Beyond One Million Genomes

POLICY DOCUMENT

B1MG WP2 - Recommendation of minimal standards for feedback provision of results of research studies conducted with data provided through 1+MG to data subjects

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Susanne Rebers on behalf of B1MG WP2
Contact: S.Rebers@nki.nl

Executive summary

This policy recommendation covers general feedback of the results of research studies conducted with data provided through 1+MG to data subjects.

The 1+MG policy covers:

- what information should and should not (necessarily) be shared with data subjects (and potentially other people interested in 1+MG);
- how this information should be shared (e.g. through which medium and in which language(s)).

The 1+MG policy only applies to analyses conducted in the context of 1+MG data sharing. Data uses addressed in the primary data collection context should be covered by local policies.

In an analysis of current guidelines and best practices, we identified three important principles to provide feedback of general research results to data subjects: transparency, accountability, and the fair distribution of benefits. Providing feedback towards data subjects about general research results contributes to transparency, and as a result, accountability, about conducted studies with health data. Factors that contribute to the need for transparency and accountability, both towards data subjects and the general public, are the use of public funding to set up the infrastructure, collect the data, and conduct the studies, and the fact that in observational research, it is often difficult to provide a detailed account of the exact studies that will be conducted with the data at the moment the data subject is informed about participation. In the long run, providing feedback may add to the (prolonged) trust of data subjects and the broader society in 1+MG and health research in general. The third principle, fair distribution of benefits from the data infrastructure, should not only be seen as the fair distribution of the resulting clinical progress, but also as the fair distribution of knowledge gained from the use of data. Sharing general research results adds to this knowledge sharing.

Based on these three principles, a recommendation to provide feedback of general research results to data subjects is set up. Other considerations are taken into account when determining how to provide this feedback. In the 1+MG federated infrastructure, the responsibility to engage with data subjects lies with the signatories. It is therefore presumed that feedback is organized by the national nodes. Practical issues, such as restricted time and expertise available to develop information that is clear to data subjects, are taken into account. Below we summarize the recommendations and provide a short list of best practices.

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Recommendations (summarized)

1: Provide a complete list of scientific publications using the 1+MG infrastructure. In order to facilitate the completion of this list, it is recommended to require data users to acknowledge 1+MG in the acknowledgements of each scientific publication, and requiring them to use a standardized sentence and/or a 1+MG study number. This requirement should be agreed upon in the Data Transfer Agreement. 1+MG personnel can then easily search catalogues of scientific publications (e.g. Pubmed.gov) for papers using the 1+MG infrastructure. It may be decided that the central 1+MG organization takes over this search to increase efficiency to the benefit of all national nodes.

2: Provide examples of completed studies and their research results on the 1+MG website. A science communication expert should be involved in the development of the examples and provide advice on the best format to provide each example (e.g. written text, movies, etc.) to ensure the examples will be understandable for most data subjects.If the studied population is expected to have special communication needs (e.g. a visual or mental impairedness), these should be taken into account. Examples should be offered in at least the official language of the member state from which data subjects were included in the study (i.e. the national node).

We also recommend 1+MG to follow as many of the best practices outlined below as feasible:

- 1+MG may allow data subjects or other interested people to subscribe to a yearly newsletter. This (e-mail) newsletter, offered in all official EU languages, could contain a hyperlink to the list of publications, the examples of completed research studies, and potentially also request for (further) participation in 1+MG.
- 1+MG may request a participant panel to offer (binding) advice about which research studies should be converted into an example on the website. The participant panel may be asked to ensure all relevant types and the whole width of research studies are covered.
- 1+MG may use social media (e.g. Facebook, Instagram or Twitter) to inform the public about new examples of completed research studies on the website. When determining which social media should be used, available resources and the target audience(s) should be taken into account.
- Use best practice examples, such as the Cochrane plain language summaries guidance[1], to write clear text about examples of studies.

[1] https://training.cochrane.org/handbook/current/chapter-iii#section-iii-4

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Scope

The B1MG ELSI WG makes the following recommendations with regard to the scope of the 1+MG Policy.

The policy recommendation covers general feedback of the results of research studies conducted with data provided through 1+MG to data subjects.

The 1+MG policy should cover:

- what information should and should not (necessarily) be shared with data subjects (and potentially other people interested in 1+MG);
- how this information should be shared (e.g. through which medium and in which language(s)).

The 1+MG policy should only apply to analyses conducted in the context of 1+MG data sharing. Data uses addressed in the primary data collection context should be covered by local policies.

