

Research Information Systems and Ethics relating to Open Science

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(1) The challenge of ethics

Doing good science in a good manner

- Research ethics provides concepts and recommendations of “right” and “wrong” scientific practice, especially norms of conduct that distinguish between acceptable (responsible) and unacceptable scientific behavior.
- Due to the changing research environment with new and complex technologies, increased pressure to publish, greater competition in grant applications etc., academic interest in research ethics and research integrity is steadily increasing, above all in medical and health sciences.
- Main issues are falsification and fabrication of research data, informed consent, patient safety, plagiarism and conflict of interest.

Technologies and infrastructures

- Regarding new technologies and infrastructures, a growing body of research revealed essential and recurrent themes and dimensions of ethics, such as privacy, security, autonomy, justice, human dignity, control of technology and balance of power.
- Regarding artificial intelligence, for instance, it has been observed “that a significant gap exists between the theory of AI ethics principles and the practical design of AI systems”.
- Does the same observation apply to CRIS?

Research ethics, a topic for CRIS

State of the art (2020):

- Research ethics is highly relevant for the evaluation, the monitoring and the governance of research activities
- Research ethics is a double challenge for CRIS
 - The CRIS data models should be able to represent ethical aspects of research.
 - The design, implementation and functioning of CRIS should be compliant with usual ethical standards of scientific research.

(2) Methodological approach

Objective: empirical evidence on the topic

- A survey with CRIS experts from different European countries (2021)
 - to investigate their views on ethical requirements
 - to assess their attitudes towards ethical principles and scientific misconduct
- A small-scale follow-up study (2021)
 - to assess to what extent ethical issues are considered in the design, implementation and application of CRIS
- A survey with experts from ethics committees, from different European countries (2022)
 - to investigate their interest in research information management

Limitations

Small samples, and small numbers of respondents

- No statistical validity
- No general conclusions
- Small number of respondents = small awareness or interest?

Instead:

- Exploration
- Material for further discussion
- Perspectives for further research

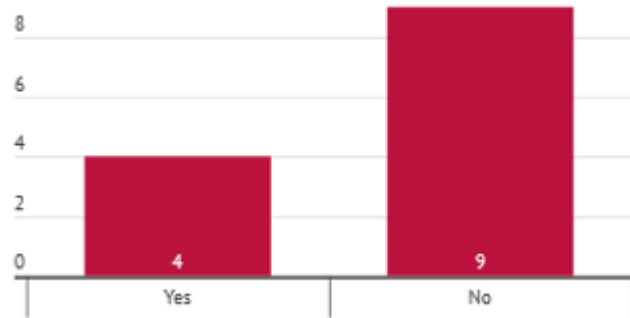
(3) CRIS and ethics

Survey with CRIS experts

The potential of CRIS

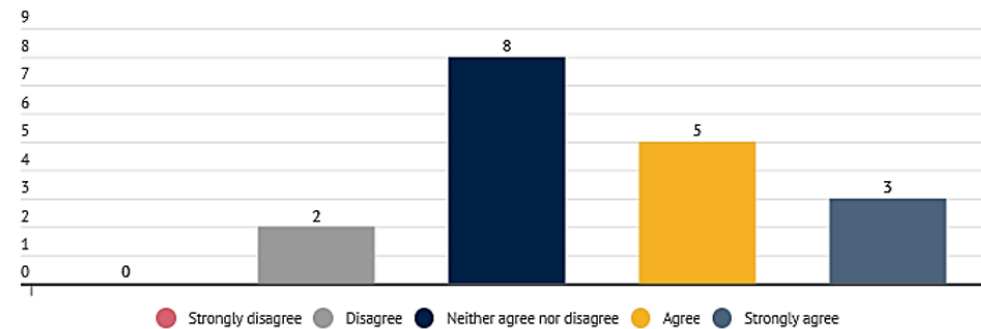
Most CRIS do not provide ethics-related assessment

Do your CRIS produce data and reports including information related to research ethics?



But they should...

Do you think that research information systems should take into account these principles and misbehaviours?



Why?

