

Configure Intervention and Data Elements

In order to Extract, you first need to Configure Interventions and Data Elements, which you do from the Configure Study Tags page in order to reuse the structure you built during the Tagging stage.

Interventions correspond to the types of therapies/treatments/medications etc. that were compared across the articles and appear as purple in the Tagging Hierarchy. **Data Elements** refer to all other relevant data from the article that will be extracted and appear as gold in the Tagging Hierarchy.

Note: Only one hierarchy can be designated as your Intervention hierarchy, but any node in your hierarchy can be configured as a Data Element. There is no requirement, however, that every tag be configured as a data element!

Where does Extraction Configuration take place?

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Configure Extraction

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Heart Failure: Ace Inhibitors & ARBs

About

This Nest is a copy of a previously-completed review presenting a comparison of patient outcomes from treatment of Heart Failure with Angiotensin-converting enzyme (ACE) Inhibitors and Angiotensin II Receptor Blockers (ARBs) that were reported in randomized controlled trials (RCTs).

In this nest, you can examine the search, screening, tagging, and extraction completed in this review, as well as editing the protocol (below) and practicing adding and running searches, including and excluding records, editing the tagging hierarchy, and collecting tags and data based on underlying included studies. To follow a guided walk-through of this demo, please visit [our documentation](#).

If you have any questions, view our Documentation using the “?” in the upper right, or [contact support](#). Happy nest building!

Research question:

How do the existing pharmacological therapies for heart failure with reduced ejection fraction compare with respect to safety outcomes: mortality, serious adverse events, cardiac events?

Background:

Heart failure is one of the leading causes of long-term morbidity and mortality, and the recent approval of angiotensin II receptor blockers (ARBs) gives physicians a wider range of choices in drugs used to address it. The publication of multiple RCTs related to both ARBs and ACE inhibitors has brought up the question of performance of these drugs across trials.

Inclusion/Exclusion:

Inclusion Criteria	Exclusion Criteria
RCTs published since 2010	Editorial
Studies reporting pharmacological therapies	Protocol or methods article

Extraction can be configured “Configure Extraction” in the Extraction module. *Note:* this page is the same as the “Configure Tagging” page, but with the extraction section automatically open.

Extraction configuration is integrated into tagging configuration in order to use your existing hierarchy to structure your Interventions and Data Elements.

Configuring Interventions

1. Open the Extraction Configuration panel

If it isn't already, expand the “Extraction Configuration” dropdown button on the right.

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Patient Characteristics

Interventions

Outcomes

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
ACE Inhibitors		+
Acute Kidney Injury		+
Age		+
Aldosterone Antagonists		+
All causes death	Dichotomous	-
Angina Pectoris		+
Angioedema		+
ARBs		+
ARNI		+
Atrial Fibrillation		+
Beta-Blockers		+
BMI	Continuous	-
Cardiac glycosides		+
Cardiac resynchronization therapy		+
Cardiovascular Death	Dichotomous	-
Change in KCCQ Clinical Summary Score		+
Clinical Outcomes		+
Clinical Values		+

Click a row to configure

2. Toggle to Interventions

Intervention Mode: Click on a tag to set intervention root tag.

Create New Tag

Import Hierarchy

Search by Name

Patient Characteristics

Interventions

Outcomes

Extraction Configuration

Data Elements

Interventions

Intervention Hierarchy

Interventions

Clear Root

Placebo

Sacubtril/valsartan

Combination: Sacubtril/Valsartan AND...

Pre Discharge sacubitril/valsarta

Post-discharge sacubitril/valsarta

rhBNP and sacubitril/valsartan

Empagliflozin

Enalapril

Eplerenone

Dapagliflozin

Sotagliflozin

Valsartan

Valsartan BID

Valsartan QD

Omecamtiv mecarbil

Vericiguat

Ivabradine

rhBNP (recombinant human BNP)

3. Click on the "Interventions" Root Tag

The Intervention list on the right corresponds to all of the tags underneath the “Intervention” root tag

Intervention Mode: Click on a tag to set intervention root tag.

Create New Tag

Import Hierarchy

Search by Name

Patient Characteristics

Interventions

Outcomes

Intervention Hierarchy

Interventions

Clear Root

Placebo

Sacubtril/valsartan

Combination: Sacubtril/Valsartan AND...

