Research Assessment Exercise 2020
Panel 2 – Health Sciences
Panel-specific Guidelines on
Assessment Criteria and Working Methods
(September 2018)

Content:

Introduction

1. This document sets out the assessment criteria and working methods that the Health Sciences Panel of the Research Assessment Exercise (RAE) 2020 will apply. It should be read alongside the General Panel Guidelines of the exercise. The provisions set out in this document serve as further elaboration and amplification on the assessment criteria and working methods as applied to the Health Sciences Panel. In areas where no additional information has been specified, the provisions in the General Panel Guidelines will prevail and apply in the assessment process of the Panel. These guidelines do not replace or supersede the requirements for submissions that are set out in the Guidance Notes for the RAE 2020.

2. This document describes the criteria and methods for assessing submissions in the Health Sciences Panel. It provides guidance on the type of information required in the submissions. It also provides a single, consistent set of criteria that will be applied by the Panel and sub-group(s)/sub-panel(s), if any, when undertaking the assessment having regard to any differences in the nature of disciplines of respective units of assessment (UoAs) under purview. It also provides a common approach to the working methods applied within the Panel.

Section A: Submissions

UoAs under the Panel

3. The Health Sciences Panel will assess universities' submissions from the following UoAs –

Code	UoAs
3	clinical medicine
4	clinical dentistry
5	nursing, optometry, rehabilitation sciences and other health care professions
6	Chinese medicine

4. The Panel expects to receive submissions whose primary research focus falls within the full spectrum of the above UoAs.

Inter-disciplinary Research

5. The Panel also recognises that individual UoAs do not have firm or rigidly definable boundaries, and that certain aspects of research are naturally inter-disciplinary or span the boundaries between individual UoAs, whether within the Panel or across panels. The Panel will adopt the arrangements for assessing inter-disciplinary submissions as set out in paragraphs 39-40 of the General Panel Guidelines.

6. Areas of inter-disciplinary research that are relevant to the Panel include biochemistry, materials science and material technology, engineering, biology, mathematics and statistics, computer science and information technology and social sciences.

Assignment of Eligible Academic Staff in Each UoA

7. Pursuant to paragraphs 7-11 of the General Panel Guidelines, the Health Sciences Panel expects to receive information on any sub-discipline(s) under a research area that each eligible staff member and their respective research outputs belong to. With reference to the list of sub-disciplines below, it is permissible to add an additional sub-specialty descriptor of five words maximum for Clinical Medicine wherever it is appropriate (e.g. paediatrics (neonatal care), psychiatry (child and adolescent mental health), orthopaedics (traumatology)).

List of Sub-disciplines

Research Areas	Sub-disciplines
3a clinical medicine	3a-01 clinical pharmacology and anaesthesiology/critical care
	3a-02 cardiovascular disorders including stroke
	3a-03 clinical immunology
	3a-04 dermatology
	3a-05 endocrinology/diabetology
	3a-06 gastroenterology
	3a-07 gerontology
	3a-08 infectious diseases
	3a-09 neurology/neuroscience/ neurosurgery
	3a-10 respiratory medicine
	3a-11 ophthalmology
	3a-12 paediatrics
	3a-13 psychiatry/clinical psychology
	3a-14 reproductive and sexual health
	3a-15 pathology
	3a-16 thoracic and cardiac surgery
	3a-17 orthopaedics/emergencies
	3a-18 rheumatology
	3a-19 haematology
	3a-20 nephrology/urology
	3a-21 ear, nose and throat surgery
	3a-22 general surgery
	3a-23 general practice/family medicine
	3a-24 public health, epidemiology, health services research and occupational medicine
	3a-25 oncology
	3a-26 palliative and supportive care
	3a-27 imaging/radiology
4a clinical dentistry	4a-01 clinical dentistry
5a nursing	5a-01 nursing
5b other health care professions	5b-01 other health care professions
5c optometry	5c-01 optometry
5d rehabilitation sciences	5d-01 rehabilitation sciences
6a Chinese medicine	6a-01 Chinese medicine

8. It is critical that research outputs are assessed by the most appropriate panel. If a panel suspects any anomaly regarding universities' assignment of eligible academic staff (and therefore their outputs) to research area(s) and UoA(s) under its remit, it will follow the procedures for re-assignment of the eligible staff according to paragraphs 10-11 of the General Panel Guidelines. The Panel also recognises its responsibility to handle submissions arising from any re-assignment of eligible academic staff to the Panel.