Other forms of transparency not covered by this policy recommendation

Besides the reporting of general research results to data subjects, other forms or types of transparency are common when conducting scientific research. These are not covered by this policy recommendation. These excluded types of transparency include:

- Any potential periodical communication about the data subject's continued (passive) participation in 1+MG.
- Any potential periodical communication about the data subject's continued active participation in 1+MG, e.g. in the form of 'dynamic consent'.
- Legal requirements on transparency and communication, based in the GDPR articles 13, 14, and 15. These describe the exercise of individual rights to access (health) information. Individual access rights are addressed in other deliverables as part of the 1+MG ethical and legal data governance framework.
- Communication towards data providers, e.g. to enrich the original database with additional analyses results.

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- Publication requirements (most notably scientific publications in peer-reviewed, scientific (open access) journals) that might be part of the requirements for researchers to access data from 1+MG.

Transparency on health care use of 1+MG data

Many of the principles underlying the argument for feedback of research results may also be applied to an argument for feedback of the results of health care use of data retrieved from 1+MG. However, there are two reasons why health care use is taken out of the scope of this policy recommendation. First of all, it is not reasonable to request data users for health care, who usually only request the data of one data subject or a small set of data subjects, usually for an exploratory examination, to spend the time needed to e.g. write a clear abstract of their data use for laymen. Secondly, and perhaps more importantly, since data use in health care will be focused on very small groups of data subjects, or even individual data subjects, the chance that an individual will be identified through open communication about data use is high. To prevent individual data subjects from being recognized, it is recommended that requesting feedback to data subjects about the results of data use in health care is generally prevented. This of course does not preclude providing a few examples of health care data uses, for instance in the form of an article or interview with a physician, provided the data subjects provided informed consent for this.

Context

Transparency and accountability

Feedback of general research results contributes to transparency and accountability (see background). Data subjects value this feedback as a form of reciprocity for their contribution. Moreover, data subjects may have an interest in learning more about conducted research studies, and their general results. From the point of view of the general population, transparency, accountability, and reciprocity might also play a role. These norms are for these stakeholders however not relevant based on their data contribution, but on the contribution of public resources on the 1+MG infrastructure and publicly funded studies using this infrastructure.

Feedback of general research results may also increase the trust of data subjects and potential future data subjects in 1+MG. It may contribute to the continued participation of data subjects, especially when they are requested to provide longitudinal data. It may also contribute to the future participation of newly recruited data subjects.

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How to provide feedback

The background review highlights several potential media to provide data subjects with general research results:

- Online list of all publications based on the infrastructure;
- More extensive descriptions of a selection of studies in a clear language. Sometimes includes an interview with a researcher;
- Overview of current studies including a short abstract;
- Newsletter;
- Press statements;
- Social media news items;
- Participant events for a selection of data subjects. Videos of presentations may be shared online afterwards.

In choosing the right medium (or media) to inform data subjects about general research results, accessibility should be an important starting point. Most of the media summed above can be accessible in principle, with an important exception being the online list of all publications. While a list of all publications may be the easiest way to provide a complete overview of conducted research, scientific publications are not written in an understandable way for most data subjects. They are full of jargon and technical terms, and are written for a public with a specific professional background. Yet, for part of the data subjects, scientific publications may provide an added value.

Many media are internet-based. The large majority of households in the EU has an internet connection[2]. When choosing an internet-based medium for the feedback of general research results, it should be taken into account however that the feedback might not be accessible to a small part of data subjects.

The EU has 24 official languages. When providing feedback of general research results, given the same amount of resources, the most optimal trade-off between the amount of studies data subjects are informed about and the number of people that can understand the information should be chosen.

The provided options through which general research results can be fed back differ in whether they are offered directly to the data subject upon request (e.g. a newsletter) or whether the data subject should take action in order to see whether new information is available (e.g. website). If offering directly to the data subject is feasible, this might offer heightened transparency.

Who should provide the feedback?

Researchers can be expected to contribute to the provision of general research results. They are the experts on the conducted studies. Therefore, even if they are not requested to e.g. write an abstract for laymen, they should at least check the information for accuracy.

[2] Digital economy and society statistics - households and individuals - Statistics Explained (europa.eu)

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It is important to realise that writing information suitable for laymen is a more difficult task than it appears at first glance. Although researchers are experts in their field and most knowledgeable about the conducted research project, this does not necessarily mean that they are best able to communicate the general research results to data subjects. A science communication expert might find the words and means to communicate complex research results more easily than a scientist.

How much to communicate?

Transparency and accountability are two important norms to determine the importance of providing feedback of general research results. In order to be fully transparent, it could be argued that all completed studies should provide research results to data subjects. However, it is most likely that resources prohibit turning all studies' results into accessible formats.