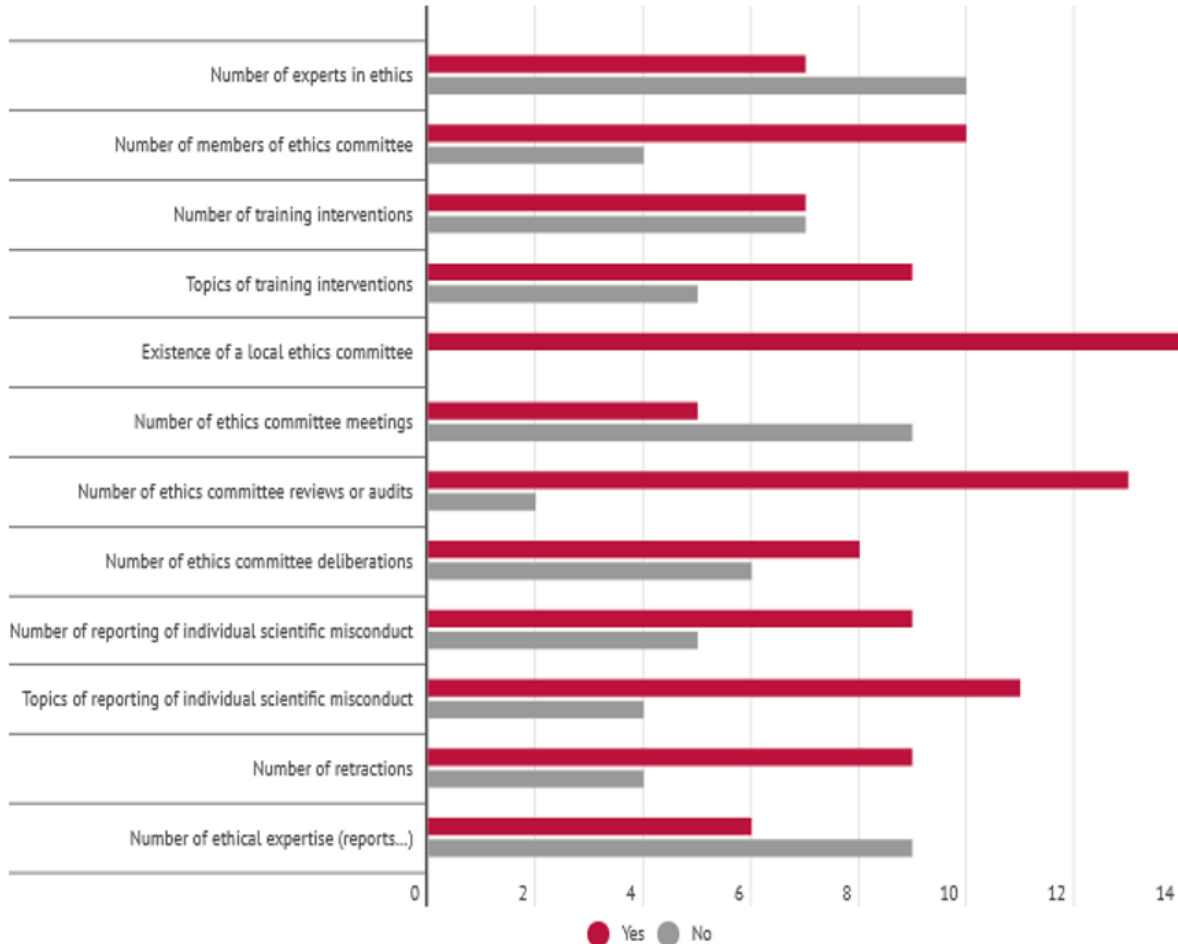
- *Research Ethics has not been much discussed in the CRIS context.*
- *I think it's quite early in the process*
- *I think at the moment most CRISs do not yet have adequately ethical procedures/controls integrated.*
- *In some systems you can find first attempts to record or handle ethical reviews. In most cases these is in an early stage.*

Two groups of problems

- The survey revealed a concern related to data transparency and access rights.
- There are two groups of problem areas.
 - One concerns sensitive data, data loss, including intellectual property and personal data issues.
 - And then there is the implementation side, which is much fuzzier - you can hurt people by implementing software incorrectly.