University's Research Strategy Statement

9. Following paragraphs 2.16-2.18 and Appendix B of the Guidance Notes and paragraph 15 of the General Panel Guidelines, the Research Strategy Statement submitted by each university will provide contextual information for the Panel when assessing the submissions. These Statements will not be assessed, but may help the Panel to understand better the material that is presented in each submission, particularly insofar as UoAs refer to the overall position of their university. The Statements will also help the University Grants Committee (UGC) when viewing the quality profiles of the universities as a whole upon completion of the RAE 2020.

10. *(Template paragraph deleted)*

Section B: Assessment Criteria: Research Outputs

Output Types

11. The Health Sciences Panel will consider the eligibility of research outputs as described in paragraphs 16-18 of the General Panel Guidelines, paragraphs 5.7-5.11 and Appendix F of the Guidance Notes.

12. The Panel will assess the quality of each eligible output on its own merits and not in terms of its publication category, medium or language of publication. The Panel will examine each item in detail and will not assess outputs mechanistically according to the publication venue. The Panel recognises that there can be work of the highest quality in various output forms, and no distinction will be made between types of output submitted nor whether the output has been made available electronically or in a physical form.

13. Forms of research outputs that are admissible and specifically relevant to the Health Sciences Panel include the following examples. This

should not be regarded as an exhaustive list. Equally, there is no implication of priority or importance in the ordering of examples in this list –

- Published papers reporting new findings in peer-reviewed journals.
- Research monographs that have been peer reviewed and that report new findings.
- Review articles that incorporate a new meta-analysis or meta-ethnographic synthesis of research findings and/or articles based on systematic reviews such as those in the Cochrane review process. Other types of review article will only be considered as research if they clearly lead to novel and original insights and/or generate novel hypotheses. Editorials and "teaching" reviews will not normally be considered as research.
- Technical reports that have been published following peer review.
- Reports that have been peer reviewed describing computer software or new devices, products, processes.
- Published reports that have been subject to peer review describing patents.

14. Research outputs will be assessed for the quality of original research they include. Such outputs, including meta-analyses and similar outputs, will be judged only on their original research or novelty of insight.

15. The Panel will consider outputs that simply repeat previously published findings as "unclassified".

Double-weighting of Research Outputs

16. Paragraphs 29-31 of the General Panel Guidelines indicate that in exceptional cases a submitting university may request that outputs of extended scale and scope be double-weighted in the assessment. However, given the usual publication norms within Health Sciences, this Panel expects items proposed for double-weighting to be uncommon.

17. When requesting double-weighting of an output, universities should submit a statement in not more than 100 words, explaining in what ways the output is of sufficiently extended scale and scope to justify the

claim. The Panel expects that such outputs will have been peer reviewed and will agree to double weighting only where the output is clearly equivalent to at least two or more single outputs.

Co-authored/Co-produced Outputs

18. The Panel affirms the principles and arrangements on assessing co-authored/co-produced research outputs as set out in paragraphs 32-34 of the General Panel Guidelines.

19. The Panel will consider co-authorship to be a normal element of research activity in the Health Sciences and will assume all named co-authors to have made a significant contribution to the research process leading to the output concerned where there are six authors or fewer. In the case of outputs with more than six authors the Panel requests a statement of no more than 100 words confirming that the submitted author made a substantial contribution either to the conception and design of the study; or to the organisation of the conduct of the study; or to carrying out the study (including acquisition of study data); or to analysis and interpretation of study data *and* helped draft the output; or critique the output for important intellectual content.

Non-traditional Outputs

20. The Panel will handle research outputs in non-traditional form according to paragraphs 35-37 of the General Panel Guidelines. However, given the usual publication norms within Health Sciences, this Panel expects such outputs to be uncommon.

Criteria and Quality Levels for Assessing Research Outputs

21. Panel members will use their professional judgement with reference to international standards in assessing research outputs.

22. In assessing outputs, the Panel will look for evidence of originality, significance and rigour, and will grade each output into one of the five categories of quality level as set out in paragraph 19 of the General Panel Guidelines. The generic description of the quality levels as set out in paragraph 20 of the General Panel Guidelines will be applied in the Panel's assessment.

23. The Health Sciences Panel provides the following amplifications on the criteria of assessing research outputs –

- Originality: will be understood as the extent to which the output introduces a new way of thinking about a subject and/or provides new evidence about an existing question.
- Significance: will be understood as the extent to which the output has exerted, or has the potential to exert, an influence on the field of health sciences or of science more generally.
- Rigour: will be understood in terms of the intellectual precision, robustness and appropriateness of the concepts and methodologies deployed within the output.