Offering the research results of a selection of the completed studies might be less transparent about the extent of all research studies, but might be equally transparent about the types and width of research studies conducted using the 1+MG infrastructure as providing a complete overview. Care should be taken to ensure that the breadth of research topics and techniques is covered, to ensure data subjects know the types of studies that are (potentially) conducted with their data. If 1+MG will set up a participant panel, this panel might play a role in determining whether all relevant types and the whole width of research studies are covered.

An advantage of offering feedback of research results of only a selection of research studies is that the studies that will be discussed can be offered in more detail, potentially also using media that are more labor intensive to develop (e.g. movies), but that offer more clear information to more data subjects.

Who should be responsible?

In the 1+MG federated infrastructure, the responsibility to engage with data subjects lies with the signatories. Feedback of general research results should therefore be organized by the national nodes. An additional advantage of organizing feedback on this level, is that specific viewpoints of each country of what information is necessary or essential to share can be taken into account.

To ensure the most efficient use of public funds, national nodes might of course decide to cooperate in sharing general research results.

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Policy recommendations for 1+MG

We recommend 1+MG to adopt the following minimal requirements regarding feedback of general research results to data subjects:

1: Provide a complete list of scientific publications using the 1+MG infrastructure. In order to facilitate the completion of this list, it is recommended to require data users to acknowledge 1+MG in the acknowledgements of each scientific publication, and requiring them to use a standardized sentence and/or a 1+MG study number. This requirement should be agreed upon in the Data Transfer Agreement. 1+MG personnel can then easily search catalogues of scientific publications (e.g. Pubmed.gov) for papers using the 1+MG infrastructure. It may be decided that the central 1+MG organization takes over this search to increase efficiency to the benefit of all national nodes.

Advantages: 1+MG offers full transparency of all conducted studies using the 1+MG infrastructure to its data subjects with minimal efforts. This list may provide further benefits if it can be linked with data subject identifiers and used to facilitate data subjects' right to be informed about the use of their data.

Disadvantages: Scientific publications may only be understood by a selection of data subjects.

2: Provide examples of completed studies and their research results on the 1+MG website. A science communication expert should be involved in the development of the examples and provide advice on the best format to provide each example (e.g. written text, movies, etc.) to ensure the examples will be understandable for most data subjects. If the studied population is expected to have special communication needs (e.g. a visual or mental impairedness), these should be taken into account. Examples should be offered in at least the official language of the member state from which data subjects were included in the study (i.e. the national node).

Advantages: Offering these examples provides optimal transparency and accountability towards data subjects and takes into account their communication needs.

Disadvantages: The proposed minimal requirement is labor intensive, both because of the extensive process to develop the right text and format, and because each national node will be responsible to provide feedback about general research results to their data subjects and/or citizens. National nodes may decide to cooperate to increase efficiency.

We also recommend 1+MG to follow as many of the best practices outlined below as feasible:

- 1+MG may allow data subjects or other interested people to subscribe to a yearly newsletter. This (e-mail) newsletter, offered in all official EU languages, could contain a hyperlink to the list of publications, the examples of completed research studies, and potentially also request for (further) participation in 1+MG.

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- 1+MG may request a participant panel to offer (binding) advice about which research studies should be converted into an example on the website. The participant panel may be asked to ensure all relevant types and the whole width of research studies are covered.
- 1+MG may use social media (e.g. Facebook, Instagram or Twitter) to inform the public about new examples of completed research studies on the website. When determining which social media should be used, available resources and the target audience(s) should be taken into account.
- Use best practice examples, such as the Cochrane plain language summaries guidance[3], to write clear text about examples of studies.

Background

Methods

WP2 of B1MG has developed and maintains a living inventory of existing guidelines relevant for the ethical and legal governance of a data sharing initiative. The guidelines in the inventory were reviewed to identify recommendations concerning the feedback of general research results. The inventory includes guidelines, policies, recommendations, including those published in academic journals. Existing policies were reviewed and interpreted for application in a large-scale pan-European genomic data sharing initiative.

Further, the websites of a random selection of larger current biobanks and research databases were searched for examples of feedback of general research results in practice.

Results

Recommendations from existing guidelines can be separated into two categories: general principles, norms and values that are related to the feedback of results to data subjects, and direct recommendations about feedback of results to data subjects.

[3] https://training.cochrane.org/handbook/current/chapter-iii#section-iii-4

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General principles

Many guidelines indicate the norms or core principles on which their recommendations are based. Identified principles that are related to the issue of feedback to data subjects are transparency, accountability, and the fair sharing or distribution of benefits.

