



Department
of Health &
Social Care

Covid-19 Personal Protective Equipment (PPE) Manufacturing Alternatives

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Alternate Manufacturing Capacity - Context

Increased demand for Personal Protective Equipment (PPE) as a result of Covid-19 is being combined with limits to the international supply resulting in the need for an understanding of alternative supply and manufacturing options

Context

- Personal Protective Equipment (PPE) is key to day to day care delivery as well as seasonal and pandemic flu response. It is currently also being seen as a key preventative measure to try to prevent the rapid transference of the Covid-19 virus.
- As a result, there is significant demand being observed from the healthcare landscape (including P&SC) but also other governmental functions such as Police, Education, MoD etc.
- Whilst existing stockpiles and resupply routes are extensive, well designed and thought through, alternative measure may be required given the immediacy of the Covid-19 situation and the reaction of other national governments in limiting their manufacturers from exporting PPE products.
- This document explores options that could be evaluated to maintain the requisite level of supply. It does not go into what those level should be or inter-link with any other contingency planning at this stage.

Example PPE Product Types

PPE Examples
Aprons
Body Bags
Clinical Waste Bags
Clinical Waste Containers
Eye Protectors
Face Masks IIR
Face Masks FFP2
Face Masks FFP3
Detergents
Gloves
Gowns
Hand Hygiene
Pulse Oximetry
Swabs

Alternate Manufacturing Capacity - Scenarios

The action of various national governments in constraining export of PPE in response to Covid-19 requires consideration of the implications on UK supply continuity

Three scenarios have been used for planning purposes based on a combination of Covid-19 impact, resupply levels and stockpile burn rate. The activities associated with each scenario are expanded over the subsequent slides.

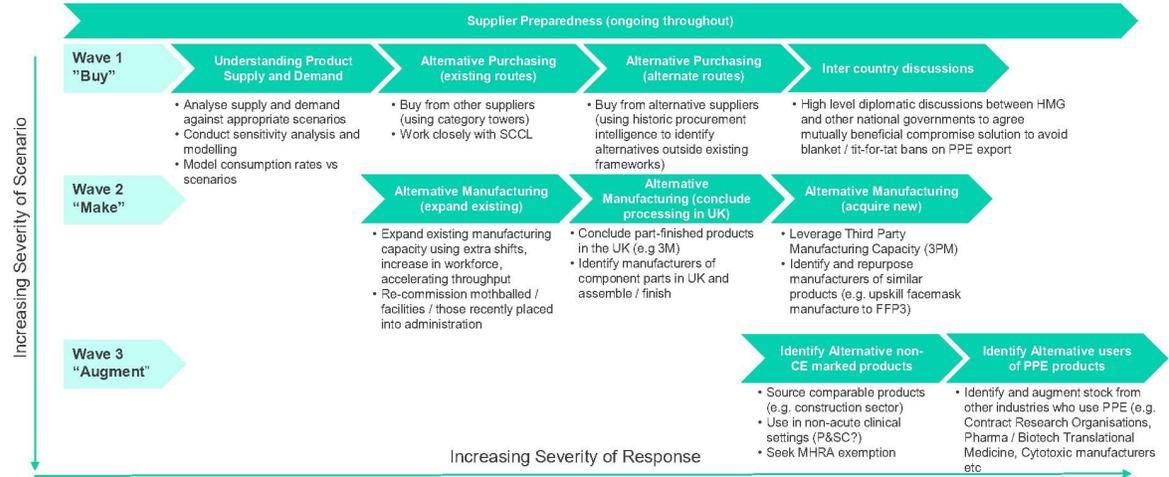
Wave	Assumptions
Wave 1 "Buy"	<ul style="list-style-type: none">• PPE Resupply continues internationally – and is only moderately constrained.• Existing stockpiles + resupply meet forecast burn rate (including winter 2020/21 PIPP resupply)• Number of Covid-19 cases low to moderate
Wave 2 "Make"	<ul style="list-style-type: none">• PPE Resupply becomes more heavily constrained due to restrictions of international governments• Existing stockpiles + resupply insufficient to meet forecast burn rate (including winter 2020/21 PIPP resupply)• Number of Covid-19 cases moderate
Wave 3 "Augment"	<ul style="list-style-type: none">• PPE stock becomes severely constrained due to clinical demand caused by severe escalation in burn rate and the action of international governments• PPE Resupply + stockpiling + manufacture fails to meet forecast demand (including winter 2020/21 PIPP resupply)• Number of Covid-19 cases high

Increasing Severity of Scenario

Note – these scenarios are not aligned with any other government models or centralised planning considerations

Alternate Manufacturing Capacity – Overall Plan

As the severity of the scenario increase (down the page) so to the severity of the response increases (across the page).