24. In addition, the Panel provides the following advice on their understanding of the quality definitions adopted for assessing research outputs –

The Panel will take into consideration the following characteristics in particular –

- Scientific rigour and excellence with regard to the design, research method, execution and analysis of the work.
- Whether or not the output has been subject to peer-review (the Panel expects that outputs that have not been peer reviewed will be uncommon).
- Significant addition to knowledge and to the conceptual framework of the field.
- Potential and actual significance of the research both within and beyond the field of health and health care.
- The scale, challenge and logistical difficulty posed by the research.
- The logical coherence of argument.
- Contribution to theory-building.
- Significance of work to advance knowledge, skills, understanding and scholarship.

Metrics/Citation Data

25. Pursuant to paragraph 24 of the General Panel Guidelines, the Panel acknowledges that metrics and citation data may serve as advisory or secondary information, and that they should not be used in any algorithmic or deterministic way for the evaluation of research quality.

26. While the Health Science Panel will examine each output in detail for the assessment, the Panel may use metrics such as citation data to help inform its assessment of individual items. Such metrics will not be used in an algorithmic or deterministic way for the evaluation of research quality and the Panel is aware of the limitations of such data, in particular their variability within as well as between disciplines.

Additional Information on Research Outputs

27. Other than the information required on research outputs as specified in the Guidance Notes, and unless specifically required by the Panel during the assessment process, no other information should be provided, and the Panel will take no account of any such information if submitted.

Section C: Assessment Criteria: Research Impact

Range of Impacts

28. The Health Sciences Panel will accept submissions on research impacts that meet the generic definition and criteria as set out in paragraphs 47-48 of the General Panel Guidelines.

29. The Panel will assess the quality of all eligible impact submissions based on their merits on equal footing with no consideration given to the differences among submitting universities/units in terms of staff size, resources and histories. The Panel recognises that impacts within its remit can be manifested in various ways and may occur in a wide range of spheres whether locally, regionally or internationally and including, but not limited to, the many types of beneficiary (individuals, organisations, communities, regions and other entities) impacts on products, processes, behaviours, policies, practices, health outcomes and avoidance of harm or the waste of resources.

30. Examples are provided to illustrate the range of potential impacts from research across the Health Sciences Panel in Table A. These examples are indicative only, and are not exhaustive or exclusive. Equally, there is no implication of priority or importance in the ordering of examples in the list.

31. Universities are expected to submit their strongest impact cases and not to align submitted cases specifically with the particular types of

impact listed, as an impact case may describe more than one type of impact, such as a new drug which can generate health and economic impact and a new method can contribute to public policy and social welfare.

Table A: Examples of Impact

Impacts on health and welfare: Impacts where the beneficiaries are individuals and groups (both human and animals) whose quality of life has been enhanced (or potential harm mitigated)	• Outcomes for patients or related groups have improved. • Public health and well-being has improved. • A new clinical or lifestyle intervention (for example, drug, diet, treatment or therapy) has been developed, trialled with patients, related or other groups (for example, prisoners, community samples), and definitive (positive or negative) outcome demonstrated. • A new diagnostic or clinical technology has been adopted. • Disease prevention or markers of health have been enhanced by research. • Animal health and welfare has been enhanced by research. • Care and educational practices have changed. • Clinical, dietary or healthcare guidelines have changed. • Healthcare training guidelines have changed. • Decisions by a health service or regulatory authority have been informed by research. • Public awareness of a health risk or benefit has been raised. • Public engagement/involvement in research has improved. • Public behaviour has changed. • The user experience has improved. • The control of diseases has changed.

Impacts on society, culture and creativity: Impacts where the beneficiaries are individuals, groups of individuals, organisations or communities whose knowledge, behaviours or practices have been influenced	• Public understanding has improved. • Public debate has been stimulated or informed by research. • Changes to social policy have been informed by research. • Changes to social policy have led to improved social welfare, equality or social inclusion.
Impacts on the economy: Impacts where the beneficiaries are usually the public health services, private health care, or agriculture	• Policies have been introduced which have had an impact on economic growth or incentivising productivity. • The costs of treatment or healthcare have changed as a result of research-led changes in practice. • Gains in productivity have been realised as a result of research-led changes in practice. • The roles and/or incentives for health professionals and organisations have changed, resulting in improved service delivery.
Impacts on commerce: Impacts where the beneficiaries are usually companies, either new or established, or other types of organisation which undertake activity that creates wealth	• A spin-out or new business has been created and established its viability by generating revenue or profits. • Industry (including overseas industry) has invested in research and development. • The performance of an existing business has been improved. • A business or sector has adopted a new technology or process. • The strategy, operations or management practices of a business have changed. • A new product or service is in production or has been commercialised. • Highly skilled people have taken up specialist roles (including academic consultancy) in companies or other organisations. • Jobs have been created or protected. • Social enterprise initiatives have been created.

