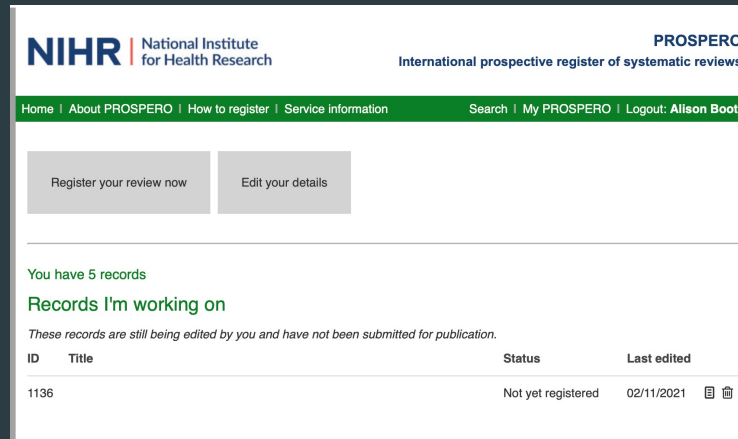
An Endnote import filter is available for these records [here](#).

- ☐ Export all results
 - ☒ Export checked results only
-
- ☒ Export in legacy PROSPERO format
 - ☐ Export as RIS

Export now

Registering a review

- ▶ Join/log in on the home page
- ▶ Go to **My PROSPERO**
- ▶ Select **Register your review now**
- ▶ Follow steps 1-4



The screenshot shows the 'My PROSPERO' page on the PROSPERO website. At the top, the NIHR logo and 'National Institute for Health Research' are on the left, and 'PROSPERO International prospective register of systematic reviews' is on the right. A green navigation bar contains links: Home | About PROSPERO | How to register | Service information | Search | My PROSPERO | Logout: Allison Booth. Below the navigation bar, there are two buttons: 'Register your review now' and 'Edit your details'. A section titled 'You have 5 records' is followed by 'Records I'm working on'. A note states: 'These records are still being edited by you and have not been submitted for publication.' Below this is a table with columns: ID, Title, Status, and Last edited. The table contains one record with ID 1136, Status 'Not yet registered', and Last edited '02/11/2021'.

ID	Title	Status	Last edited
1136		Not yet registered	02/11/2021



The screenshot shows the 'Register your review' page on the PROSPERO website. At the top, the NIHR logo and 'National Institute for Health Research' are on the left, and 'PROSPERO International prospective register of systematic reviews' is on the right. A green navigation bar contains links: Home | About PROSPERO | How to register | Service information | Search | My PROSPERO | Logout: Allison Booth. The main content area starts with a paragraph: 'Registering a review is easy. Please read the guidance notes for registering a **systematic review of human studies** or a **systematic review of animal studies relevant to human health**, then just follow the five step process below.' This is followed by five steps, each with a green icon and a description:

- Step 1** Check the **inclusion criteria** to make sure that your review is eligible for inclusion in PROSPERO
- Step 2** Ensure that your review protocol is in its (near) final form and that no major changes are anticipated at this stage - e.g. if your protocol will be peer reviewed it will usually be sensible to wait until this is complete before registering.
- Step 3** Search PROSPERO to ensure that your review has not already been registered by another member of your team
- Step 4** Search PROSPERO to ensure that you are not unnecessarily duplicating a review that is being done by another team or has been registered previously
- Step 5** Start registering your review

At the bottom, there are two buttons: a purple button with a person icon and text 'Register a systematic review of health research studies (study participants are people)' and a green button with a mouse icon and text 'Register a systematic review of animal research studies (study subjects are animals) that is of direct relevance to human health'.

