SPRINGER NATURE

Better Research Through Better Data *Live with the Health Research Board, Ireland*

#betterdata

ADVANCING DISCOVERY

Increasing the value of health research data

Better Research Through Better Data Live with the Health Research Board (HRB), Ireland, Springer Nature

Dr Annalisa Montesanti

22 October 2020

HRB Health Research Board

Research. Evidence. Action.

Health Research Board, Ireland

- **State agency under Department of Health**
  - **Budget ~€45m, staff of ~70**
- **Providing evidence for policy**
  - Public Health Alcohol Bill, Food Pyramid, Fluoridation
- **Information for service planning**
  - Drugs, alcohol, disability, mental health
- **Strategy and funding**
  - Patient Oriented/clinical, Population Health, Health Services Research
  - Infrastructure, capacity building, projects & programmes, PPI

intramural

extramural

What I will discuss

- HRB ambition
- Why data discoverability and data management/stewardship practices?
- HRB FAIR step-wise approach to support data practices and management
- Other HRB activities addressing ‘open research’
- COVID 19 Rapid Response funding call

HRB ambition –transitioning towards a more open research environment

We want to ensure that HRB funded research can have the **greatest possible impact** by having more

- Openness and transparency
- Reproducibility and replicability – research validation
- Acceleration of knowledge and its application - innovation
- Interoperability across different domains and disciplines
- Discoverability and accessibility and (Re)Usability - less research waste – increasing the value of research

We are developing a supportive and efficient environment for research data by

- **leveraging the expertise of international partners,**
- **implementing practical actions,**
- **developing policy for health research data, and**
- **driving a national discussion.**

Towards a more open research environment

HRB as many other funders globally, and other stakeholders, have now embraced:

- Open science
- DORA principled for researchers' assessment
- Open access (moving towards Plan S)
- Data sharing
- Data management and stewardship as intrinsic to good research practice
- FAIR principles

How to align and implement them in practice?

Why data discoverability and data management/stewardship practices

Data practices and management are at the core of research integrity principles

2.5 Data Practices and Management

- Researchers, research institutions and organisations ensure **appropriate stewardship and curation of all data** and research materials, including unpublished ones, with secure preservation for a reasonable period.
- Researchers, research institutions and organisations ensure access to **data is as open as possible, as closed as necessary, and where appropriate in line with the FAIR Principles** (Findable, Accessible, Interoperable and Re-usable) for data management.
- Researchers, research institutions and organisations provide **transparency about how to access or make use of their data and research materials**.
- Researchers, research institutions and organisations acknowledge **data as legitimate and citable products of research**.
- Researchers, research institutions and organisations ensure that **any contracts or agreements** relating to research outputs include equitable and fair provision for the **management of their use, ownership, and/or their protection under intellectual property rights**

The European Code of Conduct for Research Integrity
https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-ethics_code-of-conduct_en.pdf

Comment

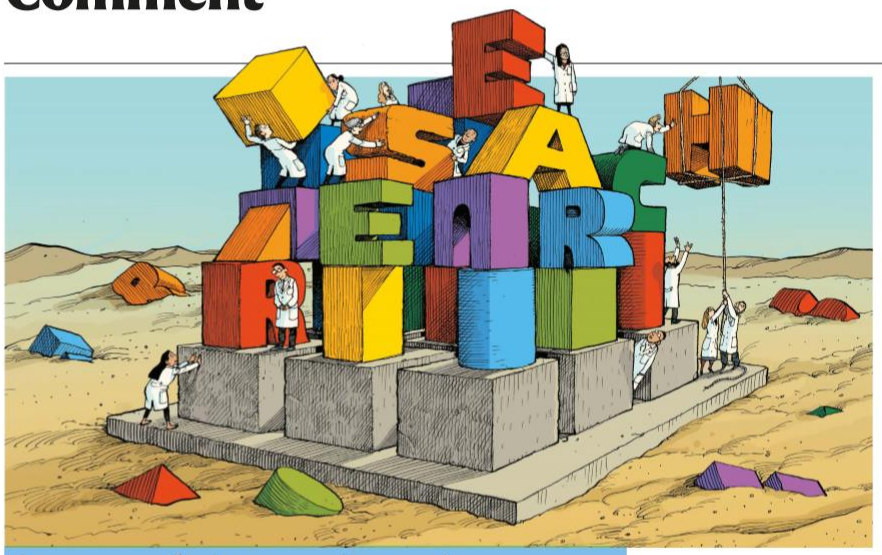


ILLUSTRATION BY DAVID PARKINS

Research integrity: nine ways to move from talk to walk

Niels Mejlgaard, Lex M. Bouter, George Gaskell, Panagiotis Kavouras, Nick Allum, Anna-Kathrine Bendtsen, Costas A. Charitidis, Nik Claesen, Kris Dierickx, Anna Domaradzka, Andrea Reyes Elizondo, Nicole Foeger, Maura Hiney, Wolfgang Kaltenbrunner, Krishma Labib, Ana Marušić, Mads P. Sørensen, Tine Ravn, Rea Šćepanović, Joeri K. Tijdink & Giuseppe A. Veltri

1. Research environment - Ensure fair assessment procedures and prevent hypercompetition and excessive publication pressure.

2. Supervision and mentoring - Create clear guidelines for PhD supervision (such as on meeting frequency); set up skills training and mentoring.

3. Integrity training - Establish training and confidential counselling for all researchers.

4. Ethics structures - Establish review procedures that accommodate different types of research and disciplines.

5. Integrity breaches- Formalize procedures that protect both whistle-blowers and those accused of misconduct.

6. Data practices and management - Provide training, incentives and infrastructure to curate and share data according to FAIR principles.

7. Communication - Research collaboration Establish sound rules for transparent working with industry and international partners.

8. Declaration of interests -State conflicts (financial and personal) in research, review and other professional activities.

9. Publication and communication - Respect guidelines for authorship and ensure openness and clarity in public engagement

Why you should make your data discoverable?

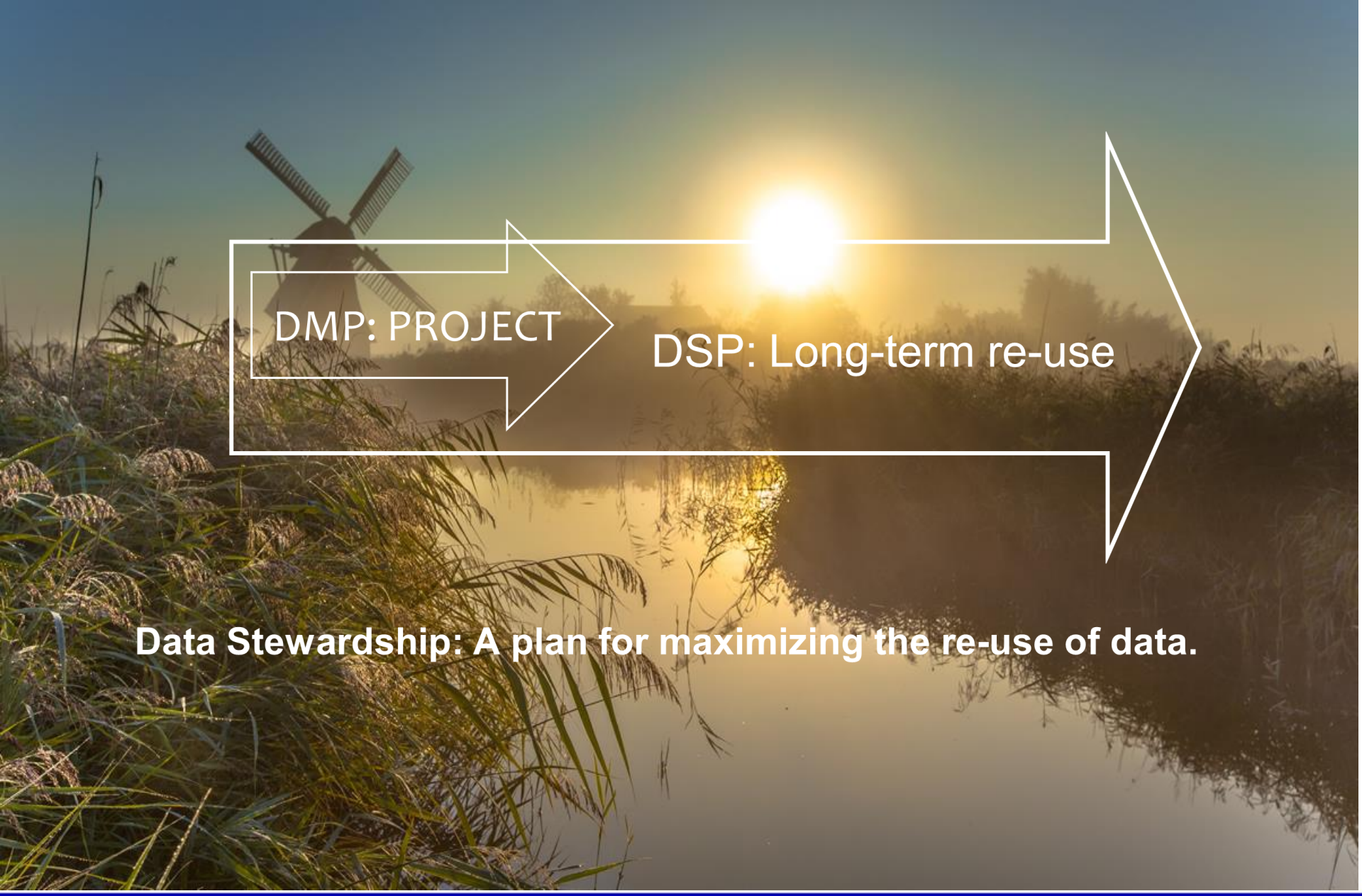
- To enable outputs to be accessed by other researchers – reusability and increased innovation
- To help reproducibility and validation of the research findings
- To allow reanalysis of data with different methods
- To reduce duplication and research waste – Increase the value and efficiency
- To promote research collaborations, data citations, visibility as researcher
- To maximise research participants' contribution
- To make research outputs accessible to the knowledge users (decision makers. Policy makers, health professionals) and the public (return on tax payer investment) – better decision and transparency
- For accountability

How to facilitate good research practices in use and reuse of research data?

