Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Office of the National Director of Health and Wellbeing

Submission

Re: HSE Feedback on Consultation Paper for Successor to Strategy for Science, Technology and Innovation

Introduction
This document is submitted on behalf of the Office of the National Director of Health and Wellbeing. Dr. Stephanie O'Keeffe, National Director of Health and Wellbeing and colleagues welcome the opportunity to make a submission to this consultation process from a HSE perspective.

Please note the submissions content and recommendations have been drawn together based on inputs from the National Director Health and Wellbeing, National Director, Clinical Strategy and Programmes and the Chief Information Office of the HSE. Inputs and feedback have also been provided by other Senior Leads in the HSE both within the Health and Wellbeing Division, including representatives of Health Intelligence and outside it, including inputs from colleagues in Mental Health, HSE.

Note on response:
This is a compendium of feed-back from key HSE respondents, as set out above, in relation to the contents and questions posed in the documents 'Consultation Paper for Successor to Strategy for Science, Technology and Innovation' as issued by the Interdepartmental Committee on Science, Technology and Innovation.

The consultation paper is set out as 8 sections in relation to 8 key 'pillars' for the successor strategy and questions are posed at the end of each section to help frame and focus responses.

The layout of the feedback in this document follows this suggested structure with some exceptions where necessary e.g. for particular or cross-cutting points of feedback.

1. Investments in ST& I and key goals/ targets

What should Ireland's ambition be in Science Technology and Innovation (STI)?
Ireland's ambition should be to at least keep pace with the average % of GNP for research and development compared to the average for the long established group EU countries.

Further, Ireland's ambition should be to make more effective connections amongst those who generate data/ conduct research; those who interpret the data; and those who act on the information derived from the research. The ambition for STI needs to ensure that the benefits from innovation in research are realised for health and wellbeing of the population.

On a specific point, the relevant tax regime should be continued and extended as follows:

i) tax incentives for R&D by for-profit health service providers and suppliers to same;

ii)tax incentive to firms to demonstrably build 'absorptive capacity (ref page 9 of the consultation paper).

Ireland is currently an innovation follower and lags behind other small developed countries in R&D intensity. Should we have more ambitious targets for investment?

Yes - for example Ireland should move to invest a substantively higher % of GNP for R&D when this can be afforded.

It would be helpful to discover and really understand why Ireland lags behind other small developed countries. Is this due to lack of appropriately targeted investment, competition among a small pool of personnel for the small or large amount of investment, issues of collaboration, or a need to upgrade the skills of experienced workers who could develop further ideas and innovation? Perhaps there is a need to attend to the 'process' issue in terms of the 'how' of research as well at targeting the 'what' needs investment.

How can that level of ambition be justified? Where would we target increased funding and how could this be justified?

It would be helpful to target the areas where the ambitions have been clearly established and support the realisation of these ambitious visions e.g.

a) Health and Wellbeing: More people have healthy lifestyles and behaviour
b) Health: 'Be the best country in the world in which to grow old'
c) Business: 'The best little country in the world in which to do business'

In addition to issues such as:

d) Social cohesion; and
e) Reduction of CO^2 emissions for the benefit of the health of the population.

Much of the health of the population, from early years and throughout the life span, can be improved by changing behaviour and lifestyle. This is complex and requires research and application of the findings. The area of prevention is an area of importance for research and funding. Each of the items a), b) and c) has whole-government or inter-agency, collective approach and therefore the funding can be justified. Items d) and e) are important aspects for prevention of ill health and promotion of mental health and enhanced societal impact.

2. Prioritised Approach to Public Research Funding

How can research prioritisation better serve our national objectives of a strong, sustainable economy and a better society?

Anything that encourages research and innovation is welcomed especially if it promotes jobs growth that raises the standard of living in the wider economy and is vital to overall societal wellbeing through engagement in purposeful activity.

