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# Importing Reagents into Australia

## Are there avoidable delays?

## The issue

In March 2022 Research Australia accepted a request from one of its member organisations to investigate an issue in relation to the importation of reagents (the chemicals consumed in laboratory experiments): *it takes Australian researchers significantly longer to access reagents and other materials for experiments than their overseas counterparts.*

### Government intervention

There are few obvious policy solutions for governments beyond supporting the establishment of more domestic manufacturing of reagents for the Australian market, potentially under the sovereign manufacturing banner.

As noted earlier, reagents for experimentation cross over with reagents needed for pathology testing, helping to strengthen the argument for greater domestic capability. ABS import data using customs declarations valued imports of reagents into Australia at $569 million in 2019, $774 million in 2020 and $1074 million in 2021, with the sharp increase presumably reflecting demand for reagents for COVID-19 testing.[1] Such a substantial Australian market for reagents may provide the scale needed to domestically manufacture at least some of the higher volume and higher value reagents judged critical to Australia.

An alternative to manufacturing would be to support/subsidise the warehousing of more reagents in Australia, recognising that this will potentially lead to greater costs due to shelf-life expiry of items before they are required.

[1] Australian Government, Australian Bureau of Statistics, Cat. No. 5368 last updated May 2022, Pivot Table for item 382200 *Diagnostic or laboratory reagents on a backing, prepared diagnostic or laboratory reagents, whether or not on a backing and certified reference material (excl. those of HS 2843 to 2846, 2852, 3002, 3006, 3204 and 3821)*

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## The approach

Research Australia made several calls out to its membership over March, April and May 2022, seeking information about experiences with delays in importing reagents.

The individuals who responded confirmed that delays were an issue. They included researchers with previous experience working overseas and/or with current overseas collaborators, who were able to confirm the relatively longer time taken to receive reagents in Australia.

The response to Research Australia's call for information was limited, with nine individuals from five different organisations responding with case studies and examples. While all were able to provide case studies, no one provided data which enabled an assessment of what percentage of reagent imports were delayed and/or otherwise problematic, or the extent to which COVID-19 had contributed to pre-existing issues.

## Potential factors at play

### A small market reliant on imports

There is little domestic manufacturing of reagents and typically only one or two overseas suppliers for any one item, so competition is limited. Researchers are generally buying reagents and other materials through an Australian distributor, which may be a local subsidiary of the overseas manufacturer.

There is evidence of long ordering cycles in Australia; e.g. domestic distributors only placing orders with a manufacturer twice a week or even once every two weeks. This may be a reflection of the relatively small size of the Australian market and the more extensive freight logistics required to ship items to Australia. The relatively small market may also lead to a more limited range of items been warehoused on shore in Australia by distributors, and/or small quantities of some items. These factors contribute to longer periods between placing an order and receiving delivery.

### A small customer

There was also a view expressed that when items are in short supply, larger domestic customers are favoured over smaller overseas customers, and that this could be placing Australian researchers at a disadvantage. It was also suggested this might be further exacerbated by individual laboratories or teams within larger organisations having their own accounts with suppliers, and being treated as a discrete (and therefore smaller and less valuable) customer. However, subsequent inquiries with respondents indicated that accounts are generally held at the organisational level rather than at the level of a laboratory, suggesting this is not a factor.

It is still possible that Australian research organisations are relatively small customers in the global market by comparison to large research organisations in the USA and Europe.

In a similar vein, one respondent with extensive supply chain experience suggested that research organisations might benefit from more professional procurement functions, with dedicated procurement staff providing an opportunity to build stronger personal relationships with key suppliers and thus improve deliveries. Evidence from respondents

suggests notwithstanding that accounts with suppliers are held at an organisational level it is individuals within laboratories who are following up on delayed, incorrect and/or missing orders. It has not been possible to test whether a more centralised and 'professionalised' procurement function would improve performance.

**COVID-19 related issues**

COVID-19 has disrupted supply chains globally in nearly all industries and many of these factors appear to apply to both the manufacture and importation of reagents.

COVID-19 related staff shortages have contributed to manufacturing. At one point in 2021 there was a worldwide shortage of plastics used for pipettes, syringes and other items. In some cases, manufacturers were unable to advise a delivery date when orders were placed. In other cases, delivery dates were missed without explanation, or were extended, sometimes several times.

These delays have been exacerbated by increased errors at point of despatch, likely also due to shortages of key staff.

Research Australia was provided with several examples where items were missing from orders. In one case, empty vials were sent instead of a reagent. COVID-19 related delivery delays compounded the time it took to receive goods after they were re-ordered.

Normal freight networks have been disrupted. Temperature sensitive orders were received without having been transported at the right temperature, because for example, they had not been correctly packed, or dry ice packaging had melted due to freight delays.

These delays have included customs and quarantine clearances, probably also due to COVID related staff shortages. Data provided by an importer of oligonucleotides indicates around 10% of shipments experience extended delays at customs and/or quarantine.

Some reagents and materials used in research have also been in demand for COVID-19 related purposes; for example, materials and reagents used in pathology testing for COVID-19.

## Conclusion

While there is evidence that Australian researchers experience longer delays in receiving reagents than many of their overseas counterparts, it has not been possible to identify a single cause or a ready solution.

A relative lack of domestic manufacturing capability, geographic distance from suppliers and a relatively small market all seem to be factors; and like the COVID-19 related problems, they are generally beyond the influence of researchers or research organisations.

There may be scope for research institutions to have a more dedicated procurement function, but there is no evidence at the moment this would make a difference to the importation of reagents.

On the subject of domestic manufacturing capability, it is worth noting this is a long-standing issue for Australia, and research organisations have taken the initiative to establish domestic manufacturing facilities in the past. BioCina is an Adelaide based biologics contract development and manufacturing organization, with its origins in a company spun

out of the University of Adelaide in the 1980s.[2] IDT Australia is a pharmaceutical manufacturing company in Melbourne that has its origins in the Victorian College of Pharmacy.[3]

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An alternative to manufacturing would be to support/subsidise the warehousing of more reagents in Australia, recognising that this will potentially lead to greater costs due to shelf-life expiry of items before they are required.

[2] https://www.biocina.com/about-biocina
[3] https://en.idtaus.com.au/about-us/
[4] Australian Government, Australian Bureau of Statistics, Cat. No. 5368 last updated May 2022, Pivot Table for item 382200 *Diagnostic or laboratory reagents on a backing, prepared diagnostic or laboratory reagents, whether or not on a backing and certified reference material (excl. those of HS 2843 to 2846, 2852, 3002, 3006, 3204 and 3821)*