Question - Do you know the difference between data management and data stewardship?

Yes – raise your hand

No – lower your hand



Data Stewardship: A plan for maximizing the re-use of data.

Data management and stewardship (DM/S) planning

Why are funders now require researchers to provide a data management plan at proposal or at award stage?

- **The goal is to enhance data and knowledge integration and reuse and ultimately achieve better knowledge discovery and innovation**
- **Research data management & stewardship planning is the key conduit to achieve the goal**

A data management/stewardship plan (DMP) is a formal document describing how new research data or other people's data will be managed, curated and preserved.

It is an ongoing process and planning in the early stages makes the whole endeavour easier.

nature > scientific data > comment > article

SCIENTIFIC DATA

Comment | OPEN | Published: 15 March 2016

The FAIR Guiding Principles for scientific data management and stewardship

Mark D. Wilkinson, Michel Dumontier, IJsbrand Jan Aalbersberg, Gabrielle Appleton, Myles Axton, Arie Baak, Niklas Blomberg, Jan-Willem Boiten, Luiz Bonino da Silva Santos, Philip E. Bourne, Jildau Bouwman, Anthony J. Brookes, Tim Clark, Mercè Crosas, Ingrid Dillo, Olivier Dumon, Scott Edmunds, Chris T. Evelo, Richard Finkers, Alejandra Gonzalez-Beltran, Alasdair J.G. Gray, Paul Groth, Carole Goble, Jeffrey S. Grethe, Jaap Heringa, Peter A.C 't Hoen, Rob Hooft, Tobias Kuhn, Ruben Kok, Joost Kok, Scott J. Lusher, Maryann E. Martone, Albert Mons, Abel L. Packer, Bengt Persson, Philippe Rocca-Serra, Marco Roos, Rene van Schaik, Susanna-Assunta Sansone, Erik Schultes, Thierry Sengstag, Ted Slater, George Strawn, Morris A. Swertz, Mark Thompson, Johan van der Lei, Erik van Mulligen, Jan Velterop, Andra Waagmeester, Peter Wittenburg, Katherine Wolstencroft, Jun Zhao & Barend Mons - Show fewer authors

Scientific Data **3**, Article number: 160018 (2016) | Download Citation

Data and services that are
Findable,
Accessible,
Interoperable,
Re-usable
both for machines and
for people.

Box 2 | The FAIR Guiding Principles

To be Findable:
F1. (meta)data are assigned a globally unique and persistent identifier
F2. data are described with rich metadata (defined by R1 below)
F3. metadata clearly and explicitly include the identifier of the data it describes
F4. (meta)data are registered or indexed in a searchable resource

To be Accessible:
A1. (meta)data are retrievable by their identifier using a standardized communications protocol
A1.1 the protocol is open, free, and universally implementable
A1.2 the protocol allows for an authentication and authorization procedure, where necessary
A2. metadata are accessible, even when the data are no longer available

To be Interoperable:
I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.
I2. (meta)data use vocabularies that follow FAIR principles
I3. (meta)data include qualified references to other (meta)data

To be Reusable:
R1. meta(data) are richly described with a plurality of accurate and relevant attributes
R1.1. (meta)data are released with a clear and accessible data usage license
R1.2. (meta)data are associated with detailed provenance
R1.3. (meta)data meet domain-relevant community standards

FAIR vs Open: a misconception

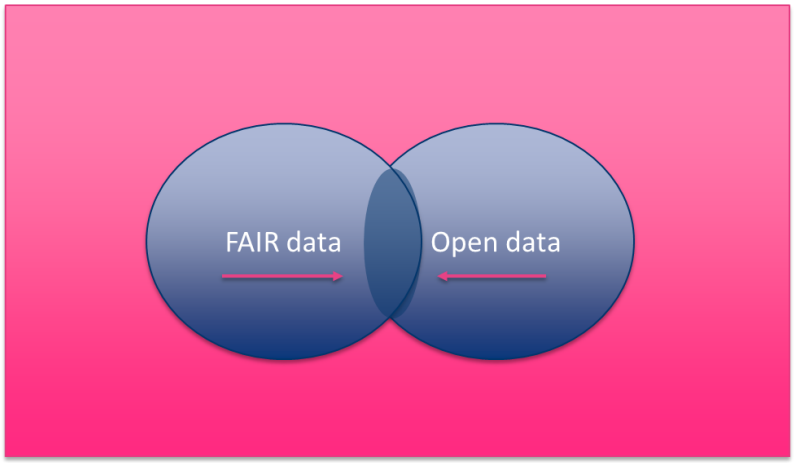
FAIR does not mean open:

- Open data should be available to everyone to access, use, and share, without licences, copyright, or patents.

FAIR uses “**Findable**” where data should be able to be found by appropriate people at appropriate times.

FAIR uses "**Accessible**" to mean accessible by appropriate people, at an appropriate time, in an appropriate way.

- Data can be FAIR when it is private, when it is accessible by a defined group of people, or when it is accessible by everyone (open data).



FAIR data uses “**Interoperable**” to refer more to how the data is formatted (e.g. standard formatting), whether the software for interpreting/interrogating/using the data is available (e.g. freely, with a license etc.)

Question - Did you know before today that FAIR output/data is not equal to open?

Yes – raise your hand

No – lower your hand

HRB step-wise approach to FAIR Data Management and Stewardship

Towards FAIR data management/stewardship and data sharing in HRB grant funding

Policy on management and sharing of research data

2016
Open science conference

2017
Building awareness
Two workshop on DMP and FAIR principles

2018
13 data stewards in HEIs

2019
FAIR DMP outline and costs encouraged in all grant applications

2020
International review of DMPs

COVID 19 funding call

Awareness building

FAIR Data management pilot

In all awards

Influencers

National/international guidelines

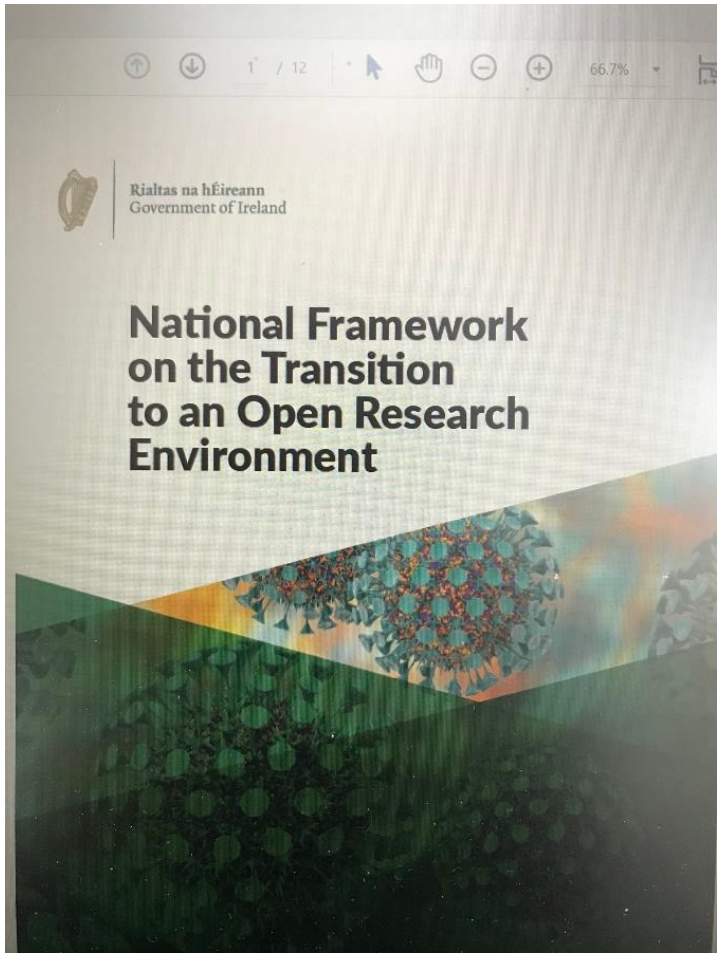
Policy

HRB policy for management and sharing of research data

From all grants launched after 01 January 2020 (e.g. COV19 Rapid Response Call)

- All data from HRB-funded projects must be made openly available unless justification can be provided as to why it can't.
  - At a minimum, data that underlies publications must be made available;
  - Metadata must always be made openly available;
  - Applies to all data outputs and any underlying software as well as original software, methodology or organisation of data collection.

- Data management plans must be submitted to the HRB as specified within the terms of the Call Guidance of a funding call (e.g. 4 months after starting the award).



It has been developed as the first step in a process to create a National Action Plan for the transition to an open research environment in Ireland.

