Show me the money! A portfolio analysis of autism research funding in Australia from 2008-2017

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Background

Previous studies have found that the distribution of investment in autism research in the United Kingdom, United States and Canada does not align with community priorities for research, with funding disproportionately invested in biological discovery Daniels et al., 2018; Pellicano, Dinsmore & Charman, 2014).

In 2013, the Cooperative Research Centre for Living with Autism (Autism CRC) was founded as the world's first national, cooperative research effort focused on autism. With a stated aim of empowering autistic people through collaborative and inclusive research, the Autism CRC has the potential to change the landscape of autism research funding in Australia.

Methods

Using the Dimensions Plus database and publicly-available records of research investment, we identified 136 autism-specific research grants active in Australia between 2008-2017. Grants were coded for research topics by both authors using the Interagency Autism Coordinating Committee (IACC) *Strategic Plan* questions and corresponding research areas (Figure 1).

Cash funding was analysed across two time periods: the five years prior to establishment of Autism CRC (2008-2012), and the first five years of Autism CRC operation (2013-2017). Autism CRC investment patterns were also compared to investment patterns from other funders.

Diagnosis: When should I be concerned?	**Biology:** How can I understand what is happening?	**Causes:** What caused this to happen and can it be prevented?	**Treatments and interventions:** Which interventions will help?	**Services:** Where can I turn for services?	**Lifespan issues:** What does the future hold, particularly for adults?	**Infrastructure and surveillance:** What other infrastructure needs must be met?
• Early signs and biomarkers • Diagnostic and screening tools • Intermediate phenotypes / subgroups • Symptomatology	• Cognitive studies • Computational science • Co-occurring conditions • Developmental trajectory • Immune / metabolic pathways • Molecular pathways • Neural systems • Neuropathology • Sensory and motor function • Subgroups / biosignatures	• Genetic risk factors • Environmental risk factors • Epigenetics • Gene-environment interactions	• Technology-based intervention and supports • Behavioral • Complementary, dietary, and alternative • Educational • Medical / pharmacologic • Model systems / therapeutic targets • Occupational, physical, and sensory-based	• Service utilization and access • Community inclusion programs • Efficacious and cost-effective service delivery • Family well-being and safety • Practitioner training	*Note: The IACC* Strategic Plan *does not provide corresponding research areas for this question*	• Biobanks • Data tools • Research infrastructure • Surveillance and prevalence studies • Research workforce development • Research recruitment and clinical care

Figure 1. IACC *Strategic Plan* questions and corresponding research areas (Office of Autism Research Coordination, 2019)

Results

Autism research investment in Australia increased by 215% between the two time periods, with 2008-2012 investment totalling just under AUD$14 million, and 2013-2017 investment totalling almost AUD$44 million.

Between 2008-2012, 47% of total research funding was invested in biological research, and no funding was allocated to lifespan issues or infrastructure and surveillance. Between 2013 and 2017, research investment was distributed more evenly (Figure 2).

When Autism CRC investments were excluded from analyses, the 2013-2017 pattern of research funding was similar to the previous time period, with a heavy focus on biological research. In contrast, when Autism CRC investments were analysed in isolation, a starkly different pattern of investment was evident (Figure 3).

The shift in the pattern of Australian autism research funding over the past decade may be explained by the establishment of Autism CRC, rather than a broader shift in research investment choices.

These findings demonstrate that it is possible to change the autism research landscape using a top-down approach, driven by research investors.

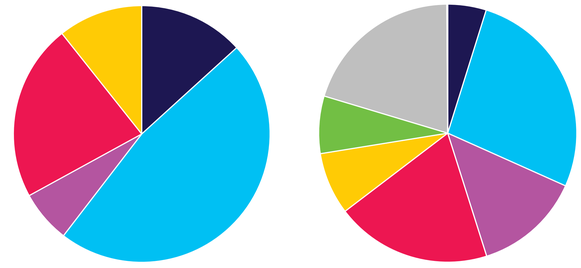

Figure 2. Distribution of Australian autism research funding (all funders)

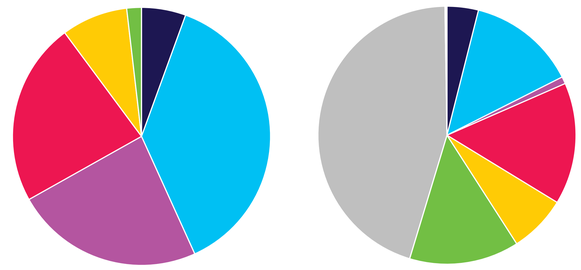

Figure 3. Distribution of Australian autism research funding by funder, 2013-2017

To capitalise on this shift, the existing top-down approach should be paired with bottom-up engagement by researchers. By partnering with autistic people and other stakeholders, researchers can ensure that their work is guided by community priorities.

Objectives

1. To examine the distribution of autism research funding in Australia across research topics
2. To determine whether the pattern of autism research funding in Australia is similar to the pattern in other countries
3. To identify whether the establishment of Autism CRC is associated with a change in the pattern of autism research funding in Australia

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