Setting up a meta-analysis in EPPI-Reviewer

Planning

You should begin to plan your meta-analysis at the beginning of your data extraction, so that you classify your studies in the way that you want to be able to use them in the meta-analysis. There are three types of codes to consider creating in your code set -:
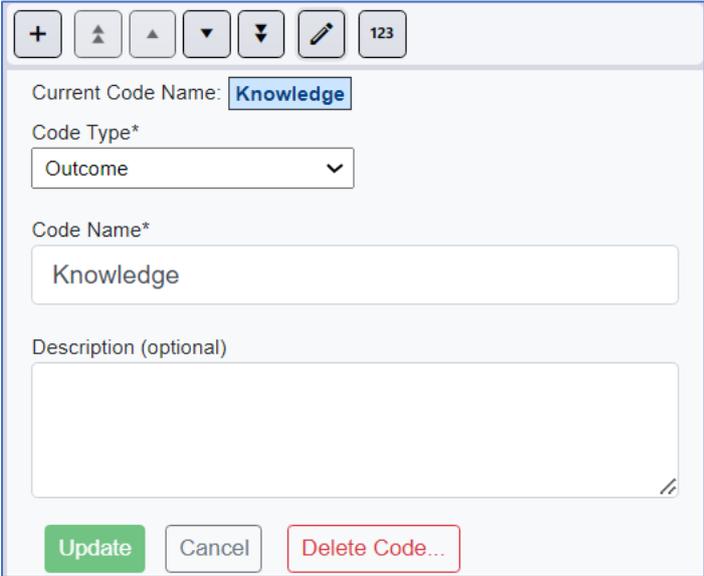
- Study codes
- Intervention / Outcome / Comparison codes
- Outcome classification codes

Stage 1: Setting up the coding tool.

Setting up coding tools is a matter of creating a code set and then right-clicking its nodes to create the structure of your choice. The same tool is used for meta-analysis, but the types of codes involved are slightly different.

Usually, when you are setting up codes for data extraction, you use the top two options in the dropdown list depending on whether you want a code to be selectable (i.e. appear with a checkbox next to it) or not. Codes for outcomes are set up in the same way, though additional options are available: outcome, intervention, comparison, and 'outcome classification code'.

It is not necessary to use intervention, comparison, or classification codes, though you do need to set up at least one outcome code for the 'outcomes' button to appear on the coding screen.

Outcome, intervention and comparison codes

Codes which allow you to classify the outcome, intervention and comparison are each individually selectable. While you may need to compile a list of, for example, all the outcomes a study evaluates (and so select from a list when doing a data extraction of a study), you also need to be able to distinguish which outcome from the list each outcome refers to. The same principle applies to interventions and comparisons. If you specify that a given code is one of these types, it is still selectable in the standard coding screen, but it also then appears in the screen where statistical outcome data are entered, and in the meta-analysis screens.

Outcome classification codes

As well as being able to specify the set categories of outcome, intervention and comparison, it is also possible to set up as many additional categorisations are needed. These are useful in situations in which you have multiple outcomes with the same outcome, intervention and comparison definitions. An example of their use might be subgroup analyses in which results are presented separately for males and females, or to be able to distinguish different types of measurement tool for assessing the same outcome. Outcome classification codes appear as a list of selectable checkboxes on the right hand side of the screen where statistical data are entered. Once you have set up at least one code as an outcome, the 'outcomes' button will appear on the coding screen.

<div style="border:1px solid #000; padding:10px">
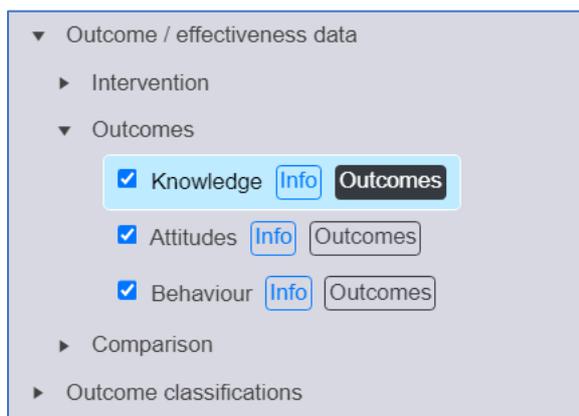
Summary of EPPI-Reviewer code types

Study codes

These are normal 'answer' codes in a code set. They describe a given study characteristic, for example, an aspect of the population, or particular intervention component. These characteristics are constant for all outcomes – they only vary across studies, not across outcomes in the same study. The ways of creating these codes are documented above.

Intervention / Outcome / Comparison codes

These are specific categories which are useful for classifying outcome characteristics. Importantly, they can differ between outcomes in the same study, so are applied to individual outcomes, rather than whole studies. These are special code types that are selected when you create a new code.