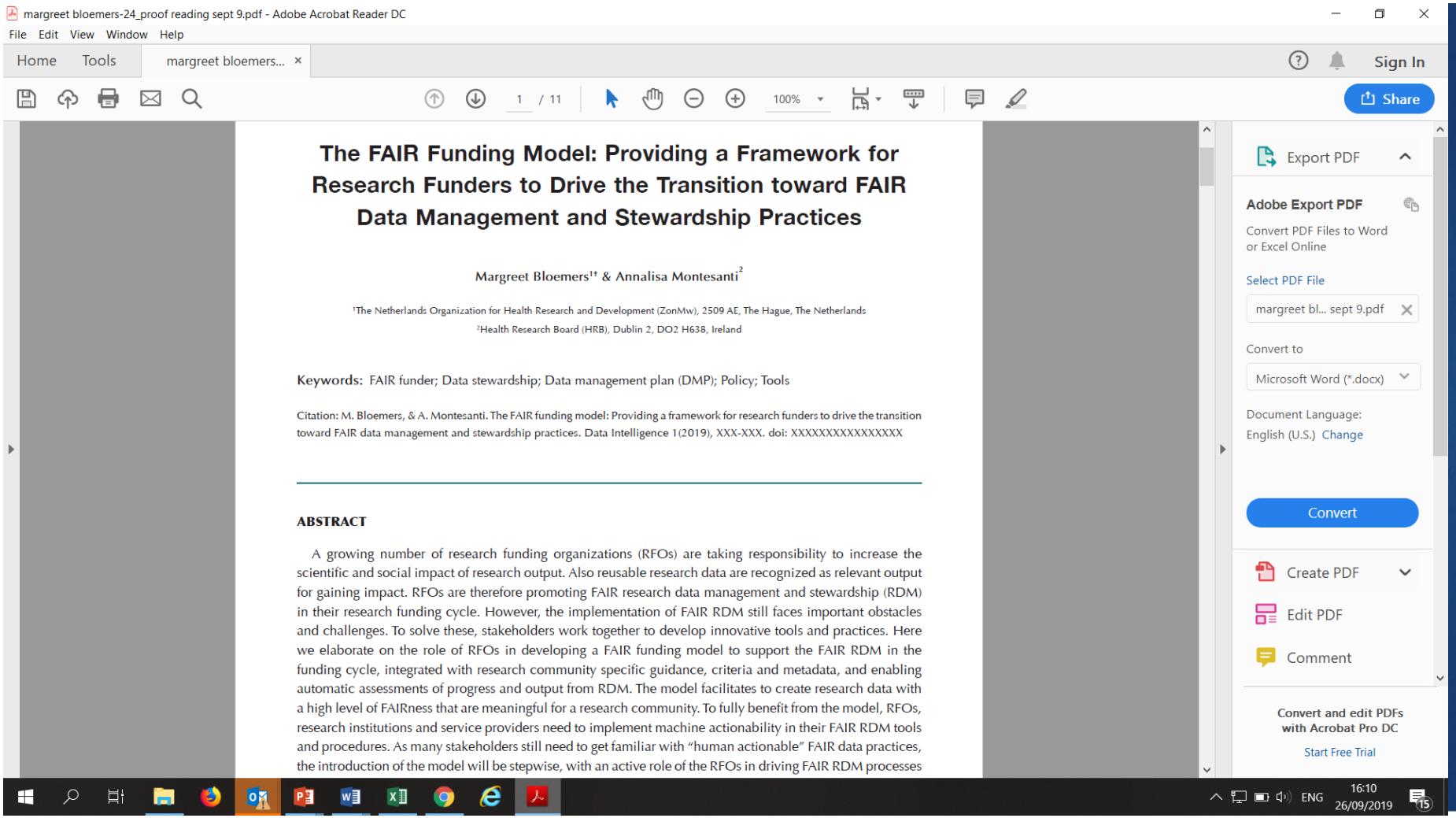
The principles support

- the free flow of information across national and international research communities, contributing to research-enabled teaching and learning;
- citizen science;
- open innovation;
- and greater transparency, accountability, and public awareness of the results of publicly funded research.

Ensuring Value in Research principles

Raising the probability of benefits to society from health-related research for the tangible and intangible costs involved

Relevance and expressed need		High quality research that minimises bias		Open and transparent research and research funding
Set justifiable research priorities	**Design, conduct and analysis are robust and appropriate**	**Regulation and management are proportionate to risks**	**Complete information on methods and findings are accessible and usable**	**Findings are appropriately and effectively disseminated**
Priorities are set involving those who use and are affected by health research New research should be set in the context of a systematic review or rigorously determined evidence gap	Designed using advances in research methods and taking steps to reduce bias Studies registered at inception	Actively manage research in a risk proportionate way Protocols, methods and materials should be made available early	Methods, interventions and findings reported in full Support replication and reuse of data	Findings set in the context of previous evidence and systematic reviews. Disseminate knowledge to end users. Usage of new knowledge should be supported and facilitated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The FAIR Funding Model: Providing a Framework for Research Funders to Drive the Transition toward FAIR Data Management and Stewardship Practices
Margreet Bloemers[1†] & Annalisa Montesanti[2]
[1]The Netherlands Organization for Health Research and Development (ZonMw), 2509 AE, The Hague, The Netherlands
[2]Health Research Board (HRB), Dublin 2, DO2 H638, Ireland
Keywords: FAIR funder; Data stewardship; Data management plan (DMP); Policy; Tools
Citation: M. Bloemers, & A. Montesanti. The FAIR funding model: Providing a framework for research funders to drive the transition toward FAIR data management and stewardship practices. Data Intelligence 1(2019), XXX-XXX. doi: XXXXXXXXXXXXXXX
ABSTRACT
A growing number of research funding organizations (RFOs) are taking responsibility to increase the scientific and social impact of research output. Also reusable research data are recognized as relevant output for gaining impact. RFOs are therefore promoting FAIR research data management and stewardship (RDM) in their research funding cycle. However, the implementation of FAIR RDM still faces important obstacles and challenges. To solve these, stakeholders work together to develop innovative tools and practices. Here we elaborate on the role of RFOs in developing a FAIR funding model to support the FAIR RDM in the funding cycle, integrated with research community specific guidance, criteria and metadata, and enabling automatic assessments of progress and output from RDM. The model facilitates to create research data with a high level of FAIRness that are meaningful for a research community. To fully benefit from the model, RFOs, research institutions and service providers need to implement machine actionability in their FAIR RDM tools and procedures. As many stakeholders still need to get familiar with "human actionable" FAIR data practices, the introduction of the model will be stepwise, with an active role of the RFOs in driving FAIR RDM processes
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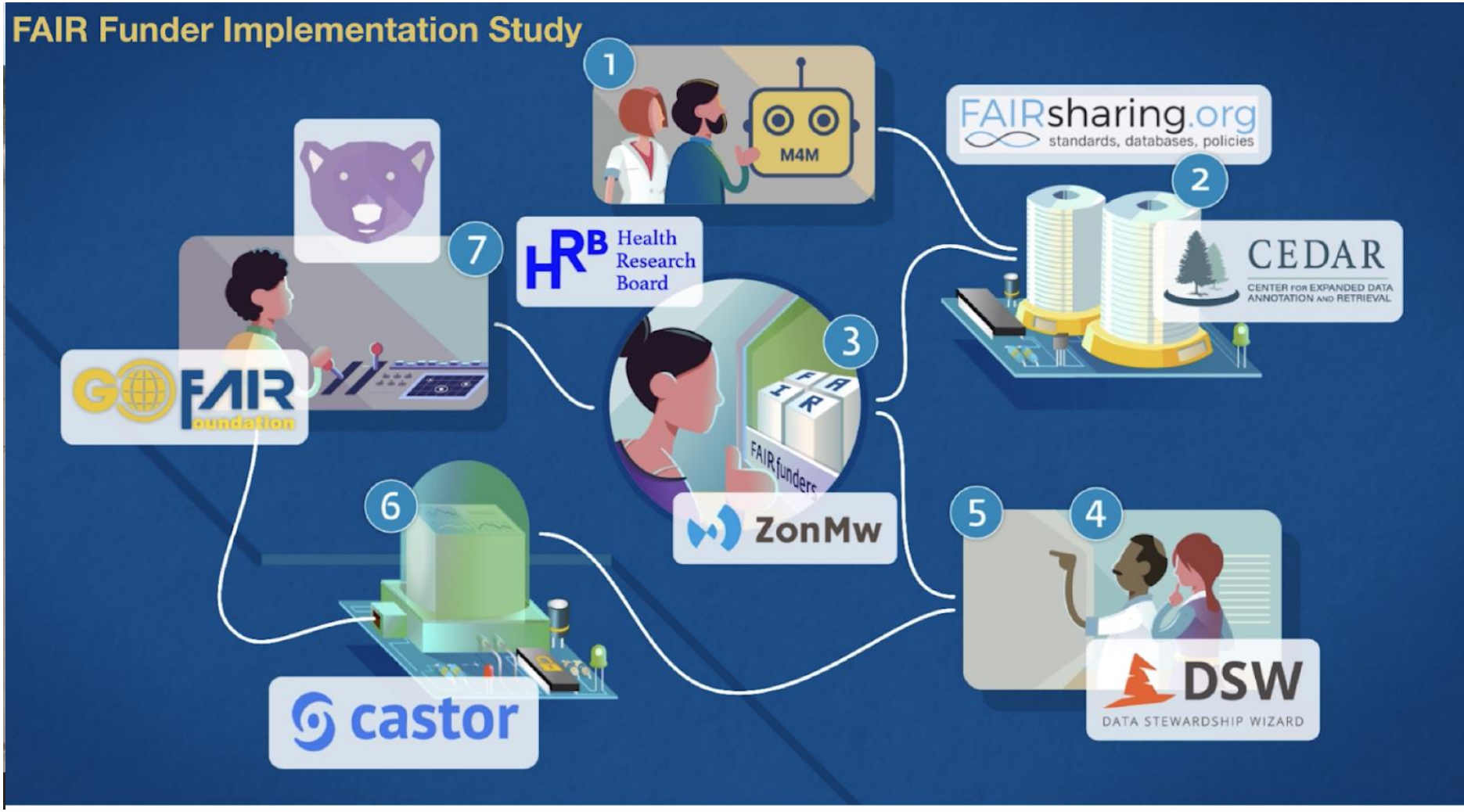
FAIR Funder Implementation Study
1
M4M
FAIRsharing.org
standards, databases, policies
2
CEDAR
CENTER FOR EXPANDED DATA ANNOTATION AND RETRIEVAL
3
FAIR funders
ZonMw
4
DSW
DATA STEWARDSHIP WIZARD
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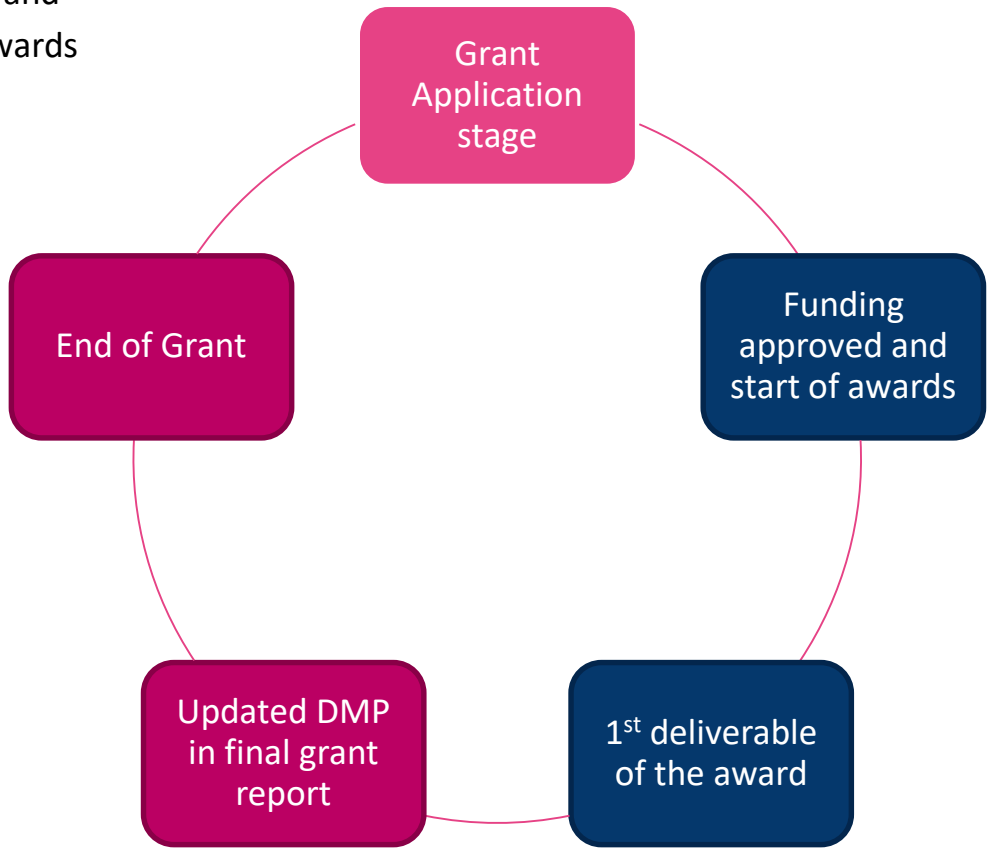
6
castor
7
GO FAIR foundation
HRB Health Research Board

