



ModRUM User Guide

Instructions for using ModRUM

Quick start guide

To use ModRUM for collecting resource-use data you will need to:

- (1) Assess whether the core module is adequate for your needs.
- (2) If not, choose the depth version of ModRUM in its entirety, or edit the core/depth version and replace core/depth questions with chosen depth/core questions (see [Section 8](#) for equivalent questions in each version).
- (3) If necessary, add questions for resources that are not included in ModRUM, that are important to capture in your trial.
- (4) Edit adaptable aspects of ModRUM to suit your needs, including:
 - (a) recall period ([Section 2.6](#))
 - (b) resource-use type ([Section 2.7](#))
 - (c) examples ([Section 2.4](#))
 - (d) table rows ([Section 2.2](#))
- (5) Update the wording and formatting (see [Section 7](#) for tips) of ModRUM to ensure that:
 - (a) each question is contained within one page, where feasible
 - (b) question numbers are updated, if edits have been made
 - (c) square brackets are removed
 - (d) section instructions and the extra space box has been added at the end, if ModRUM has been extended beyond the core module

1. Introduction

This document provides guidance on how to use ModRUM. ModRUM is a brief, generic, standardised resource-use measure (RUM) designed to collect patient-reported data. ModRUM was developed with the aim of alleviating some of the issues associated with resource-use measurement. Despite wide use of self-report RUQs, research efforts are often duplicated as new RUQs are designed on a trial-by-trial basis, with limited time for validity and reliability testing. A well-validated, standardised RUQ would reduce unnecessary work and make study results more transparent and directly comparable with one another.

ModRUM has a modular design, with a core module that includes a minimum set of healthcare resource items that could be collected in all trials. If needed, the core module can be expanded to ask patients for additional details by substituting 'core' questions for 'depth' questions. Resources in sectors beyond healthcare can be measured by adding additional 'breadth' modules (in development). Users may also adapt ModRUM to give examples of resources pertinent to their trial. ModRUM is designed to capture general healthcare use over the study follow-up period. Additional micro-costing methods may be needed to cost the intervention and comparator procedures/services.

While some flexibility is permitted (e.g. the recall period or the examples of resource-use items given) to ensure ModRUM is appropriate to each study, users are discouraged from editing parts of questions that are not specified as adaptable (see [Section 2](#) for permitted adaptations). This will maximise the potential for ModRUM-based costs to be compared across studies.

2. Implementation of ModRUM

2.1. Core module

The core module includes 11 items that are potentially relevant to most trials, conditions and patient groups. The items include A&E, outpatients, day cases, inpatients, GP and other healthcare professionals. The items can be seen in [Section 8](#). To maintain standardisation in the implementation of ModRUM, editing/omitting the core questions, other than extending them to depth questions, is not permitted. Rows may be added to the inpatient stay table.

2.2. Depth questions

The core module captures enough information on important items to allow for cost estimation of healthcare utilisation. However, depth questions allow users to capture more detail for questions that are potentially key cost drivers or are highly utilised resources in their study, so that costs can be estimated with greater precision. Depth questions are available for outpatients, day cases, inpatients and other healthcare professionals at the surgery/health centre. Additional depth information includes free-text fields, such as clinic type, tests/procedures and reason for appointment. Depth questions also include questions on the ambulance service and prescribed medications. When using depth questions users may select how many rows are appropriate to include in tables for their patient group. If adaptations are made, users will also need to revise section instructions to reflect the questions included. When depth questions are included the extra space box should be included at the end of the questions.

2.3. Scope, perspective and items beyond ModRUM

The scope of the core module is healthcare and the questions are worded from a public payer (i.e. NHS) perspective. The wording could be adapted to take a different perspective (e.g. healthcare provided by public or private healthcare providers) or to make it internationally applicable (substitute NHS for equivalent international body). Users may also adapt ModRUM to add resources that are pertinent to their trial, that are not included in ModRUM.

2.4. Examples

Examples to aid patients understanding are highlighted in the questionnaire template in square brackets. They have gone through patient testing; however, the user can assess whether they are relevant to their patient group and use different examples if appropriate.

2.5. Administration mode

In piloting, adults aged 18 and over self-completed paper versions of ModRUM. It may be appropriate for future adaptations of the ModRUM to be administered by an interviewer or completed by a proxy. The user can decide which administration mode is most suitable for their population. ModRUM is currently available in paper format; however, in future there are plans to develop an online version.

