

# Unit Seven: Data Abstraction

## Learning Objectives

- To understand the importance of a well-designed, unambiguous data abstraction form
- To identify the necessary data to abstract/extract from the primary studies

Once data has been abstracted from primary studies the synthesis of findings becomes much easier. The data abstraction form becomes a record to refer back to during the latter stages of the review process. In addition, the forms may be of use to future reviewers who wish to update the review.

Different study designs will require different data abstraction forms, to match the quality criteria and reporting of the study. The data abstraction form should mirror the format for which the results will be presented.

### **Details to collect:**

Sometimes, the data required for synthesis is not reported in the primary studies, or is reported in a way that isn't useful for synthesis. Studies vary in the statistics they use to summarise the results (medians rather than means) and variation (standard errors, confidence intervals, ranges instead of standard deviations).<sup>1</sup> It is therefore important that authors are contacted for any additional details of the study.

\*\* It is possible that one study is reported in more than one journal (duplication of publication). In addition, different aspects of the study (process outcomes, intervention details, outcome evaluations) may be reported in different publications. All of the papers from the study can be used to assist with data abstraction. However each paper should have a unique identifier in the data abstraction form to record where the information was located.

The data abstraction form should be piloted on a small group of studies to ensure the form captures all of the information required. In addition, if there is more than one reviewer a selection of studies should be tested to see if the reviewers differ in the interpretation of the details of the study and data abstraction form. If reviewers do not reach a consensus they should try to determine why their accounts differ.

The data abstraction form should contain the criteria used for quality appraisal. If the study does not meet the pre-determined criteria for quality there is no point continuing with the data abstraction process.

### Useful data to collect:

- Publication details
- Study details (date, follow-up)
- Study design
- Population details (n, characteristics)
- Intervention details
- Theoretical framework
- Provider
- Setting
- Target group
- Consumer involvement

- Process measures – adherence, exposure, training, etc
- Context details
- Outcomes and findings

**Examples of data abstraction forms:**

A number of data abstraction forms are available in the following publication: Hedin A, and Kallestal C. Knowledge-based public health work. Part 2: Handbook for compilation of reviews on interventions in the field of public health. National Institute of Public Health. 2004.

[http://www.fhi.se/shop/material\\_pdf/r200410Knowledgebased2.pdf](http://www.fhi.se/shop/material_pdf/r200410Knowledgebased2.pdf)

Other data abstraction forms can be found at:

- The Effective Public Health Practice Project reviews – (appendices in reviews) <http://www.city.hamilton.on.ca/phcs/EPHPP/default.asp>
- The Community Guide <http://www.thecommunityguide.org/methods/abstractionform.pdf>
- Effective Practice and Organisation of Care Review Group <http://www.epoc.uottawa.ca/tools.htm>
- NHS CRD Report Number 4. [http://www.york.ac.uk/inst/crd/crd4\\_app3.pdf](http://www.york.ac.uk/inst/crd/crd4_app3.pdf)

Please note: No single data abstraction form is absolutely suitable for every review. Forms will need to be adapted to make them relevant to the information required for the review.

**REFERENCES**

1. Clarke M, Oxman AD, editors. Cochrane Reviewers' Handbook 4.2.0 [updated March 2003]. <http://www.cochrane.org/resources/handbook/index.htm>

## Data abstraction



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## DATA ABSTRACTION

- Effective Public Health Practice Project reviews
- The Community Guide  
<http://www.thecommunityguide.org/methods/abstractionform.pdf>
- Effective Practice and Organisation of Care Review Group  
<http://www.epoc.uottawa.ca/tools.htm>
- NHS CRD Report Number 4.  
[http://www.york.ac.uk/inst/crd/crd4\\_app3.pdf](http://www.york.ac.uk/inst/crd/crd4_app3.pdf)

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**Pilot test on a sub-sample of studies**

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## Example 1 - RCT

**Table 3. Weighted mean difference in BMI standard deviation score and vegetable intake between the five intervention schools and their control schools**

|         | BMI                      |                    | Vegetable intake         |                    |
|---------|--------------------------|--------------------|--------------------------|--------------------|
|         | Weighted mean difference | % weight of school | Weighted mean difference | % weight of school |
| 1       | 0 (-0.2 to 0.1)          | 25.8               | 0.2 (-0.1 to 0.4)        | 25.5               |
| 2       | 0.1 (0 to 0.2)           | 18.0               | 0.4 (0.2 to 0.7)         | 18.2               |
| 3       | 0.1 (-0.1 to 0.2)        | 22.5               | 0.3 (0.1 to 0.5)         | 23.0               |
| 4       | -0.1 (-0.3 to 0)         | 19.8               | 0.4 (0.1 to 0.7)         | 16.0               |
| 5       | -0.2 (-0.3 to 0)         | 13.9               | 0.1 (-0.1 to 0.4)        | 17.4               |
| Overall | 0 (-0.1 to 0.1)          |                    | 0.3 (0.2 to 0.4)         |                    |

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## Example 2 - CBA

**Table 2. Estimated Differences in Daily Dietary Intake Based on Repeated 24-Hour Recalls at Follow-up for Children in Intervention (n=173) vs Control (n=163) Schools, Controlling for Baseline Measures**

No. fruits and vegetables per 4184 kJ  
 Control 1.41  
 Intervention 1.78