Alternate Manufacturing Capacity – Playbook (1 of 3)

Wave 1 (“Buy”) is built on developing or leveraging a firm understanding of supply and demand and using existing NHS purchasing routes to maximise buying options.

Wave	Response Measure	Activity	Owner	Detail	Immediate Next Steps
1	Understanding Product Supply and Demand	<ul style="list-style-type: none"> Analyse supply and demand Conduct sensitivity analysis and modelling Model burn rates vs scenarios 	TBD	<ul style="list-style-type: none"> Map likely requirements for PPE (including Covid-19 but also seasonal flu usage etc) Balance against existing stockpiles + need to resupply 	Assumed already in partially in flight 1. Confirm modelling in place and use to develop high level plan of mitigation against a number of defined scenarios against different care settings eg acute, social care
	Alternative Purchasing (existing routes)	<ul style="list-style-type: none"> Buy from other suppliers (using category lowers) 	TBD	<ul style="list-style-type: none"> Within category lower, increase purchasing in line with predicted burn rate. Report and share 'early warnings' to centralised intelligence function (see slide 9) in case suppliers are unable to fulfil orders 	Assumed already in partially in flight 1. Increase purchasing where product available in line with stock piling 2. Assess and understand commercial implications of increasing purchasing 3. Evaluate if expanding warehousing is necessary
	Alternative Purchasing (alternate routes)	<ul style="list-style-type: none"> Buy from alternative suppliers (using procurement intelligence to identify alternatives outside existing frameworks) 	TBD	<ul style="list-style-type: none"> Previous procurement activities provided lists of potential suppliers who could now be approached to provide alternate routes of supply 	Assumed already in partially in flight 1. Review all historic proposals received for supply of PPE to category lowers 2. Contact suppliers to gauge ability to supply 3. Order as appropriate 4. Agree commercial terms

Note: assumption is that SCCL are the national suppliers to all care settings for PPE. Other distributors and their supplies (eg Bunzl) should be evaluated also

Alternate Manufacturing Capacity – Playbook (2 of 3)

Wave 2 (“Make”) is based on either concluding manufacture of non-finished goods in the UK, or adding capacity to the manufacturing processes through a number of means.

Wave	Response Measure	Activity	Owner	Detail	Immediate Next Steps
2	Alternative Manufacturing (expand existing)	<ul style="list-style-type: none"> Expand existing manufacturing capacity using extra shifts, increase in workforce, accelerating throughput Re-commission mothballed / facilities placed into administration 	TBD	<ul style="list-style-type: none"> Where product is manufactured either in part or in whole in the UK, engage with suppliers about increasing volume of output Investigate mothballed facilities Consider implication of expanding workforce (child care etc) 	<ol style="list-style-type: none"> Confirm list of PPE manufacturers in UK Engage with them about increasing outputs (shift patterns, capacity etc) Analyse recent administrators records and financial data sources to identify relevant facilities recently placed into administration Evaluate supply chain / regulatory / validation considerations - liaise with regulatory authorities as required (e.g. MHRA, Notified Bodies etc)
	Alternative Manufacturing (conclude process in UK)	<ul style="list-style-type: none"> Conclude part-finished products in the UK (e.g. 3M) Identify manufacturers of component parts in UK and assemble / finish 	TBD	<ul style="list-style-type: none"> Where product is manufactured either in part or in whole but is exported for finishing (surface treatment, packaging, sterilisation etc) evaluate completing manufacture of product in the UK. Nature of product finishing needs to be understood 	<ol style="list-style-type: none"> Identify Manufacturers who export part-finished PPE Identify finishing activities required (e.g. techniques and requirements) Identify facility (could be 3PM) who can conclude manufacturing in UK Evaluate supply chain / regulatory / validation considerations - liaise with regulatory authorities as required (e.g. MHRA, Notified Bodies etc)
	Alternative Manufacturing (acquire new)	<ul style="list-style-type: none"> Leverage Third Party Manufacturing Capacity (3PM) Repurpose other manufacturing lines Identify and repurpose manufacturers of similar products (e.g. upskill facemask manufacture to FFP3) 	TBD	<ul style="list-style-type: none"> Where existing capacity is insufficient, evaluate use of: <ul style="list-style-type: none"> 3PM facilities Repurposing other lines to manufacture PPE Repurposing non-CE manufacturing lines to manufacture CE products Lead time will need to be understood given validation requirements 	<ol style="list-style-type: none"> Identify suitable 3PMs – understand capacity / capability and lead times Engage with suppliers - evaluate IP and tech transfer challenges (legal input required) Evaluate supply chain / regulatory / validation considerations - liaise with regulatory authorities as required (e.g. MHRA, Notified Bodies etc)

