

Memorandum

Additional Information: Personal Protective Equipment (PPE) domestic supply

Date due to MO: 22 May 2020 **Action required by:** 22 May 2020

Security level: IN CONFIDENCE **Health Report number:** HR20200817

To: Hon Dr David Clark, Minister of Health

Commercially sensitive

Contact for telephone discussion

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Action for Private Secretaries

N/A

Date dispatched to MO:

Additional Information: Personal Protective Equipment (PPE) domestic supply

Purpose of report

1. To respond to your request for additional information regarding Personal Protective Equipment (PPE) domestic sourcing and procurement¹.
2. On 18 May 2020, you requested that the Ministry of Health (the Ministry) provide information regarding:
 - a) aspects of domestic PPE manufacture: what is being, and will be manufactured; production capacity and ability to scale-up production;
 - b) any constraints on domestic manufacture e.g. supply chain issues with imported inputs;
 - c) what proportion of NZ's PPE needs could be met from domestic production; and
 - d) employment and other economic benefits expected from domestic production.
3. While there remain gaps and uncertainties in the data, the report summarises what is currently known about PPE manufacture in New Zealand, and flags the need for more investigation in the context of developing a National PPE Procurement Plan.

Background

4. Since the onset of the Covid-19 pandemic, various agencies have considered the development of alternative markets and sources, including domestic producers, for the supply of PPE:
 - A draft procurement plan, prepared in collaboration with Ministry of Business Innovation and Employment (MBIE) in late April 2020², proposed a strategic approach to the management of all PPE procurement and supply (the Plan was subsequently reduced in scope to only consider N95 mask procurement³). This Plan noted that given the supply-chain challenges regarding P2/N95 masks in particular; securing a domestic supply was seen as a critical response enabler.

• section 9(2)(b)(ii)

¹ HR20200704 - MEMO: Personal Protective Equipment (PPE) distribution across the health sector

² PPE Procurement Plan DRAFT, 20 April 2020, MoH & MBIE, drafted by Tom O'Sullivan

³ 20200419 P2-N95 Masks Procurement Plan DRAFT 19th April.docx

⁴ section 9(2)(b)(ii)

section 9(2)(b)(ii)

- The National Crisis Management Centre compiled a business register which included a 'stocktake' of local manufacturers that currently manufacture PPE in New Zealand. The stocktake identified potential suppliers but did not obtain information about the specifics of production capacity and capability, or ability to retool or scale-up production at speed. In addition, it did not consider whether the products could be produced to the required clinical standards (where these apply).

- section 9(2)(b)(ii)

5. The Ministry's focus over March-April was on the acute needs to source N95 masks, noting that domestic manufacture would take time to scale. This meant that the Revolution Fibres proposal, Lanaco opportunity and the Procurement Plan were not progressed at that time. However, the production quality of the Lanaco masks is currently being evaluated by HealthSource NZ. This involves "fit" testing with users to ensure that the stock meets workforce needs and quality assurance requirements against known international standards.
6. While some domestic production and manufacture opportunities have been scoped and/or initiated, there is a need to develop a medium to long term policy and strategy for a sustainable approach to the supply and procurement of PPE. NZ Health Partnerships (NZHP) has now been tasked with further development of the national PPE procurement plan, under the Ministry's direction, to more broadly consider all PPE requirements. This plan will provide the diverse and resilient sourcing strategy which considers the appropriate contribution of domestic production in the context of ongoing disruptions to international supply.

Summary of domestic PPE Supply

Domestic suppliers

7. Currently, we are aware of a relatively small number of NZ manufacturers making the following products at scale (refer Table 1).

⁵ section 9(2)(b)(ii)

8. Domestic PPE production continues to operate in a competitive international pricing market. Prices reflect this competition as well as the increased cost of sourcing raw materials internationally.

Table 1: Key items of PPE required and what is available domestically

PPE item		Production capacity (est.)	Reliance on import of raw material
Face shields	section	Enough domestic manufacture to cover NZ demand. Also, Face Shields can be reprocessed (following WHO guidance on PPE conservation and reuse ⁶)	Plastics
	section	Up to 10,000 per DayFace Shield (based on TIDI design) with frame. CCDHB and Waikato DHB are currently purchasing from this supplier.	Plastics
	section	30,000 units/week, some of which are supplied to DHBs	Plastics
Masks – General purpose	se	Approx. up to 500,000 per week of large masks	Reliant on Spun bond Propylene Product (SBPP) currently sourced from South Africa; previously Taiwan, India and China
N95 Masks	se	Unknown production capacity	
	secti	Unknown production capacity	
Hand Sanitiser	section 9(2)	Unknown production capacity This product has been approved for use by the Infection Control team.	Isopropyl Alcohol, Glycerine
	section 9(2)(b)(ii)	section 9(2)(b)(ii)	Isopropyl Alcohol, Glycerine