The main aim of the pilot is to introduce data management and stewardship process in a small scale across two funding schemes

- Investigator-led Projects and
- Emerging Investigator Awards

Phase I
Grant Applications

'DMP outline' and DMP costs in all applications



The main aim of the pilot is to introduce data management and stewardship process in a small scale across two funding schemes

- Investigator-led Projects and
- Emerging Investigator Awards

Phase I
Grant Applications

'DMP outline' and DMP costs in all applications

Grant Application

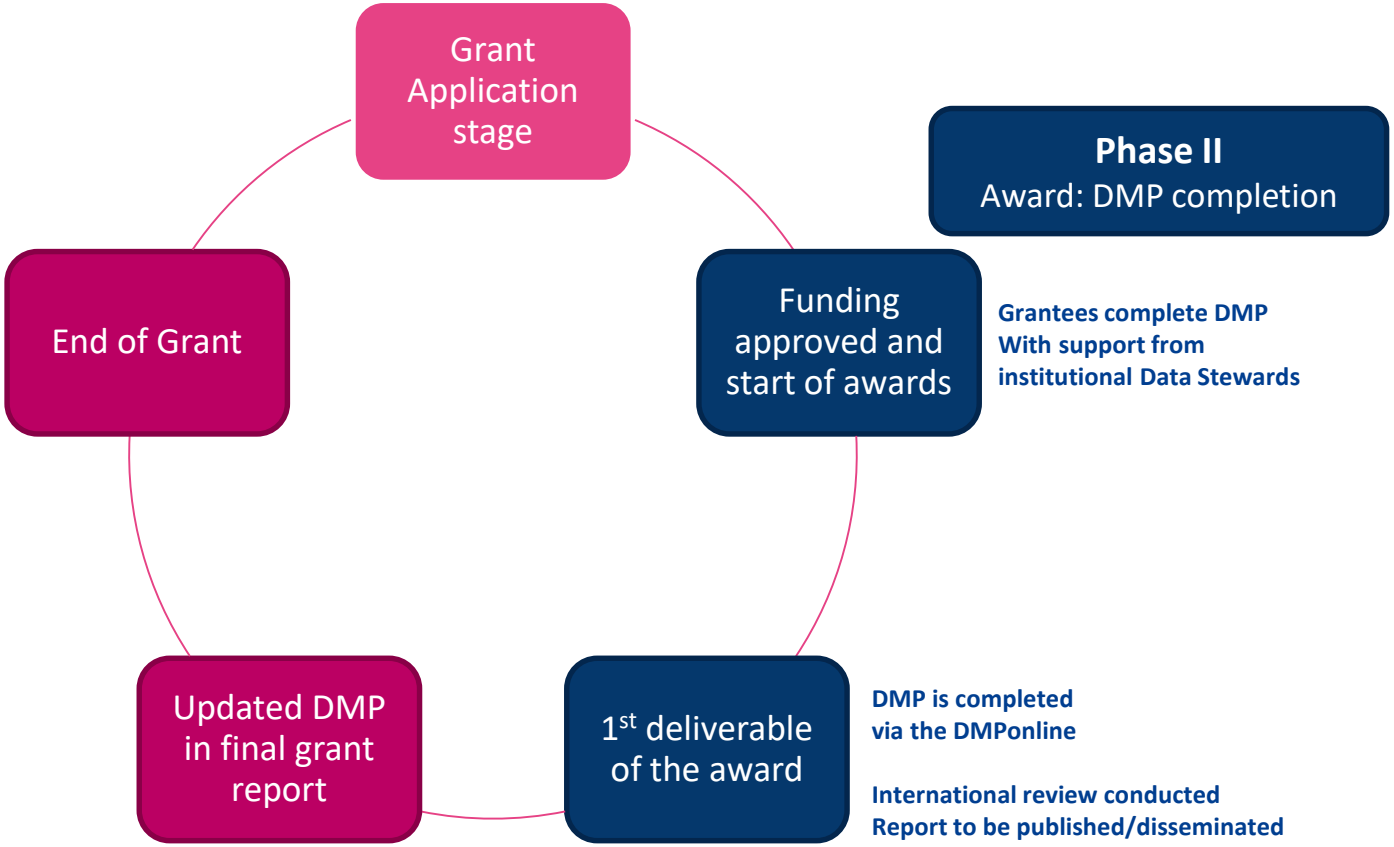
6. FAIR Data Management Costs	**Applicable to LA from institutions participating to the HRB Pilot only: Costs related to data management, FAIRification, storage and archiving of research data in line with best practice of data management and stewardship and the FAIR principles incurred during the lifetime of the project should be included..**

start of awards

People	Staff time per hour for data collection, data anonymisation,
	staff time per hour for data management/stewardship support, training, etc
Storage and computation	cloud storage, domain hosting charge
Data access	secondary data access, costs for preparing data for sharing (eg anonymisation)
Deposition and reuse	costs for depositing research data and metadata in an open access data repository
	e.g. defining semantic models, making data linkable, choosing the licence, defining metadata for dataset, deploying/publishing
Others	Please further explain
	report
Notes	The HRB is currently not covering the cost of long term preservation of data
	This list is not exhaustive and aims to provide examples only of eligible costs

Phase I
Grant Applications

'DMP outline' and DMP costs in all applications



Phase II
Award: DMP completion

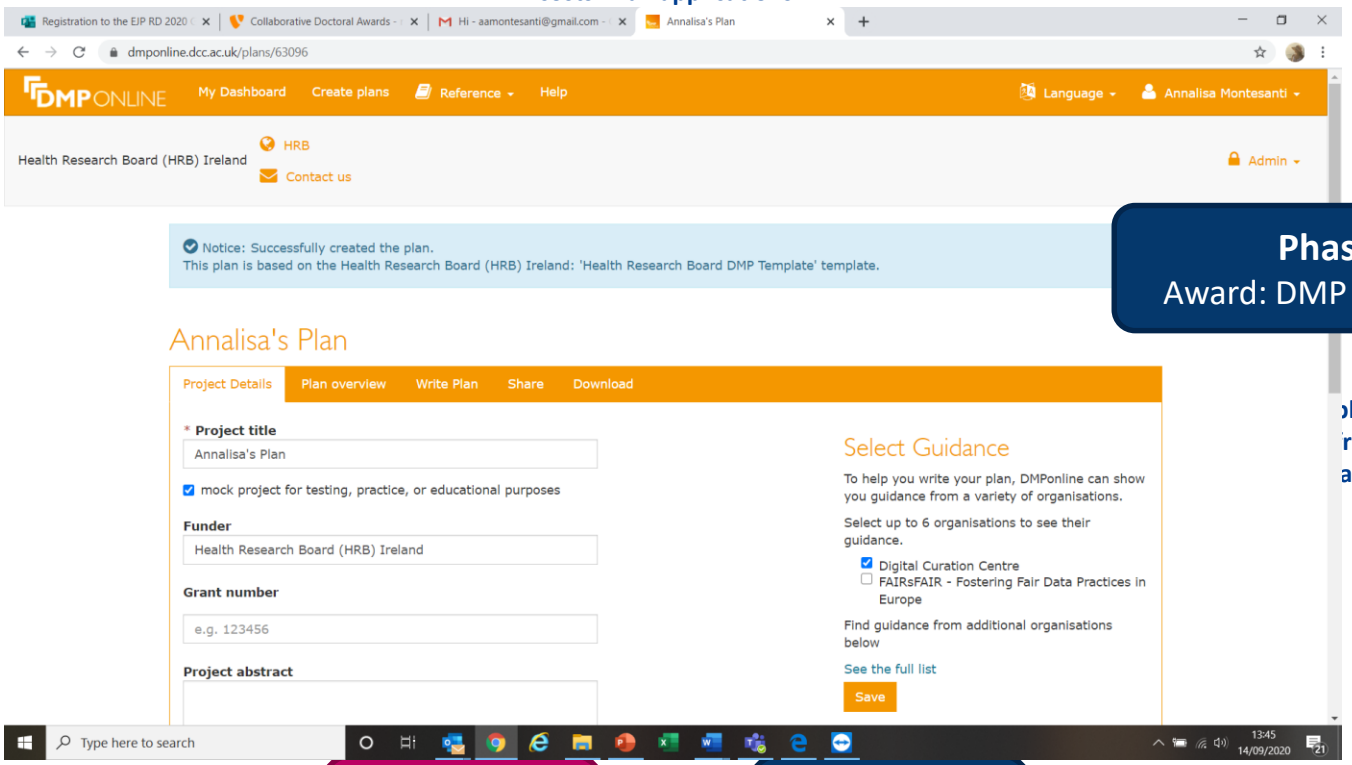
Grantees complete DMP With support from institutional Data Stewards

DMP is completed via the DMPonline

International review conducted Report to be published/disseminated

Phase I
Grant Applications

'DMP outline' and DMP costs in all applications



Phase II
Award: DMP completion

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ata Stewards

Updated DMP in final grant report

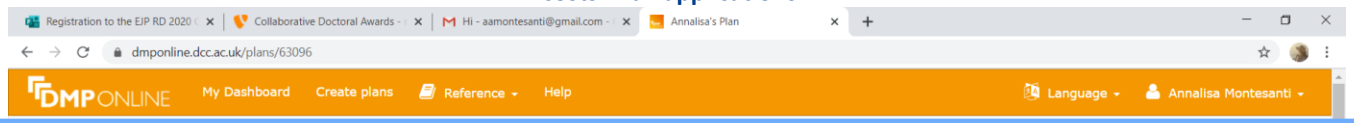
1st deliverable of the award

DMP is completed via the DMPonline

International review conducted
Report to be published/disseminated

Phase I
Grant Applications

'DMP outline' and DMP costs in all applications



What does the DMP address?

