Guidance on implementing the principles of peer review

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Principles of peer review

Peer review is the best way for health and medical research charities to decide what research to fund. Done properly, peer review allows charities to support the best research and the best researchers. This, in turn, can help charities maximise the impact of their funding and deliver changes that really matter to their supporters and stakeholders, so that patients benefit from the fruits of research.

External organisations look upon AMRC membership as a hallmark of quality in research funding. This is vital – it sets AMRC members apart from others in the field but it comes with the responsibility to make sure peer review is carried out to high standards. We check members' peer review processes when they join AMRC and subsequently every five years through an audit. This guidance has incorporated the findings from the last audit in 2015.

How AMRC members fund research

AMRC members undertake peer review according to our five principles of peer review: **accountability, balance, independence, rotation** and **impartiality**.

The specific peer review processes will differ from one charity to another, depending on the size of the charity, its structure, the degree of in-house expertise, the grant and the funding mechanism. However, all charities seek external expert review. This can be through written peer review, through a committee of external experts, or, most commonly, through a combination of the two. There may also be additional steps used by some AMRC members, as described below:

1. Internal triage: the charity checks eligibility of the research applications to ensure they are within scope. Some organisations assess the basic quality of research at this stage - this is done by experts.
2. Written peer review: experts from around the world provide written comments on the research application. The number of written reviews needs to be proportionate to both the size and the materiality of the award. Where substantial funding is being applied for (in relation to the charity's research spend), AMRC members generally require at least two written reviews. Smaller grants may not require this unless the charity deems it necessary to make an informed decision. Very large grants routinely require more than two written reviews. See Case Studies 1 and 2 for further information.
3. Research review committee (sometimes called a research advisory panel, scientific advisory committee, grants committee, research awards panel etc): made up of independent experts, the committee meets on behalf of the charity to discuss each application and the written peer review comments. The research review committee makes independent and impartial funding recommendations to the charity.
4. Trustees: make the final decision on whether the charity should award funding to the research application. Sometimes this decision making is delegated back to other groups but trustees are kept informed of the research review committee's activity.

Guided by findings from the 2015 peer review audit, we have revised the guidance around how AMRC members should enact our principles of peer review. The following document describes each principle in turn, and outlines the standards to which all AMRC member charities operate.

Definition of terms

In each principle, we have outlined the 'must' and 'should' criteria.

Where we say:

All AMRC members **must**: this is mandatory for AMRC membership.

All AMRC members **should**: this is good practice that we encourage members to adopt or work towards but it is not mandatory for membership.

If members have any queries on applying this guidance, please contact us to discuss this further.

Additional guidance and resources are available on the AMRC website www.amrc.org.uk/our-work/peer-review

Principle 1 - Accountability

Accountability: charities are open and transparent about their peer review procedures and publish details online, including the names of the members of research review committee or other decision-making bodies.

Accountability ensures charities are open and transparent about how they fund research.

All AMRC members must:

- Publish a research strategy and information explaining what type of research the charity funds online. A charity's research strategy must be accessible to researchers, the public and other external audiences.
- Publish peer review processes online. A charity must describe the peer review process so that external audiences can see the rigorous methods used to make research funding decisions. Where triage is used, the criteria for making triage decisions must be clear and accessible.
- Publish the names of the members of the research review committee(s) online to increase transparency and demonstrate a commitment to sourcing the appropriate research expertise to inform decision making.
- Where appropriate, consider the replacement, refinement and reduction (the 3Rs) of animals in research applications. Charities must ensure external reviewers are aware of the 3Rs and have suitable resources to consider them. Applications must be referred to the National Centre for the 3Rs where appropriate (e.g. for higher species - see Case Study 3).

AMRC members should:

- Update the research strategy regularly (i.e. when it is over five years old) to keep it accurate and up-to-date with research progress in their research field(s).
- Publish details about funding opportunities widely in order to reach potential applicants from all relevant fields.
- Publish success rates of eligible applications in grant rounds (where applicable). This helps to manage expectations of potential applicants and demonstrate that awards are made in open competition.
- Publish information on research that has been funded by the charity so that external audiences can see what research the charity supports.
- Provide feedback to applicants (successful and unsuccessful) where appropriate to help them to improve future applications.
- Assess ongoing grants through regular reviews.

Principle 2 – Independence

Independence: the research review committee is independent of the charity's administrative staff and trustees.