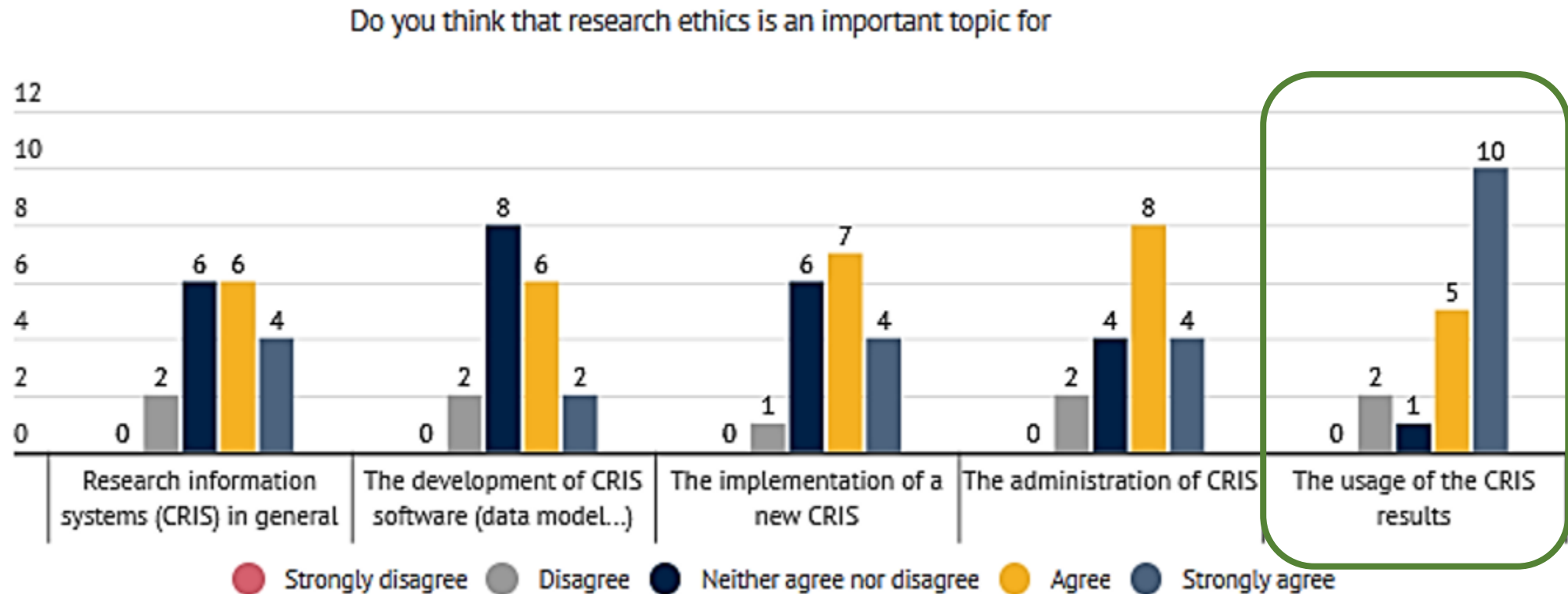
Relevant metrics

The following list contains potential indicators (metrics) of research ethics. Can you please tell us if you think they are relevant for the institutional assessment of research ethics