We would like to see a considerable increase in investment in health research of all types as part of the next strategy. There can and should be a 'balanced' investment in R&D in relation to basic bio-medical science, along with that focused on population health, and in relation to health treatments. In that context a crucial focus for the successor strategy should be in relation to the full spectrum above as pertaining to Chronic Disease.

Not all research will necessarily result in jobs growth but focus on improving the health of a population in terms of better service provision by system analysis and evaluation and service improvement methodologies - this type of research should not be disadvantaged by the SSTI or excluded from public research funding as to have a high performing health system we need continued research across the spectrum. When clinicians undertake research they usually do so with the focus on patient outcomes - albeit this may result in an opportunity to convert this into jobs in the future - but it would not be the initial priority.

The priority of the strategy is to exploit the market and create jobs but research into rare conditions that may not have an impact on jobs but on the patient needs to be maintained. Further, prevention is a key area and we need to focus research in this area - both disease prevention and changing behaviours (smoking, alcohol etc.) and this type of research tends to generate long term societal gains. Also a lot of research is based at illness and medically focused - other types of research from the wider clinical group - nurses, HSCP's, etc. can generate service improvement and efficiencies as well as improved patient outcomes.

Note is that the purpose of research prioritisation is to make the most efficient use of limited resources in order to meet organisational, national and international objectives, and to ensure that patients, service users and the wider economy benefit from research efforts. Existing priorities may need to be re-examined, or new ones will need to be set when:

- New technologies are developed and little is known of their effects;
- Knowledge is already well advanced, but knowing a little more may have a positive impact on health;
- Studies are readily available, but have not taken into account issues that are important to patients and clinicians;
- Considerable research has been conducted but the total knowledge is unclear because isolated studies need to be considered with main body of the research[i].

It is increasingly recognised that it is vital to have patient involvement in decision-making around research prioritisation. Patients and clinicians have specific ideas about which technologies they would like to be fully tested, and which current treatments warrant further testing[ii]. The following checklist for setting priorities for health research captures themes of good practice:

- Decide which contextual factors underpin the process: resources; focus; values; health; research and political environment;
- Use a comprehensive approach, with structured, detailed, step-by-step guidance;
- Inclusiveness towards participants;
- Information gathering to inform the exercise;
- Planning for information: translating priorities into research;
- Select relevant criteria for deciding on priorities;
- Plan evaluation: how and when;
- Transparency: report clearly who set the priorities and how

Finally, there certainly should be a specific prioritisation of R&D regarding methods that directly tackle issues of social inequity e.g. methods to deliver substantive improvement in education levels of the population. Such a prioritisation makes sense for a number of reasons:

i) the issue of successfully raising education levels is a major national and global issue for advanced economies;

ii) there is substantive evidence that success will have economic and social/ health benefits;

iii) Ireland arguable has a reasonable position to develop, deliver and evaluation the relevant methods; and

iv) prominence of this aspect of R&D investment will directly counterbalance the perception that SSTI R&D investment is about jobs and wealth generation for the 'upper half/ three-quarters of society' without obvious benefits to the most deprived and challenged.

How best do we identify emerging areas of opportunity and challenge, i.e. horizon scanning?

In every field there tends to be thought leaders who are often 8–10 years or more ahead of the current thinking. It would be helpful to identify these thought leaders through the research networks that have been established on the island of Ireland. The following include networks for example that emphasise healthcare research: SPHeRE Research Network; Children's Research Network; HEAnet, Irish National Education and Research Network; Irish Clinical Research Infrastructure Network (ICRIN); Northern Ireland Public Health Research Network; HRB Clinical Trial Network; Irish Heart Foundation National Cardiovascular and Stroke Research Network; and the Irish Paediatric Clinical Research Network.

It is important to have a process of consultation between representatives from academic institutions, industry & the health services to identify shared research priorities & opportunities for collaboration.