Impacts on public policy and services: Impacts where the beneficiaries are usually government, public sector, and charity organisations and societies, either as a whole or groups of individuals in society, through the implementation of policies	• Policy debate has been stimulated or moved forward by research evidence. • Policy decisions or changes to legislation, regulations or guidelines have been informed by research evidence. • The implementation of a policy (for example, health, environment or agricultural policy) or the delivery of a public service has changed. • A new technology or process has been adopted. • The quality, accessibility, acceptability or cost-effectiveness of a public service has been improved. • The public has benefitted from public service improvements. • Control measures for infections have improved.
Impacts on production: Impacts where the beneficiaries are individuals (including groups of individuals) whose production has been enhanced	• Production, yields or quality have increased or level of waste has been reduced. • Decisions by regulatory authorities have been influenced by research. • Costs of production, including food, have been reduced. • Husbandry methods have changed. • Management practices in production businesses have changed.

Impacts on practitioners and services: Impacts where beneficiaries are organisations or individuals, including service users involved in the development of and delivery of professional services	• Professional standards, guidelines or training have been influenced by research. • Practitioners/professionals have used research findings in conducting their work. • The quality or efficiency of a professional service has improved. • Work force planning has been influenced by research. • Forensic methods have been influenced by research. • Educational or pedagogical practices and methods have changed outside of the submitting unit. • Law enforcement and security practices have changed.
Impacts on the environment: Impacts where the key beneficiary is the natural or built environment	• Policy debate on climate change or the environment has been influenced by research. • Environmental policy decisions have been influenced by research evidence. • Planning decisions have been informed by research. • The management or conservation of natural resources has changed. • The management of an environmental risk or hazard has changed.
Impacts on international development: Impacts where the beneficiaries are international bodies, countries, governments or communities	• International policy development has been influenced by research. • International agencies or institutions have been influenced by research. • Quality of life in a developing country has improved.

(Note: Other examples of research impact as assessed in other jurisdictions may be accessible online such as <http://results.ref.ac.uk/Results/SelectUoa> from the United Kingdom.)

Impact Overview Statement

32. Following paragraphs 7.7 (a) and (b), 7.8 and Appendix G of the Guidance Notes and also paragraph 49 of the General Panel Guidelines, submitting units are required to describe how they have sought to enable and/or facilitate achievement of impact arising from their research during the assessment period, and how they are developing and adapting their plans to ensure that they continue to do so. This is distinct from the environment overview statement, which should describe how the units support the conduct and production of research.

33. The impact overview statement should include relevant illustrative explanations with examples and traceable references where possible, rather than broad, general statements. The Panel expects the impact overview statement to include –

- Context: institutions should describe the main non-academic user groups, beneficiaries or audiences for the unit's research, the main types of impact specifically relevant to the unit's research, and how these relate to the range of research activity or research groups in the unit.
- Approach to impact: Institutions should describe the unit's approach to interacting with non-academic users, beneficiaries or audiences and to achieving impacts from its research, during the assessment period. This could include details of, for example: how staff in the unit interacted with, engaged with or developed relationships with key users, beneficiaries or audiences to develop impact from the research carried out in the unit, evidence of the nature of those relationships and interactions, evidence of follow-through from these activities to identify resulting impacts, how the unit specifically supported and enabled staff to achieve impact from their research, how the unit made use of institutional facilities, expertise or resources in undertaking these activities and other mechanisms deployed by the unit to support and enable impact.
- Strategy and plans: Institutions should describe how the unit is developing a strategy for achieving impact, including goals and plans for supporting and enabling impact from current and future research.
- Relationship to the case studies: Institutions should describe how the selected case studies relate to their approach to

achieving impact. This could include details of, for example, how particular case studies exemplify aspects of the approach, or how particular case studies informed the development of the unit's approach. The Panel recognises that case studies are underpinned by research over a time frame that is longer than the assessment period, and that individual case studies may, therefore, not relate directly to the approach set out above.

Impact Case Study(ies)

34. Following paragraphs 7.7 (c) and (d), 7.9-7.10 and Appendix H of the Guidance Notes and also paragraph 51 of the General Panel Guidelines, submitting units are required to provide a narrative account in each case study that should be coherent, clearly explaining the relationship between the research and impact, and the nature of the changes or benefits arising.

35. Each impact case study should include appropriate evidence and indicators that support the claims for the impact achieved, including who and what has/have benefitted. Individual case studies may draw on various evidence and indicators, which may take different forms depending on the type of impact.