Outcome classification codes

Like intervention / outcome / comparison codes, outcome classification codes are codes which apply to individual outcomes, rather than the whole study. For example, you might want to have classification codes which allow you to identify the follow-up period for intervention measurement, as you might have several of these per study. Classifying study outcomes in this way allows you to quickly to identify specific sub-sets for meta-analysis.

</div>

Stage 2: Entering outcome data

Once you have specified at least one code as being an 'outcome' (in order for the outcome button to appear in your coding screen), you are able to enter outcomes. Outcomes are associated with a given code set, so you will need to have at selected at least one code for the coding record to be created. Clicking the 'outcomes' button presents you with a small box containing a list of the outcomes already entered (in your current coding record) against the study record you are working with.

| Outcome Title	Intervention	Actions
Knowledge after 6 months	Educational materials	Edit 🗑 📋
self reported knowledge	Practical tasks	Edit 🗑 📋

New Outcome   Cancel

You can edit existing outcomes, enter new ones and delete redundant outcomes from this screen. Clicking 'new outcome' will cause the outcome editing screen to appear.

Title	Knowledge after 6 months		
Timepoint		⌄	⊗
Outcome Description			
Outcome type	Continuous: Ns, means, and SD	⌄	
Outcome	Knowledge	⌄	⊗
Intervention	Educational materials	⌄	⊗
Comparison	Current practice	⌄	⊗
Group 1 arm		⌄	⊗
Group 2 arm		⌄	⊗

Group 1 N	34	Group 2 N	34
Group 1 mean	22	Group 2 mean	21
Group 1 SD	5	Group 2 SD	5

Correct for unit of analysis error: [Go]

SMD	0.197718631178707
SE	0.24316384340703573

You can further characterise this outcome by associating it with any code in the current codeset:

▸ 👥 Data extraction tool

[💾 Save] [Cancel]

This figure shows an outcome being entered manually. The codes set up previously all appear in the appropriate places on this screen: outcomes, interventions and comparisons are available to select on the left hand side, and classification codes appear as a list on the right.

As well as classifying outcomes, of course, this screen enables you to enter numeric data. There are currently eight types of outcome available. If you require other types please contact us and we will see if they can be added to the program.
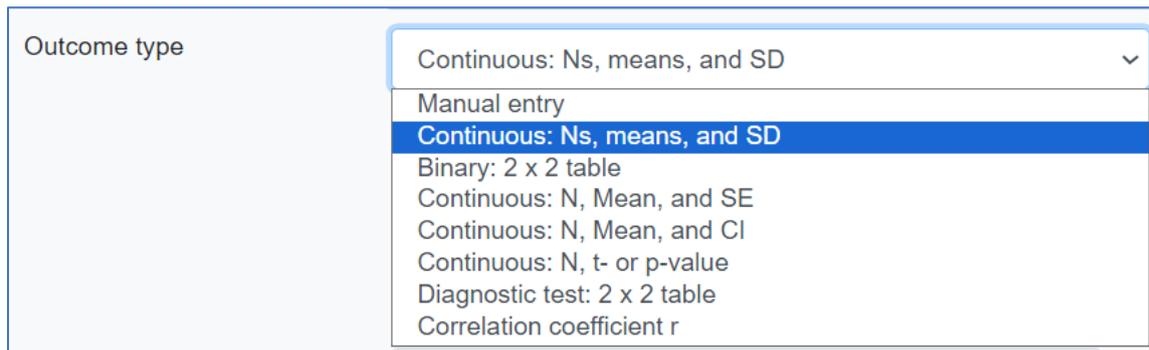
You should name the outcome, enter your outcome data based on the outcome type selected and then click Save outcome. Once you have outcomes entered, you can view them from the 'coding record' tab by clicking view against the relevant coding tool.
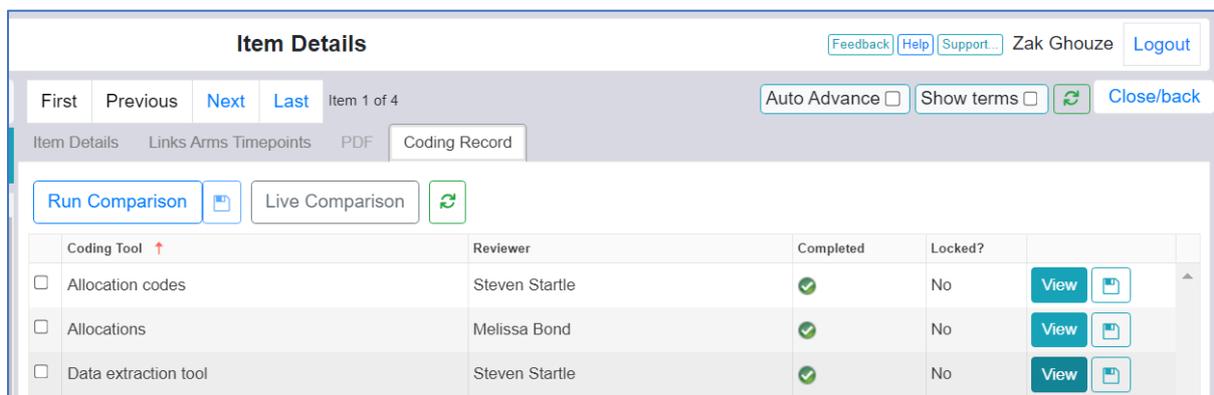
Your outcomes will then appear in a table as shown below (image is for demonstration purposes only).

