

# Commentary on Opportunities and Challenges for Commercializing Microarray Patches for Vaccination from a MAP Developer's Perspective

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## About the Study

The previous research work entitled "Opportunities and challenges for commercializing microarray patches for vaccination from a MAP developer's perspective" Published in 2022 discussed the challenges facing vaccine patch developers [1]. The biggest challenge is bridging the gap between the development phase and commercial (income generating) manufacturing. Medical and Biotechnology is especially challenging given that manufacturing must be defined and established years before product registration can occur. The manufacturing will generate data for regulatory approval, all this investment is at risk well before a lifesaving income can be guaranteed. This funding gap is often too big to breach and the point at which Australian companies are forced to move or sell offshore.

The funding required to establish manufacturing and the inability to find it was also discussed in a more recent article "Accelerating the development of vaccine microarray patches for epidemic response and equitable immunization coverage requires investment in microarray patch manufacturing facilities" [2]. This article authored collaboratively by members of WHO, BARDA, GAVI, CEPI and others argues that immediate collaboration among global public health organizations and health actors is required to realize the advancement of this vaccine platform technology. Typically, investment in such large ventures is a risk adverse step by step approach, however the post COVID activity to accelerate vaccine development and vaccination logistics requires a more pragmatic approach if we are to provide solutions for pandemics and the increasing spread of diseases due to global warming [3].

CEPI initiated the 100-day mission to rapidly decrease the time it takes to develop vaccines for emerging threats [4]. CEPI also has a mission to provide equitable access to vaccines across the globe and eliminate the current disparity across developing nations. These initiatives would be delivered by programs that include MAP technology. These would increase the global coverage of vaccines, reduce the skills required to administer them and remove the need for established cold chains in distribution.

MAPs are a game changing technology that can alleviate the economic and human pain of future pandemics and bio threats. The advancement and commercialization of these must move with the same urgency and pace as the development of vaccines. The conservative nature displayed by pharmaceutical companies, investors and Governments in funding emerging technology facilities and infrastructure will need to replace by an optimism to build at risk and provide the solutions for the challenges that face us.

Since the post COVID call to arms what have we achieved? The Government has invested heavily in mRNA manufacturing which means we might be in a position to use this new advance to produce more effective vaccines faster. But we have failed to invest in the technology to administer it to the population. We still rely on syringes from overseas and our ability to fill syringes or vials is limited. Cold chain costs are high and losses are still significant. What use is a vaccine in a pandemic when your syringe and PPE supply may be compromised? Vaccines alone are useless without the ability to efficiently administer them to the population.

With Government support we could achieve the first commercial supply of MAP technology and achieve an enviable level of self-sufficiency and a source of revenue. The dose sparing performance would require less vaccine to vaccinate the population, cold chain storage and distribution costs would be minimized and losses due to temperature excursions reduced to almost nil. By replacing our current stockpile with MAPs that investment would be put back into the economy while building a reputation and med tech infrastructure equal to none.

## References

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