Data description and collection or reuse of existing data

Documentation and data quality

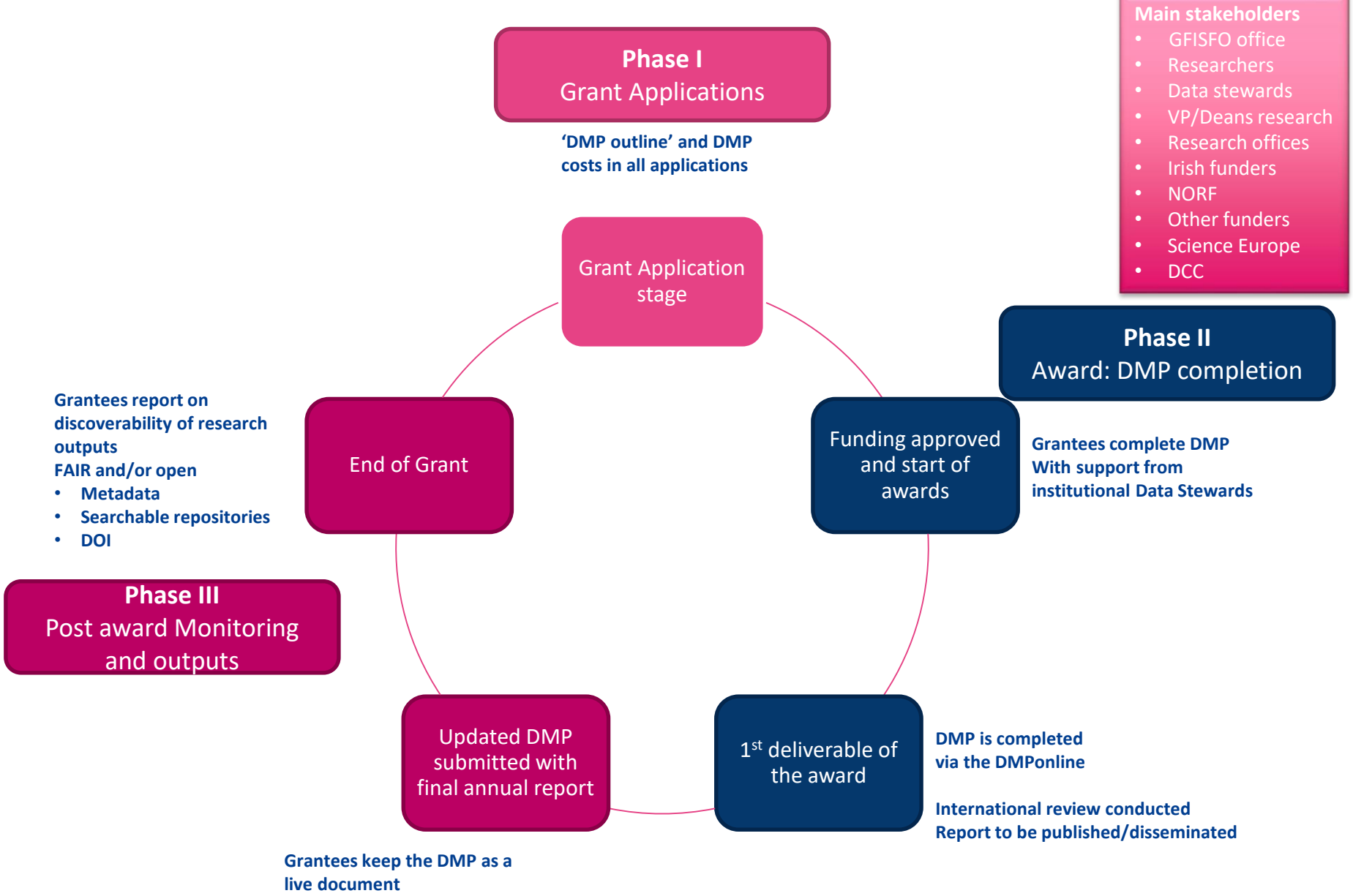
Storage and backup

Ethical and legal compliance, codes of conduct

Data sharing and long-term preservation

Data management responsibilities and resources

Phase II
Award: DMP completion

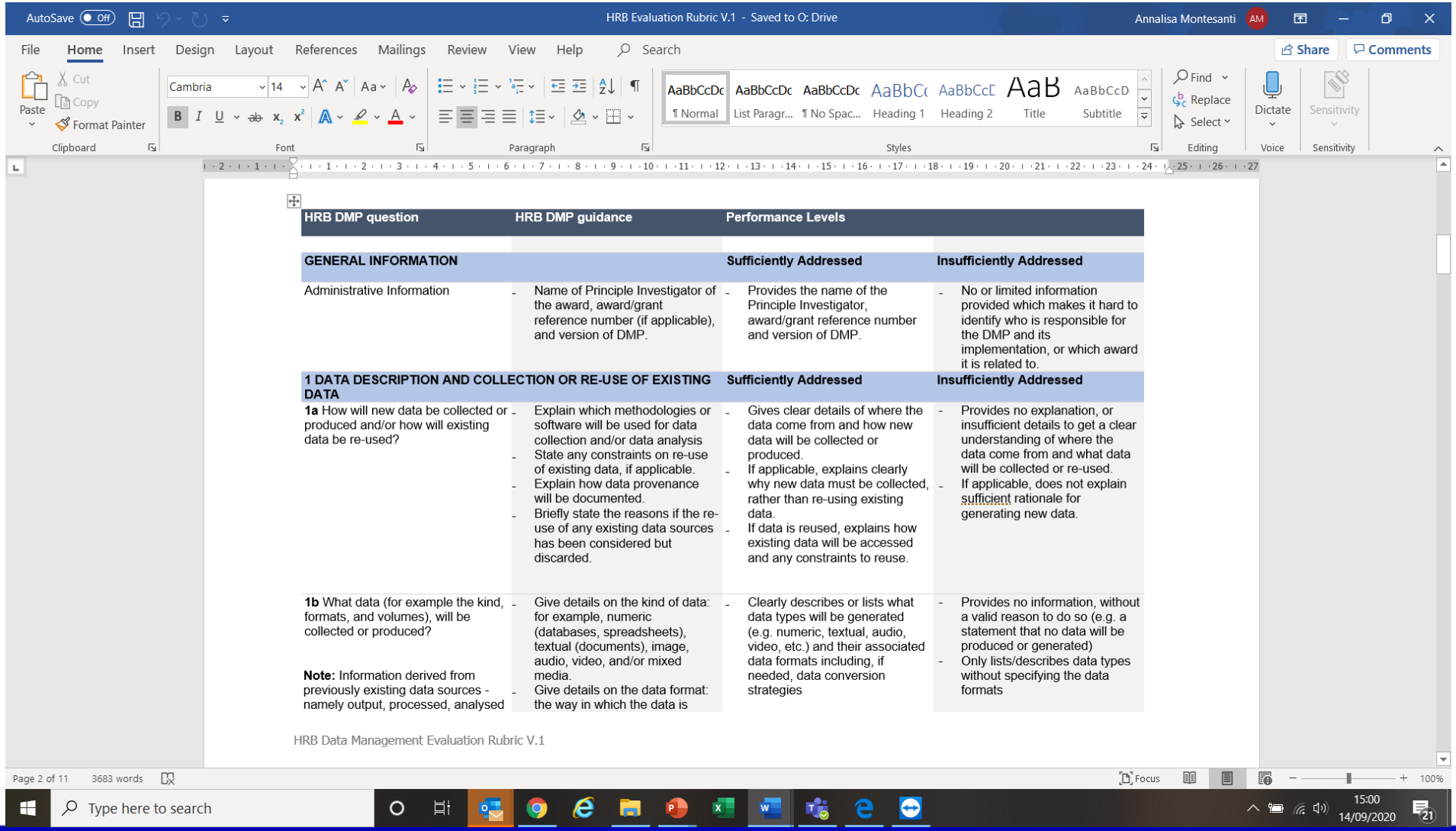

Main stakeholders
• GFISFO office
• Researchers
• Data stewards
• VP/Deans research
• Research offices
• Irish funders
• NORF
• Other funders
• Science Europe
• DCC
Phase I
Grant Applications
'DMP outline' and DMP costs in all applications
Grant Application stage
Phase II
Award: DMP completion
Funding approved and start of awards
Grantees complete DMP
With support from institutional Data Stewards
1st deliverable of the award
DMP is completed via the DMPonline
International review conducted
Report to be published/disseminated
Updated DMP submitted with final annual report
Grantees keep the DMP as a live document
End of Grant
Grantees report on discoverability of research outputs
FAIR and/or open
• Metadata
• Searchable repositories
• DOI
Phase III
Post award Monitoring and outputs

International Panel review of a sample of DMPs

Panel experts from the UK, Netherlands, Austria, Finland and Denmark met in September

- To provide feedback to data stewards, HRB and researchers – learning curve
- To discuss with HRB topics such as DMP quality, costing, process, DMP template
- To provide to HRB any advise and/or recommendation on how to further advance the data agenda