Step 1: eligibility

- ▶ PROSPERO includes details of any planned or on-going systematic review that has a health related outcome
- ▶ Exclusion criteria:
 - ▶ Systematic reviews without an outcome of clear relevance to the health of humans
 - ▶ Scoping reviews
 - ▶ Literature reviews that use a systematic search
 - ▶ Systematic reviews assessing sports performance as an outcome
 - ▶ Methodological reviews that assess ONLY the quality of reporting
- ▶ **Step 2:** Full protocol should be (near) ready before registering
- ▶ Submission must be before data extraction commences (from Oct 2019)
- ▶ Forms must be complete and in English
- ▶ **Steps 3 and 4:** Search PROSPERO for existing registrations


Step 5: Select the required form


NIHR National Institute for Health Research **PROSPERO** International prospective register of systematic reviews

Home | About PROSPERO | How to register | Service information Search | My PROSPERO | Logout: Alison Booth

Registering a review is easy. Please read the guidance notes for registering a systematic review of human studies or a systematic review of animal studies relevant to human health. Then just follow the five step process below.

- Step 1** Check the inclusion criteria to make sure that your review is eligible for inclusion in PROSPERO
- Step 2** Ensure that your review protocol is in its (near) final form and that no major changes are anticipated at this stage - e.g. if your protocol will be peer reviewed it will usually be sensible to wait until this is complete before registering.
- Step 3** Search PROSPERO to ensure that your review has not already been registered by another member of your team
- Step 4** Search PROSPERO to ensure that you are not unnecessarily duplicating a review that is being done by another team or has been registered previously
- Step 5** Start registering your review

 Register a systematic review of health research studies (study participants are people)

 Register a systematic review of animal research studies (study subjects are animals) that is of direct relevance to human health

Respond to a series of questions...

...if you make it to the end - click on the link to register your review

Home | About PROSPERO | How to register | Service information Search | My PROSPERO | Logout: Alison Booth

Before submission we need to check that your review is eligible for inclusion in PROSPERO. Completing these questions before registration is intended to prevent you wasting time filling out a form if your project is not eligible for PROSPERO.

Will the systematic review protocol be submitted in English?

YES NO

Is this a scoping, literature or mapping review?

YES NO

Does this review have at least one outcome directly related to human health or is it a methodology review that has a clear link to human health?

YES NO

Is this a Cochrane review?

YES NO

Is this a mini or partial review done for a trainee system to learn how to register?

PROSPERO provides registration free of charge and resource to process applications for reviews that are cannot accept registrations for mini reviews restricted where a whole class is doing the same systematic review. However you may use and save provided you do not SUBMIT it for publication. You c supervisors. It will not be published on the PROSPERO.

YES NO

Have you searched PROSPERO to identify similar studies?

Checking to see if a similar review already exists is a good reason for doing this - e.g. if the new review is a different focus.

there is more than one person conducting the review

YES NO

Do you intend to publish the results of your systematic review and/or make them publicly available when completed?

PROSPERO aims to increase transparency and help prevent unintended duplication of effort. This requires that the results of systematic reviews should be made publicly available e.g. by publication in an academic journal, posting in a research repository or being made available on a permanent website. We therefore do not accept registrations from systematic reviews that will not be made available to others e.g. projects that are internal to an organization or company, or masters dissertations if it is known that these will not be shared.

YES NO

Stage of review

What work have you already done on your systematic review?

Preliminary searches

Not started Started Completed

Piloting the study selection process

Not started Started Completed

Formal screening of search results against eligibility criteria

Not started Started Completed

Data extraction

Not started Started Completed

Risk of bias (quality) assessment

Not started Started Completed


Data analysis

What stage is your review at regarding data analysis?

Not started Started Completed

Please now go ahead and register your review.

Registration form

- ▶ Form has 40 fields:
 - *mandatory fields
- ▶ Text can be typed or “pasted” in
- ▶ Form can be saved as a pdf
- ▶ Brief and full guidance available 
- ▶ Can upload pdf of:
 - ▶ Search strategy
 - ▶ Published protocol

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for Health Research

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UNIVERSITY of York
Centre for Reviews and Dissemination

Systematic review

Fields that have an **asterisk (*)** next to them means that they **must be answered**. **Word limits** are provided for each section. You will be unable to submit the form if the word limits are exceeded for any section. Registrant means the person filling out the form.