9. Beyond these manufacturers, there is not extensive detail available on the scale within the NZ domestic manufacturing industry to produce PPE, the potential to retool or scale up production to meet domestic PPE needs, the specifics of production capability, or the likelihood of meeting clinical standards. As noted above, the National Crisis Management Centre business register included a 'stocktake' of local manufacturers that currently manufacture and/or distribute PPE in New Zealand, which produced around 150 entries. Further to this, Manufacturing New Zealand has created an online register for New Zealand businesses able to produce PPE⁷. It currently contains 329 entries but includes both manufacturers and importers/distributors reliant on imported supply. NZTE has created an online marketplace identifying suppliers of publicly-available PPE⁸.
10. Issues relating to domestic production include:

⁶ https://apps.who.int/iris/bitstream/handle/10665/331695/WHO-2019-nCov-IPC_PPE_use-2020.3-eng.pdf

⁷ <https://nzmanufacturer.co.nz/2020/04/covid-19-ppe-register-goes-live/>

⁸ <https://nz-marketplace.nzte.govt.nz/s?q=>

- **Ability to scale production:** During the peak of Covid-19 period, OCC forecast about 1 million N95 masks were required per week. Currently, the consumption rate is around 100,000 N95 masks per week.
 - **Assurance of ongoing demand:** Some companies that can scale-up or reconfigure production to manufacture PPE may be reluctant to do so in the absence of assurances of ongoing orders. Manufacturers will require some return on investment for scaling-up their production and may also seek long-term purchase guarantees if they are converting current production environments to a new product line, or retraining staff.
 - **Sourcing raw or intermediate input materials:** Logistics disruptions and trade restriction in global markets have impacted on NZ producers. For example, Spun Bond Polypropylene (SBPP), a material used in the manufacture of filters, facemask filter media, and other PPE (notably gowns) is in short supply globally given high demand in some markets (China) and export restrictions in others (India). Domestic production of specialised theatre linen is reliant on the importation of the specialised linen. Some mask producers have advised of issues with importing component parts (e.g. nose pieces, filters). Addressing some of these shortages will involve identifying alternative supply markets or retooling existing manufacturing.
11. Before progressing this option or any other option to support domestic production through targeted procurement, a broader market scan would need to be completed to ascertain other market competitors, evaluate proprietorial interests and provide a competitive process before commissioning production of this product to support mask manufacture.
 12. It is possible to enter into a non-exclusive contract to produce PPE. This is a direct source process permissible under Rule 14.9(a) of the Government Procurement Rules (4th Ed. 2019) which states a procurement opportunity does not need to be openly advertised in a genuine emergency as defined by MBIE's Quick Guide to Emergency Procurement. This guide defines an emergency to include a critical health emergency such as a pandemic. Further to this, Rule 14.9(j) states, an opportunity does not need to be openly advertised if an agency receives an unsolicited unique proposal, as described in MBIE's Guide to Unsolicited Unique Proposals.
 13. We have received many offers for domestic consideration to address the supply of PPE within the domestic market. On review of these offers we have in some cases identified the sourcing of sub-medical grade products from offshore that do not meet the certification or grade specification requirements for use of PPE within New Zealand.

Economic opportunity for domestic supply

14. The last significant analysis of the New Zealand manufacturing sector (MBIE, 2018)⁹ indicated that the sector overall made up 12% of New Zealand's economy (\$23 billion), directly employs more than 240,000 people (close to 11% of total employment) and accounted for over half of our total exports.
15. It is challenging to estimate the percentage of total manufacturing employment and economic activity attributable to manufacturers of PPE, as these manufacturers

⁹ MBIE Manufacturing Sector Report 2018 <https://www.mbie.govt.nz/assets/f0f81b6194/new-zealand-manufacturing-sector-report-2018.pdf>

represent a proportion of the total output of different manufacturing subsectors (plastics and rubber, and other manufacturing (including textiles). At the time of the MBIE analysis, 12,000 people were employed in the manufacture of polymer products, basic polymers and natural rubber products, and 7,900 people employed in the manufacture of textiles, fibre, yarn, woven and knitted products, clothing and footwear.