Finally, and specifically, Ireland should re-double the efforts to stay 'highly networked', with the addition of three key new approaches:

i) focus on economic and environmental sustainability as a major theme

ii) establish Ireland as a very 'research friendly' location for the above and other themes

iii) a programme of job postings for senior public service leaders to work with leading teams in other jurisdictions to learn latest thinking for application to Ireland.

3. Enterprise-Level R&D and Innovation Performance

How can we incentivise firms that are R&D active to scale their research efforts?

Ireland should move as rapidly as possible to increase commercial delivery of a range of health services (in the context of a model of universal coverage) in a manner that focuses on rewards for improved value (improved outcomes at lower unit costs) – this will considerably accelerate the incentive for attention to and application of R&D process by that sector.

4. International Collaboration and Engagement

How can we further increase/ strengthen the effectiveness of our international collaboration and engagement across all areas of STI investment in pursuit of economic and societal goals?

Research has indicated that, while changes in structure and process will help with collaboration, the most critical factor in determining whether a cross-departmental initiative works or not, is leadership (Maguire, unpublished thesis, 2013)[iii]. Systems thinking, strategic thinking, results-orientation, judgement and an ability to develop and maintain relationships are the traits and characteristics which indicate predisposition to effective collaborative leadership. Collaborative leadership is value-based and collaborative leaders are required to demonstrate honesty, integrity, empathy, openness and active listening. These are issues for consideration which can underpin ways to improve international collaboration.

In addition, it is worth noting the types of people identified by Malcolm Gladwell who impact engagement. These include *Connectors*, defined as people who link people up and introduce them to business and social circles – people we rely on more heavily than often realized. They have a very special gift of bringing people together.

Gladwell further describes the *Maven* as a person who has information on a lot of different products or prices or places. This person likes to initiate discussions with consumers and respond to requests, and is likely to be a helper in the marketplace. This is the person who connects people to the marketplace and has the inside knowledge on the marketplace. In the current context, this could be the person who connects people to the research world or, indeed, to ways to access funding.

In addition, there is what Gladwell calls Salespeople: "Mavens are data banks. They provide the message. Connectors are social glue: they spread it. But there is also a select group of people – Salesmen – with the skills to persuade us when we are unconvinced of what we are hearing, and they are as critical to the tipping of word-of-mouth epidemics as the other two groups."

In research terms, we need Connectors to make the links among people who are doing similar or complementary research. The Mavens will be knowledgeable on the products and outputs of research and the Salespeople will spread the work of the outcomes or benefits and actions from the research.

While keeping these characteristic people in mind, research engagement activities are also required to help make science more accessible to people across Ireland and internationally. Engagement can take place in science centres and museums, at festivals, in schools, on the street or through the media, including the internet. They could include radio and TV debates where members of the public can hear about the latest research on topical issues. This tends to be more common in Canada than here in Ireland.

5. Organisational / Institutional Arrangements to Enhance Research Excellence and Deliver Jobs

What could we do to further enhance our landscape and intuitional arrangements to maximise the impact of research excellence and delivery jobs?

Ireland should consider how to make the very most of the eHealth Ireland initiative, learning lessons from other countries will allow us to have from the beginning options to access health information in a suitably anonymised way that means research can safely be done.

In this regard, with the establishment of an EHR (Electronic Health Record) in Ireland we will garner a longitudinal record system for the whole population. If the opportunities arising are handled correctly and carefully (i.e. with regard to data protection requirements, e.g. facilities for opt-in/ opt-out) then this will provide a rich resource for clinical research.

By prioritising e-health research, the HSE could facilitate clinical research as part of its capability. HSE health care providers could be asked to commit to delivering clinical research with targets to achieve some research underway in every part of the organisation by a certain date. Further, health care providers could be directed that improved methods discovered through funded research must be implemented in the health provider and the local geography.