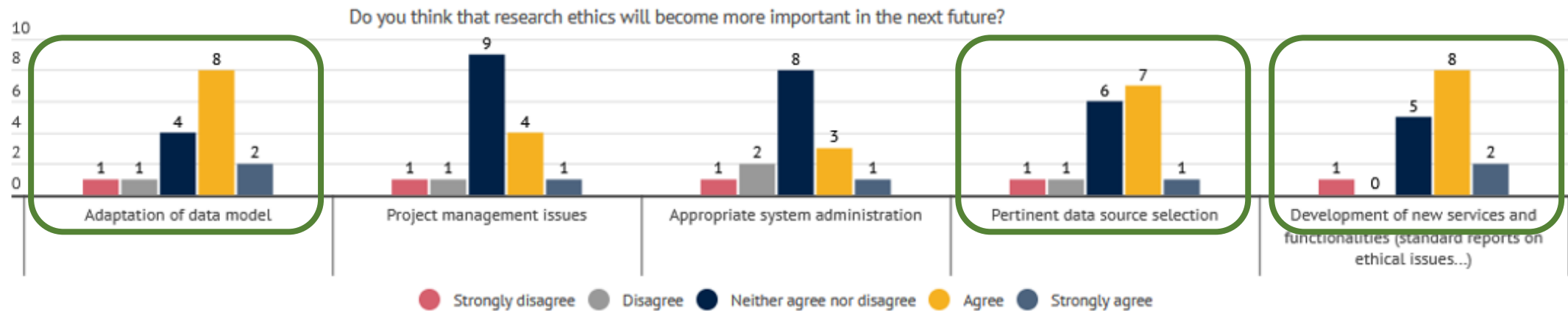


- Existence of a local ethics committee
- Number of ethics committee reviews or audits
- Topics of reporting of misconduct
- Number of members of ethics committee

Main relevance for CRIS: the usage of results



Priority action: development of new services, adaptation of data model and selection of data sources



Other issues

- Some respondents mentioned other issues, such as political surveillance (cooperation with China) or biased terminology (potentially harmful or offensive descriptors, prejudices, etc.).
- The survey revealed also that ethics committees and experts are rarely associated with projects related to research information management.

Verbatims from CRIS experts

- *A CRIS system should be accompanied by an **ethics committee**.*
- *The members of our **research ethics committee**, for instance, they will know much better, but they are not typically part of the present information management.*
- *It would be really useful if the **ethics experts** could be involved in this. It's probably a requirement actually but it's not an easy conversation to arrange.*

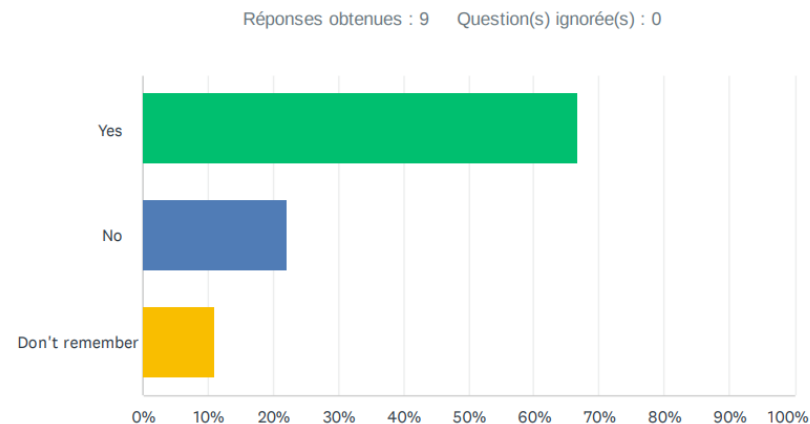
(4) Ethics and CRIS

Survey with ethics experts

Partial involvement and total interest

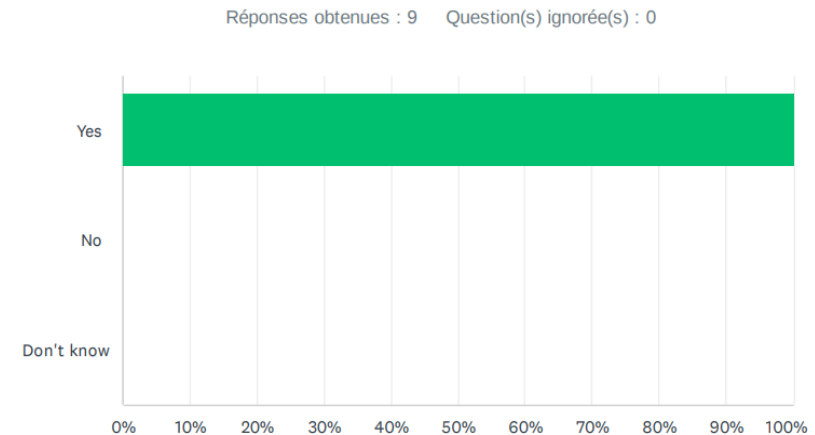
Involvement

Q2 Do you remember if other ethics experts or ethics committees have been involved in research information management or in the design and/or implementation of such modules?



