STRATEGIC REVIEW OF CSO CORE FUNDED UNITS STAKEHOLDER QUESTIONNAIRE

Response submitted by: UNIVERSITY OF ABERDEEN

1. How would you change the current arrangements and why?

We would not change the current arrangements. The current arrangements provide many advantages for all stakeholders including NHS Scotland, government policy makers, Unit staff, host institutions, and ultimately bring significant added value to the Scottish economy.

The CSO budget is currently of the order of £65m[1]. This supports a mixed portfolio of mechanisms to support the design and delivery of health research including infrastructure support, grant funding, fellowship etc. Each element provides a complementary mode of funding with different expectations for success and delivery. Within this funding eco-system, the core funding to support the four substantive Units represents approximately 6% of the overall CSO budget.

For this 6% investment, the Units provide national centres of excellence in areas of strategic importance for applied research directly relevant to the health needs of Scotland (examples given in response to points below). They lever significant additional external funds into Scotland and provide extensive capacity-building capability. Also, uniquely within the CSO funding system, substantive co-funding from host institutions is an essential requirement – thus providing immediate and sustained return on investment, and a shared commitment to ensuring the success and delivery of the Units.

All Units are subjected to rigorous independent review every five years to ensure their continued strategic relevance and scientific excellence. This review system has proved highly effective to date, with the reshaping of some Units over time and indeed the closure of Units where the continuing need has not been required.

The benefits of this model of funding, as compared with the other approaches, are many. The Units act as national centres of excellence and their prestige attracts, develops and helps retain the very best researchers to Scotland (e.g. the Director of the Health Economics Research Unit was named the top health economist in the UK in a recent study). The size and scale of the Units provides for a critical mass of expertise in the cognate areas and results in high performing teams of skilled researchers who are highly successful in levering large-scale, external funding from external prestigious national and international funding agencies. All this additional activity brings new investment into Scotland thus contributing directly to the economic wealth of the nation. For example, for the £4.4m invested by CSO in our Health Services Research Unit (HSRU) over the last 6 years, HSRU has levered in an additional £72m in new grants, £27m of which supported research directly in Aberdeen; £26m supported research led by other Scottish Universities and NHS Scotland organisations, and £19m beyond Scotland (England and internationally). This means that for every £1 the CSO invested, the Unit has generated £16 in research monies alone (£6 back into the Unit; £6 across Scotland and £4 outside of Scotland). Similar rates of return were achieved by our Health Economics Research Unit (HERU). It should be noted that the University of Aberdeen match funded the CSO investment in both Units throughout that time.

This provides compelling evidence that the current arrangements work well for the Scottish health service and the Scottish economy more broadly.

[1] Chief Scientist Office. https://www.cso.scot.nhs.uk

2. What outputs have you seen or used from CSO funded units in the past and what health research outputs would you like to see from the units?

The research and outputs produced by the CSO Units have had, and continue to have, significant impact on policy and practice across health services in Scotland, other parts of the UK and internationally.

Research undertaken by the CSO Units have informed some of the most important decisions taken by the NHS and the Scottish Government more widely. The research priorities of the Units map directly onto government priorities, resulting in outputs that directly inform government imperatives such as the implementation of the Chief Medical Officer's Realistic Medicine agenda[2]. Research from HERU underpinned the Scottish Government's introduction of the smoke free public places legislation and informed the Scottish Government policy on alcohol minimum pricing. Similarly, the work of HSRU and HERU has underpinned many decisions made by the Scottish Medicines Consortium, the National Institute of Health and Care Excellence and other government agencies. Researchers in HSRU and HERU have conducted more than 1,000 studies to date, including: 100+ large-scale clinical trials involving 46,000 participants from 1,500+ sites worldwide; approximately 60 full health technology assessments; 100+ in-depth systematic reviews of evidence covering different clinical areas; approximately 250 other types of health services research study and 500 health economic studies.

There are also numerous external markers of the quality of the outputs produced by the Units including high levels of performance in UK Research Excellence exercises (for example, our Health Services Research portfolio of research, which includes both HSRU and HERU was ranked 1st equal in the UK in RAE2008 and the top return in Scotland in REF2014). The work of the two CSO Units hosted by the University of Aberdeen also received the Queens Anniversary Prize in 2017 for sustained excellence in health services and health economic research over the past 20+ years (the Queens Anniversary Prize is the highest UK honour that can be bestowed on an institution for research excellence).

Additionally, the extensive capacity building activities of the Units directly supports the Scottish government's innovation agenda[3]. The Units have delivered many cohorts of highly skilled research individuals to the health service within Scotland, other parts of the UK and beyond. These individuals have been able to cascade knowledge within their daily environment, promoting innovation and evaluation in everyday practice. Many of the individuals trained by the Units are now leaders of research programmes and research units across the globe – promoting evidence-based practice worldwide.

3. What sort of engagement would you wish to have with CSO funded units?

We wish to continue our highly successful and extensive engagement with all four CSO Units, working collaboratively to undertake research that underpins the evidence-base of health services in Scotland and beyond.

As a globally active institution committed to making an impact wherever it interacts, we know that the CSO Units comprise staff with infrastructure, skills and experience needed to address some of

[2] Practicing Realistic Medicine. https://www.gov.scot/publications/practising-realistic-medicine/
[3] Scotland Innovation Action Plan: https://www.gov.scot/publications/scotland-innovation-action-plan-scotland/

the most pressing problems faced by society in Scotland and elsewhere. Big problems often need a wide range of disciplines for appropriate solutions, many of which are found and nurtured within the Units. We fully support the need for CSO Units to be strategically focussed on key issues to NHS Scotland and the Scottish people more generally. We recognise fully that this work needs to be protected and supported. Nevertheless, we believe that by the University funding additional posts, which sit alongside CSO-funded staff, overall research capacity will grow; more disciplines will develop academic excellence and profile; and all staff will be supported in their career development. In this way, the University can gain access to skills and infrastructure needed to address wider health priorities, such as global challenge research and international health work, without diminishing impact on direct CSO issues.

4. What do you consider should be the principal objectives, activities and responsibilities of CSO core funded units, and what should be the advantages, added value and outcomes from this funding?

Reflecting the strategic funding that underpins CSO Units, appropriate objectives should include:

- To place Scotland at the forefront of healthcare research within the United Kingdom and internationally
- Be a focus of innovative and inter-disciplinary research addressing key health and social care challenges in Scotland
- Provide a specialist expert resource for clinicians, managers and policy makers needing advice and support to inform key decisions affecting organisational and professional practice
- Support the economic development of Scotland, through the significant leverage of additional funding into Scotland from other prestigious funding agencies e.g. MRC, NIHR, and consequential creation of skilled, high value jobs
- Build and sustain research infrastructure and capacity in relevant disciplines, to strengthen the ability to address health service priorities

The expected advantages and added value of such a model are those that were largely outlined in our response to question 1. In short, these include:

- The establishment of centres of excellence which act as hubs which attract, develop and retain world-class researchers to Scotland, ensuring innovative solutions are delivered for Scotland health and social care services
- Securing substantial additional inward investment to Scotland
- The agility to respond to rapidly emerging health challenges through the sustained availability of a critical mass of expert researchers
- The strategic imperative to address potentially less attractive, but crucially important, clinical research topics for the health service, for example, the so-called “Cinderella” clinical topics such as incontinence or rare diseases; or disciplines such as dentistry.