Pre Discharge sacubtril/valsarta

Post-discharge sacubtril/valsarta

rhBNP and sacubtril/valsartan

Empagliflozin

Enalapril

Eplerenone

Dapagliflozin

Sotagliflozin

Valsartan

Valsartan BID

Valsartan QD

Omecamtiv mecarbil

Vericiguat

Ivabradine

rhBNP (recombinant human BNP)

Intervention tags can easily be changed. For example, by simply opening the Interventions tab and clicking “Implants”, all tags under “Implants” are now Interventions for your Extraction.

Intervention Mode: Click on a tag to set intervention root tag.

Create New Tag

Import Hierarchy

Search by Name

Patient Characteristics

Interventions

Outcomes

Intervention Hierarchy

Implants

Clear Root

Implantable cardioverter-defibrillator

Cardiac resynchronization therapy



1. View the Data Elements Menu

<https://wiki.nested-knowledge.com/>

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Patient Characteristics

Interventions

Outcomes

Cardiac glycosides

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
ACE Inhibitors		+
Acute Kidney Injury		+
Age		+
Aldosterone Antagonists		+
All causes death	Dichotomous	-
Angina Pectoris		+
Angioedema		+
ARBs		+
ARNI		+
Atrial Fibrillation		+
Beta-Blockers		+
BMI	Continuous	-
Cardiac glycosides		+
Cardiac resynchronization therapy		+
Cardiovascular Death	Dichotomous	-
Change in KCCQ Clinical Summary Score		+
Clinical Outcomes		+
Clinical Values		+

Click a row to configure

The data elements tab will show you a list of all tags, which you can select either in the list or by clicking on the tag node.

2. Turn tag into Data Element

Click the plus sign next to a tag to turn the tag into a Data Element

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Patient Characteristics

Interventions

Outcomes

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
ACE Inhibitors		+
Acute Kidney Injury		+
Age		+
Aldosterone Antagonists		+
All causes death	Dichotomous	-
Angina Pectoris		+
Angioedema		+
ARBs		+
ARNI		+
Atrial Fibrillation		+
Beta-Blockers		+
BMI	Continuous	-
Cardiac glycosides		+
Cardiac resynchronization therapy		+
Cardiovascular Death	Dichotomous	-
Change in KCCQ Clinical Summary Score		+
Clinical Outcomes		+
Clinical Values		+

Click a row to configure

3. Select the Data Type

Continuous, Dichotomous, or Categorical (Mandatory)

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Patient Characteristics

Interventions

Outcomes

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
ACE Inhibitors		+
Acute Kidney Injury		+
Age		+
Aldosterone Antagonists		+
All causes death	Dichotomous	-
Angina Pectoris		+
Angioedema		+
ARBs		+
ARNI		+
Atrial Fibrillation		+
Beta-Blockers		+
BMI	Continuous	-
Cardiac glycosides		+
Cardiac resynchronization		+
rhBNP and sacubitril/valsartan		

Data Type:

Continuous

Dichotomous

Categorical

Depending on the data type, different inputs will populate. For example, if a data element is categorical, you will be able to specify the different categories.

4. Select the Expected Timepoint

Baseline or Outcome - Choose the Expected Timepoint based on whether the data was collected at Baseline or as an Outcome (Mandatory)

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Study/Exclusion Criteria/Interventions

Endpoints

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
30 day Mortality		⊕
60 day Mortality		⊕
7 day Mortality		⊕
8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕
Active Trials		⊕

180 Day Mortality

Data Type: Continuous

Expected Timepoint: Baseline Outcome

Unit:

Central Tendency Measure:

Close Save

If the data element can be both a Baseline and an Outcome, choose Baseline.

5. Select the Direction

Higher Better or Lower Better (if applicable) - For example, the Data Element is “Mortality”, Lower Better would most likely be appropriate

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Study/Exclusion Criteria/Interventions

Endpoints

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
30 day Mortality		⊕
60 day Mortality		⊕
7 day Mortality		⊕
8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕
Active Trials		⊕

180 Day Mortality

Data Type: Continuous

Expected Timepoint: Outcome

Direction: Higher Better Lower Better

Close Save

6. Add the Measurement Units

Example: Mintues, mL, kg (if applicable)

Data Element Mode: Click on a tag to set a data element.