Alternate Manufacturing Capacity – Playbook (3 of 3)

Wave 3 (“Augment”) is intended as a final line of supply, augmenting buying and make options with repurposing of non-CE products and obtaining supply from other sources if PPE supply becomes severely constrained

Wave	Response Measure	Activity	Owner	Detail	Immediate Next Steps
3	Identify Alternative non-CE marked products	<ul style="list-style-type: none"> Source comparable products (e.g. construction sector) Use in non-acute clinical settings (P&SC?) Seek MHRA exemption 	TBD	<ul style="list-style-type: none"> Source non-CE product equivalents (e.g. construction sector FFP3 masks). Understand delta to CE product (e.g. bactericidal, fluid resistant etc) Consider if certain non-acute settings would be suitable for their use (e.g. P&SC?) 	<ol style="list-style-type: none"> Identify suitable non-CE products across the PPE range Evaluate deficiencies vs CE standard Liaise with MHRA and clinical agencies to determine appropriate use
	Identify Alternative users of PPE products	<ul style="list-style-type: none"> Identify and augment stock from other industries who use PPE (e.g. CROs, Pharma / Biotech Translational Medicine, Cytotoxic manufacturers etc) 	TBD	<ul style="list-style-type: none"> As an ultimate fall back, consider purchasing critical PPE equipment from other users in less critical sectors (note, some sectors may become critical over a prolonged period – e.g. Cytotoxic manufacturers, waste handling etc) Elective research activities (e.g. non critical clinical trial activities) could be a logical place to evaluate 	<ol style="list-style-type: none"> Identify the industries most likely to use PPE and assess likely volumes Engage with those users early to mitigate duplicative demand Consider a voluntary scheme, pairing manufacturers to local hospitals Ultimate fall back is a more centralised requisition programme – only to be used in extremis

Alternate Manufacturing Capacity – Approaching Suppliers

For any of the waves to be successful they are reliant upon up to date intelligence. This is currently being received by multiple entities across government and needs to be consolidated and centrally managed – DHSC have a methodology in place based on supply continuity which could be expanded

Consideration

- 1 **Consolidate sources of intelligence into a single 'centralised supplier intelligence' repository:**
 - Intel should ideally be consolidated into a database allowing simultaneous access (could be a CRM tool, or excel as a fall-back, Caseman (NSDR) could be considered also).
- 2 **Establish hub and spoke intelligence gathering teams:**
 - **Hub:** A single centralised team need to consolidate and manage supplier intel. DHSC's construct could be rolled out across government or adopted by another department (CO?) to reflect the cross governmental nature of demand for PPE. The Hub team would maintain responsibility for reporting to Senior leaders, Ministers etc
 - **Spokes:** Nominate Single Point of Contact (SPoC) in each relevant department
- 3 **Regularise Sourcing of Intelligence**
 - Set up and run regular cadence of intelligence calls and update repository with intel:
 - **Daily** - Cross Governmental SPoC calls to share recent changes in supply / demand
 - **Weekly** - calls to main suppliers of PPE to assess ongoing supply issues (accelerate to daily if required)
- 4 **Standardise guidance around dealing with suppliers (see slide 10-11)**
 - Update EU Exit NSDR and Supplier Preparedness guidance to reflect Covid-19 challenges – particularly the need to secure stock urgently at the first sign of a supplier struggling to fulfil an order (consider purchasing route, approvals and commercial / legal considerations)