5. Do the current arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or are there disadvantages of this and would different arrangements or alternative models (such as the models set out in the review panel’s terms of reference) be more appropriate?

The University of Aberdeen firmly believes that the current arrangements deliver research excellence and relevance, and directly addresses the needs of NHS Scotland, the Scottish

Government, the host institutions, the Scottish people; resulting in significant added value to the Scottish economy.

The current arrangement of direct CSO strategic investment in CSO Units ensures that the dual elements of **research excellence** and **research relevance** are enshrined in the culture and fibre of the Units. Units are held directly accountable to these dual aims via a regular rigorous review process led by expert independent assessors (and informed by in-depth consultation with stakeholders to ensure continuing relevance). The critical mass of interdisciplinary researchers that the current core funding facilitates also provides resilience to the endeavour, and ensures sustained support to policy makers, clinicians and NHS managers.

Alternative models for funding are possible, for example, more short-term strategic support, or more responsive-mode policy-type contracts. As a University, we have direct experience of the breadth of these models including experience of MRC centres, NIHR TAR "call-off" contracts etc. Whilst shorter-term investments may appear to be attractive to a funder, our experience is that the scope of such approaches is usually more limited, constrained by the need to address primarily short-horizon research questions. This leaves research teams susceptible to potential gaps between projects, leading to loss of key skills and infrastructure; and the danger of insufficient time to consider underlying methodological issues because key staff are constantly moving from one project to another. Crucially, there is a danger of weakened capacity to respond quickly and strongly to new issues emerging within Scottish healthcare. The more sustained investment and critical mass provided by the current funding model allows breadth and depth of skills to be nurtured and honed resulting in the specialist skills required to address the most intractable challenges faced by the NHS.

6. What criteria and processes should CSO apply to considerations about continuing, discontinuing and establishing core funded units (or alternative models of research support), including the exit strategy if funding is discontinued?

Reflecting the aims of the strategic investment made to CSO Units, the following criteria should inform decisions about continuing, discontinuing or establishing new CSO Units:

- Criteria for continuing: Demonstrable evidence of:
    - Sustained research quality
    - Continued relevance of research portfolio to current and emerging Scottish health and social care challenges
    - Leverage of substantial external grant income
    - Capacity building in research skills across the NHS
    - Continued, substantial host institution co-investment
- Criteria for discontinuing:
    - Lack of sustained research quality
    - Lack of return on investment
    - Lack of continued relevance of research portfolio
    - Lack of engagement with NHS staff and service needs
    - Insufficient evidence of institutional support
- Criteria for establishing a new Unit:
    - Demonstrable unmet need for new research capability and a substantial new research portfolio in a clinical/research area not covered by any of the existing Units (or which could not be achieved through extending the remit of a current Unit)

STRATEGIC REVIEW OF CSO CORE FUNDED UNITS
STAKEHOLDER QUESTIONNAIRE

Response submitted by: ***University of Dundee*** ***please note that this response relates only to my knowledge of the NMAHP research unit***

1. How would you change the current arrangements and why?

   The units are sited in individual universities, which necessarily gives them a narrower focus, and less influence across Scotland than if they were developed as collaborative schools of expertise across Scotland, learning from the experiences of the NIHR model. This means that some of the outputs of the units, thinking specifically about the NMAHP research unit, are within highly specialised but narrow topic areas, dependent on individual researchers and research teams.

   Operating as specialist national schools, e.g the NIHR School for Primary Care Research, with multiple collaborating institutions may provide greater breadth of focus to issues that are NHS and health priorities. Operating in such we would arguably provide opportunities for greater interdisciplinary collaboration around international healthcare problems, in ways that don't necessarily happen at the moment. In the case of NMAHP research, having a distributed model could provide opportunity for greater capacity building for research across the health service and the profession in Scotland.

   The specialist units housed within universities has given rise to duplication of research effort. Better integration of the units with University departments and schools would prevent this.

   Capacity building in some units has been effective, for example health economics and public health, but has not accelerated as much or quickly enough in others.

2. What outputs have you seen or used from CSO funded units in the past and what health research outputs would you like to see from the units?

   A multitude of research outputs, including Cochrane reviews and overviews, James Lind priority **lists**, stakeholder involvement initiatives, leadership of national implementation research programmes, leadership of capacity building programs for practitioners, integration with quality improvement initiatives in the NHS. Provision of specialist services and expertise, for example health economics and clinical trials design. However at times research and other activities have been too focused in their local geographical areas, limiting the impact of the work as nationally relevant units.

   Taking a more distributed approach to the way in which the units work, could mean government supported research initiatives could develop better and more comprehensive approaches to research and research implementation across Scotland that would lead to major transformational initiatives. A more distributed approach

would also facilitate capacity building for research, PhD opportunities and training expertise for underserved professions such as NMAHPs.

3. What sort of engagement would you wish to have with CSO funded units?

   This should be a more integrated strategic approach to development of their research priorities with key stakeholders. As mentioned above, many of the specialist research programs within these units are there because of the expertise of those who happen to be employed within the units, rather than because their work is of specific national priority.

   Engagement with key stakeholders, including research departments across Scotland, and key stakeholders within health services and social services should be engaged to truly inform the strategic research agendas of the of the units. As the units are geographically based there needs to be wider impact beyond place.

4. What do you consider should be the principal objectives, activities and **responsibilities** of CSO core funded units, and what should be the advantages, added value and outcomes from this funding?

   Objectives:
   - to address established health priorities of the patients and population of Scotland
   - to identify and engage with critical gaps in knowledge mobilisation
   - to provide innovation and problem solving
   - to deliver excellence in research
   - to provide funded training programs for new and early career researchers
   - to broaden the scope of available fellowships beyond medical practitioners
   - to strengthen the research culture in environments where it is lacking, particularly in professions where the capacity building has arrived later, for example nursing, midwifery and allied health professions, and outcomes research
   - to support the National Health Service in tackling major and future health challenges
   - to support and grow excellence across the country in research through appropriate partnership building and working with "arm's length bodies"
   - to step out of the normally competitive research culture across universities in Scotland, to support current researchers
   - to demonstrate good value for public money and return on investment by delivering widely applicable research

   Activities
   - research capacity building
   - methodological developments
   - demonstrate specific engagement with health priorities, and be transparent about how this is undertaken

- innovations within their fields
- implementation of research should form a major part of the work of all the units

Advantages of this funding are that it should provide sustainability for major and important research initiatives that influence priorities for health in Scotland. However, the initiative should also ensure that investment is made where expertise and excellence exist across the country to address these priorities. In that respect, this should be some flexibility to support major collaborations where that is relevant, and to support relevant collaborations with there is added value from multiple institutions.

