Strategic Examination of R&D
April 2025

Introduction:

AusBiotech welcomes the opportunity to respond to the Federal Government's Strategic Examination of Research and Development (R&D). As Australia's leading voice for life sciences, an industry whose lifeblood is R&D, we are fully aligned with the Government's ambition to create a stronger R&D system that supports a better Australia.

Our submission has been informed by our members and is focused on our knowledge of the life sciences industry. There are close to 350,000 biotech jobs across Australia and 2,905 life science organisations, including 1,592 biotech and medtech companies[i]. Since 2016, the biotechnology industry is cumulatively Australia's greatest value-add export industry outside of primary industries, making it key to Australia's future diversified, modern economy. Globally, governments are recognising that a thriving home-grown biotech and medtech sector is key to a nation's health security, prosperity and the health and wellbeing of their people. Now is the time for Australia to be advancing our R&D system, with a focus on supercharging the D, especially in the biotech and medtech sector. This is fundamental to Australia's competitive advantage. Every dollar invested in innovation, commercialisation and development results in an average of AU$3.50 in economy wide benefits for Australia[ii].

AusBiotech is developing a Life Sciences Industry Roadmap, which will provide a greater level of detail on some recommended policy settings for the sector. This can be shared with the expert panel for consideration in May 2025, and following the proposed in-person consultation with the expert panel at the end of May.

Consultation questions:

1. **What should an integrated, sustainable, dynamic and impactful Australian R&D system look like?**

An integrated, sustainable, dynamic, and impactful Australian R&D system should:

- See more Australian ingenuity reach and benefit Australians by being developed and commercialised in Australia.
- Take a whole pipe-line approach – where the policy settings for commercialising, manufacturing and procuring are integrated with the whole R&D pipeline.
- Play to Australia's strengths and competitive advantages, knowing that Australia cannot do everything and has finite resources.
- Enable Australia to show up as mature and sophisticated partner, to effectively engage on the world stage.
- Be driven by a long-term bi-partisan whole-of-government national strategy and policy settings.
- Be backed by data.

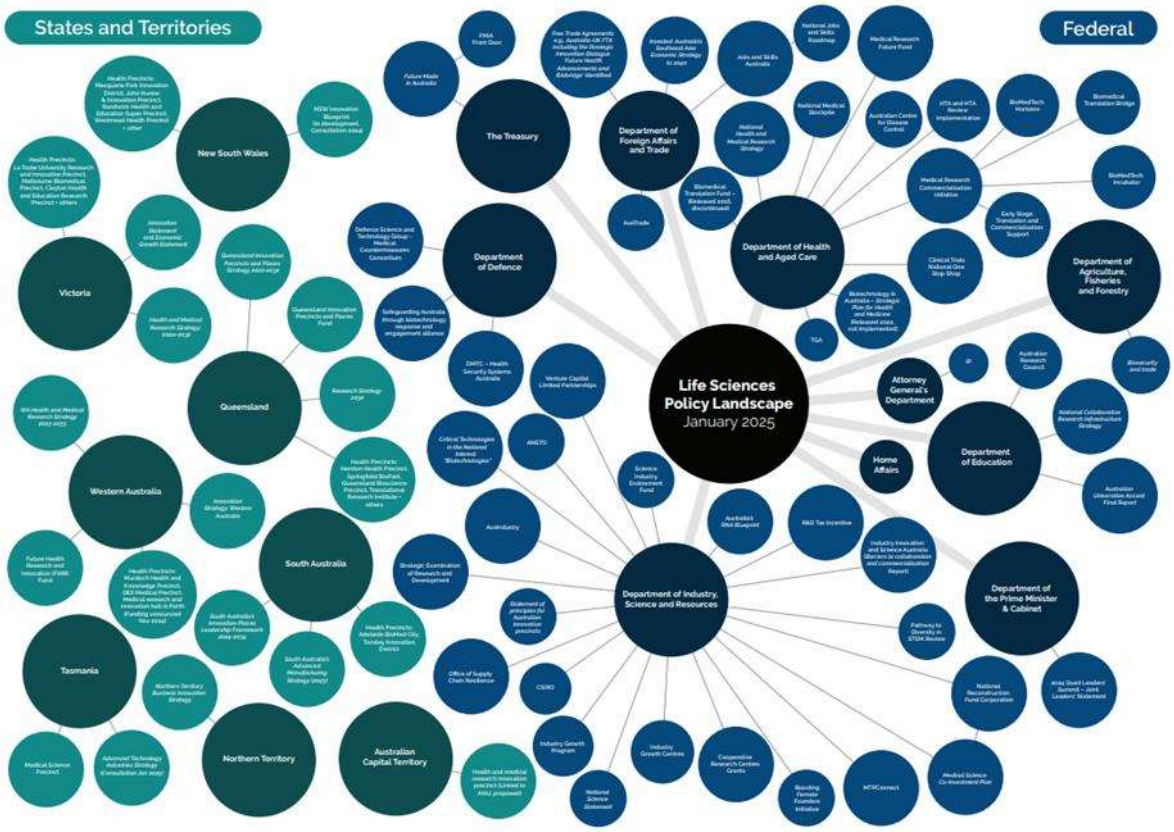
Given the long lead times for R&D from value generation to value capture, there is a need for a similarly long-term, strategic and bipartisan approach from the Federal Government to achieve an integrated, sustainable, dynamic and impactful Australian R&D system. Indeed, there is an