Charities ensure they take account of advice provided by experts who are independent of the charity. The research review committee provides this independent expertise. Trustees can sometimes sit on a research review committee as long as this is because of the expertise they bring.

All AMRC members must:

- Have a research review committee including external experts that provides the charity with advice and recommendations on what research might be funded.
- Ensure that triage processes (where in use) are undertaken by those with appropriate expertise. Where triage is based on eligibility, strategic fit or completeness of an application, this may be undertaken by charity staff. Where triage is based on research quality, it should be undertaken by experts – via either as a specific triage panel or through members of the research review committee.
- Seek written review for applications where the support requested is substantial in relation to the charity's research spend, or where there is a lack of expertise on a particular subject area on the research review committee. The number of written reviews needs to be proportionate to both the size and the materiality of the award. Where substantial funding is being applied for (in relation to the charity's research spend), AMRC members require at least two written reviews. Smaller grants may not require this, unless the charity deems it necessary to make an informed decision. Very large grants routinely require more than two written reviews. See Case Studies 1 and 2 for further information.
- Have clear routes of communication between the charity's trustees and the research review committee.
- Not have an over-representation of trustees on the research review committee. AMRC members generally do not have more than two trustees serving on the committee, unless there are strong reasons for having more. In such cases, charities should contact AMRC to discuss this.

AMRC members should:

- Have terms of reference for the research review committee that clearly outlines its roles and responsibilities.
- Have a quorum for research review committee meetings of at least three, or, ensure more than 50% of the committee are present (whichever figure is higher). For decisions made out of cycle (i.e. annual reviews assessed outside of research review committee meetings), a quorum of three should be adhered to. Above all, the charity should ensure that they have a sufficient range of expertise to be able to make informed funding recommendations.
- Ensure trustees are aware of the funding recommendations made by the research review committee(s) as well as its membership. This could be as simple as a paper presented at a trustee meeting outlining the funding recommendations made by the research review committee.
- Invite the chair of the research review committee to attend trustee meetings to report on the activity of the panel. In some cases, this is not appropriate or feasible and the role may be undertaken by senior charity staff.
- Avoid having a trustee of the charity chairing the research review committee. This can create a situation where the chair may wield undue influence over the decision making and therefore lacks independence. Where charities do have trustees that chair the research review committee, they should contact AMRC to discuss this.

Principle 3 - Balance

Balance: the research review committee reflects a fair balance of experience and research disciplines.

In demonstrating the principle of balance, the charity ensures the research review committee appropriately reflects the views from stakeholders that are active in the field.

All AMRC members must:

- Ensure the research review committee is balanced appropriately. This is normally in terms of expertise, experience, location, age, gender and ethnicity. Experts do not necessarily mean academics – patients, regulators, industry and other representatives are also expert and so should be considered where appropriate.
- Consider membership of the research review committee with respect to the charity's remit and range of disciplines being considered. See Case Study 4 for further information.
- Ensure the process for assigning reviewers is fair and reflects the expertise required to evaluate the applications appropriately.
- Use a variety of methods to select written reviewers and research review committee members so that charities do not rely on a single person or small group of people to provide reviews.

AMRC members should:

- Ensure the research review committee is composed of at least five members unless there are strong reasons for having fewer. In such cases, charities should contact AMRC to discuss this.
- Consider inviting experts from neighbouring fields if the pool of experts available is small or heavily conflicted.
- Consider the best way of incorporating lay reviews in the peer review process, where appropriate.

Principle 4 - Rotation

Rotation: members of the research review committee have a fixed term of office.

Rotation ensures the charity has the capacity to bring fresh ideas and new thinking into the peer review processes. This allows the charity to seek the views from a range of individuals, including those who may not have been represented otherwise. It also allows the charity to change the membership of its research review committee as appropriate to meet their research strategy.

All AMRC members must:

- Have a fixed term of office for members of the research review committee. Members (including the chair) may serve for no longer than six years before stepping down from the committee for at least three years.

AMRC members should:

- Stagger appointments to the research review committee to avoid instances where a large proportion of members step down at the same time.
- Have an induction process for new committee members, particularly for lay reviewers who may not have served on research review committees before.
- Ensure the fixed term of office is clearly communicated to all members when they join the committee, and as appropriate during their term.
- Set an initial term for the research review committee of three years, with the option of renewing for an additional three years.