Responsibilities
The units have responsibility to provide excellence, to ensure that there truly is a national approach to the research that they're doing; they have responsibility to provide opportunities for the development of new researchers and for development of research that improves health and healthcare practice.

5. Do the current arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or are there disadvantages of this and would different arrangements or alternative models (such as the models set out in the review panel's terms of reference) be more appropriate?

The current arrangements are effective in some areas but the points raised above indicate the limitations in relation to this effectiveness. Geography and existing expertise are both limiting factors.

6. What criteria and processes should CSO apply to considerations about continuing, discontinuing and establishing core funded units (or alternative models of research support), including the exit strategy if funding is discontinued?

   Criteria
   - Excellence
   - Policy and health relevance
   - National significance
   - Innovation
   - Broadest impact in terms of health and healthcare practice
   - Sustainability and spread of expertise and excellence
   - Integration with research being undertaken in other HEIs
   - Value for investment in terms of health benefits
   - Responsiveness to emerging priorities
   - Prediction and prioritisation of research to address future healthcare priorities
   - Collaborative integration with other areas of national expertise
   - There are usual considerable staff casualties and career casualties when units close. This is a workforce well-being and mental health prevention opportunity.

Processes

- Scientific review
- Stakeholder review
- Policy and practice impact review
- International impact

STRATEGIC REVIEW OF CSO CORE FUNDED UNITS
STAKEHOLDER QUESTIONNAIRE

Response submitted by: ***University of Edinburgh***

1. How would you change the current arrangements and why?

   Despite the significant contributions to research, income generation and, to some extent, capacity building by the existing units, we consider that a future-facing model might look different. There is a need to deliver clinical trials and health services research across Scotland and also to harness the opportunities of health data science (e.g. the Scotland-wide HDR UK hub) to undertake more efficient and effective clinical research.

   The aim has to be to develop networks and infrastructure that deliver for Scotland. This absolutely requires an element of core funding and should allow Scotland to function as a single "unit" in delivery of clinical research, by utilising all the expertise in the different Scottish centres. This would build in resilience to the Scottish system.

   CSO's role in supporting academic careers in allied health professions is in part delivered through the NMAHP. Continued support for this important part of the research workforce should be ensured.

   In our view there is a strong case for adopting the NIHR School model, engaging all major centres in Scotland in collaborative networks. A competitive process would allow shaping the leadership and resource in each network to best deliver and to leverage funding.

2. What outputs have you seen or used from CSO funded units in the past and what health research outputs would you like to see from the units?

   The HRSU has delivered well for Scotland and HPHSU has a strong external reputation. The NMAHP has also provided a focus for investing in capacity building in the allied health professions.

3. What sort of engagement would you wish to have with CSO funded units?

   The University of Edinburgh would relish the opportunity to engage with and potentially lead CSO funded units. We would envisage opportunities to bring in additional external funders (as achieved by the SPHSU in Glasgow), and in so doing leveraging additional resource for Scotland.

   We would be keen to support capacity-building in areas of need in Scotland and to host young researchers in relevant areas of our University. We also see considerable

opportunity to use our world-leading skills in online digital education to provide educational opportunities across Scotland where they are useful and relevant.

4. What do you consider should be the principal objectives, activities and responsibilities of CSO core funded units, and what should be the advantages, added value and outcomes from this funding?

   Principal objectives/activities/responsibilities:

   1. Undertake internationally-leading research that has impact

   2. Capacity build across the medical and allied health professions to reinforce the future academic workforce

   3. Provide an infrastructure to harness talent from across Scotland, perhaps building on the NIHR School model

   4. Disseminate their work effectively, including a strong interface to implementation within the NHS and engaging the public/patients in effective partnerships

   5. More broadly to support areas of applied health research that have historically been underfunded compared with England, providing opportunities for building critical mass and retaining researchers in Scotland.

5. Do the current arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or are there disadvantages of this and would different arrangements or alternative models (such as the models set out in the review panel's terms of reference) be more appropriate?

   The current model does support both research excellence and the production of research that is responsive to health policy and practice needs, but there is the potential both to increase excellence by harnessing talent across Scotland rather than confining to a single HEI, and to increase responsiveness through a more strategic review process and through more robust links to the NHS across Scotland.

   The size of Scotland and the existence of a number of excellent HEIs with expertise in health and social care research surely argues in favour of some of the alternate models proposed, where one HEI may lead but take a consortium approach including others.

   There is also an issue of balancing between infrastructure funding and research. The lack of any CSO funding for support with trial design and early health economics impact significantly disadvantages Scottish investigators when applying for clinical trial funding. Addressing this deficit would be a major priority for Edinburgh.

6. What criteria and processes should CSO apply to considerations about continuing, discontinuing and establishing core funded units (or alternative models of research support), including the exit strategy if funding is discontinued?

   The criteria for assessing CSO funded units should include (i) standard criteria of academic success e.g. external funding awards, high-quality publications, (ii) evidence of capacity building across the health professions, including evidence the centre can attract competitive external fellowships, PhD students/programmes, (iii) evidence of joint working with other HEIs in Scotland, possibly via the NIHR School of Public Health model and (iv) impact upon the health of the public in Scotland and beyond.

   The process we would prefer would be similar to that of MRC Units/Centres or NIHR Biomedical Research Centres, with quinquennial funding reviews by an independent external panel. The MRC Centre process is particularly attractive in requiring the demonstration both of strategic need in the specified area, as part of the health research portfolio in Scotland, but also the expectation that a 10 year funding period is the limit in the absence of substantial strategic need for continued investment. This would allow the portfolio to be refreshed to ensure that the highest strategic priorities are being addressed.

   An exit strategy should allow a period of at least one year of "sunset" funding and the commitment of the host HEI(s) to continued support of staff beyond the funding period should be a part of the application process.

STRATEGIC REVIEW OF CSO CORE FUNDED UNITS
STAKEHOLDER QUESTIONNAIRE

Response submitted by NHS Fife R&D Department

1. How would you change the current arrangements and why?
   To change current sectorised activities to allow these units to support more research in areas they are not geographically invested in.

2. What outputs have you seen or used from CSO funded units in the past and what health research outputs would you like to see from the units?
   We receive newsletters from these units. We are not aware of any sources of advice or training and how to access these. Frequent and relevant communication. Supporting research activities in different areas of Scotland through regular interactions with the R&D Departments.

3. What sort of engagement would you wish to have with CSO funded units?
   Regular meetings to help us identify the potential to increase research outputs and opportunities for support

4. What do you consider should be the principal objectives, activities and responsibilities of CSO core funded units, and what should be the advantages, added value and outcomes from this funding?
   Provide authoritative sources of advice and training. However this advice and training should be aimed at increasing the capability and capacity at a ***local level.***

5. Do the current arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or are there disadvantages of this and would different arrangements or alternative models (such as the models set out in the review panel's terms of reference) be more appropriate?
   Utilise units that are established for as long as needed to support a specific scientific need or research vision

6. What criteria and processes should CSO apply to considerations about continuing, discontinuing and establishing core funded units (or alternative models of research support), including the exit strategy if funding is discontinued?
   Demonstrating that performance, outputs and their impact are ecologically valid.