PrintPDF

SubmitSaveExit

1. * Review title. ⓘ
Give the title of the review in English

50 words remaining

2. Original language title. ⓘ
For reviews in languages other than English, give the title in the original language. This will be displayed with the English language title.

50 words remaining

3. * Anticipated or actual start date. ⓘ
Give the date the systematic review started or is expected to start.

03/11/2021

4. * Anticipated completion date. ⓘ
Give the date by which the review is expected to be completed.

03/11/2022

5. * Stage of review at time of this submission. ⓘ
Tick the boxes to show which review tasks have been started and which have been completed.
Update this field each time any amendments are made to a published record.

Reviews that have started data extraction (at the time of initial submission) are not eligible for inclusion in PROSPERO.
If there is later evidence that incorrect status and/or completion date has been supplied, the published PROSPERO record will be marked as retracted.

This field uses answers to initial screening questions. It cannot be edited until after registration.

☐ The review has not yet started

Review stage	Started	Completed
Preliminary searches	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

My PROSPERO

- Edit your details
- Start new registration
- Ongoing records
- Published or rejected records
- Records not submitted
- Access to email trail



[Register your review now](#)

[Edit your details](#)

You have 5 records





Records I'm working on

These records are still being edited by you and have not been submitted for publication.

ID	Title	Status	Last edited
1136		Not yet registered	02/11/2021  

My other records

These are records that have either been published or rejected and are not currently being worked on.

ID	Title	Status	Last edited
CRD42017055872	A systematic review of the effectiveness of internal fixation for lateral compression (LC1) fragility fractures of the pelvis	Registered	04/06/2019 
1276	Management of frozen shoulder: a systematic review and decision analytic model	Not yet registered	11/02/2018 
CRD42015015981	Mental health training programmes for non-mental health trained professionals coming into contact with people with mental ill health: protocol for a systematic review of effectiveness	Registered	11/02/2018 
CRD42015023501	Social prescribing: a systematic review of the evidence	Registered	11/02/2018 

PROSPERO public interface

- ▶ Published records immediately available on the PROSPERO site
- ▶ Named contact details available in records
- ▶ Fields displayed in a different order to registration form
- ▶ Can print or save as pdf

The screenshot displays the PROSPERO public interface for a specific record. At the top, the NIHR National Institute for Health Research logo is on the left, and the PROSPERO International prospective register of systematic reviews logo is on the right. Below the logos, there are links for 'Print' and 'PDF'. The main title of the record is 'Mental health training programmes for non-mental health trained professionals coming into contact with people with mental ill health: protocol for a systematic review of effectiveness'. Below the title, the authors are listed: Alison Booth, Kath Wright, Arabella Clarke, Adwoa Hughes-Morley, Catriona McDaid. The 'Citation' section provides a full citation for the protocol, including the PROSPERO ID (CRD42015015981) and a URL. The 'Review question' section contains two questions: 'What evidence is available on the effectiveness of training programmes and/or resources aimed at increasing knowledge and/or changing behaviour/attitudes of the trainees with regard to mental ill health, mental vulnerability, and learning disabilities?' and 'What are the most effective methods for evaluating the impact of these training interventions?'. The 'Searches' section is divided into 'Electronic sources' and 'Other sources'. 'Electronic sources' lists databases (Criminal Justice Abstracts, MEDLINE, EMBASE, PsycINFO, ASSIA, Cochrane Central Register of Controlled Trials, SSCI, ERIC, Campbell Library, Social Care Online, EPOC) and websites of major mental health charities. 'Other sources' describes the search strategy, including the use of reference lists, restrictions on participants, language, and country, and the inclusion of ongoing work.