opportunity for the government to prioritise industries that have competitive advantages, such as life sciences, to lead Australia's economic growth over the next decade and beyond.

The importance, value and potential of the life sciences sector, along with its challenges and opportunities, are recognised by state and federal governments. The Federal Government designated biotechnology as one of seven 'critical technologies' in the national interest and medical science as a priority area for future prosperity through the National Reconstruction Fund. The industry's value is also recognised across a multitude of policies, programs and investments related to the life sciences industry scattered across various state and federal government departments, portfolios and agencies.

While the recognition is positive, as Figure 1 shows, the scattered policy approach to supporting industry development and growth is extremely challenging for our sector to navigate. Most recently, the development of a National Health and Medical Research Strategy at the same time as the Strategic Examination of R&D, but in different portfolios, reinforces the disconnect and continues to cause confusion with stakeholders. Consequently, the ongoing fragmentation is not delivering the health and economic results that Australia should be achieving.

Figure 1: Life Sciences Policy Landscape[1]



[1] This infographic was developed following an audit of policies relating to the life sciences industry conducted in January 2025, primarily focusing on Federal programs. While all attempts have been made to ensure accuracy, given the multitude of touchpoints the life sciences industry has across different federal and state and territory policies, funds, and departments some omissions are possible.

Unlocking the full potential of Australia's health and life sciences capability requires a coordinated, national focus on biotech, medtech and digital health that captures the true breadth of the opportunities and issues across industry, health, foreign affairs, education, defence and trade, as well as state and territory considerations. Outputs from the Strategic Examination of R&D must include the overdue policy reform that is needed to ensure Australian innovators, manufacturers and global investors are no longer disincentivised from operating locally, which leads them to take their innovations and business offshore to more competitive markets. Foundational and globally competitive business settings that make it easier for innovators to stay in Australia is one such area. AusBiotech is in the latter stages of developing a Life Sciences Industry Roadmap, which provides recommended policy settings and can be shared with the expert panel for consideration in May 2025, and following the proposed in-person consultation with the expert panel at the end of May.

Recognising the unique opportunities and challenges of different sectors, AusBiotech recommends that the overarching R&D strategy include sector-specific strategies for identified priority areas and areas of Australia's competitive advantage. This should include the life sciences sector. AusBiotech recommends the Federal Government establish a National Life Sciences Strategy, as called for in our 2025/26 Pre-Budget Submission (**attached**). In recognition of the need for a nationally coordinated, whole-of-government approach to life sciences, a national strategy would:

- Highlight Australia's life sciences strength and its contribution to both health and economic outcomes, as well as enhancing Australia's reputation as a global leader and sophisticated partner, drive investor confidence and solidify its position within the region and globally.
- Establish clear priorities for translation, development and commercialisation within the sector to provide certainty for the industry, boost global partnership capability and increase investor confidence.
- Identify the gaps to strengthen supply chain resilience, allowing Australia to better address health product supply chain resilience by identifying risks and providing greater clarity on what our country should or need to be able to produce onshore to protect the health of wellbeing of our communities.
- Promote policy certainty and industry confidence by committing to deliberate, long-term policies aligned to the strategy, including cross-portfolio and cross-jurisdictional approach that is aligned, supportive, predictable, and internationally competitive. Further details will be provided in the Roadmap being developed by AusBiotech.
- Maximise policy efficiency and impact by aligning efforts across state governments, the federal government and industry. Given Australia's relative size, it is not feasible to independently develop full sovereign capabilities in all areas and in all states. A national strategy is essential to ensure state investments complement strategic national priorities. This will help to avoid over-capacity in some areas and real or perceived duplicated investment.
- Demonstrate leadership and develop a robust investment environment by enhancing Australia's capacity to strategically partner, accelerating our global competitiveness and increasing our ability to coordinate our contribute to global health security challenges.

Having a competitive and nurturing environment that actively promotes successful commercialisation is an essential underpinning of Australia's ability to attract investment. This will help mitigate the offshoring of Australian medical innovations – boosting productivity,

economic growth and health outcomes for Australians. A thriving local R&D ecosystem also enhances Australia's influence within the Indo-Pacific region, which is an important strategic goal for government.

There also needs to be a focus on developing stronger collaboration between universities, research institutions and industry, with research targeted at addressing national health priorities. Further, the R&D system should be sufficiently agile and adaptable to respond to national and global health challenges, such as pandemic preparedness, as well as supporting supply chain resilience for essential medicines and health technologies.

2. What government, university and business policy settings inhibit R&D and innovation, why?

While the Federal Government supports local "R" and some early-stage "D", support for the rest of the development and commercialisation pipeline is significantly lacking. This creates disincentives for Australian-made research and IP to stay in Australia. Disincentives include globally uncompetitive:

1. Business fundamentals, including tax policy
2. Sector-specific regulatory and procurement impediments
3. Workforce and skills challenges
4. Funding mechanisms and incentives that are well-intentioned, but mis-aligned
5. Limited and homogenous capital pool

3. What do we need to do to build a national culture of innovation excellence, and engage the public focus on success in R&D and innovation as a key national priority?

Seeing Australian research directly benefit Australians will reinforce our culture of innovation excellence and also engages the public in supporting innovation as a key national priority.

Australians intrinsically care about health innovation and excellence – healthcare is one of the top three most important issues for Australians[iii] . However, with over 90% of pharmaceuticals and medical devices imported, the connection between Australian health and medical research and Australia's health outcomes will naturally be lacking. It is often the case that Australian-born research and ingenuity is offshored, benefiting patients in other nations and never reaching an Australian patient. Similarly, Australian innovations are often disincentivised from being manufactured in Australia, with the domestic capability foregone.

AusBiotech regularly hears from members who are disheartened by the persistent push to offshore their home-grown research and innovation, driven by the systemic disincentives to commercialise health and medical breakthroughs in Australia. This detracts from the culture of innovation excellence.

While the above challenges are significant, Australian has much to be proud of in our excellence in health and medical research. From groundbreaking world-firsts – with household names such as the Cochlear hearing implant and Gardasil human papillomavirus vaccine to a lesser-known but still remarkable innovations like Remplir for nerve repair in people with quadriplegia, and Vaxxas' needle-free vaccination technology. Australia also manufactures influenza vaccines,

human plasma products, Australian antivenoms and biotherapeutics, including cancer treatments and other high value therapeutics.

While these end products are lauded, all stakeholders – including industry and their representative organisations, like AusBiotech, academia, government and the media – share a collective responsibility to explain to the public how R&D is the catalyst behind these inventions, and why continued investment in R&D should be considered a national priority. AusBiotech's is investing in initiatives to highlight Australia's home-grown innovations, including a spotlight series, where video interviews with Australian leaders in biotech and medtech are published, and education programs for Australian health innovators in communicating and engaging with policy makers. These are a couple of examples of how peak bodies can showcase Australian innovation excellence.