STRATEGIC REVIEW OF CSO CORE FUNDED UNITS
STAKEHOLDER QUESTIONNAIRE

Response submitted by: NHS Health Scotland

In submitting this response, we would expect that the CSO and the Review Panel should take into account the final report of the Leadership for Public Health Research, Innovation and Applied Evidence (LPHRIAE) Commission contributing to the Scottish Public Health Reform programme. This provides the context for much that follows and bears on extensive consultation across the academic – service community; CSO were closely involved.

We are also aware that colleagues in Public Health and Intelligence within National Services Scotland have also submitted views. We would endorse their comments in regard of Health Protection and Health Intelligence research within Public Health.

1. How would you change the current arrangements and why?

Our familiarity with these units varies; SPHSU where colleagues are close and inter-dependent collaborators on a weekly basis; HERU where the links are less frequent but still strong and where capacity building has been a particular feature; HSRU which relates to different domain of Public Health; NMAHP which is rarely in the realm of Heath Scotland practice but which could be, as the delivery of population interventions at scale relies on evidence and consistently high-quality practice in the clinical realm.

Clearly the units are successful in responding very well to the ways in which research incentives they face and the context in which they work. It also needs to recognise the good and not so good, and to be clear how 'better' would be defined and measured.

This question implies that the status quo is not an option. Whilst we note the caveat that this review is not focussing on the units themselves, it would be good to set out the merits of the current units and investments, and the criteria by which the review is being undertaken. There is passing mention of resource constraints and policy objectives which, we must assume, are part of the bigger picture, especially if underpinning this review is an assumption that the balance between funding research units, developing research capacity, and contributing to research programmes needs to change. Clearly the units are successful in responding to the research incentives they face in the context in which they work. The review does, therefore, need to consider carefully how it changes those incentives without damaging the good thing that the incentives in place until now have helped to create.

At the same time, we can see that the units are seeking greater collaboration in creating research which is useful to research users. For example, we would highlight the way in which HERU has sought better engagement with some of the recent Health Economics Network for Scotland activities and other initiatives. Yet we are less clear that the 'nudges' provided by the CSO 5-year review will be strong enough to get them to move in a more policy and practice-oriented direction.

How would matters change? We still need longer-term investment in complex intervention development, intervention in causes of the causes of poor health and wellbeing, interventions that are not primarily medical or health professional (bio-psycho-social models); leading edge methodological development, interplay of talented staff with tenure / job security and career development opportunities.

Where would we welcome change? More policy relevant strategic investment in research, less micro or individual level research on public health problems; more interplay of staff between service and research organizations in statutory and third sectors; continuing investment in practice-based 'Implementation' research would also be important.

As the LPHRIAE report notes, we understand more about what is required to improve public health but we need research that tests theories, assumptions, harnesses new knowledge about research methods and capabilities of data, makes public health an attractive career option, focusses intelligently on skills blend and shortages. In this regard, we would suggest that the CSO share the public health response to the NIHR request regarding future research direction with the review team on this point.

2. What outputs have you seen or used from CSO funded units in the past and what health research outputs would you like to see from the units?

This is a very challenging question as the landscape of PH-related research and user focussed research has been influenced by leading edge themes and approaches over the decades. Arguably, any of the research undertaken by the units can be interpreted within a population perspective and has a public health value in application.

What we would like to see is a more active engagement with the policy and practice communities to define research priorities prior to research being designed and executed. How this may be achieved is set out very explicitly in the final report of the LPHRIAE Commission and is a driving ambition of the Prevention Research Programme and Health of the Public Research framework. This clearly articulates the need to move engagement away from the units seeking the best ways of 'selling' the kind of work they want to do, and moving more towards co-producing research priorities that seek to be transformational in finding out – and delivering – research based on what policy and practice stakeholders want and need.

There is an obvious tension here between building up centres of excellence regarded as such from the perspective of the academic community, upon whom peer recognition, publication and funding often depend; and building up centres of applied work where the types of analysis and questions asked may not fit with the academic areas of interest of, or the incentives faced by, academic units such as HERU.

As an example of a more fruitful engagement, we would point to the work between Health Scotland and HERU which has: supported the development and delivery of health economic capacity building efforts; collaborated on research associated with the evaluation of the MUP for alcohol legislation; and which has – along with others - been actively involved in discussions about how to strengthen both inter-university and university-policy-practice engagement to increase the impact of health

economics research on policy and practice. This has led to the proposal for a Scottish Health Economics network.

3. What sort of engagement would you wish to have with CSO funded units?

We would note that some of this is already covered in our answer to the first question, and that good models of collaboration already exist.

Our views are also set out in the LPHRIAE Commission's final report. However, these can be summarised as:

- shared strategy, planning and expenditure, notably with the new Public Health Scotland;
- Research ties – strategic influence, collaborations, networks, learning, mutual influence on priorities.
- Career & Skills development – staff interchange, shared posts, shared approaches to filling skills gaps and shortages.
- Keep wider (UK, international) ties where they add value, through the units.
- Host more internationally focussed and relevant collaborations.

4. What do you consider should be the principal objectives, activities and responsibilities of CSO core funded units, and what should be the advantages, added value and outcomes from this funding?

We should be seeking to promote longer-term, internationally leading edge, policy and population health-relevant research.

Advantages of such an approach? –Assured investment with the expectation of return, Scotland specific challenges in a UK or international context, capacity, building on existing talent and strength, strategically intelligent focus on research in a changing research world, leading and growing capacity in a knowledge economy where research will be an important part of the wider economy, Scotland's still-poor health record to tackle (which also means more morbidity and mortality events to study for a given population size).

Such an approach would also add value – vibrant inter-disciplinary research community already, competitive with increasing interest from policy makers and national agencies in health, wellbeing and social policy related interventions, based on evidence, and proper evaluation. Short-term funding means peaks and troughs, and have to be built on some constancy of investment. It is notable that the CRC Excellence model sows some successes and these have now passed – we need to learn from their successes and future challenges. We need also to add value to data and knowledge advances that are not easy to make a success at a population prospective level.

We need to be commissioning and delivering high impact research in terms of quality and applicability, relating to a critical mass of a PH research community, confident and productive collaborations, research groups. Enhancing researcher capacity is a very important function for CSO – other funding streams are not guaranteeing this.

5. Do the current arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or are there disadvantages of this and would different arrangements or

alternative models (such as the models set out in the review panel's terms of reference) be more appropriate?

This is a difficult question to answer as there are few – if any - hard indicators to help us to tease out if maintaining the status quo or creating a different structure or operating model would deliver different / better results. Of the three on offer, the third is already in place with SPHSU as it is part-MRC funded. The review panel will have a view, given their experience in England (most of the panel is from there). Our informal understanding is that there is merit in more close alignment with policy and that is good, but success varies. We understand that not all new arrangements are working well – we would need to understand why. We still need 'not-yet-applied' research in the blend, such as methodological development along with PhD and Masters', and post-doc programmes.