Many guidelines and recommendations, even if they don't specifically mention whether or how to give feedback about general research results to data subjects, argue that genomics research should always be conducted transparently (WMA 2002, revision 2016, Ministers. 2006, GA4GH 2014, BBMRI-ERIC 2015, Alliance 2019), either towards data subjects or towards 'the public' as a whole. The OECD refers to 'openness' as an important principle, and as a prerequisite for participation (OECD 2013). Importantly, the OECD here refers to several different types of transparency, most of which are meant to provide information before a data subject provides informed consent. However, especially for data subjects who sign informed consent after the first research results of 1+MG have been published, might get an indication of the type of research conducted using data from 1+MG.

Another core element mentioned by more than one guideline is accountability (Ministers. 2006, Alliance 2019). Sharing information about conducted research with data subjects and/or the public can add to the accountability of 1+MG to EU citizens, which is especially relevant in initiatives funded by public means.

The third principle is the fair distribution of benefits. This was for instance a foundational principle of the Australian Genomics Health Alliance (2019). Additionally, the Human Genome Organization (HUGO) International stresses that '*Human genomic databases are a public resource'* and therefore, that *'All humans should share in and have access to the benefits of databases'* (Organization 2002) . This benefit sharing is also stressed in the Universal Declaration on Bioethics and Human Rights by UNESCO (UNESCO 2005). This Declaration makes it clear that by 'benefits' one should not only think about access to care (e.g. new diagnostic tools or treatments), but also '*access to scientific and technological knowledge'*. This benefit sharing is probably related to another aim of the Australian Genomics Health Alliance (2019), which is the aims to foster trust, integrity and reciprocity. BBMRI-ERIC (BBMRI-ERIC 2015) also stresses the importance of reciprocity: *'Stewardship also implies giving something back*'.

All in all, these principles set a stage in which transparency, openness and accountability are highly valued. Moreover, value is seen in returning some of the benefits, including gained knowledge, of a genomic database to either data subjects and/or a broader population.

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Direct recommendations

Besides relevant principles, many guidelines give direct recommendations on giving feedback about conducted research to data subjects.

Guidelines consistently recommend to provide feedback of research results to data subjects (Committee 2000, Europe 2005, Ministers. 2006, BBMRI-ERIC 2015), while one provides such feedback as an option (OECD 2009).

The guidelines also offer some guidance on how to offer this feedback. Importantly, only generalized results should be offered, data subjects should never be identifiable in this type of feedback (Ministers. 2006). None of the guidelines indicate feedback should be given actively, i.e. by actively approaching data subjects. Rather, information should be given on request (Europe 2005). The form in which the information is presented should be easily accessible. Examples given are newsletters (Ministers. 2006, OECD 2009) or websites (OECD 2009). However, sometimes specific groups might require other means, such as paper or video (OECD 2009). Personal contact is seen as either impractical (Ministers. 2006) or even potentially '*unduly burdensome*' (OECD 2009). When providing feedback, language issues or data subjects should be taken into account. The language should be understandable (Committee 2000), and sometimes translation in another language or for instance Braille for the visually impaired should be considered (OECD 2009).

Examples / best practices

Current biobanks and research databases with health data provide some examples of how feedback on research results can be given to data subjects. A random selection of mostly larger research infrastructures provides a multitude of possible methods. An online list of all publications is published by Finngen[4], Lifelines[5], the Cancer Genome Atlas Program (TCGA)[6], and the Canadian Partnership for Tomorrow's Health (CanPath)[7]. A selection of finished studies and their results, written in clear language that is suitable for a broader audience, is given by Finngen, Hebon[8], and Lifelines. In some cases e.g. interviews with the researcher(s) are included. Biobank Graz[9] provides an overview of current (COVID-19) studies, including a short abstract. Lifelines provides an overview of all studies, both aimed at informing the participants and providing researchers the possibility to search for studies with an overlap in aims with their own study. The UK Biobank[10], Hebon, and Lifelines provide participants the opportunity to subscribe to a newsletter, which is sent regularly to inform interested data subjects. Lifelines sometimes shares research results through press

[4] www.finngen.fi
[5] www.lifelines.nl
[6] https://www.cancer.gov/about-nci/organization/ccg/research/structural-genomics/tcga
[7] www.canpath.ca, only offers part of the publications using their data on their website
[8] www.hebon.nl
[9] www.biobank.medunigraz.at
[10] www.ukbiobank.ac.uk

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statements or social media. The UK Biobank moreover offers two ways to interact with their data subjects. They invite participants to ‘participant events’ regularly. These are meant for a selection of participants, but video’s of some of the presentations are offered on YouTube as well. Further, they communicate with participants (and potentially a broader audience) through Twitter.

Sharing of research results by researchers is sometimes, for instance in Lifelines, agreed upon by the researchers through the MDTA.

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