Response ID ANON-QZ7X-DDD1-Q

Introduction

1 Full name

Full Name:
Prof. John Carlin (Murdoch Children's Research Institute), Prof. Andrew Forbes (Monash University) and Prof. Julie Simpson (University of Melbourne) on behalf of The Victorian Centre for Biostatistics (ViCBiostat)

2 Submission type

Organisation affiliated

3 Organisation type

Non-government

4 Organisation sub-type

University, Medical Research Institute, Other

5 Residential state or territory

Victoria

6 Do the current Priorities remain relevant in the contemporary environment for continuation for a further 12 months?

250 word limit:
The current priority areas are endpoints of activity, and remain relevant. However, there is a major gap in national capacity in the methodological expertise and innovative methodology that is needed to underpin research in these priorities areas. Describing this gap and proposed remedies form the basis of this submission.

7 Should any of the Priorities be emphasised or de-emphasised for the next 12 month period?

If you answered YES, please indicate what specific priorities and why? (max 250 words):
The gap that we identify (below) suggests that there should be greater focusing of the Digital Health Intelligence and Comparative Effectiveness Priorities (with flow-on benefits to other Priorities). These two current Priorities assume that fit-for-purpose data exist by happenstance, whereas in reality true digital health intelligence and high-quality comparative effectiveness research require far greater emphasis on the scientific challenges of defining clear research questions, identifying corresponding research designs and developing appropriate analysis strategies that address the research questions, while recognising important sources of bias and uncertainty in conclusions. This is in contrast to the current tendency to emphasise the technology of computing, in particular artificial intelligence, and its use with 'big data' or 'real world evidence'. Technology provides powerful tools but cannot itself address scientific questions. Although we are broadly supportive of all of the priorities, the strategy to achieve them needs augmenting by consideration of the gaps that exist with respect to methodological capacity and leadership. To guarantee that investment in translationally oriented research is cost-effective, such research must be underpinned by high-level expertise in research methods, in particular in biostatistics and epidemiological methods.

If you answered NO, please indicate what specific priorities and why? (max 250):

8 Are there any unaddressed gaps in knowledge, capacity and effort across the healthcare continuum and research pipeline that would warrant changes to the Priorities?

If you identified a gap, please explain how it should be addressed in the 2020-2022 MRFF Priorities (max 250 words):
High-level capacity in research methods
There is a long recognised but increasing (because of the "data explosion") risk of waste and inefficiency in health research associated with poor study design and analysis. The need for sound research methodology is ever-increasing and capacity for innovative development needs to keep pace with the rapidly increasing complexity of data structures, research questions and computational technologies. Examples that are highly relevant to today's research landscape include:
- Methods for comparative effectiveness research using observational 'real-world' data that incorporate a systematic understanding of when cause-and-effect conclusions may be safely drawn without fear of major bias and thus incorporated into guidelines and practice
- Adaptive clinical trials, as currently needed for large-scale COVID-19 studies internationally
Strengthening the Australian research community's capacity in biostatistics is critical to addressing this gap, and this in turn requires recognition that biostatistics is a scientific discipline, concerned with modelling and understanding variability and uncertainty, that needs to evolve with the changing research landscape, and is not just a well-established toolkit of techniques. Australia lacks a long-term strategy of investment in leadership in this field, which remains seriously underdeveloped when compared to similar countries (Lee et al, MJA, 2019, doi:10.5694/mja2.50372). Development of such a strategy is endorsed by the Melbourne Academic Centre for Health and Monash Partners. The MRFF could contribute to filling this gap by expanding its scope to include research methodology as a core priority area, and by the creation and support of graduate and postdoctoral methodological training programs.

If you identified a second gap please explain how it needs to be addressed in the 2020-2022 MRFF Priorities (max 250 words):

9 Is there an opportunity to consolidate the Priorities for the remaining twelve months of the Strategy?

Max 250 words:
Addressing the gap we have identified above would in itself represent a significant, efficient and valuable consolidation of the Priorities.

10 Do you have any additional comments in regards to the Priorities for 2020-2022?

Max 250 words:
We wish to emphasise that the priority areas are listed as if distinct, but their fulfilment rests on a common foundation of sound and responsive research methodology, which cannot be assured without strategic investment to keep pace with evolving and expanding data availability.

11 Do you consent to components of your submission being made publicly available?

Yes