6. What criteria and processes should CSO apply to considerations about continuing, discontinuing and establishing core funded units (or alternative models of research support), including the exit strategy if funding is discontinued?

As a general observation, please see the themes emerging from our answer to Question 4.

Criteria do really need to be looking for aspects of the quality and impact of the type or scope of research to be undertaken. In addition it would be important to see the criteria as having a "read across" to subsidiary ambitions that align with wider strategic longer-term aims, such as Scotland Performs. We would, however, note that clarity is needed if the criteria are for application to existing units moving forward, or for new applications; this would have a bearing on the appropriateness of the criterion.

Processes – as a general note they have been employed before, but consultation and sufficient notice periods would be essential.

Report of a strategic review of CSO core funded research units by an independent expert panel

July 2019

Background

1. Current investments by the Chief Scientist Office (CSO) to support health research in Scotland include the core funding of four research units. These Units are:
   - The Health Economics Research Unit (HERU) at the University of Aberdeen established in 1977;
   - The Health Services Research Unit (HSRU) at the University of Aberdeen established in 1988;
   - The Nursing, Midwifery and Allied Health Professionals Research Unit (NMAHP-RU) at the University of Stirling and Glasgow Caledonian University established in 1994;
   - The Social and Public Health Sciences Unit (SPHSU) at the University of Glasgow established in 1998 that is co-funded with the Medical Research Council (MRC).

2. The Units were established as centres of research excellence in areas of strategic importance to the development of effective health, care and/or public health practices and policies in Scotland. As well as producing high quality research evidence, they are expected to provide authoritative sources of advice, training and research capacity building in Scotland, and to attract substantial additional external grant-based funding. All receive significant support from their host institutions. Each Unit was established at a different point in time, and has undergone a different evolution. Together they represent a significant investment, representing about £3.2 million p.a., which is about 5% of the total annual budget for CSO.

3. The Units have been reviewed on an individual basis around every five years by independent panels of experts to assess their strategic relevance and scientific quality in order to inform decisions about future funding. Over the decades, this arrangement has evolved into a process of rolling contracts with five year review points. There has not been an overarching review to assess CSO's investment in research units and, for this reason, the 2015 Scottish Government Health and Social Care Research Strategy[1] included an action for CSO to conduct an overarching 'strategic review of Unit purpose and funding'.

Strategic review process

4. To undertake this strategic review, CSO convened a panel of independent experts with experience in the strategic organisation of health research to address the terms of reference for this review. The membership of the panel and the terms of reference of the review are at Annex A.

5. The Panel initially discussed the context and background of the review in a conference call on 8 April 2019, agreeing the process it would follow, and the information that should be gathered in order to address the terms of reference. It agreed that views would be invited from a range of stakeholders via written questionnaires, decided on the questions that would be asked, and identified other information that it wished to be provided with. The Panel also decided it would invite the Directors of each Unit as well as senior representatives from the host institutions to meet with the Panel for a question and answer session.

[1] https://www.gov.scot/publications/delivering-innovation-through-research-scottish-government-health-social-care-research/

6. The written questionnaires were circulated on 17 April 2019 to the Directors of the Units, Scottish Universities, research-active Scottish territorial NHS Boards, Scottish special NHS Boards, health-related policy teams in the Scottish Government, a number of research funders, as well as some other stakeholders with a deadline for submission of responses of 10 May 2019. The questions asked of the stakeholders and the data on response rates are given at Annex B. The responses submitted were collated and common themes identified.

7. The Panel convened for a meeting in Edinburgh on the evening of 6th and all day on 7th June 2019 to consider the information that had been gathered and to meet and ask questions of each Unit Director together along with a representative from the associated host institution(s). The meeting agenda and a list of papers considered by the Panel are at Annex C. Since the Director of NMAHP-RU was not available to meet the Panel, she presented her views in a telephone call with the Panel Chair on 30 May 2019. A note of the discussion was provided to the Panel, and at the meeting on 7 June 2019 this Unit was represented by a senior member of its executive team.

8. At the meeting, the Panel reviewed and discussed all the information that had been provided and the responses during the question and answer sessions with the Unit Directors and representatives of the host institutions. It considered this information alongside the terms of reference for the review and formulated its advice and recommendations to CSO.

9. Following the meeting, a draft report was prepared in consultation with the Panel setting out its findings, conclusions and recommendations to CSO. The agreed final report was submitted by the Panel Chair to the Scottish Government's Chief Scientist for Health. This is the report of the Panel.

Findings and conclusions

10. The Panel recognised that core funding from CSO had helped the Units to establish themselves as centres of research excellence that are very highly regarded for the quality of the research, the calibre of their researchers and the science they produce. They leverage substantial additional income from grant awards from a range of research funders. The income generated has allowed the Units to expand significantly their activities, and each has developed an internationally-leading reputation in specialist areas of health research. The institutions that host the Units benefit greatly from the excellent scientific reputation, calibre of the research teams, and income generating capacity of the Units they host and clearly value them highly and provide them with significant support. The capacity of the Units to generate inward investment also provides some benefits to other research groups in Scotland via collaborations with them.

11. The Panel noted that there is good evidence of the impact and, in some cases, substantial influence of the Units' research on aspects of Scottish Government policy and NHS practice, particularly from the responses from the Units to the questionnaire and in the responses of stakeholders with developed relationships with the Units who had been consulted as part of the individual reviews of each Unit. In their responses the Units had identified the steps they had taken to engage and collaborate more widely,

and the Panel heard from the Units that engagement could be challenging, can be difficult to incentivise, and may not always be successful or productive.

12. The Panel considered that responses to the questionnaire circulated to the wider group of interested parties, as part of the strategic review, were more mixed about the impact of the research and engagement with the Units. These revealed amongst some stakeholders a lack of visibility and knowledge of the Units and uncertainties about the relevance, importance and impact of the Units' research. Some stakeholders were of the opinion that the scope of the research covered by the Units is too narrow. They were unclear how research priorities followed by the Units had been derived and did not consider that across the units as a whole they necessarily matched government priorities well. It was also unclear how some stakeholders might engage with the Units to discuss areas of research evidence needs, to influence the scope of the research conducted, or to collaborate in research and other activities.

13. The Panel considered that at the different points in time when the Units where first established they were likely to have addressed a lack of expertise and capacity in areas of health research in Scotland. While there is a clear continuing need for high quality health services, health economic, public health and nursing, midwifery and allied health professions research relevant to Scottish health and care challenges, the scope of the research that can be accommodated within a single Unit will necessarily be limited. The Panel felt that the scope of the Units' research portfolios would over time have tended naturally, and understandably, towards areas where they have developed specialised expertise. Hence, without scope to increase funding for this type of investment, the current, closed, rolling funding arrangement restricts the range of research that CSO might support in these disciplines. In addition, the current arrangement precludes funding a broader range of research to address any new priority areas of unmet need for longer-term programmatic research.

14. The Panel also recognised that the research landscape and context in Scotland has changed considerably since the Units were established with more university departments active in health-related research, including in health services, health economics, public health, and nursing, midwifery and allied health professions research. Hence, the Units and their host institutions may no longer provide such unique sources of expertise and capacity to undertake longer-term programmatic research in these and other research disciplines, and as such the current situation is more conducive to funding based on open competitive calls.