4. **What types of funding sources, models and/or infrastructure are currently missing or should be expanded for Australian R&D?**

Australian R&D needs a cultural and structural shift whereby funding is targeting to where the impact and need is greatest, rather than, for example, the number of publications produced. An impact-based funding model like this could be measured by the number of patents, licenses and/or commercial partnerships; successful spinouts and scale-ups of R&D companies; and the overall contribution to the national economy via job creation and exports.

A diversification of funding sources is needed for blue-sky innovative research; industry-academia collaborations; VET and higher education to enable R&D workforce training; NCRIS to be fully funded long-term with infrastructure relevant to emerging technologies; as well as industry PhDs and industry secondments. Further, stakeholders need ready access to data to inform decision-making. Infrastructure improvements are needed to enable secure data-sharing. Finally, funding sources to enable Indigenous-led R&D should also be made available.

5. **What changes are needed to enhance the role of research institutions and businesses (including startups, small businesses, medium businesses and large organisations) in Australia's R&D system?**

Australia's life sciences industry is central to the country's productivity, health security and the health and wellbeing of all Australians. Australia's life sciences industry has untapped potential to develop, commercialise and manufacture medical innovation to drive better health outcomes.

Despite our strengths and potential, often Australian health innovations either never reach a patient or leave Australia's shores to be developed and commercialised elsewhere. The human papillomavirus (HPV) vaccine, Gardasil, is a case in point. Queensland University researchers started working on a vaccine against HPV in the 1990s, culminating in the 2006 TGA approval of Gardasil. A year later, Australia became the first country to roll out a national HPV vaccination program. This incredible story of Australian ingenuity and health success should also have been one of economic success. Instead, we lost around US $8.9 billion per annum in revenue, as well as capability, skilled jobs and other economic impacts when the vaccine was instead manufactured in the U.S.

Gardasil is one of many examples of ground-breaking medical innovations being invented in Australia but commercialised overseas where policy and business settings are more favourable. Unfortunately, many of our Australian innovations go overseas and never come back, with the Australian economy and Australian patients losing out. We need to act now to ensure we do not miss out on future economic, employment and health outcomes for our nation because of opportunities lost.

The chasm between research and industry also needs to be closed. Australia ranks last in the OECD when it comes to collaboration between universities and businesses. We consistently rank in the top ten worldwide on the Global Innovation Index but are currently ranked 30th for research outputs – demonstrating the clear and urgent need for targeted reforms, such as strengthening collaboration between universities, industry and government, incentivising private sector investment in development and translation and scale-up manufacturing. Bridging the gap between innovation and research outputs in Australia's life sciences sector will bring more life-saving medical products and technologies out of the lab and into market, with all the health and economic benefits that come along with that.

6. How should Australia support basic or 'discovery' research?

It is well established that basic research underpins long-term innovation outputs, such as transformative drugs and medical devices. Indeed, most transformative and successful medicines and medical devices exist today because of fundamental, basic research that was carried out decades before their eventual launch on the market. Therefore, a dedicated focus from Government on funding basic research, aligned with national priorities, in the higher education sector - for the sake of fundamental knowledge – would be an important step towards helping to create a stronger R&D system and a better Australia.

7. What should we do to attract, develop and retain an R&D workforce suitable for Australia's future needs?

To compete globally for top-tier R&D talent, Australia's R&D ecosystem must be high-functioning and offer long-term and secure career opportunities that appropriately reward risk-taking and innovation. A whole-of-government approach and prioritisation of an R&D workforce is required, where education, skills, immigration and visa policies work together to support the industry.

8. How can First Nations knowledge and leadership be elevated throughout Australia's R&D system?

Australia has much to gain by fully embracing First Nations traditional knowledge as part of its science and R&D system. First Nations people are our first researchers and innovators, and the keepers of their knowledge systems and culture. As the keepers of their knowledge systems, any discussions about elevating Indigenous knowledges and leadership within Australia's R&D system can only be led by First Nations people.

9. What incentives do business leaders need to recognise the value of R&D investment, and to build R&D activities in Australia?