36. Examples are provided in Table B to illustrate potential evidence or indicators that may be mostly relevant to the Health Sciences Panel. These examples are not intended to be exhaustive. Equally, there is no implication of priority or importance in the ordering of examples in the list. Some indicators may be relevant to more than one type of impact. The Panel will consider any appropriate evidence that is verifiable. Wherever possible, quantitative indicators should be included. Verifiable sources for key evidence and indicators should be provided in section (5) of the impact case study template, and must be available on request. The Panel does not welcome testimonials offering individuals' opinions as evidence of impact; however, factual statements from external, non-academic organisations would be acceptable as sources to corroborate claims made in a case study. Institutions may submit case studies that describe impacts at any stage of development or maturity. However, the assessment will be solely on the impact achieved during the assessment period, regardless of the stage of maturity. No account will be taken of anticipated or future potential impact.

Table B: Examples of Evidence or Indicators for Impact

Impacts on health and welfare	• Measures of improved clinical outcomes, public behaviour or health services (lives saved, reduced infection rates). • Measures of improved well-being. • Documented changes to clinical and public health guidelines (documented references to research evidence in guidelines). • Evidence from audit, change in guidelines. • Documented changes to animal welfare codes or guidelines. • Evidence of enhanced awareness of health risks and benefits by consumers. • Evidence of enhancement of patient experience.
Impacts on society, culture and creativity	• Documented evidence that public understanding has been enhanced through active collaborative involvement in research. • Critical reviews in the media. • Evidence of public debate. • Documented evidence of changes to social policy. • Measures of improved social equality, welfare or inclusion. • Increased public uptake of scientific training, through public engagement. • Documented shift in public attitude (for example, to sexual behaviour, or social factors in health).
Impacts on the economy	• Evidence of improved cost-effectiveness. • Evidence of service change.

Impacts on commerce	• Sales of new products/services. • Business performance measures (for example, turnover/profits, trends in key technical performance measures underlying economic performance). • Employment figures. • Licences awarded and brought to market; market authorisation. • Demonstrable collaborations with industry (including knowledge transfer partnerships, and contracts). • Commercial adoption of a new technology, process, knowledge or concept.
Impacts on public policy and services	• Documented evidence of policy debate (for example, in the scrutiny processes of the Legislative Council). • Documented evidence of changes to public policy/legislation/regulations/guidelines. • Measures of improved public services. • Documented evidence of influence on health policy and/or advisory committees. • Evidence of use of process/technology.
Impacts on production	• A new product has been recommended for use or adopted. • Development of a new plant variety or crop protection product which has entered the appropriate national or international regulatory testing system. • Published rights for animals and plants. • Evidence of improved sustainability. • Documented changes to working guidelines. • Documented evidence of improved working practices and/or level of production.

Impacts on practitioners and services	• Literature/web information from practitioners and advisers, including the research findings and how they are applied in practice. • Evidence of adoption of best practice (for example, by educators or law enforcement personnel).
Impacts on the environment	• Sales of new products, or improvements in existing products, that bring quantifiable environmental benefits. • Verifiable influence on particular projects or processes which bring environmental benefits. • Evidence of generic environmental impact across a sector, confirmed by independent authoritative evidence. • Traceable reference to inclusion of research into government policy papers, legislation and industry guidance. • Traceable reference to the influence of research in planning decision outcomes.
Impacts on international development	• Documented evidence of changes to international development policies. • Measures of improved international equality, food security, welfare or inclusion. • Evidence of take-up and use of new or improved products and processes that improve quality of life or animal welfare in developing countries.

(Note: Other examples of evidence or indicators for research impact in other jurisdictions may be accessible online such as <http://results.ref.ac.uk/Results/SelectUoa> from the United Kingdom.)

37. The Panel provides the following advice on particular aspects of impact case studies –

- All the material required to make a judgment should be included – no further reading should be required.
- There should be a clear definition of who the non-academic beneficiaries were, or what had changed as a result of the research.

- The narrative should be coherent, clearly explaining the relationship between the research and the impact, and the nature of the changes or benefits arising.
- Indicators used should be meaningful, contextualised and precise in support of the case study, and the evidence should be focused and concise.
- Supporting evidence and claims should be capable of verification.
- There should be a brief explanation of what is original or distinctive about the research insights that contributed to the impact.
- The case study should include details of the names of researchers, their position in the institution, and the dates and locations of the research activity.
- Specific and appropriate independent sources of corroborating information should be supplied.
- Where the research was carried out in collaboration with other institutions, or was part of a wider body of research, this should be acknowledged and the specific input of the submitting unit's research clearly stated.
- For case studies claiming impact from public engagement:
    - There must be a clear link between the research and the engagement or involvement activity.
    - Evidence should be provided about dissemination, as well as a clear explanation about the significance or the demonstrable benefits to audiences e.g. what change in behaviour has occurred as a consequence.
    - The activity should go beyond "business as usual" engagement or involvement (for example, there was active involvement of service users and/or the public, the activity informed the focus of the research or created widespread interest, was particularly innovative, or created legacy resources).