15. Given this, and the needs expressed by stakeholders for a broader range of research to be supported, the Panel concluded that CSO should move away from the current funding arrangements. Instead, CSO should introduce fixed funding terms for investments of this nature. Selection should be based on an open competitive process with independent expert appraisal of applications in response to calls that set out identified priority areas for longer-term programmatic research. This approach would provide opportunities to support a broader range of research and regular re-assessment of research priorities in consultation with stakeholders.

16. The Panel recognised that core funding from CSO had provided incentives for the Units to direct research towards Scottish health and care challenges and to foster links with

policy makers and practitioners in Scotland. Without core funding, research activities supported by the Units are likely to focus towards areas where grant funding is available from UK funders with priorities that may not be so well matched to priorities in Scotland. In addition, the Units may be less inclined to seek, develop and maintain relationships with health and care policy makers and practitioners in Scotland. However, the Panel considered that any open competitive calls issued by CSO as part of alternative arrangements would be for applied research with a requirement to demonstrate relevance to important Scottish health and care challenges. Thus, these incentives would remain but could potentially be taken up by a broader range of researchers, which could include those in the current Units, as a result of open calls.

17. The Panel acknowledged that, with a projected flat budget available to CSO for this type of investment, introducing new funding processes would mean ceasing the current core funding arrangements with a consequent impact on the Units. However, given their long-established profile as centres of research excellence able to generate substantial income through additional grant awards and their value to their host institutions, the Panel concluded that core funding is not essential to sustain them. They are highly likely to continue to be supported by their host institutions and to be sustained without continued CSO core funding, provided they are given time to adjust to these new circumstances.

18. Since their continued presence as centres of research excellence will be important for Scottish health research, the Panel considered that, for the Units that are core funded solely by CSO, time should be given to allow the Units to adjust to the new circumstances by tapering core funding over a period of time. The Panel noted that the Unit co-funded with the MRC operates with a different funding arrangement. With an impending quinquennial review dependent on a funding commitment in principle in advance of the review, it would be reasonable for CSO to commit to funding this Unit for the next quinquennial review period (subject to the outcome of the quinquennial review) with notice given that funding through this arrangement will cease thereafter. Withdrawing funding to a defined schedule across all these investments will also allow CSO to introduce new alternative arrangements for longer-term research in a planned and phased manner.

19. The Panel noted that stakeholder expectations of core funded research Units were varied. Commonly expressed views suggested that Units should be centres of research excellence producing high quality research of broad scope that is relevant to priority health and care policy and service challenges in Scotland. They should have a national reach and a collaborative approach with clear routes of engagement and effective knowledge exchange with policy makers, practitioners and researchers with capacity to respond to emerging policy priorities. In addition, they should support and sustain research capacity building and training activities and provide these on a national basis.

20. The Panel recognised that the Units had made useful contributions to building capacity in certain areas of health research and provided training opportunities for researchers, health and care practitioners and policy makers. However, again, stakeholders' views were mixed with some suggesting that capacity building and training activities had not been given sufficient prominence. It was felt these had been too limited to address the needs for greater clinical academic research capacity across health professions and

research support specialists such as medical statisticians, informaticians and health economists as well as training opportunities in research methods and skills for policy makers and practitioners.

21. The Panel concluded that, while all of these functions expected by stakeholders are important, it may not be possible for a single Unit to encompass all of them with the impact that may be expected and is needed. Instead, CSO should consider a range of more bespoke investments that can support the most prominent and important areas of need identified.

22. In light of this conclusion, the Panel considered that CSO should replace core funded Units with fixed-term funding for a small number of research centres that could be hosted within one, or a collaboration of a number of, Scottish universities. These centres could probably operate effectively with funding of around £0.5 million p.a. supplemented by host institution support and additional grant funding. They should be collaborative, have a national reach and fulfil defined areas of strategic need for research that requires longer-term development, a multidisciplinary approach, and close engagement with health and care policy makers and/or practitioners, producing research that is of particular relevance to, and can be applied by, them.

23. Centres should be selected through independent, expert appraisal of applications in response to open, competitive calls setting out the areas of research need. CSO should define a process and consult key stakeholder in Scotland to identify the areas of research for inclusion in these calls. The centres could operate on a fixed term of five years, although an initial seven year term could be considered for centres undertaking population-based research that generally needs longer lead in times to start producing results compared with laboratory-based research. There should be an expectation of a second term of five years of funding (or 3 years in the case of a seven year first tranche) subject to independent expert appraisal of progress, which would provide an opportunity to re-set the direction and priorities or to address failing centres with the potential to withdraw funding. Thereafter, the areas of research need should be redefined before a new open competitive call is issued; funding for more than two consecutive terms without an open competitive process should be avoided.

24. In addition to research centres, the Panel suggested that CSO should consider parallel calls for a small number of programmes of research to address defined areas of policy or practice need requiring a multidisciplinary approach but not the longer-term development of a research agenda where investment in a research centre would be required. Again, CSO should define a process and consult key stakeholders in Scotland to identify the areas of research for inclusion in these calls. These programmes could be of up to five years duration with a maximum total funding of around £1 million, though smaller and shorter programmes could also be envisaged, and would not be renewable. Programmes should be selected following independent expert appraisal of applications following an open competitive call.

25. Together research centres and programmes should complement the response mode grant schemes supported by CSO and provide a platform for CSO to support a broader range of project-based and longer-term programmatic research of established importance to health and care policy and practice in Scotland. In addition to these, the

Panel suggested that CSO could also consider whether it should support topic specific calls for projects addressing urgent policy priorities for research evidence or whether mechanisms for this would remain better placed elsewhere.

26. While all these initiatives would provide some indirect support to help build research capacity in Scotland, the Panel concluded, based on views expressed by numerous stakeholders and knowledge of the UK wide health research landscape, that CSO should take a more strategic and collective approach to building clinical academic and research support specialist capacity.

27. In order to address this issue, the Panel suggested that CSO should consider establishing a national academy to build capacity and provide training across a range of clinical research and health research support disciplines including: medics, allied health professionals, nurses, midwives, medical statisticians, health economists, and informaticians. CSO could bring together all of its current capacity building activities, including the range of fellowship schemes currently offered, into an academy structure to provide a single unified strategic investment to support health research capacity building and career development in Scotland. A national academy could be hosted by a collaboration of universities across Scotland that should be expected to contribute research studentships and post-doctoral training and be selected through an open competitive process with independent assessment and re-tendering based on review at fixed points in time. CSO could work in partnership with others such as territorial and special NHS Boards and professional bodies who might have an interest and co-invest in a national academy.

Recommendations

28. The Panel recommends that CSO:

- cease core funding of research units through a managed process with, in the case of Units solely core funded by CSO, core funding being tapered over a period of time to help the research groups within the Units to acquire other sources of funding to become self-sustaining with the support of their host institutions. In the case of the Unit co-funded with the MRC, which operates with a different funding arrangement, CSO should commit to funding this Unit for the next quinquennial review period with notice given that funding through this arrangement will cease thereafter.