While the life sciences sector is recognised as a national priority, there is currently no overarching framework or central body to co-ordinate and guide holistic national strategy formation, policy development and implementation across the life sciences pipeline and value-chain. This is particularly relevant given the industry's numerous policy touchpoints - spanning regulation, funding, investment, procurement, clinical trials, manufacturing, exports, education, and skills - which are dispersed across more than eight Federal Government portfolios, at least 20 incubator and accelerator programmes across the country, as well as numerous state and territory initiatives. The sector would greatly benefit from a whole-of-government strategic focus, deliberate coordination, and an enduring forum to foster partnership between industry, government and other key stakeholders across the value chain.

AusBiotech is calling for the establishment of a Life Sciences Council (Council) to inform a whole-of-government approach to health innovation across the lifecycle – from early-stage research through to clinical trials, translation, development and commercialisation – in partnership with the life sciences industry. Drawing on international best practice, it will help local innovators overcome existing challenges that make it difficult to bring new health innovations from early-stage discoveries through to clinical trials, commercialisation and domestic manufacturing.

Through the partnership between government and the industry, the Council will seek to streamline strategic government decision-making, optimise the regulatory and policy environment, and increase the attractiveness of Australia as a location for the life sciences sector to create new jobs and exports. It will also help to foster favourable conditions for new, innovative businesses to be established and sustained over the long term, thus fulfilling the Federal Government's policy goal to build these businesses here.

Specific incentives will be provided in AusBiotech's Roadmap, and through the in-person consultation with the expert panel in May.

10. What should be measured to assess the value and impact of R&D investments?

Innovation has long been considered one of the most important drivers of national economic growth. However, the time lag between value generation and value capture can be considerable for emerging technologies making accurate measurement difficult.

The Research Impact Framework[iv], developed by the Association of Australian Medical Research Institutes (AAMRI) attempts to overcome the challenges associated with measuring research impact by using a common language for communicating how their work is contributing to knowledge, society, health and the economy. Further, it provides a foundation for developing standardised measures for research impact by identifying a set of agreed indicators for research translation, knowledge mobilisation activities, and practices which support the translation of research.

At a minimum, the value and impact of R&D investments should be aligned with national priorities and measured against their ability to stimulate productivity – a bipartisan policy goal for Australia. For the life sciences industry, the establishment of a National Life Sciences Strategy would provide the necessary rigour and strategic oversight for government investments in R&D and thereby optimise their value and impact from an economic and health perspective.

Survey questions:

a) R&D is important for economic diversification. *Strongly agree*
b) Increasing R&D investment by the business sector is the most critical element to improving the economic impact of Australian R&D. *Strongly agree*
c) Maintaining investment in foundational R&D is critical to the overall health of the R&D system. *Strongly agree*
d) Public R&D resources should be more targeted towards national priorities. *Strongly agree*
e) New and alternative sources of R&D funding are needed. *Strongly agree*
f) First Nations knowledge is sufficiently reflected in the R&D landscape. *Disagree*
g) Research institutions should be more specialised with more clearly defined roles. *Neutral*
h) The current R&D workforce can address Australia's future needs. *Disagree*
i) Better coordination is needed to manage R&D infrastructure. *Neutral*
j) Government should play a larger role in spurring collaboration and alignment of cross-sector interests. *Agree*

About AusBiotech:

AusBiotech is Australia's biotechnology organisation, working on behalf of members to provide representation and services to promote the global growth of the Australian biotechnology industry. AusBiotech is a well-connected network of over 3,000 members in biotechnology, including therapeutics, medical technology (devices and diagnostics), and digital health sectors. AusBiotech has representation in each major Australian state, providing a national network to support members and promote the commercialisation of Australian life science in national and international marketplaces. AusBiotech is dedicated to the development, growth, and prosperity of the Australian life science industry, by providing initiatives to drive sustainability and growth, outreach and access to markets, and representation and support for members nationally and worldwide.

[i] Global Data research on behalf of AusBiotech 2024
[ii] https://www.csiro.au/en/news/all/articles/2021/november/value-innovation-investment
[iii] https://www.jwsresearch.com/responses-to-federal-budget-future-made-in-australia-policy-and-our-regular-issues-tracking/
[iv] Research Impact Framework - AAMRI Accessed April 2025