Usefulness

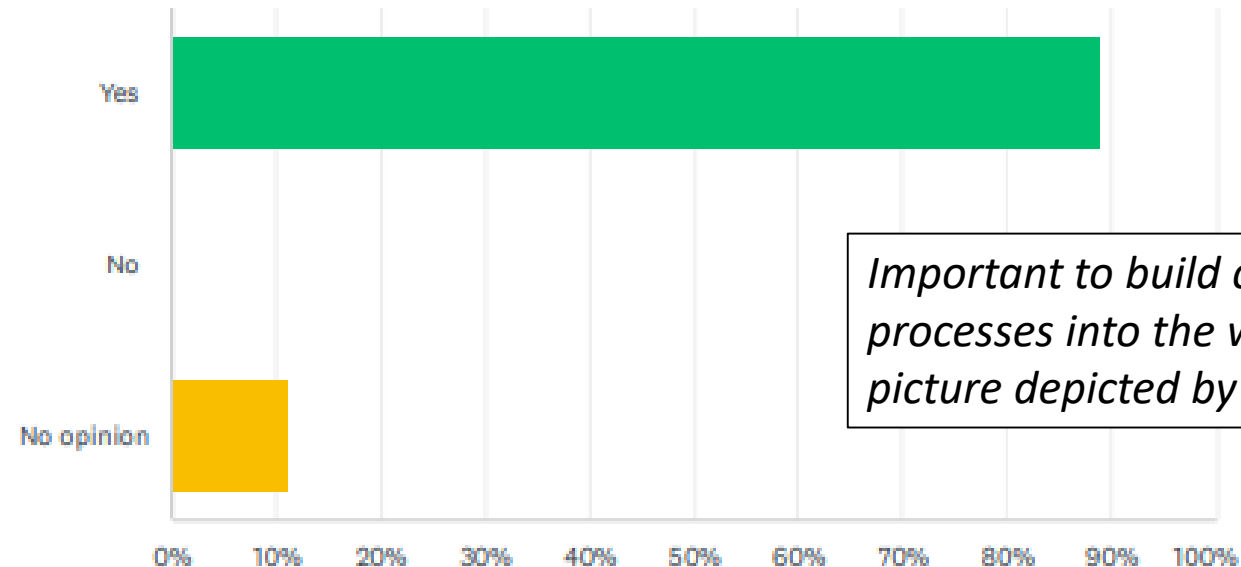
Q3 Do you think that research information systems could be useful for the work of ethics committees?



Future implication of ethics committees

Q11 Do you think that ethics committees should be associated to the implementation and the management of research information management systems?