- fund a small number of research centres hosted by a single Scottish University or, if clearly justified, by more than one in collaboration. Centres could be expected to operate with funding of around £0.5 million p.a., supplemented by host institution support and additional grant funding, for a fixed term of five to seven years with an expectation of a second term subject to independent expert appraisal of progress. The centres should be collaborative, have a national reach and fulfil needs for applied health research in defined areas of strategic priority for Scotland requiring longer-term development, a multidisciplinary approach, and close engagement with health and care policy makers and/or practitioners.

- fund a small number of applied health research programmes to address defined areas of policy or practice need requiring a multidisciplinary approach but not

the longer-term development of a research agenda where investment in a research centre would be needed. These programmes, which should involve close engagement with evidence users, and produce outputs that can be applied in Scottish policy making and/or practice, could be of five years duration with total funding up to £1 million, though smaller and shorter programmes could also be envisaged, and would not be renewable.

- select research centres and programmes for funding through independent expert appraisal of applications from the Scottish research community in response to open competitive calls in areas of need defined in consultation with key stakeholders in Scotland.

- invest in establishing a national academy in Scotland to build capacity and provide training across a range of clinical research and health research support disciplines. By bringing together all of its current capacity building activities, this could become a single focussed investment by CSO to support health research capacity building in Scotland. An academy could be hosted by a collaboration of institutions across Scotland that should be expected to contribute research training posts. Selection of the host(s) should be through an open competitive process and independent assessment with review and re-tender at fixed points in time. CSO should aim to partner with others who might have an interest in co-investing in such a national academy.

Acknowledgements

29. The Panel would like to thank all stakeholders that responded to the questionnaire for their input into this review and to thank the representatives from the Units and host institutions for their time to meet with the Panel.

Annex A – Panel Membership and Terms of Reference

Membership

Professor David Lomas (Panel Chair)	Vice Provost (Health), Head of the UCL School of Life and Medical Sciences and Head of UCL Medical School
Professor Jon Bisson	Former Director, Health and Care Research Wales, Division of Psychological Medicine and Clinical Neuroscience, Cardiff University School of Medicine
Professor Jon Nichol	Professor of Health Services Research in the School of Health and Related Research (ScHARR); Dean of ScHARR
Professor Jeremy Pearson	Associate Medical Director (Research) at British Heart Foundation
Professor Jane Sandall	Professor Social Science and Women's Health, School of Life Course Science, Faculty of Life Sciences & Medicine, Kings College London, and NIHR Senior Investigator
Professor Stephen Smye	Professor, School of Medicine, University of Leeds & NIHR Clinical Research Network Specialty Cluster Lead, King's College London
Professor Nick Wareham	Director MRC Epidemiology Unit, University of Cambridge
CSO support	Dr Tom Barlow, Andrew Butter
Observer	Professor David Crossman, Chief Scientist (Health) Scottish Government

Terms of reference

To advise CSO on:

- the advantages, and disadvantages of core funding of health research units and whether core funding continues to offer an important and valuable mechanism for CSO to support world-leading health research in Scotland or whether alternative models***** to support applied research in areas of priority need would be more appropriate. This should take into consideration the other funding mechanisms employed by CSO, the constraints on the CSO budget, the wider UK funding landscape and the access to those wider funds in Scotland.
- given this, should CSO continue to provide core funding for research units or implement an alternative model of research support and if so, the level of this investment in terms of its overall budget?
- what should be the principal aims, objectives, activities and responsibilities of core funded units or an alternative model of research support, and what outcomes should be expected from the funding?
- what are the principles and criteria CSO should apply to considerations about continuing, or discontinuing core funding of units and/or establishing new core funded units or an alternative model of research support, and what process should CSO follow in each case, including the exit strategy when funding is discontinued?

- what financial arrangements should be applied by CSO with the host institution(s) and co-funder (when there is one), and what duration, conditions, review, and monitoring arrangements should be applied?

*****Alternative models could include:

- the 'schools' model employed by National Institute of Health Research of partnerships of academic centres to conduct research and engage with practitioners and policy makers (e.g. School for Public Health Research);
- the policy research unit model employed by the Department of Health & Social Care of academic centres to meet longer-term policy research needs and secure capacity for work commissioned at short notice;
- MRC Institutes (long-term flexible multidisciplinary investments), Units (established for as long as needed to support a specific scientific need or research vision) or Centres (shorter-term to establish a self-sustaining centre of excellence).

Annex B – Questions asked of stakeholder and response rates

Questions asked of Scottish Universities, research active and special NHS Boards, Scottish Government, research funders, and other stakeholders

1. How would you change the current arrangements and why?
2. What outputs have you seen or used from CSO funded units in the past and what health research outputs would you like to see from the units?
3. What sort of engagement would you wish to have with CSO funded units?
4. What do you consider should be the principal objectives, activities and responsibilities of CSO core funded units, and what should be the advantages, added value and outcomes from this funding?
5. Do the current arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or are there disadvantages of this and would different arrangements or alternative models (such as the models set out in the review panel's terms of reference) be more appropriate?
6. What criteria and processes should CSO apply to considerations about continuing, discontinuing and establishing core funded units (or alternative models of research support), including the exit strategy if funding is discontinued?

Questions asked of Unit Directors

1. How would you change the current arrangements and why?
2. What is the Unit's strategy to help ensure alignment of its research with Scottish Government policy priorities, and important NHS challenges?
3. How does the Unit support patient and public involvement in research, training, and research capacity building?
4. What is the added value of CSO's investment in Units?
5. Do the current Unit funding arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or would different arrangements be more appropriate?

Response rates to the questionnaires

	Number responses / number questionnaires sent	% Response rate
Units	4/4	100%
Scottish Government	6/14	43%
NHS Boards	4/17	24%
Medical Schools	5/5	100%
Other HEIs	4/10	40%
Research Funders	3/7	43%
Others	2/3	66%
Total	28/60	47%

Annex C – Meeting agenda and papers considered by the Panel

AGENDA

	Item
1	Welcome, recap and overview of the day
2	Preparation for meeting with Units and Host Institution representatives and discussion of written responses
4	Meetings with Unit and Host Institution representatives • Mandy Ryan (HERU) & Marion Campbell (UoA) • Craig Ramsay (HSRU) & Marion Campbell (UoA) • Edward Duncan (NMAHP-RU), Jayne Donaldson (UoS) & Jim Woodburn (GCU) • Laurence Moore (SPHSU) & Jill Pell (UoG)
5	Discussion of responses from Unit and Host Institution representatives to identify common themes and draw some interim conclusions
6	Future CSO strategic priorities and operating budget
7	Lunch
8	Discussion of stakeholder responses to questionnaire to identify common themes and draw some interim conclusions
9	Discussion against terms of reference and agree conclusions and recommendations
10	End

Papers considered at 8 April 2019 conference call

- Paper 1 – Background of core funded units and context for the review
- Paper 2 – Proposed process for the review