Principle 5 - Impartiality

Impartiality: research review committees comprise a significant number of experts that are not in receipt of charity research funding. There is a conflict of interest policy and those with a conflict are not in a position to influence funding decisions.

Impartiality ensures the decision making process is fair. One of the criticisms of peer review is that it can be open to bias. It is therefore important that the experts that provide comments are impartial and give an honest reflection of the quality of the application without undue influence from other factors.

All AMRC members must:

- Have a conflict of interest policy, specific to research funding, which is adhered to. This policy must clearly articulate the type of conflicts that may arise in research funding and specify the actions that conflicted committee members should take.
- Ensure peer reviewers (written reviewers as well as committee members) have access to a copy of the conflict of interest policy before they agree to review a grant application.
- Ensure research review committee members are not present in the discussion or scoring of applications where they have a conflict of interest. This includes trustee members that sit on the committee.
- Where the chair of the committee is applying for funding from that same committee, they should absent themselves from the whole meeting and not appoint any written reviewers. This should be the case whenever funding is directly attributed to the chair regardless of the type of applicant they are listed as (e.g. lead or joint lead applicant, coinvestigator, collaborator etc.) In all applications where funding is linked to the chair, the committee vice-chair should take over the chair's responsibilities for that round.
- Should the chair have other conflicts of interest not related to funding (e.g. institutional, co-authorship, personal or professional relationships), they should declare these interest upfront and leave the room for the specific item(s) when they are discussed, as per the requirement for other committee members. The vice-chair should take over for these specific items.
- Avoid occurrences where a majority of the committee have received awards from that committee during their term of office. The charity needs to ensure the committee is not perceived as awarding grants biased towards its own members.
- Where research funding is awarded to trustees of the charity, this must be done according to the Charity Commission rules in Annex A, Conflicts of interest: a guide for charity trustees and the charity's governing document (e.g. articles of association) must allow this.

AMRC members should:

- Publish the conflict of interest policy online.
- Ensure research review committee members sign a copy of the conflict of interest policy when they join the committee, and either re-sign or, are reminded of this policy on an annual basis while they are active committee members. Some charities also ask committee members to make a written declaration of interest at least every 2 years during their term on the committee.
- Difficulties can arise in small research fields where the range of expertise is limited and the community is more closely connected. In these circumstances, the nature of conflicts of interest can be different. AMRC members should consult the chair of the research review committee where ambiguity exists and source reviewers in neighbouring fields where possible.

Charities that fund in single institute: charities carry out a review of work that has been undertaken every three to five year intervals.

Peer review looks different in charities that fund in a single institute. In such cases, charities have a long term and closer relationship to the grant holders and the work undertaken. It is therefore important that an additional long term review is carried out to assess the work undertaken over a three to five year period. This type of funding cannot be reviewed in the same way as a traditional project grant – often funding supports multiple research projects and its impact is longer term and more cumulative. But charities still need to determine the ‘value’ of such awards to determine whether they are meeting their research strategy.

All AMRC members that fund in a single institute must:

- Have a research review committee made up of experts not connected to the programme of work being assessed. The committee normally has at least three members and operates separately to other research review committees the charity may operate (although a small proportion of members may overlap).
- The committee must undertake a regular (i.e. every three to five years) review of the long-term funding at the institute, assessing the quality, strategy and direction of the research. This will normally involve a site visit and an interview with the institute director and senior staff.
- Ensure the process for reviewing the institute is transparent and the timeframes are made clear to the relevant parties well in advance.
- Ensure the findings of the review are fed back to the institute in an accurate and timely manner.
- Have systems to ensure that the findings and recommendations are checked and have been acted upon.
- Have procedures for managing negative reviews, including potential disinvestment of funding, should it be recommended.
- Request regular progress reports from the institute every one to two years. These should be reviewed by the research review committee.

AMRC members that fund in a single institute should:

- Make sure the review process is transparent to the public, researchers and the reviewers.
- Provide notice and agree timescales with researchers as to when the review will take place. AMRC recommends planning should start at least a year before the review is due.
- When undertaking the review, the charity should request at least five written reviews to supplement the committee decision making.