The HSE could engage with a CRO and become a site for specific types of research, nation-wide. This approach has been successfully adopted for example in Scotland – where it has been possible to generate a degree of new investment finance for health services through orderly partnerships with commercial health products providers to enable R&D exercises without transgressing legal and ethical requirements.

Driving research in health and in particular in the HSE needs the buy-in of vital non-clinical stakeholders such as ICT, HR and Estates who may have very different priorities. High level support for an agenda for health research through SSTI would ensure these issues are addressed and a plan is in place with various stakeholders, dept of health, HSE, HRB, SFI, private sector etc.

There needs to be a clear road map with so many entities (SFI, HRB, EI, HIH) and who goes where and for what. Also there is a large volume of research being undertaken via different initiatives in the HSE – we are currently working on joining this up and also using research outputs in a structured way to inform policy going forward.

There is also research been undertaken in the system where Irish clinicians are part of international studies - as a result of this the jobs dividend may not be in Ireland but the patient benefits may be, again Irish clinicians taking part in international work should continue to be supported.

In this context there needs to be a substantive R&D 'hub' in the HSE, and a step-change in research capacity in the Department of Health (DoH), including the possible establishment of a Scientific Advisory Committee directly inputting to the DoH.

How can Ireland optimise its strategic advantages of location, scale, and environmental quality as a fundamental component of its research infrastructure

Ireland can and should aggressively develop a market share of the provision of 'tele' methods for managed care/ self-care supports by harnessing a combination of the latent advantage of excellence in: data analytics; health; customer relations management (including services large geographies in multiple languages).

To accelerate this opportunity, there should be a accelerated switching from the current models in Ireland, largely using existing in-house workforce, towards the use of contracted external providers, with the existing in-house workforce being then able to engage in broader / 'street-level community development work.

The above could be accelerated by the selection of one of the EI/ IDA Technology Centres as the sole centre for collaborative development on the necessary R&D.

How can we further increase/ strengthen the effectiveness of our national collaboration and engagement across all areas of STI investment in pursuit of economic and societal goals?

- We need to develop research networks / clusters to facilitate conducting high quality, large N research.
- We need to engage in a process of consultation between academia, industry & the health service to identify opportunities for collaboration.
- We need more funded fellowships to support collaboration between our health service & industry, similar to way in which the SFI Industry Fellowship programmes seek to facilitate exchanges between academia & industry.

6. World Class IP Regime and Dynamic Systems to Transfer Knowledge and Technology and Jobs

The next substantive stage of harnessing a knowledge transfer approach must include the establishment of an effective scale R&D programme office in each relevant government department and other major public sector planning and delivery agencies. These programme offices would take charge on ensuring knowledge transfer and generation happens and delivers targeted benefits.

7. Government wide goals on innovation in key sectors for job creation and societal benefit

There are 3 major issues for Ireland which combine economic and societal challenges, and opportunities for benefits from a step-change in approach

i) education;

ii) sustainability – environmental, energy and quality food supply {these are increasingly intrinsically linked); and

iii) health and social care services (especially maternal and child health).

Investment in R&D and commercialisation of solutions nationally and internationally will deliver direct economic benefits through job creation and will address key issues underpinning a better society. The above also further underscores a theme for the successor strategy to deliver benefits for all of society (e.g. through sustainable energy methods delivering lower costs to deprived households) rather than being perceived to be about 'business/ profit' and those already in an advantageous position.

8. Research for Knowledge and the Development of Human Capital

A key aim of this section to consider how to ensure increased capacity for research knowledge producers to share information and increased opportunity for research knowledge users to utilize information.

What more can we do to best harness the potential of our knowledge base for sustainable economic and social well-being?

AND - What additional steps can government take to ensure the development of human capital across the population to ensure the success of the new Strategy?

The new strategy should enable later career healthcare professionals and managers to develop research skills through funded CPD and mentoring; and support ways for organizational representatives to link with their constituency base for ongoing two-way communication e.g. support to connect with same and multi-disciplines nationally and internationally.