Réponses obtenues : 9 Question(s) ignorée(s) : 0



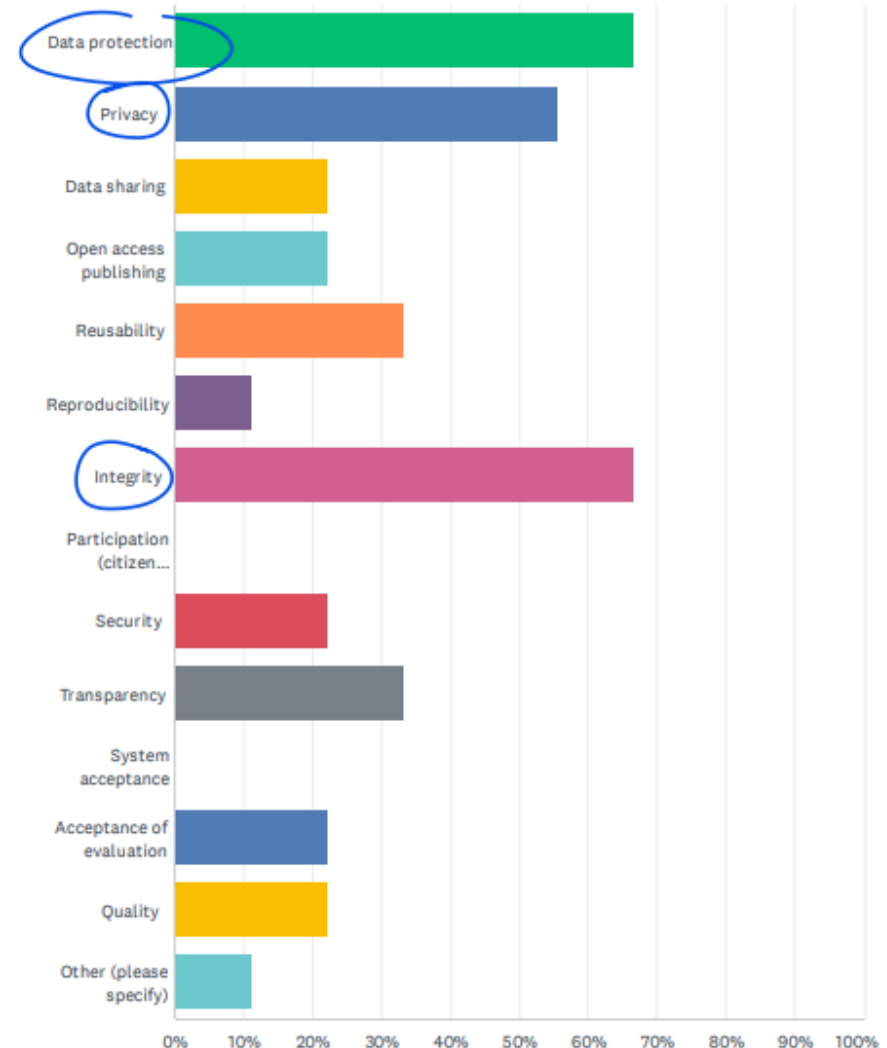
Important to build consideration of ethical review processes into the wider research management picture depicted by information systems.

Key topics for CRIS

- Integrity
- Data protection
- Privacy
- *All of these have significant ethical dimensions, even if not surfaced as such in formal ethical review*

Q5 From an ethical viewpoint, which are for you the key topics for research information management systems?

Réponses obtenues : 9 Question(s) ignorée(s) : 0



Level and quality of metrics

Institutional rather than individual

- *Processes for ethical review should be audited as part of ensuring that institutions are meeting responsibilities for assuring research integrity*

Metrics

- *I don't believe that "numbers" are the right criteria. It is most the quality of the job that matters, e.g. how and to whom the training sessions are proposed, who gives them; do the ethics committees write reports that are available to everybody in the organization; are there seminars about scientific integrity; does the organization change things in order to favour scientific integrity (e.g., stop evaluating researchers with "numbers" of publications, reports, etc.)*

Transparency

Reporting

- *Transparent reporting of the ethical review processes and the amount of actions actually undertaken as dictated by these processes - openly reported for any interested party (research funders, potential research participants etc)*

Monitoring

- *Monitoring and managing flows of work for ethical reviewers - this kind of work needs to be transparently recorded and acknowledged. Monitoring completion of ethical review for all research projects.*

(5) Both sides now

Towards ethical CRIS – a proposal*

A CRIS should be considered as ethical if and insofar it is

- beneficial to, and respectful of, people and the environment;
- robust and secure;
- respectful of human values;
- fair; and
- explainable, accountable and understandable.

* Based on Morley, J. et al. (2020). From What to How: An Initial Review of Publicly Available AI Ethics Tools, Methods and Research to Translate Principles into Practices. *Science and Engineering Ethics*, 26(4), 2141–2168.
<https://doi.org/10.1007/s11948-019-00165-5>

Further research – three levels

- **Research & development of CRIS**

- involvement of ethics committees from the beginning on;
- data model;
- respect of open science principles - transparency, openness, integrity, transformation of research evaluation (eg, San Francisco declaration on research assessment DORA)

- **Use of CRIS**

- use cases;
- all stakeholders;
- control and restriction of use;
- respect of privacy

- **Governance of CRIS**

- openness and transparency;
- respect of all communities;
- sustainability;
- risk assessment

Potential role of euroCRIS

- Further work and discussion is required to define in an operational way and with practical use cases the application of these principles to the R&D, the use and the governance of CRIS
 - Establishing the link with the ethics committees and experts
 - Reducing the gap between principles and practice
- euroCRIS appears to be an appropriate forum for this work and discussion, as it brings together system developers and editors, project and system managers and users



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Thank you

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