Create New Tag

Import Hierarchy

Search by Name

Stelusion/Exclusion Clinterventions

Endpoints

Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
30 day Mortality		⊕
60 day Mortality		⊕
7 day Mortality		⊕
8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕
Active Trials		⊕

180 Day Mortality

Data Type:

Continuous

Expected Timepoint:

Outcome

Direction:

Lower Better

Units:

Unit

Central Tendency Measure

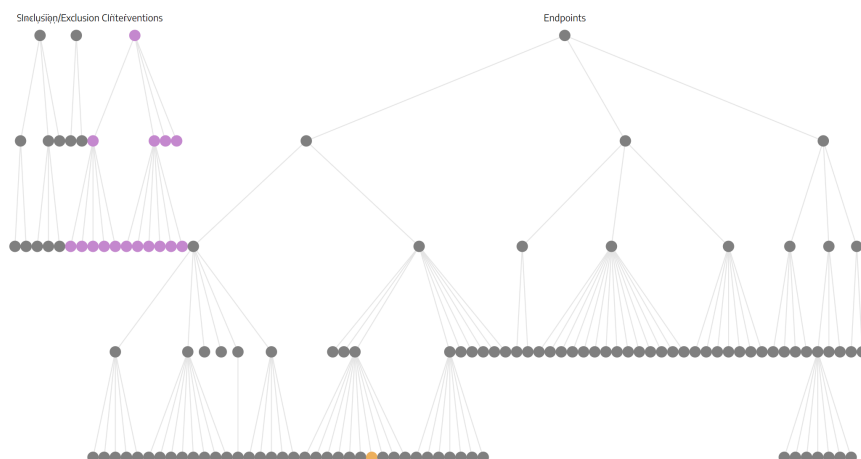
Close

Save

7. Add the Central Tendency Measurement

Mean or Median (Mandatory for continuous variables) - After choosing Mean or Median, it will also ask you about “Dispersion Measure” (SD for Mean; IQR or Range for Median)

Nested Knowledge - <https://wiki.nested-knowledge.com/>



Extraction Configuration

Data Elements

Interventions

Name	Data Type	
16 week Mortality	Dichotomous	⊖
180 Day Mortality		⊕
246 Week Mortality		⊕
30 day Mortality		⊕
60 day Mortality		⊕
7 day Mortality		⊕
8 Week Mortality		⊕
90 day mortality		⊕
Active Cohort Study (prospective)		⊕
Active Non-Randomized Trial		⊕
Active Randomized Controlled Trial		⊕

180 Day Mortality

Data Type: *

Continuous

Expected Timepoint: *

Outcome

Direction:

Lower Better

Units:

Unit

Central Tendency Measure

Mean

Mean

Median

Close Save

8. Click Save

Confirm that the configuration worked based on whether the node turned gold, and move on to configure any other Data Elements of interest

How many Data Elements should you create?

When configuring your Data Elements, it is vital to recognize that **every Data Element you configure must be:**

1. collected as a metric across all studies, adding time to your project, and
2. presented on Synthesis, potentially confusing readers as to which Data Elements are vital to your review/meta-analysis.

It is also important to understand that, unlike with primary studies, multivariate comparisons are limited in meta-analytical research by the aggregated nature of the data. Thus, all Data Elements should be of direct interest to compare among Interventions of interest.

There is no exactly 'correct' number of Data Elements. However, remember that: the minimum # of metrics collected = # of study arms * # of Data Elements configured, and this can increase if multiple timepoints are collected.

Therefore, the following **suggested guidelines** may help estimate the appropriate number of Data Elements and project timelines:

- **1-3 Data Elements:** <5 min per study, highly focused Synthesis. May provide too little context for key outcomes, but optimizes project timelines & ease of quality control.
- **4-7 Data Elements:** 5-10 min per study, focused Synthesis. Likely represents the primary & secondary outcomes of interest, as well as high-value background data.
- **8-10 Data Elements:** 10-20 min per study, detailed Synthesis. Likely represents all primary & secondary outcomes of interest, subsidiary endpoints, and any background data of interest. Data sparsity may be a problem. **Recommended that you keep your review to this size or smaller!**
- **10-20 Data Elements:** Up to an hour per study, intensively detailed Synthesis. Likely represents most data elements reported in underlying studies; may represent an unfocused research question. Should be reserved only for extensive reviews where the endpoints of interest are undefined, or review types that require going beyond conventional methods.
- **20+ Data Elements:** Several hours per study, potentially overwhelming Synthesis. Can introduce not only data sparsity but collection quality concerns. May reflect an unfocused research question or unconventional review type. Recommended that such reviews be split into smaller pieces if they must be undertaken.

These are suggestions only, but can have major impact on the quality, focus, and timeliness of projects. If you have any questions on this guidance, feel free to [Contact Support](#)!

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