Appendix 1: Written review of grant funding applications

AMRC members seek written review where it is necessary to fully consider a research funding application. The manner in which this is done can differ depending on the size of the charity, the size of the award and the type of research being proposed. We recommend each charity assesses the suitability of written review for its funding portfolio. Written review may not be appropriate or feasible for smaller awards – such as travel grants, seed funding and PhD studentships – particularly when considered in the light of a charity's overall research spend. But where the support requested is substantial (in relation to a charity's research spend), and where the research review committee does not have the expertise to assess a research application fully, we do recommend its use. The following case studies describe how some organisations conduct peer review, including written review.

Case Study 1: Cancer Research UK – use of written review and expert review panels

Cancer Research UK recently introduced a new step into its peer review process for some of its funding streams in order to assess both the scientific quality and strategic fit of research applications. This is something that is particularly important for larger funders where it can be more difficult to ensure the research they support across multiple funding streams is in line with their research strategies. The majority of response mode applications now go through a three step process:

1. External written reviewers are invited to comment on applications. Experts are carefully selected based on their area of interest, expertise, publication record and avoidance of conflicts of interest.
2. An expert review panel meets to assess the quality of research applications, taking into account the written reviews. This panel is tasked with assessing the quality of the science.
3. Informed by the expert review panel, the funding committee, which generally have a broad remit (i.e. clinical research) assesses the strategic fit of the research applications and make funding recommendations.

There is some degree of cross-membership of the expert review panel and the funding committee, but their roles and terms of reference are distinct and this allows the charity to be more selective over the research it supports.

Case Study 2: Tuberous Sclerosis Association – written review

The Tuberous Sclerosis Association assesses research funding applications using a two-step peer review approach. Grants applications are externally reviewed by at least two experts that provide written comments on the quality of the science, the potential impact of the project, the value for money and the appropriateness and track record of the applicant. The applications, along with written comments are subsequently assessed by a research review committee.

For smaller awards (currently those where the request is under £27,000 p.a.), the charity does not seek written review. The time, resource and burden on the research community is too high for such awards, and the overall benefit that written review would bring is considered too low to warrant such an approach. In these cases, the research review committee can sufficiently assess the funding application and make an appropriate recommendation.

Appendix 2: Peer review of grant applications involving animals

AMRC members that fund animal research assess the 3Rs – the replacement, refinement and reduction of animals in research – during the peer review process. For applications that involve higher species (non-human primates, cats, dogs and equines), all members are required to contact the NC3Rs for additional peer review. Further information is available at http://www.amrc.org.uk/our-work/animal-research/amrc-policies-on-animal-research; the following case study describes this approach.

Case Study 3: Wellcome Trust and NC3Rs – peer review of grant applications involving animals of higher species

The Wellcome Trust funds over £700m of research across the biomedical sciences. A small proportion of the work it funds involves research using animals, of which an even smaller fraction involves the use of non-human primates, cats, dogs or horses. In recognition of particular public concern about the use of animals in research (in particular non-human primates, cats, dogs and equines), the NC3Rs works in partnership with Wellcome Trust, other AMRC members as well as non-charity funders to provide a 3Rs and animal welfare review of research proposals involving the use of these species. This review considers many issues including:

- the licences in place for the establishment, project and person (from the Home Office),
- the facilities and environment where the animals will be housed,
- the source of the animals and whether transportation is required,
- the nature of the study and scientific merit,
- the experimental procedures and how pain, distress and harm will be minimised,
- the training the researchers and associated staff will be given when working with these animals.

The results of both the scientific, 3Rs and animal welfare reviews are taken into account by the Wellcome Trust's research review committee members when making recommendations on research funding.

Appendix 3: Balance on the research review committee

All AMRC members ensure their research review committees are balanced. This can include elements such as expertise, experience, location (or institution), age, gender, ethnicity and any other factor relevant to an individual charity's circumstance. In addition, a balanced research review committee also needs to reflect the breadth of research funding applications being reviewed.

The following case study describes the approach from one member where a majority of research applications are in a similar disease area. This emphasises the need to take our principles of peer review in the context of an individual funder's circumstances.

Case Study 4: The Stroke Association – a balanced research review committee for a specific funding call

In a recent funding call, The stroke Association received fourteen grant applications, half of which were on the subject of aphasia and other communication difficulties. While recognising the need for a balanced research review committee, it was essential that its composition reflected the type and range of applications being reviewed. The committee consisted of seven members, four of which had expertise in aphasia. This was necessary to ensure the committee had the resources and depth of expertise to review the proposed research appropriately. It also avoided the potential over-burdening of members of the research review committee should there have been fewer with expertise in aphasia.