Underpinning Research

38. The Panel acknowledges the level of quality required for research underpinning impact cases, i.e. equivalent to at least 2 star (2*) or international standing, as stipulated in the General Panel Guidelines. Case studies should include references to underpinning outputs that clearly demonstrate the threshold has been met. They should include additional indicators, as appropriate, of the quality of the underpinning research, for example evidence of citation and peer-reviewed funding. The Panel will use the information provided in case studies, and where necessary will review outputs referenced, to ensure the quality of the research is of at least 2 star (2*).

39. Provided the Panel is satisfied that the quality threshold has been met, the quality of the underpinning research will not be taken into consideration as part of the assessment of the reach and significance of the claimed impact. Underpinning research referenced in a case study may also be submitted for assessment under the research output element. The evaluation of the outputs concerned under the impact element is a separate assessment only for assuring the threshold of underpinning research. In this case, the guidance on output types and criteria for assessing research outputs as stipulated in paragraphs 11-15, 21-24 above would apply. The Panel recognises that several research groups or institutions may have made distinct research contributions to an impact, and they advise submitting institutions to ensure that their own critical, scientific contribution is specified clearly and that the contributions of others are duly acknowledged. There will also be many cases where a researcher has moved to a different institution during the period in which a body of research underpinning a case study was produced. Where this is the situation, the submitting institution should make it clear that the research undertaken during the period the researcher spent at that institution made a material and distinct contribution to the impact claimed.

Criteria and Quality Levels for Assessing Research Impact

40. Panels will exercise their expert judgement in assessing the quality of each impact submission, and will not judge in terms of the type of research underpinning the impact cases.

41. In assessing impacts, the Panel will look for evidence of reach and significance, and will grade each impact submission as a whole and give a rating using one or more of the five categories of quality level following paragraphs 53-55 of the General Panel Guidelines. In respect of the Health

Sciences Panel, the criteria of reach and significance will be understood as follows –

- Reach: the extent and diversity of the communities, individuals, organisations that have benefitted or been positively affected from the impact. For example, the Panel will evaluate the extent to which society as a whole, communities or individuals have benefitted from the introduction of a new drug.
- Significance: the degree of beneficial effects to policies, practices, perspectives or awareness of organisations, communities or individuals, constructive change to the prevention or reduction of harm, risk or cost. For example, the Panel will evaluate the degree of constructive change to the prevention or reduction of harm, risk or cost from the introduction of new drug.

42. The Panel will make an overall judgement about the reach and significance of impacts, rather than assessing each criterion separately. The criteria will be applied in the assessment of the research impact regardless of the domain to which the impact relates. Reach will not be assessed in purely geographic terms, nor in terms of absolute numbers of beneficiaries, but rather based on the spread or breadth to which the potential constituencies have been affected.

Section D: Assessment Criteria: Research Environment

Research Environment

43. The Health Sciences Panel will accept submissions on research environment according to paragraphs 57-58 of the General Panel Guidelines. The Panel recognises that excellent research can be undertaken in a wide variety of research structures and environments. The Panel has no pre-formed view of the ideal size or organisational structure for a research environment, and will judge each submission on its merits. The Panel will assess each submission based on what has been presented in relation to the work of the submitting unit in providing and ensuring a good environment.

44. As a research environment submission may relate to a single coherent faculty and equally to multiple departments, submissions may depict the commonalities and dynamics among faculties and departments

within the submitting unit, and define their prime activities, how they operate and their main achievements. In this context, using the information provided in the environment template and the environment data, the Panel will assess the vitality and sustainability of the submitting unit and its contribution to the vitality and sustainability of its discipline. The Panels recognise that the health of the discipline requires appropriate infrastructures and activity at university level to maintain and develop individuals and groups of researchers, and to train new generations of researchers. Given that, for the RAE, there is no expectation that the environment element of submissions relates to a single coherent organisational unit, submissions may define groups and their members. Groups may be departments/research groups or units which may or may not be cognate. This gives an opportunity to explicitly state how enhanced multi- and/or inter-disciplinary research is being encouraged. Institutions should define their prime activities, how they operate and their main achievements. It is recognised that submissions may consist of a single group which may or may not relate to a single coherent organisational unit. To facilitate the assessment of submissions, when defining groups and their members, institutions should identify groups of staff and their associated outputs, and use the same groupings in the environment template. The same groups should be referred to in the impact template where relevant. The descriptors given above in paragraph 7 should be used.