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Print | PDF

Mental health training programmes for non-mental health trained professionals coming into contact with people with mental ill health: protocol for a systematic review of effectiveness

Alison Booth, Kath Wright, Arabella Clarke, Adwoa Hughes-Morley, Catriona McDaid

Citation
Alison Booth, Kath Wright, Arabella Clarke, Adwoa Hughes-Morley, Catriona McDaid. Mental health training programmes for non-mental health trained professionals coming into contact with people with mental ill health: protocol for a systematic review of effectiveness. PROSPERO 2015 CRD42015015981 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42015015981

Review question
What evidence is available on the effectiveness of training programmes and/or resources aimed at increasing knowledge and/or changing behaviour/attitudes of the trainees with regard to mental ill health, mental vulnerability, and learning disabilities?
What are the most effective methods for evaluating the impact of these training interventions?

Searches

Electronic sources
We will search the following research databases: Criminal Justice Abstracts (CJA); MEDLINE; EMBASE; PsycINFO; ASSIA; Cochrane Central Register of Controlled Trials (CENTRAL); SSCI; ERIC; Campbell Library; Social Care Online; EPOC.
The websites of major mental health charities such as MIND, Rethink, Black Mental Health UK and YoungMinds will also be searched and/or we will contact them for relevant studies and evaluations of training.

Search terms
Initial searches will be carried out using terms related to:
Training (e.g. training; learning package; resources; courses; education; staff development; skills development; apps; increasing knowledge)
Roles (e.g. Police; magistrates court staff; prison staff; probation staff; criminal justice system; paramedics; ambulance; A&E; casualty; emergency; youth justice; appropriate adult; teachers; tutors)
Conditions (e.g. mental health; learning disability; schizophrenia; bipolar; personality disorder; depression)
Vulnerabilities (e.g. homelessness; poverty; unemployment; previous mental health problems)
These search terms will be refined and modified for the resources being searched.

Other sources
We will check the reference lists of relevant papers identified electronically.
All UK Police forces will be contacted for relevant published and unpublished evaluations of training packages.

Restrictions
Included training evaluations will be restricted to adult participants, but content of the training will not be age restricted i.e. training related to mental health issues in children and young people will be included.
In view of changing legislation and other requirements, attitudes, awareness related to mental health generally in the UK, we will only include evidence from the last 20 years.
An English language only restriction will be used; only studies from OECD countries will be included.
Given the Government and NHS England focus on improving mental health services, a considerable amount of work is already on-going in many related areas. The searches for evidence will include scanning for relevant ongoing work and work completed but not yet published.
An example search strategy is attached.

Challenges: volume of records

- ▶ Volume of registrations
 - ▶ October 2019 - around 54,800
 - ▶ October 2021 - around 133,216
- ▶ Highlighted by COVID submissions (*Dotto et al 2021*)
 - ▶ “a massive number of SRs about COVID-19 have been conducted, whose PROSPERO records present varied characteristics. Furthermore, many of the assessed records were poorly reported and would be difficult, if not impossible, to replicate...”
- ▶ Can see that unplanned duplication occurs - cannot see where it is prevented

Challenges: level of detail

- ▶ Published protocol +/- registration
 - ▶ of the 96 reviews included, 91 (95%) had not published their protocol in a journal, making their PROSPERO registration the only source for planned methods (*Tricco et al 2016*)
- ▶ Incomplete records
 - ▶ Significant short fall in items reported compared to those recommended in PRISMA_P (*Booth et al 2020*) - so registration is not a substitute for a published protocol for identifying potential biases

Future

New opportunities for transparency

- ▶ Text mining, machine learning technologies
- ▶ Open data repositories
 - ▶ + is that everything for a study can be in one place
 - ▶ - is no single searchable site for ongoing reviews
- ▶ Drivers for change
 - ▶ Limited resources need to be used wisely
 - ▶ Public now more aware and asking the right questions

Thank you for listening

- ▶ Any questions
- ▶ alison.booth@york.ac.uk

www.crd.york.ac.uk/PROSPERO

References

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