Papers considered at 7 June 2019 meeting

- Paper 1 – Agenda and background on the review
- Paper 2 – Background on the Units and for meetings with Units and Host Institutions
- Paper 3 – Reports of stakeholder views and unit reviews
- Paper 4 – Summary of Unit Director responses to questionnaire
- Paper 5 – Future CSO strategic objectives
- Paper 6 – CSO operating budget and commitments
- Paper 7 – Summary of stakeholder responses to questionnaire
- Paper 8 – Other funding models
- Unit Director and stakeholder responses

STRATEGIC REVIEW OF CSO CORE FUNDED UNITS
STAKEHOLDER QUESTIONNAIRE

Response submitted by: *NHS Lanarkshire*

1. How would you change the current arrangements and why?
   My initial comment would be to recognise that, as one of the Dunfermline Group Boards, our primary contacts with any of the directly funded units usually occur when those units are involved in the conduct of individual research studies / clinical trials that we, as a Board, participate in as a 'host' site. For example, we have been involved in a number of studies that involve one or other (or both) units in Aberdeen – OPAL, LENS, DyNAMISM, RAACENO, BSRBR-AS, etc. However, as a host site, or focus and main contacts are often via the Chief Investigator's team (in the case of OPAL, this was Professor Susan Hagen at Glasgow Caledonian University, although both the HSRU and HERU were involved in the study), rather than with the units that are involved in planning, analysis, etc. Recognising that context, our contacts therefore tend to be coincidental and project-specific, rather than strategic in nature – our concern is the conduct of the individual studies – patient recruitment, following the research Protocol, adherence to GCP principles, etc. - rather than recognising the broader strategic aims of the units that are involved. We recognise that this perhaps limits the insight that we can offer about the units themselves, but we do offer comments where possible.

   In terms of the current arrangements, we have little contact or direct involvement with the work of the Social and Public Health Sciences Unit at Glasgow University so it is difficult, from the perspective of a Board primarily involved in acute and primary-care based translational / interventional research studies, to offer comment in this area.

   Our contacts with HSRU and HERU – albeit as described above – have been positive. Their locus – within an academic unit with close NHS integration – is a positive that appears to work well, and we would suggest this to be a good arrangement. A similar arrangement applies for the NMAHP-RU, and we have primarily engaged with them in projects within the field of stroke via this unit – similarly to the comments re: HERU and HSRU, the involvement was triggered by the clinical subject matter – stroke care – rather than the fact that this was a study related to NMAHP-delivered care

2. What outputs have you seen or used from CSO funded units in the past and what health research outputs would you like to see from the units?
   As indicated above – it is not necessarily obvious when carrying out a research study in a host Board that one, or more, of the funded units is involved. This potential lack of visibility may not serve the units themselves. All have websites where they describe their work, outputs, impact, etc., - although in some cases it is easier to find out the impact of their work than in others. This is a general comment regarding output from research and the funded units. It would be helpful to have a standardised form of output from all of the units on a regular basis (annually / bi-annually?) detailing their performance against a number of metrics / quality indicators.

The NHS Boards have for the first time this year been asked by the CSO to include within their annual Research Activity Report (RAR) details of their most 'impactful studies'. This is a welcome addition to the annual report, and seems to be a step in the direction of the Research Excellence Framework (REF) reporting that is a requirement for HEIs. It is, however, often very difficult for Boards that are host sites for studies – i.e., not the sponsor, nor responsible for publication, dissemination of results, etc. – to actually know how those studies influence practice. As part of the output from CSO funded units, it would be good to see what the impact of their work is, and also, to highlight the Boards that helped contribute to that impact by recruiting to the study. This would also help those Boards' own annual reporting to the CSO

3. What sort of engagement would you wish to have with CSO funded units?
   More direct input across the Board. We expect that there is a higher level of input and collaboration within the HEIs that host units, and possibly within the NHS Boards where units are hosted. Broadening that collaboration would be beneficial for all parties.

4. What do you consider should be the principal objectives, activities and responsibilities of CSO core funded units, and what should be the advantages, added value and outcomes from this funding?
   *Create capacity in **all** NHS Boards, or at least have a direct, active and clear link to all NHS Boards so that the flow of information, and access to expertise across the Board can be improved.*

   The advantages of CSO funded units should be that they are clearly seen part of the 'NHS National Research Scotland' family. That may not seem to be the case, with the locus being on their HEI setting.

   For Dunfermline Group Boards, there is often a sense that 'specialist' activities and support is distant – '…we don't know what they can do for us, they don't know what we can do for them…' (if anything). There is no criticism here – it may simply be a function of a small R&D Department – perhaps only 3-5 people with one manager in the R&D Office - having limited capacity to engage across a broad range of support organisations. The same is true in other areas, such as innovation, where R&D managers have limited engagement.

5. Do the current arrangements support both research excellence and the production of research that is responsive to pressing health policy and practice needs or are there disadvantages of this and would different arrangements or alternative models (such as the models set out in the review panel's terms of reference) be more appropriate?

   As mentioned previously, we can only really comment on our experience as a host Board, and within the context of the engagement we have had in projects supported by the units, and recognising the limitations of feedback about the impact of research supported by the units. Within those limitations, we expect that others can comment on responsiveness to policy, etc. It would, however, be interesting to know how this is arranged – i.e., are the units given priorities to address / are they required to conduct research in response to Regional / National Healthcare Planning priorities (this seems to

be the direction that the WoS Innovation Hub may be taking in relation to innovative solutions to healthcare priorities), or are the internal priorities determined within the units themselves.

In relation to the NMAHP-RU specifically, the work of the unit is clearly important, and – as detailed in the Scientific Review of the Unit from 20110-2017 – delivers real impact – we are involved in a number of the studies. I would just perhaps make the point that our involvement is not focussed on the fact that this is a unit primarily concerned with building NMAHP capacity for research, or for focussing on NMAHP-delivered interventions per-se. Our concern is offering research studies that may benefit our patients irrespective of the profession or professions that deliver the intervention. It is a small point, but I think worth noting that we regard researchers in the same way irrespective of their profession – we don't have a 'doctors' research unit, or a 'cardiology technicians' research unit for instance.

It may be that, in this instance, the 'school' model alluded to below may be something that could be considered as an alternative, slight re-focus of the current unit. Indeed, the NMAHP-RU is already very closely aligned within the School of Health and Life Sciences within Glasgow Caledonian University.

6. What criteria and processes should CSO apply to considerations about continuing, discontinuing and establishing core funded units (or alternative models of research support), including the exit strategy if funding is discontinued?
   As mentioned previously, annual reports with clear metrics that measure quality / return on investment (ROI). Board funding, for instance, is calculated based on number of studies and number of recruits. Clearly too crude – and short term – for funding a research unit, but could be measures such as ROI (grant funding vs investment – similar to metrics associated with CSO investment in NIHR programmes), number of Boards that contribute as host sites to research unit-sponsored studies, number of occasions in which Boards are credited within publications, measures of impact (in line with REF reporting) and how Boards contributed, etc.