Environment Overview Statement

45. Following paragraphs 9.6 (a) and (b), 9.7 and Appendix I of the Guidance Notes, and also paragraph 59 of the General Panel Guidelines, submitting units are required to describe how they have supported the conduct and production of research. This is distinct from the impact overview statement, which should describe how the units encourage and facilitate the achievement of research impact.

46. Within the terms of the Guidance Notes, the Health Sciences Panel will expect in particular to see the following in the environment overview statement –

- Overview: submission in this part is expected to briefly describe the organisation and structure of the unit, which research groups are covered in the submission and how research is structured across the submitting unit. The extent to which the components and elements of the unit show coherence and inter-relatedness should be described. This

section will be assessed in combination with the research strategy.

- Research strategy: evidence of the achievement of strategic aims for research during the assessment period, and details of future strategic aims and goals for research; how these relate to the structure described above; and how they will be taken forward; methods for monitoring attainment of targets; new and developing initiatives not yet producing visible outcomes but of strategic importance; identification of priority developmental areas for the unit, including research topics, funding streams, postgraduate research activity, facilities, staffing, administration and management. Evidence and indicators may also include, but are not limited to, the following: details of significant changes, if any, to the research environment over the assessment period; evidence of strong research plans: a statement of the main objectives and activities in research over the next five years, including capacity building, research student recruitment, the involvement of service users, and any ongoing research work that is not producing immediately visible outcomes; balance sought between long-term and short-term research; the development of infrastructure to facilitate research; responsiveness to national and international priorities and initiatives; effective mechanisms for the development, promotion and dissemination of research; research groupings, their activities, their rationale, how they operate and their main achievements; mechanisms and practices for promoting research, and sustaining and developing an active and vital research culture and evidence of multi- and/or inter-disciplinary developments.

- People: staffing policy and evidence of its effectiveness; evidence of how the staffing strategy relates to the unit's research strategy and physical infrastructure; how individuals at the beginning of their research careers are being supported and integrated into the research culture of the submitting unit; implementation of support for the career development of researchers; information on postgraduate recruitment, training and support mechanisms; mechanisms by which standards of research quality and integrity are maintained for example ethics procedures and authorship; evidence of how the submitting unit supports equalities and diversity; research career development of both non-clinical and clinical

researchers and effective integration of clinical academics and health service-employed active researchers. The training and supervision of postgraduate research students should also be described here. Evidence and indicators may include, but are not limited to, the following: effective and sustainable doctoral research training; evidence of a strong and integrated research student culture and evidence of application of technology generated by research students.

- Income: information on research funding portfolio; evidence of successful generation of research income; major and prestigious grant awards made by external bodies on a competitive basis; significance of major benefits-in-kind (including, for example, donated items of equipment, sponsorships secured, or other arrangements directly related to research) and policy and practice in relation to research governance.
- Infrastructure and facilities: provision and operation of research infrastructure and facilities, including special equipment, library, technical support, space and facilities for research groups and research students and information on joint-university or cross-institution shared or collaborative use of research infrastructure.
- Collaborations: information on support for and exemplars of research collaborations; contributions to the wider research base, including effective academic collaboration and work with other researchers outside the submitted unit whether locally, nationally or internationally; support for research collaboration; and inter-disciplinary research; extent of collaboration or integration with external bodies, such as health service providers, industry, government agencies and, where appropriate, responsiveness to national and international priorities and initiatives and effective mechanisms to promote collaborative research at national and international level within the academic community and with users of research, whether with industry or the public sector.
- Esteem: prestigious/competitive research fellowships held by individual researchers; external prizes and awards in recognition of research achievement.
- Contribution to the discipline or research base: exemplars of leadership in the academic community such as advisory board membership, contributions to official government reports

influencing policy and participation in the peer-review process for grants committees or editorial boards.

Environment Data

47. Following paragraphs 9.6 (c) and (d), 9.8 and Appendix J of the Guidance Notes, and also paragraph 60 of the General Panel Guidelines, submitting units are required to provide environment data in conjunction with the environment overview statement. The Panel will consider the environment data within the context of the information provided in the environment overview statement, and within the context of the disciplines concerned.

48. Data on "staff employed by the university proper" and "graduates of research postgraduate programmes" will be used to inform the Panel's assessment in relation to "people" (section (3) (i) and (ii)). Data on "on-going research grants/contracts" will be used to inform the Panel's assessment on "income" (section (4)). Additional quantitative data or indicators that are particularly relevant to the Panel are indicated in paragraph 46 above. Such additional information should be submitted within the appropriate section(s) of the environment overview statement.