2.6. Recall period

While it is acknowledged that recall periods for RUMs are often driven by outcome measure collection points, ModRUM has undergone initial piloting with a 3-month recall period, which most patients found acceptable. Patients provided some indication that a 6-month recall period may be acceptable; however, recall periods beyond 3 months would require further testing as they are potentially problematic for less salient items.

In testing, an 'anchor' point was not included; however, an 'anchor' can be used as evidence suggests they can help with recall (e.g. Since your knee replacement). The chosen recall period (e.g. in the last month or since your operation) should be repeated at the beginning of every question. To minimise respondent burden, the same recall period should be used for all questions.

2.7. All-cause or condition-specific resource-use

ModRUM has been piloted with patients who completed their all-cause (i.e. for any reason) healthcare use. If appropriate, the user can specify in the introduction that only resources related to a specific condition should be included. The condition can also be repeated in each question (e.g. 'In the last 3 months, because of your knee pain, how many times...').

3. Analysis of ModRUM

The design of ModRUM questions aims to make responses straightforward to cost using publicly available unit cost data. We recommend the following unit cost sources: the National Schedule of NHS Costs (emergency, secondary and community care), the Unit Costs of Health and Social Care (primary and community care), and the Prescription Cost Analysis or British National Formulary (prescribed medications).

4. Reporting use of ModRUM

To increase the transparency in how resource-use data are collected, in the write up of research, users should report which modules, depth questions and resources beyond ModRUM they have included. They should also report which parts they have adapted (e.g. recall period).

5. Registration and copyright of ModRUM

To obtain and use ModRUM, prospective users should register using the short, registration form, which can be found here: bristol.ac.uk/modrum/ Following registration, ModRUM is free to use for non-commercial use.

6. Development of ModRUM

Development and validation of ModRUM has incorporated:

- A Delphi consensus survey with health economists to identify items (doi.org/10.1016/j.jval.2017.06.011).
- Interviews with health economists to assess face and content validity.
- Interviews with patients to assess content validity and acceptability (doi.org/10.1186/s12913-021-06364-w).
- An online survey of health economists to assess feasibility and suitability.
- A pilot study with patients to assess feasibility, acceptability, construct validity and criterion validity.

Ongoing work includes:

- Development and validation of social care and informal care modules.

7. Formatting tips

(a) How do I move a depth question into the core module, to replace a core question?

- If the depth question takes up 1 page, click the top of the page where you wish to add a new page. The cursor should blink.
- In the task bar, go to “Insert” tab and click “Pages, then click “Blank page”. Everything below the cursor should move to the page below and a new page will be added.
- Copy the depth question and paste it on the new page. Delete the core question.

(b) I want to capture data on nurses, separate from other healthcare professionals. How do I add a question on nurses?

- Data on nurses and any other healthcare professionals seen or services used in the community, can be captured using prespecified questions in depth questions 11 to 13 or using free-text questions in depth questions 14 to 16.
- If you include 11 to 13, you can replace [pre-specified healthcare professional or healthcare service] with the name of the professional or service you wish to capture.
- To avoid double-counting, if you are also including questions 14 to 16, you will need to remove professionals or services named in 11 to 13 from examples in 14 to 16.
- Questions 11-13 can be repeated to collect to collect data on different healthcare professionals/services.

(c) How do I quickly change the recall periods in ModRUM?

- If you want to change the recall period to 3 months. In the task bar, go to “Home” and in “Editing” click “Replace”.
- The “Find and replace” box will appear. In “Find what”, write “[X]” and in “Replace with” write “3”. Click “Replace all” and all recall periods should now state “3”.

(d) I want to use the examples provided; how do I remove the square brackets?

- As above, use the “Find and replace” box. In “Find what”, write “[” and leave “Replace with” blank. Click “Replace all”. Repeat for “]” and all square brackets will be removed.

8. ModRUM items

Resource	Question number	
	Core module	Core module with depth questions
A&E	1	1
Ambulance service (to hospital)	-	2
Ambulance service (no hospital)	-	3
Outpatient (face-to-face)	2	4
Outpatient (online or telephone)	3	5
Day case	4	6
Inpatient	5	7
GP (surgery, health centre or walk-in centre)	6	8
GP (telephone or online)	7	9
GP (home)	8	10
Other healthcare professional (surgery, health centre or walk-in centre) (specified by researcher)	-	11
Other healthcare professional (telephone or online) (specified by researcher)	-	12
Other healthcare professional (home) (specified by researcher)	-	13
Other healthcare professional (surgery, health centre or walk-in centre)	9	14
Other healthcare professional (telephone or online)	10	15
Other healthcare professional (home)	11	16
Prescribed medication	-	17