Trainer's notes for module 2:
RDM Introduction

Good practice in research data management

# Session Details

## Aims and Objectives / Learning Outcomes

By the end of this module participants will have:

* An understanding of what RDM is and its importance from different perspectives

## Session Topics

* What is Research Data Management (RDM)?
* Why is RDM important?
	+ National landscape and external drivers
	+ Newcastle University response/policy/implications
* Benefits & barriers

## Structure

This module is planned to be delivered via one 45-60 minute session with a group of 12-20 attendees. The expectation is that these are postgraduate students and/or early career academics.

The general tone of the presentation is with an emphasis on the benefits of RDM; however there is a slide towards the end, in the Benefits & barriers section, stating the commonly cited barriers. To ensure progress through the session, you may wish to "park" issues and barriers on a flip chart if/as they arise; then compare the elicited items with the slide when you reach slide 20.

### Indicative timings

|  |  |
| --- | --- |
| What is Research Data Management (RDM)?Activity 1: Your research data cycle | 5mins15mins |
| Why is RDM important?Activity 2: Ncl Policy principles and you | 15mins15mins (optional) |
| Benefits & barriers | 8mins |
| Session review | 2mins |
|  | 45-60mins total |

## Set-up

Slides are provided as detailed in the "notes to accompany slidedeck". Note the use of hidden slides by default for optional activities and slides offering further detail on a topic. (Hiding/unhiding slides is best done in 'slide sorter' view; select slides, right-click and toggle 'hide slide')

Activities are indicative rather than prescriptive. The assumption is that you are used to tailoring training outlines to meet your own needs, space and available resources! (Post-it notes, pens, flipcharts etc.)

# Notes to accompany Slidedeck for module 2

## What is RDM (slides 3-6)

### Slide 4: What is RDM?

The quote on the slide is an accepted and well-used definition of Research Data Management. It's taken from a Digital Curation Centre (DCC) briefing paper titled "Making the Case for Research Data Management", published in September 2011.

Emphasis should be placed on the consideration of data through the full research cycle; RDM happens throughout.

### Slide 5: RDM is about…

Again this slide references a lifecycle of research data.

Note the introduction of "digital" here; this could be "digital ready" data (i.e. collected in digital form or digitised data (i.e. converted to digital form)

Note also the use of more emotive language, alluding to benefits.

### Slide 6: Activities involved in RDM

So, if we accept that RDM takes place throughout the full research cycle, here is a simple model of that cycle, from the creation of data, through its documentation, use, storage, sharing and preservation. So, describe:

* Creating data
* Documenting data
* Using / accessing data
* Storing data (and backup)
* Sharing data
* Preserving data

Note that these steps are not mutually exclusive! Exemplify with an example from your knowledge or field of research. (For example, describe how creation of digital data inherently also involves temporary storage!)

The model is taken from the DCC's "Digital Curation 101" training materials: <http://www.dcc.ac.uk/training/dc-101>

Note that the DCC also has a more detailed model of an iterative curation cycle (which is covered in module 4):
<http://www.dcc.ac.uk/resources/curation-lifecycle-model>

Note also that other models of the research data lifecycle, such as from the UK Data Archive (also covered in module 4):
<http://www.data-archive.ac.uk/create-manage/life-cycle>

Activity 1: Your research data cycle

End this section with a 15 minute activity of three 5minute parts.

First, ask the group to draw their own research data cycle on a flip chart and challenge them to exemplify the different activities with their own methods of data management.

Second, after 5minutes ask them to find a partner and to spend a couple of minutes describing the nature of their cycle to each other.

Third, bring the whole group back together for the remaining 5 minutes. Don't ask for feedback from every pair; instead elicit emerging themes by asking telling questions:

* Did everyone feel that they could improve their research data management? (Ask for an example)
* Did anyone identify any weak point where they're at risk of losing data?! (Ask for an example)

## Why is RDM important? (slides 9-18)

### Slide 10: Holistic perspective

Considering RDM in the context of academia and research it's fair to assume that good RDM practice should lead to better, more efficient knowledge, understanding and discovery.

### Slide 11: HE perspective

A recent trend has seen Universities take increased ownership of the data that their academics create; external data archiving services still exist, but generally there's improved local research data infrastructure.

### Slide 12: External drivers

Note that there is potential to cover a lot via this slide; consider carefully the level of detail you want to cover and what topics you want to emphasise!

A modern driver for UK research is the need to demonstrate and evidence impact. One route to impact, supported by RCUK, is free and open access to publicly funded research data. The RCUK policy on Open Access is here:
<http://www.rcuk.ac.uk/research/Pages/outputs.aspx>

Many research funders require research data management plans or 'technical appendices' to be incorporated into a grant application. UK Research Councils are now mandating that research data produced through their funding are available openly for verification and re-use.

The University of Oxford have collated summary guidance for their major research funders here:
<http://www.admin.ox.ac.uk/rdm/managedata/funderpolicy/>

The DCC also summaries UK research funders' data policies:
<http://www.dcc.ac.uk/resources/policy-and-legal/funders-data-policies>

So, UK Universities need to get best use of data produced and comply with funders' policies, but are also carrying out research in an increasingly litigious environment. National policy developments have been put in place alongside the explosion in the creation of new data. Most important in terms of data management are consideration for Open Access, Data Protection Act (DPA) and Freedom of Information Act (FOIA). Links to Newcastle University policies are below:

* Open Access:
<http://www.ncl.ac.uk/res/assets/documents/Accesstoresearchoutputspolicy.pdf>
* Data Protection:
<http://www.ncl.ac.uk/data.protection/>
* Freedom Of Information:
<https://my.ncl.ac.uk/staff/assets/documents/FreedomofInformationPolicy.pdf>

More advice from Newcastle University about the requirements on researchers with respect to various policies can be found at: <https://my.ncl.ac.uk/staff/policies/>

Researchers in almost all disciplines now create data in digital form.