16. New Zealand has relied heavily on global interconnected supply chains to improve margins. Our supply chain vulnerabilities include realities inherent to medical supply, such as high levels of cyclical or long lead times, level of inventory to maintain and approaches to domestic product development. These pressures have been exacerbated by pandemic conditions placing unprecedented commercial pressure on a small number of commonly-sought items, and on air and sea logistics, together with an increase in trade restrictions affecting both PPE items and raw materials for producing them.
17. Concerns continue to emerge regarding overseas sourced PPE from new manufacturers, including quality concerns, potential for fraudulent activity, ongoing reliability of international supply chains, and increasing trade restrictions. As global demand increases further, and the number of new manufacturers grow, these problems are expected to compound.
18. In considering appropriate response strategies and the role of domestic production in them, it is worth considering a recent OECD analysis of supply chain issues for face mask global value chains. This analysis concluded that it would be excessively costly for every country to develop production capacity that matches crisis demand and encompasses the whole value chain. The report suggests that an alternative, more effective and cost-efficient solution in the long-term may involve the combination of strategic stocks; upstream agreements with companies for rapid conversion of assembly lines during crises (with possible government incentives and co-ordination); and supportive international trade measures.¹⁰
19. The findings of this study are relevant for the New Zealand context and for PPE items beyond masks. They imply that while developing some domestic capacity and capability may be worth exploring, this may not be cost-effective or efficient for all items and should be part of a broader and considered suite of measures aimed at achieving diverse and resilient supply networks.
20. Domestic PPE production could provide some opportunities for ongoing and additional education and employment. Cross-agency initiatives such as the Provincial Growth Fund, the Employment Strategy, Future of Work and the Review of Vocational Education could help grow a talent management pipeline (industry skills growth and opportunity to upskill and reskill people adversely effected by economic recession) alongside a supply pipeline for PPE. Aligning these strategies to a growth and productivity area could allow New Zealand to become a globally competitive supplier of PPE.
21. Our primary industry opportunities alongside Crown Research funding could support the identification of alternative raw materials that are ecologically sustainable and economically sustainable. International partners may also be willing to pay for the development of capacity within New Zealand to secure quality products with minimal

¹⁰ <http://www.oecd.org/coronavirus/policy-responses/the-face-mask-global-value-chain-in-the-covid-19-outbreak-evidence-and-policy-lessons-a4df866d/>

supply chain risk using higher content of locally produced materials. This is a viable option for the production and export of face shields however, it may not be viable for other PPE items where raw material supply is difficult to source, domestic product is expensive, or it is unviable to develop domestically.

22. Any future support to the development of domestic PPE production could be targeted to those items in most pressing need in the New Zealand context: N95s, L2 Procedure masks and L3 Procedure masks. It is possible that, subject to appropriate due diligence, suppliers could be contracted to supply lower-specification items (e.g. L3 procedure masks) to confirm proof of concept and quality, before investment is considered in more complex manufacturing.
23. Another option is to consider increasing the domestic production capacity around the key raw materials or intermediate products e.g. SBPP, Isopropyl Alcohol, Glycerine¹¹, or increase reserves of these raw materials in New Zealand, to enable a wider range of PPE to be produced domestically.

Summary and next steps

24. The New Zealand health system currently has orders in place to ensure sufficient supply of key PPE items. Based on current level of usage, there is sufficient N95 masks, procedure mask, face shields and goggles on hand and placed orders to last more than four months. Gowns, Aprons and Nitrile Gloves continue to be in high demand and further orders will be required to ensure that there is at least supplies for the next four months.
25. It is evident, given the long-term requirement for PPE to manage Covid-19, a strategy is required to map supply options across both domestic and international markets. This work is currently being overseen by the Ministry, working with NZ Health Partnerships.
26. Robust future demand forecasting remains a challenge. The Ministry is working to create a reliable forecast that can be used to inform current procurement and the future strategy.
27. MBIE can assist with the development of commercial arrangements, consideration of patent requirements and provide advice on the economic-legal aspects of market policy.

Work underway

28. The Ministry is working to:
 - a) progress development of a national PPE procurement plan to more broadly consider all PPE requirements
 - b) develop better forecasting of future PPE demand
 - c) test and revalidate assumptions about domestic PPE production capacity and capability

¹¹ Glycerine (also called Glycerol or Glycerin) is a simple polyol compound.

- d) understand the upstream constraints for domestic manufacture such as investment requirements and raw material supply.
29. In parallel, the Ministry continues to work with DHB procurement partners to secure sufficient stock of PPE internationally, noting that this continues to be challenging due to global demand.

Next steps

- 30. The Ministry will report back to you about the outcomes of supply chain work outlined in paras 28 and 29 in July 2020.
- 31. Officials can provide further information about this topic at your request.

Dr Ashley Bloomfield

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