Outcomes

Title	Description	Timepoint	Outcome	Intervention	Control	Arms	Type	Group 1 N	Group 2 N	Group 1 mean	Group 2 mean	Group 1 SD	Group 2 SD	SMD	SE	Outcome Classifications
Knowledge after 6 months			Knowledge	Educational materials	Current practice		Continuous: Ns, means and SD	34.000	34.000	22.000	21.000	5.000	5.000	0.198	0.243	Data collection tool: observation

Title	Description	Timepoint	Outcome	Intervention	Control	Arms	Type	Group 1 events	Group 2 events	Group 1 no events	Group 2 no events	Odds ratio	SE (log OR)	Outcome Classifications
self reported knowledge			Knowledge	Practical tasks	Leaflets		Binary: 2 x 2 table	50.000	20.000	23.000	7.000	0.761	0.506	Data collection tool: self report (diary)

The saved outcomes are available for running meta-analysis once the coding for that item is marked as complete (with respect to the relevant coding tool).

Running meta-analyses in EPPI-Reviewer

Once outcomes have been entered, they can be selected for inclusion in individual meta-analyses on the 'Meta-analysis' tab. Any existing meta-analyses will be listed. Existing users will see options for editing/running meta-analysis (using a new set of commands added in in September 2015), or will be able to run commands using the 'old' method. When the same specifications are entered, both methods should give the same results, although selecting the edit/run option will allow users greater flexibility and functionality over the analyses that are undertaken and the diagnostics and outputs that are produced.

| Review home | References | Reports | Search & Classify | Collaborate |

| Review Items | Import Items | ▼ | Duplicates | Meta-A | Zotero |

Included: **322**   Excluded: **0**   Deleted: **10905**   Duplicates: **7**

EPPI Reviewer   **Meta-Analysis**   Feedback Help Support... Zak Ghouze Logout

New MA | Collapse MAs list   Close/back

ID	Name	Type	Actions
46	Educational materials: knowledge	Continuous: d (Hedges g)	Edit/Run 🗑
47	Attitudes	Continuous: d (Hedges g)	Edit/Run 🗑
48	All outcomes	Continuous: d (Hedges g)	Edit/Run 🗑
49	Educational materials: knowledge 2	Continuous: d (Hedges g)	Edit/Run 🗑

Meta Analysis name: **Educational materials: knowledge**   Type: Continuous: d (Hedges g) ⌄

▼ Edit Filters | + Add Column | 💾 Save | ▶ Run | ⇅ Network MA (Run)

Outcomes table: 2 selected Export To: Excel (Table) ⌄

☑	ES ▼	SE ▼	Study ▼	Outc. Desc. ▼	Timepoint ▼	Type ▼	Outcome ▼	Intervention ▼	Comparison ▼	Arm 1 ▼	Arm 2 ▼	Data collection tool: observation ▼	Data collection tool: self report (diary) ▼
☑	0.198	0.243	Botherlyy (1999)	Knowledge after 6 months		Continuous	Knowledge	Educational materials	Current practice			1	0
☑	0.248	0.192	Further (1999)	Knowledge after 5 months		Continuous	Knowledge	Educational materials	Current practice			0	0
☐	-0.299	0.127	Interest (2002)	Knowledge: 2 years		Continuous	Knowledge	Educational materials	Current practice			0	0
☐	-0.017	0.156	Soluable (2002)	Attitudes: 1 month		Continuous	Attitudes	Educational materials	Current practice			0	0
☐	0.622	0.158	Soluable (2002)	Knowledge (written test)		Continuous	Knowledge	Educational materials	Current practice			0	0
☐	0.497	0.17	Further (1999)	Attitudes: 6 months		Continuous	Attitudes	Educational materials	Current practice			0	0
☐	0	0	Botherlyy (1999)	self reported knowledge		Binary	Knowledge	Practical tasks	Leaflets			0	1