* The volume of data created is increasing relentlessly across all subjects.
* In part this is also due to new methods for doing research such as developments in eScience (computationally intensive science across networks), cyberscholarship (high-performance computing meets digital libraries to bring together vast quantities of material), or e-research (using information technology to support collaborative research).
	+ In particular, at Newcastle University, in genomics/bioinformatics in FMS
* Multiple forms of complex data could be re-interpreted and re-used in new research and for new collaborations if access to it was easy.

### Slide 13: Newcastle University perspective

Newcastle University maintains a commitment to conventional discipline based research which represents the core research activities of academics and largely takes place in prominent focussed research groups within our three faculties.

The University also supports multi-disciplinary and inter-disciplinary research based on excellence within individual disciplines.

Clearly Newcastle University's reputation for research excellence has significant academic and financial benefits, as shown by the 2010-11 figures on the slide.

### Slide 14: Newcastle University perspective #2

Newcastle University is making a strategic response to the national landscape and external drivers.

Public funders are now mandating that research data produced through their funding are available openly for verification and re-use.

To maintain EPSRC funding, Newcastle University was required to create a roadmap to compliance to their mandate on research data management by 1 May 2012 and will have to have in place mechanisms for actual compliance by 1 May 2015.

RDM is of vital importance to Newcastle University, which aims through research impact ... to be a globally significant research University that performs high quality research across a wide range of disciplines and locations: <http://www.ncl.ac.uk/research/impact/>

Refer also to the Newcastle University mission statement: <http://www.ncl.ac.uk/about/values/mission.htm>

### Slide 15: Newcastle University perspective #3

The Iridium project was a significant intra-institutional collaboration, producing RDM policies in consultation with researchers along with the infrastructure required to support their adoption and use. It was funded by Jisc.

Documentation and support is accessed via: <http://research.ncl.ac.uk/rdm/>

Systems and tools have been updated and created, including MyProjects, MyImpact and the Research Data Catalogue – these are covered in modules 5 and 6.

### Slide 16: Newcastle University draft RDM policy

UK universities are adopting policies which set out their expectations for the management of research data across all academic disciplines and in all forms.

At Ncl, the University Research Committee has agreed a draft, aspirational RDM policy, made up of ten policy principles and a code of good practice. Note however that these are an "agreed draft" meaning that they're broadly accepted, but may be minimally altered.

The draft policy principles and code of good practice aim to:

* Support good research data management practice.
* Maximise impact by encouraging discoverability and re-use.
* Facilitate compliance with legislation and funder polices.
* Protect intellectual property and commercialisation opportunities.

They have been written to guide researchers towards the best practice in the area of RDM, bringing together guidance from across the institution and are designed as a single point of reference for academic and support staff.

They do not replace or override guidance from research funders however, but instead should be considered as a complementary resource. If there are multiple guidelines then the most rigorous advice should be followed and / or advice sought from Research & Enterprise Services (RES).

### Slides 17-19: 10 policy principles

These three slides state the 10 RDM policy principles – they're hidden as default, so unhide as required.

The trainer delivering this module should be familiar with these and make emphasis accordingly. If possible, avoid simply reading through the policy principles – they're long and not ideal for presentation. Consider offering the principles as a handout and, if time allows, running the following short activity.

Activity 2 (optional): Ncl RDM Policy principles and you (10-15 minutes)

Introductory slides for this activity are provided, hidden as default as this is an optional activity. Unhide to use.

Quickly read through the 10 policy principles and consider your research and/or research project. Annotate the individual points, noting responses wrt your research.

You might ask attendees to consider:

The different levels of responsibility (University, PI, researcher etc.) How clearly defined is responsibility for you, your research and its data?

Grading how comfortable they are wrt each item in the policy. (Ask them to mark each with a tick – squiggle – cross, or smiley face – straight face – sad face, or red dot – amber dot – green dot!)

Allow 5-7 minutes for feedback and discussion.

## Benefits and barriers (slides 22-24)

### Slide 23: Benefits and barriers of good RDM

This introductory slide could be used to elicit responses from attendees, or to ask attendees to spend a few minutes discussing. The following slides offer the detail for each perspective.

Alternatively, if time is short, present using the detail on the following slides.

### Slide 24: Benefits for the researcher

Benefits of RDM should have been apparent throughout the module so far, implied via previous slides and considered in activity 1. However, it's worth spending a minute or two considering benefits from different angles; some of the "benefits for the researcher" shown here.

Any additional benefits from attendees?

### Slide 25: Benefits for the "public good"

Some of the benefits for the "public good" shown here. Any additional benefits from attendees?

### Slide 26: Benefits of compliance

Some of the benefits wrt compliance (i.e. for the HEI) shown here. Any additional benefits from attendees?

For further consideration of benefits, especially wrt benefits for the "University Community" (i.e. its staff, students, services ) and benefits for external partners see:
<http://opus.bath.ac.uk/32509/1/RDM_Benefits_vFinal.pdf>

### Slide 27: Barriers to good RDM

There are a range of commonly cited barriers to adoption of good RDM practice; these are stated on the slide. If you have been collecting issues and barriers through the session, compare the elicited list with that on the slide.

Offer the opportunity for attendees to comment or respond. Ask them if the sympathise with any of the barriers? If so, what will they do to overcome it?

## Session review (slides 28-30)

### Slide 29: In summary

This is a round up slide, summarising the topics covered – you may wish to edit to align with your particular emphasis.

### Slide 30: Acknowledgements

Cited here are acknowledgements for resources used to create this module.

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