DMP assessment rubric



HRB DMP question	HRB DMP guidance	Performance Levels	
GENERAL INFORMATION		**Sufficiently Addressed**	**Insufficiently Addressed**
Administrative Information	- Name of Principle Investigator of the award, award/grant reference number (if applicable), and version of DMP.	- Provides the name of the Principle Investigator, award/grant reference number and version of DMP.	- No or limited information provided which makes it hard to identify who is responsible for the DMP and its implementation, or which award it is related to.
1 DATA DESCRIPTION AND COLLECTION OR RE-USE OF EXISTING DATA		**Sufficiently Addressed**	**Insufficiently Addressed**
1a How will new data be collected or produced and/or how will existing data be re-used?	- Explain which methodologies or software will be used for data collection and/or data analysis - State any constraints on re-use of existing data, if applicable. - Explain how data provenance will be documented. - Briefly state the reasons if the re-use of any existing data sources has been considered but discarded.	- Gives clear details of where the data come from and how new data will be collected or produced. - If applicable, explains clearly why new data must be collected, rather than re-using existing data. - If data is reused, explains how existing data will be accessed and any constraints to reuse.	- Provides no explanation, or insufficient details to get a clear understanding of where the data come from and what data will be collected or re-used. - If applicable, does not explain sufficient rationale for generating new data.
1b What data (for example the kind, formats, and volumes), will be collected or produced? **Note:** Information derived from previously existing data sources - namely output, processed, analysed	- Give details on the kind of data: for example, numeric (databases, spreadsheets), textual (documents), image, audio, video, and/or mixed media. - Give details on the data format: the way in which the data is	- Clearly describes or lists what data types will be generated (e.g. numeric, textual, audio, video, etc.) and their associated data formats including, if needed, data conversion strategies	- Provides no information, without a valid reason to do so (e.g. a statement that no data will be produced or generated) - Only lists/describes data types without specifying the data formats

Some learning and reflections from the pilot to date (1)

Some challenges for researchers

- Many researchers are not yet familiar on how to implement the FAIR principles into practice;
- Also the concept of scholarly outputs being machine readable (actionable) is neither well understood, nor are the practices and tools available – for many even achieving FAIR for humans is a challenge!
- Researchers fear that the funders requirements lead to additional costs and therefore a reduction of research budget;
- Researchers perceive the DMP requirements as additional paperwork, from which their research does not directly benefit. What is the real value?
- In some case researchers think they do not need to improve their practices;
- There might be a lack of incentives for researchers to create FAIR data, share data and achieve societal impact;

Some learning and reflections from the pilot to date (2)

- *Researchers should liaise with data manager and stewards to be guided throughout this process;*
- *Mandatory requirements via policies at funders and institutional level (stick vs carrot) are effective but only when some support and expertise is available in the institution, otherwise it is just a tick box exercise;*
- *Costs and funding: Experts say that actually by better planning the management of the data the costs should decrease!*
- *It has been suggested to encourage data steward(s) to be part of the research team as collaborator/co-applicant, especially for data intensive projects;*

Some learning and reflections from the pilot to date (3)

Some of the issues:

- the definition of “data” or good research practice in collecting, cleaning, preparing for repositories, etc;
- human vs machine actionability;
- the definition of metadata and the different types they might need (plurality of metadata);
- anonymisation vs pseudonymisation of personal information;
- data sharing vs publication of the research article;
- data sharing vs commercialisation of data – societal impact;
- use of domain specific vs other repositories (Zenodo);
- costs for data management not realistic
- support during the project on data management, roles and responsibilities not explained
- explanation of why new data is needed not provided
- clarity on data sharing strategy missing

  – *Hence they need support from data managers/stewards*

Some learning and reflections from the pilot to date (4)

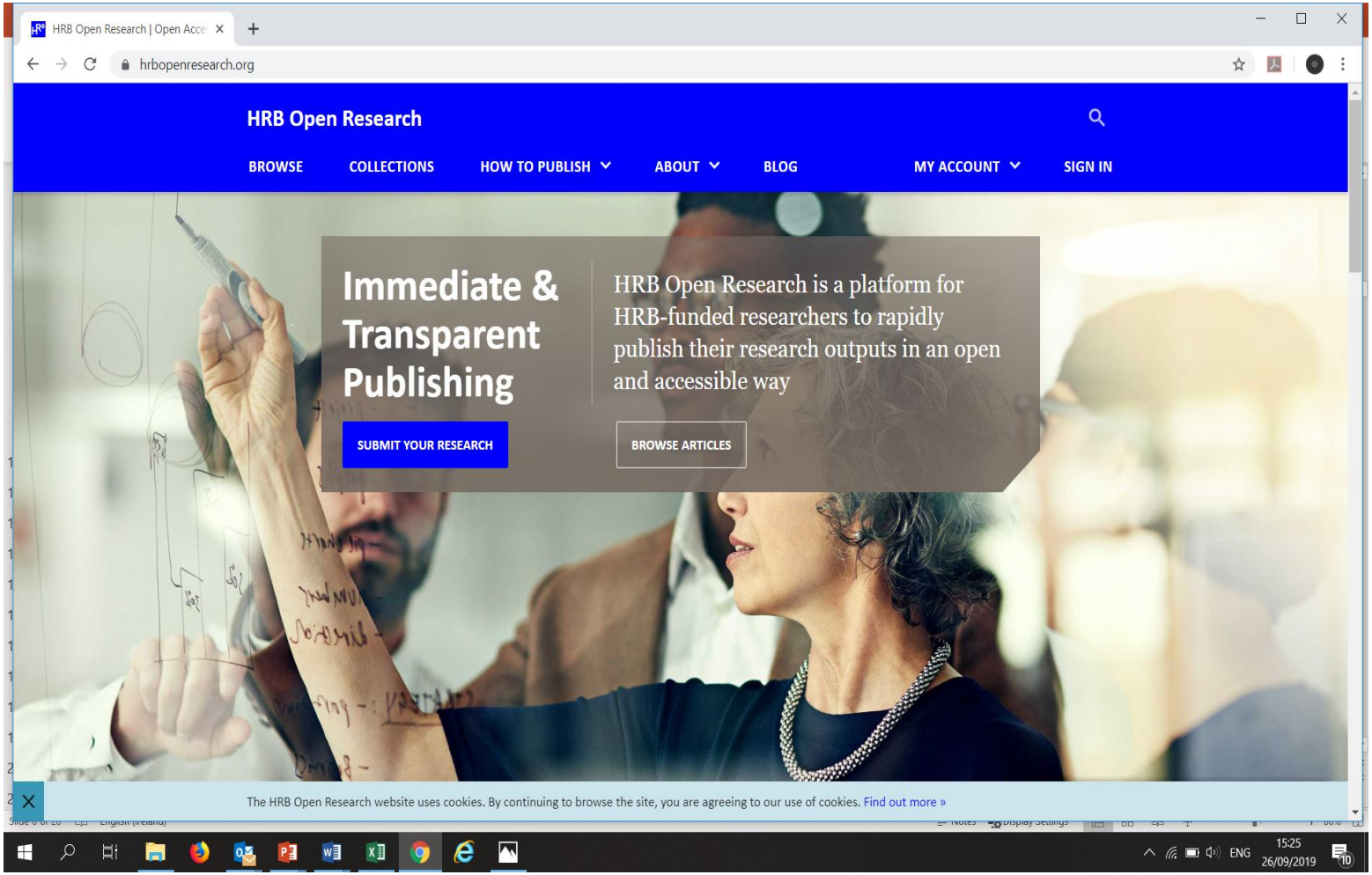
- Lack of expertise/resources at institutional level – who is going to support the demand of DMPs? How are the institutions going to sustain new headcounts? *Many research institutions/universities in Ireland are slowly increasing number of people involved in DM/DS support and have/will have policies in place*
- Lack of expertise/resources in funding agencies; *international review during the pilot has been very useful which will be repeated as well as learning via others' experience*
- Fragmentation within institutions – different units with different roles (e.g. research office, library, data support,, etc; . Domain specific vs Institutional vs centralised service outside institution?

Poll - What do you think is the main barrier to data discoverability and data sharing

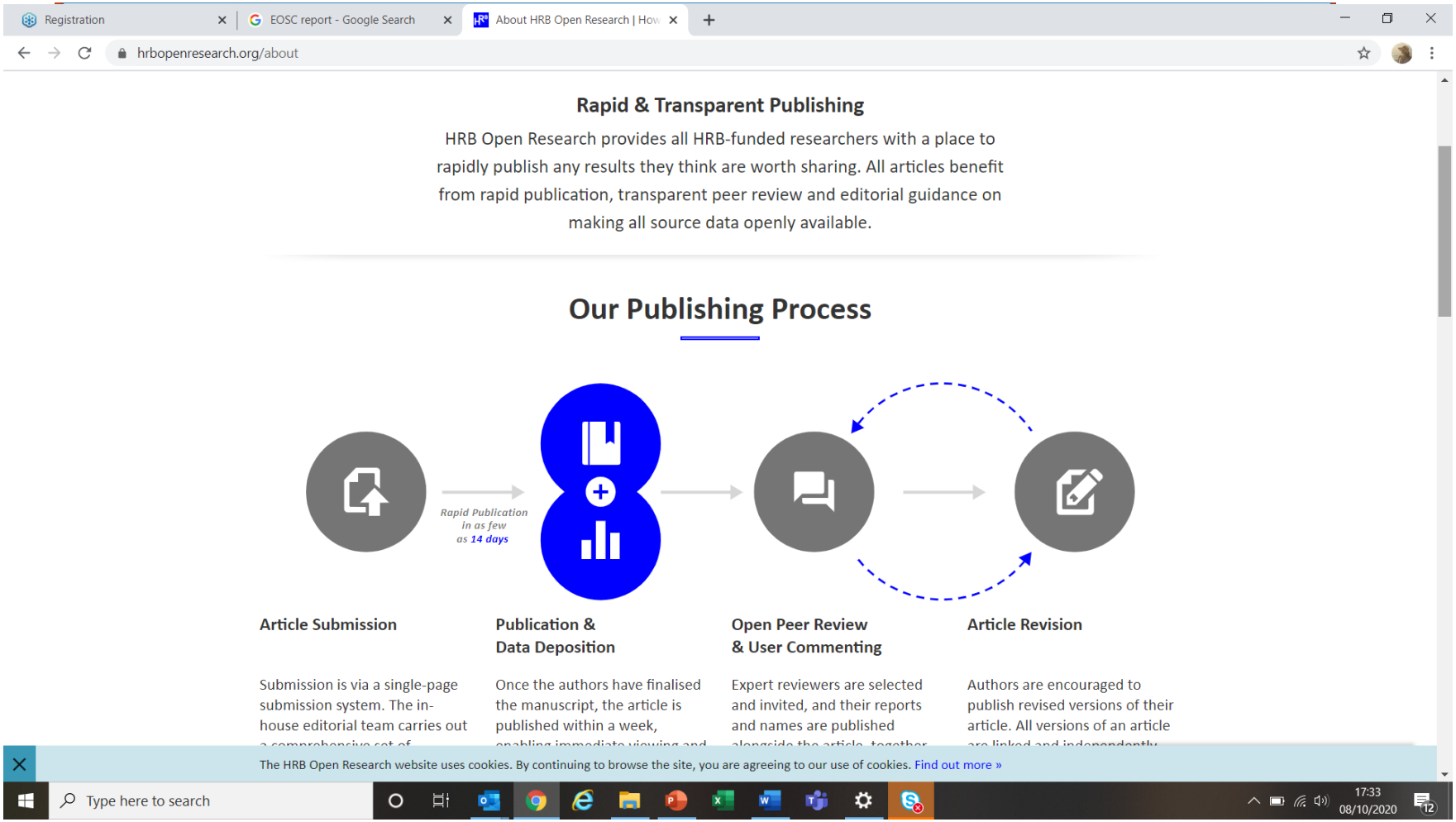
1. Time to do it
2. Knowledge and expertise in how to do it
3. Costs/budget available
4. Institutional support available
5. Data Infrastructure available