The establishment of the skills and the discipline of the role of *Knowledge Broker* i.e. someone who will draw on the existing body of knowledge, research, products and information to interpret bottom-line results and create targeted, practical tools that can help to change practice. This can be achieved through facilitating collaborative efforts of stakeholders/ partners.

Further, there should be a funding of skills development in:

a) project management skills development for researchers and practitioners;

b) communication/dissemination know–how; and

c) Network analysis training.

These skills will likely augment human capital though improving how research is managed, findings are communicated and map the project or research networks which have been established and which can be developed further.

Further, with reference to the final paragraph of section 8 of the consultation paper, and the material in the middle of page 66 re Higher Education Reform, a key theme for the successor strategy should be a very much similar approach to the post-primary sector.

There will be considerable economic and societal benefits from a step-change in the application of R&D in that sector, including a considerable increase in opportunities for the provision of services by 'for-profit' providers (e.g. proven programmes to structure and supplement to deliver, monitor and evaluate parts of the curriculum).

Finally, there should be re-doubled attention to the establishment and operation of eHealth Ireland – as an entity with freedom to identify, contract for, and apply best –in-class methods. This will provide direct incentives for indigenous commercial entities allowing them to flourish and be more able to grow through exporting products and services.

How can we ensure that the requisite links between research and scholarship are maintained across all RPOs?

AND In order to achieve a sustainable research capacity, are the outputs of our research system at doctoral and postdoctoral level the right ones in terms of volume, quality and relevant discipline?

Provide funding to support experienced professionals to conduct PhD part-time which will likely enhance the development of human capital and application of theory to practice for improved outcomes.

Should research and innovation performers be supported to engage citizens more actively in the innovation process to achieve optimal outreach to the public?

Yes, absolutely. Possible activations could include:

- Tap the expertise of SFI, HSE and other national organisations to identify research from a range of knowledge sources, and make the information accessible to a variety of users in a variety of ways;
- Support a national conversation and consensus building process on a range of key topic areas such as health and wellbeing, cancer, heart failure etc;
- Support capacity development of users to create information, and to access and utilize the information created by others;
- Facilitate exchange of ideas and information amongst various knowledge sources;
- Build in mechanisms for multidirectional communication among researchers and audiences, such as links to a variety of websites as well as face-to-face fora, accounting for the possibility that the respective research/audience roles are dynamic and subject to shifts;
- Support the development of a 'Research Radio' or 'Health Research Radio programme' or indeed station such as exists for Harvard to support broad public engagement.

Additional Points

There are many challenges in health and social care for which solutions are yet to be resolved. It would be helpful for the ST&I strategy to find mechanisms to connect research and innovation with real world problems so that research helps to solve such problems and the challenges enhance creativity, innovation and stimulation. These may include the following issues:

- How to keep people healthy?
- How to use research to track and make recommendation with regard to the potential impact of demography such as ageing population?
- In addition it would be beneficial for the strategy to focus on research and innovation which supports the discovery of technical solutions to support staff improvement and avoid healthcare practice inefficiencies.
- How to address and resolve the issue of cyber bullying?
- Ethics and Research ethics - ensure that the SST&I strategy supports researchers and practitioners to keep pace of ethical issues which emerge from new innovations.

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[i] Hazelkorn E. Accessing the Knowledge Society: Intended and Unintended Consequences of HE Policy Reviews. Forum on Higher Education, Research and Knowledge; Colloquium on Research and Higher Education Policy UNESCO, Paris, December 2004.

[ii] NHS National Institute for Health Research. *INVOLVE: Patient and Public involvement in prioritising research.* Available at*:* http://www.invo.org.uk/posttypeconference/patient-and-public-involvement-in-prioritising-research/ (Accessed 12th February 2015)

[iii] 'Collaborative Leadership' at Cross-Departmental Level in the Irish Civil Service – An Exploratory Study The Irish Management Institute. May, 2013