Criteria and Quality Levels for Assessing Research Environment

49. Panels will exercise their expert judgement in assessing the merits of each environment submission, and will not judge automatically in terms of the scale of research environment concerned.

50. In assessing environment, the Panel will consider research environment in terms of vitality and sustainability, including its contribution to the vitality and sustainability of the wider discipline or research base. In forming the environment sub-profiles, the Panel will combine "overview" and "research strategy", and will assess the environment template sections as four components of equal weighting –

- overview and research strategy
- people (staffing strategy and staff development; and research students)
- income, infrastructure and facilities
- collaboration, contribution to the discipline or research base and esteem

The Panel will use one or more of the five categories of quality level as specified in paragraphs 62-64 of the General Panel Guidelines for assessing each aspect within the environment element and by aggregating assessments of individual aspects to form an overall assessment for each environment submission.

51. The Health Sciences Panel provides the following amplifications to supplement the generic criteria for assessing research environment –

- Vitality: the extent to which a unit provides an encouraging and facilitating environment for research, has an effective strategic plan, is engaged with the regional and international research community, is able to attract excellent postgraduate and postdoctoral researchers through a worldwide reputation.
- Sustainability: vision for the future and investment in people and infrastructure and, where appropriate for the subject area, the extent to which activity is supported by a portfolio of research funding.

52. The Panel will make an overall judgement about the vitality and sustainability of research environments, rather than assessing each criterion separately. In assessing the environment element of submissions, the Panel will apply the criteria in terms of both the research environment within the submitting unit, and its participation in and contribution to the academic discipline and community of relevance to the UoA.

Section E: Working Methods

Use of Sub-Group(s)/Sub-Panel(s)

53. While for Clinical Medicine, a list of sub-disciplines is given in paragraph 7, this is to help in the allocation of outputs and impact case studies to those most suited to assess them. There will not be any sub-group or sub-panel formed under the Health Sciences Panel; the final assessment and grading will be decided by the Panel as a whole.

Allocation of Work in the Assessment Process

54. The Convenor, consulting the Deputy Convenor and other panel members, as appropriate, will allocate work to members and, if necessary, impact assessors and/or external reviewers in light of their expertise and workload. In allocating the work, the Convenor will also take into account

any potential conflicts of interest of respective panel members and assessors. All panel members will take account of the requirements of the General Panel Guidelines to ensure that the exercise is conducted fairly and equitably.

55. Panel members will examine the submitted outputs in detail, and put forward a recommendation to the Panel for a collective decision on the final grading. To ensure fairness and consistency, each research output will be assessed in detail by at least two members, one of whom should be a non-local member to the extent possible. For UoA(s) which is (are) only housed at one or two local universities, submissions will be assigned to at least one non-local member in order to ensure fair and impartial assessment. Final grading on research outputs will be decided by the Panel as a whole.

56. Subject to conflicts of interest of individual members, the impact and environment submissions will be assessed by panel members and impact assessors for respective UoA(s) or research area(s) under the Panel. Final grading of individual submissions will be a collective decision of the Panel.

Cross-Panel Referrals

57. This Panel will follow the procedures in paragraphs 41-43 of the General Panel Guidelines when initiating referrals to other panels and assessing submissions cross-referred by another panel.

58. Generally, research on pedagogy and education issues submitted to this Panel will be assessed by panel members or external reviewers with expertise in pedagogy or cross-referred to Panel 13 – Education.

59. Cross-panel referrals are envisaged in areas such as: biomedical engineering (to Panel 1 – Biology and/or Panel 6 – Engineering); medical imaging (to Panel 5 – Computer Science / Information Technology) and medical ethics (to Panel 11 – Humanities).

External Advice

60. This Panel will follow the procedure in paragraph 66 of the General Panel Guidelines when referral to external reviewers for expert advice becomes necessary for panel assessment. External reviews may be sought in the cases for which members of the Panel do not have the necessary expertise such as outputs in foreign language or niche research work.

Trial Assessment

61. With reference to paragraphs 89-91 of the General Panel Guidelines, the Panel will conduct a trial assessment using a sample of submissions selected from universities' submissions. These sample submissions will be assessed by all members of the Panel. Members will share among themselves any important observations in the assessment to ensure fairness and consistency in the actual assessment. Submissions used for the trial assessment will be assessed afresh during the main assessment period regardless of their assessment results during the trial. The Panel will decide on the sample size after the submissions are received.

Panel Feedback Report

62. With reference to paragraph 71 and Appendices E and F of the General Panel Guidelines, the Panel will provide feedback to the UGC after the assessment process. Non-local panel members will be involved in offering comments for an impressionistic international comparison. The Convenor on behalf of the whole panel will submit the panel feedback report to the UGC by 10 November 2020.