Other HRB activities facilitating a more open research environment

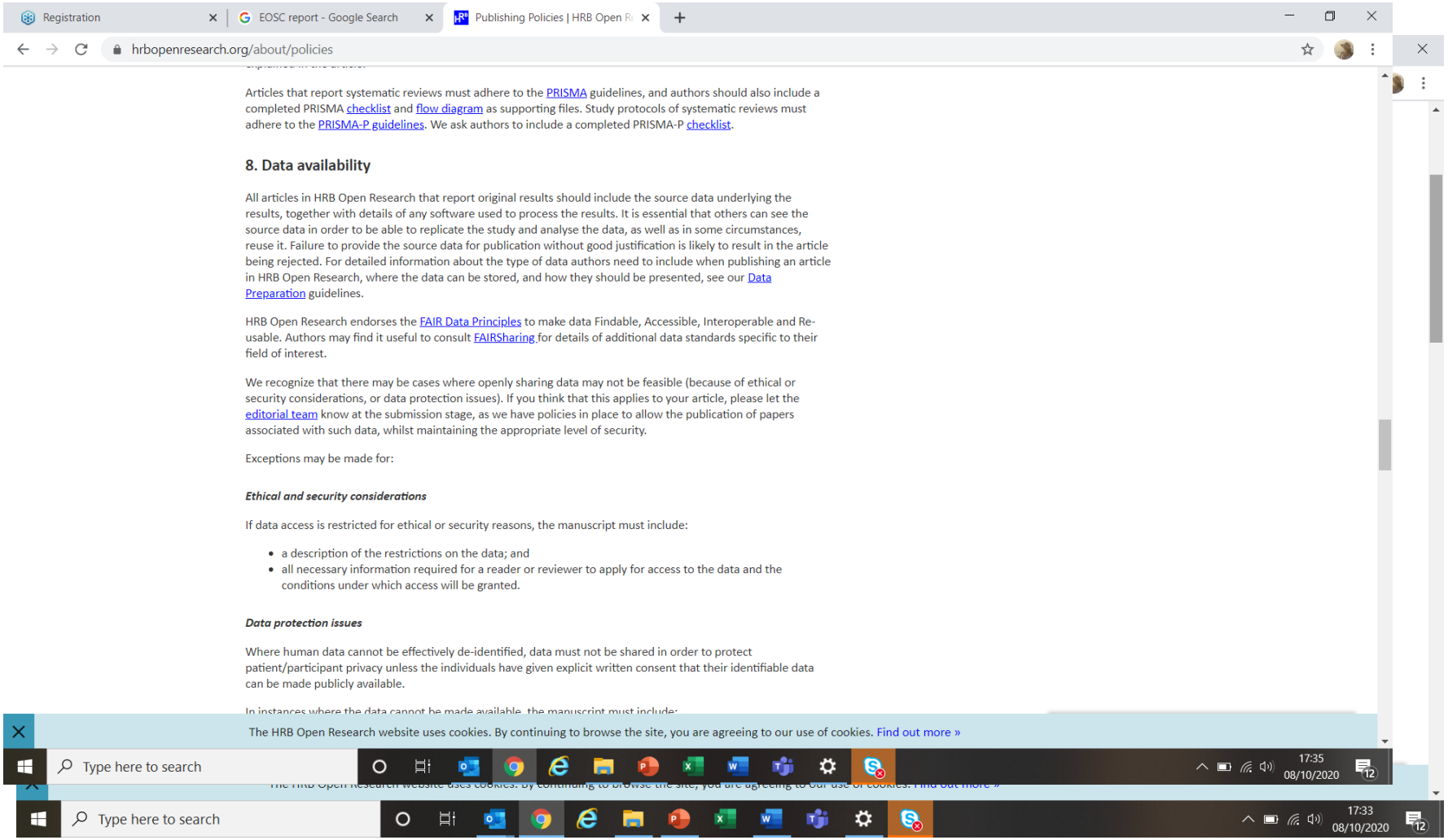
HRB Open Research



HRB Open Research



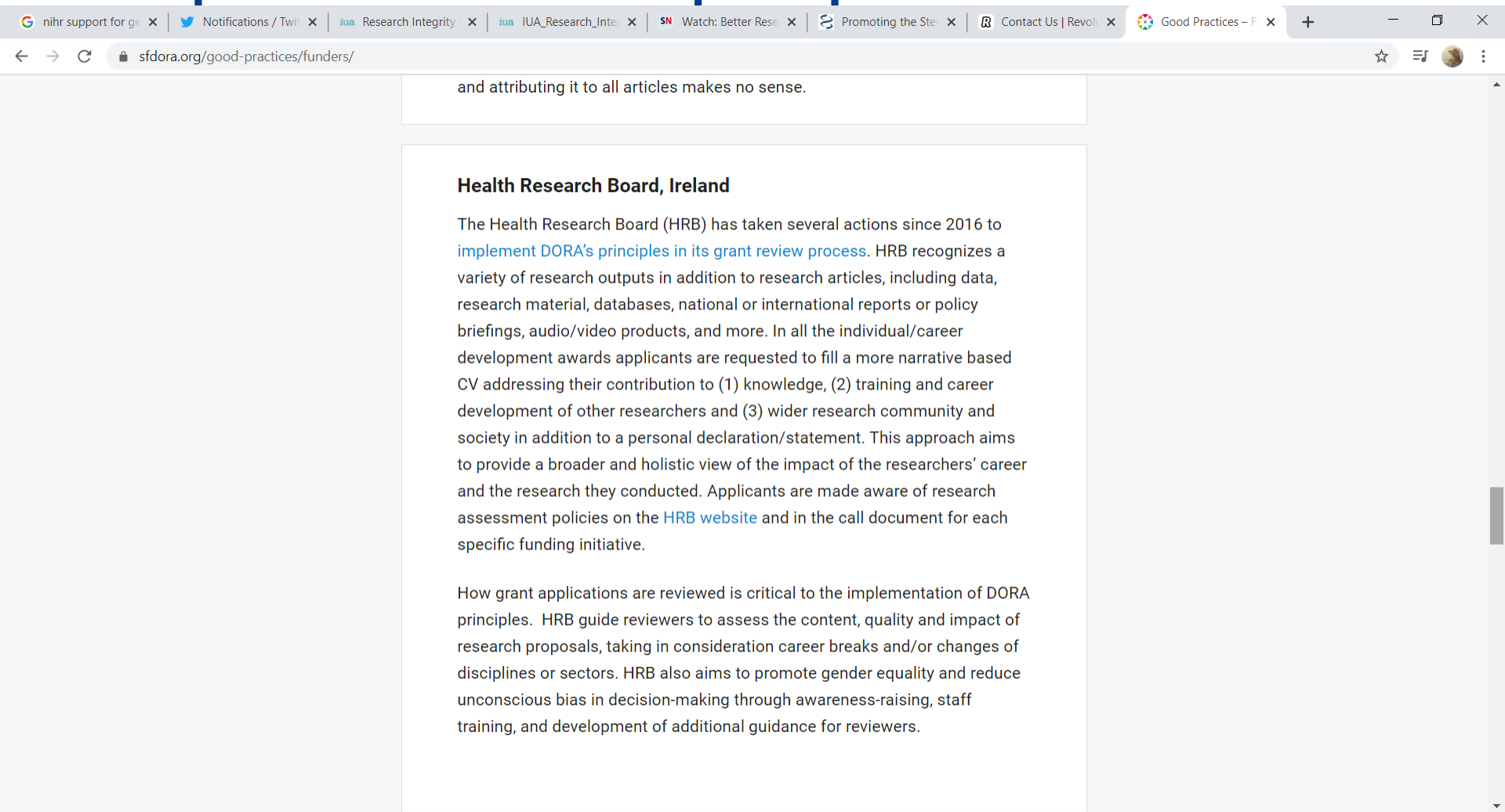
HRB Open Research



Incentives and rewards: DORA declaration and implementation of the principles

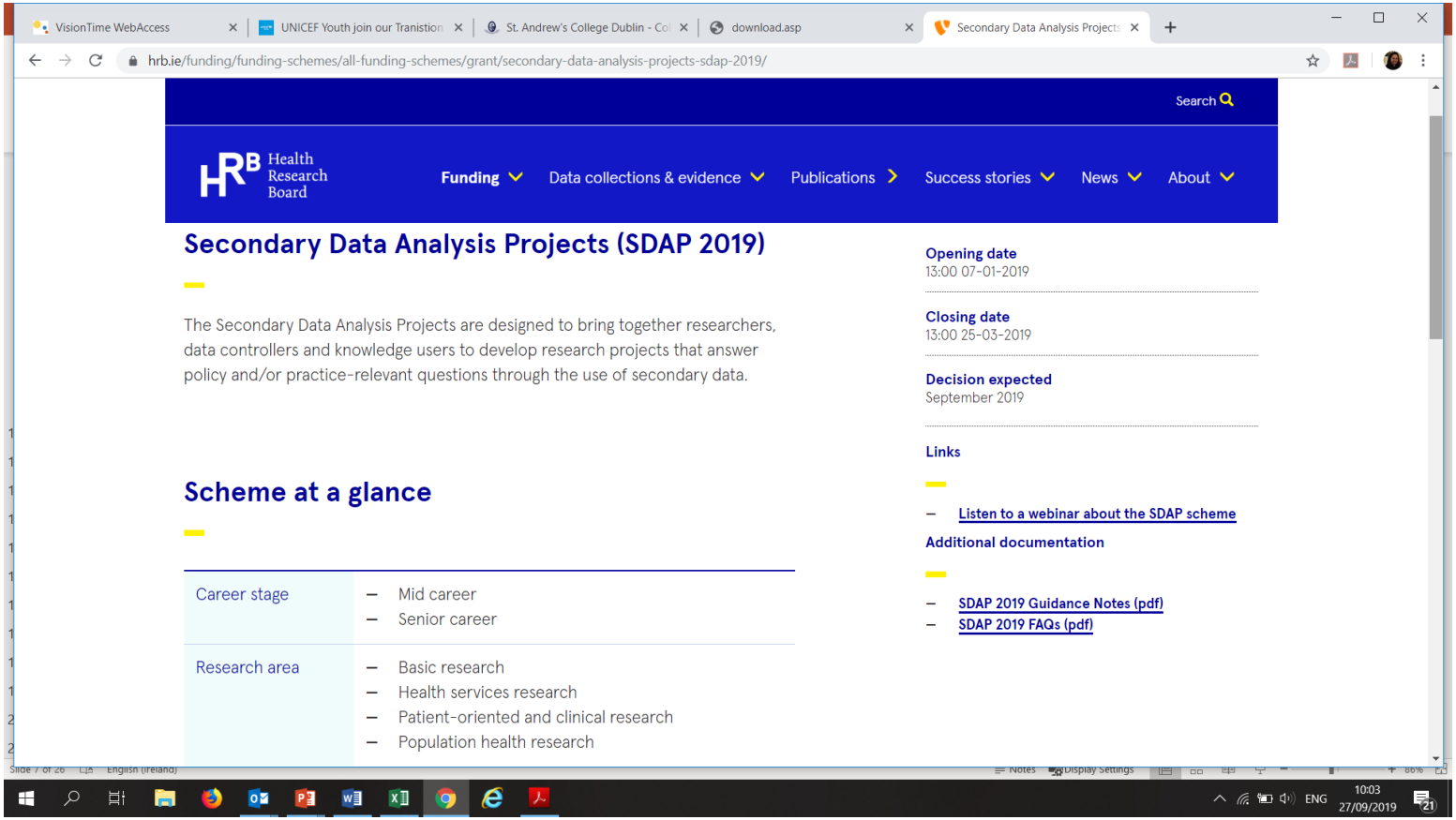
- The endorsement of the Declaration emphasises the HRB's support for a research environment where importance is placed on the intrinsic value of research and its impact in society https://sfdora.org/good-practices/research-institutes/ ;
- The Declaration also aligns with the HRB's effort in transitioning towards an open research environment.
  - HRB recognizes a variety of research outputs in addition to research articles, including data, research material, databases, national or international reports or policy briefings, audio/video products, and more.
  - In all the individual/career development grant schemes applicants are requested to fill a more narrative based CV addressing their contribution to (1) knowledge, (2) training and career development of other researchers and (3) wider research community and society in addition to (4) a personal declaration/statement.
  - HRB guide reviewers to assess the content, quality and impact of research proposals, taking in consideration career breaks and/or changes of disciplines or sectors

Incentives and rewards: DORA declaration and implementation of the principles



Supporting the reuse of research data

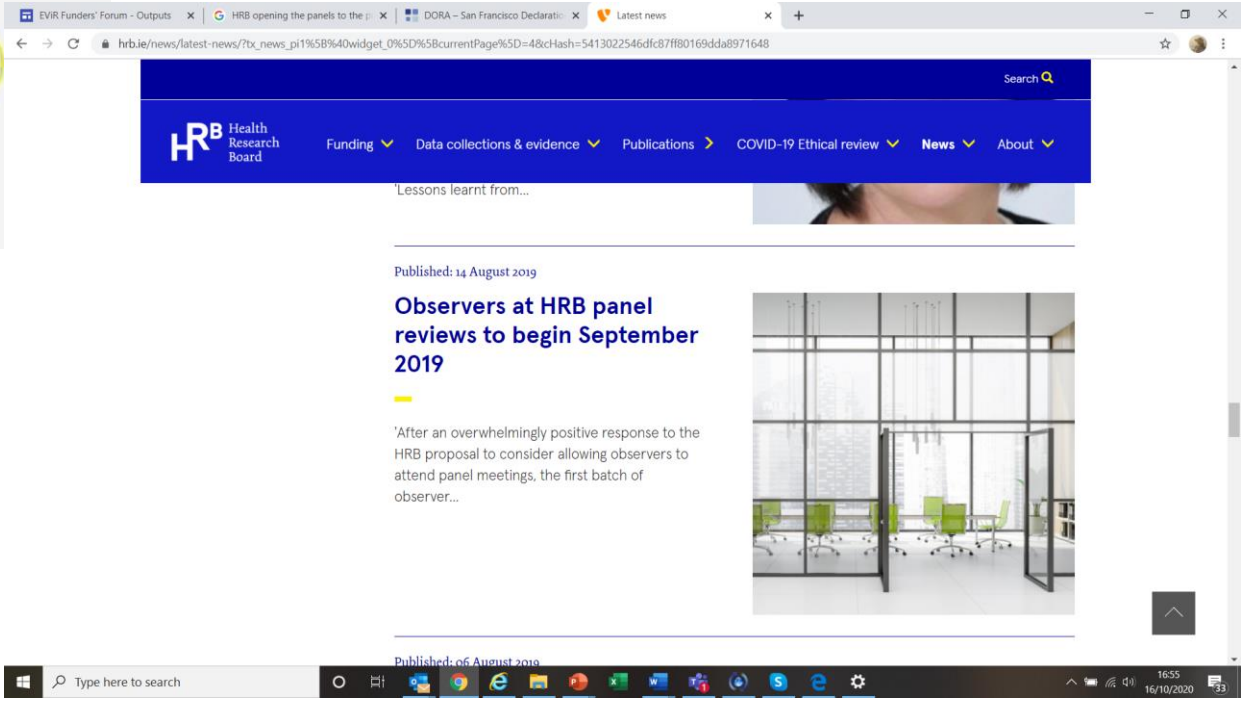
Secondary Data Analysis Projects funding call



Data Access Storage Sharing and Linkage (DASSL) Proof of Concept

- The HRB also funded a Proof of Concept (PoC) technical infrastructure project to demonstrate how researchers can be provided with secure and controlled access to anonymous and linked health and social case datasets in Ireland.
- This work builds on an earlier published discussion document which presented a 'Data Access, Storage, Sharing and Linkage' model or 'DASSL' model showing types of infrastructure and services required to unlock the significant value of currently under-exploited data for the public good.
- This work is being led by the Irish Centre for High-End Computing (ICHEC) at NUI Galway working with researchers at the Royal College of Surgeons in Ireland, Trinity College Dublin and the Health Service Executive.
- Further discussion and investment are required to scale-up this model to serve national research requirements.

HRB opening the funding panels to researchers and institutional representatives



Poll - What can funders do to support better data discoverability and data sharing

1. Provide detailed guidance on the requirements
2. Reward the discoverability of outputs and data sharing
3. Provide the funding for data management/sharing related costs and data stewards' support within each grant
4. Provide small grants/supplementary grants to make data discoverable
5. Publish examples of good quality DMPs and how to budget/cost it

COVID 19 Rapid Response Funding Call

As many funders…

HRB developed and completed a funding call in less than two months (March to May)

- 22 projects were awarded out of 162 submitted with 10 more to be awarded by end of the year = 32
- Average duration of awards is 12 months with a max of 18 months;
- Addressing medical countermeasures; health services readiness; and social and policy countermeasures.

Data management and sharing

- Data management plans were requested by 3 months from start of the award (HRB policy);
- FAIR Data Management costs eligible in the budget;
- HRB has signed up to the Statement on Data Sharing in Public Health Emergencies; Deliverables must be shared in real time with relevant knowledge users and reported in open access formats (preferably HRB Open Research);
- Publication of study protocol or registered reports in HRB Open Research were contractually required.

Statement on Data Sharing in Public Health Emergencies

- All peer-reviewed research publications relevant to the outbreak are made immediately open access, or freely available at least for the duration of the outbreak
- Research findings relevant to the outbreak are shared immediately with the WHO upon journal submission, by the journal and with author knowledge
- Research findings are made available via preprint servers before journal publication, or via platforms that make papers openly accessible before peer review, with clear statements regarding the availability of underlying data
- Researchers share interim and final research data relating to the outbreak, together with protocols and standards used to collect the data, as rapidly and widely as possible - including with public health and research communities and the WHO
- Authors are clear that data or preprints shared ahead of submission will not pre-empt its publication in these journals

What next

1. International postal review of the COV19 awards DMPs with the aim to provide constructive feedback to the PI and data stewards;

2. To develop a mechanism to provide supplementary funding aimed to facilitate data sharing and to create FAIR research outputs for the COV 19 awards

3. The HRB and the CSO are now establishing a mechanism to facilitate secure and controlled access to these data for research purposes.

- The Central Statistics Office (CSO), the Department of Health (DoH), the Health Service Executive (HSE) and others continue to support the collection, collation and statistical analysis of COVID-19 related data.
- These include routinely collected health service data, census and administrative data, and data from research cohorts.

And…

5. Developing a DMP infrastructure supporting data management practices for researchers and institutions in health research

6. We are discussing internally how to collaborate with international partners for the development of machine actionable metadata and FAIR data points

Thank you!

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Find out more about our work