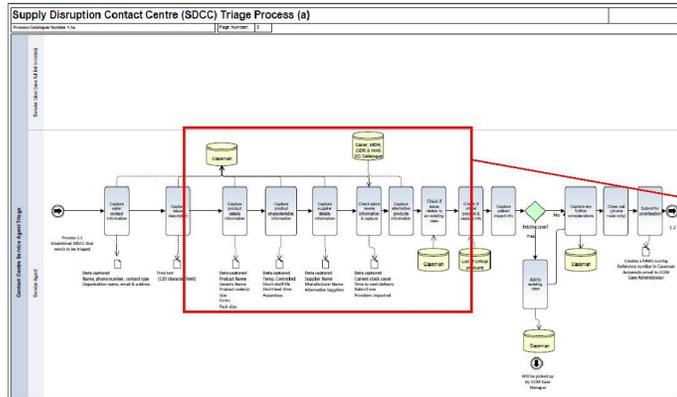
Required Team / Asset & Owner

Requirement	Owner
Product and Supplier Database	?
Single Team to own supplier intelligence	?
Clear SPoCs across impacted government departments	?
Daily calls, chaired by central intel team	?
Scheduled weekly calls with key suppliers	?
Update NSDR Guidance, Scripts and responsibilities	?

Updating NSDR Guidance

EU Exit NSDR Guidance assumed product existed and could not be imported. The Covid-19 situation is different as supply of stock may have been stopped. Response measures will need to be considered accordingly

Example of EU Exit Process Flow



Required Team / Asset & Owner

- Supplier Preparedness, intelligence gathering and NSDR activities will act as early warning systems identifying if a supplier is struggling to supply orders
- During EU exit preparations, time could be taken to evaluate what steps to take. In the case of Covid-19 any critical PPE stock will need to be secured immediately
- The NSDR and Supplier Preparedness processes and guidelines will require updating and suitable purchasing permissions and approvals (as well as any anti-competitive and legal considerations) will need to be put in place

Updating NSDR Guidance – Playbook

Updating the NSDR and Supplier Preparedness guidelines requires a number of steps to be completed

Wave	Response Measure	Activity	Owner	Detail and Next Steps
N/A	Update NSDR and Supplier Preparedness Documentation	<ul style="list-style-type: none"> Review and update NSDR guidelines, processes and approaches to reflect new situation: <ul style="list-style-type: none"> Review EU Exit materials and update as required for Covid-19 planning purposes Pay particular attention to the need to circumvent some of the stock alternative review processes as there may be limited time to secure available stock 	TBD	<p>Review and update:</p> <ul style="list-style-type: none"> MDCC and Non clinical goods and services NSDR process flows MDCC NSDR high level operating model and associated documentation NSDR Call centre scripts NSDR training materials <p>Also Consider:</p> <ul style="list-style-type: none"> Conducting a review of the policies related to coordination of a supply disruption response between the NSDR and the National Coordination Centre / Commercial Procurement Cell for MDCC / NCGS. This includes how decisions on solutions are made, solutions are carried out, and how communications are issued. This process was defined previously in preparations for an EU Exit but coordinating a response for COVID-19 will likely require an update to processes.

Alternate PPE Suppliers – Non Exhaustive Example FFP3

Assessment of suppliers – focusing on those with UK manufacturing entities needs to be conducted in depth. Here is an initial view of some suppliers of FFP3 masks and their level of activity in the UK

Supplier	Primary Industry	Link	UK based manufacture?	Contact	Notes / Action
3M	Both HC and Non-HC	https://www.3m.co.uk/3M/en_GB/company-us/	Yes – unfinished products (FFP3 mask) are exported	Irrelevant & Sensitive	German government prevented unfettered export of PPE. Contact to evaluate finishing products in UK
JSP	Non-HC	https://www.jsp-safety.com/link/en/respiratory-protection/c/	Yes - Oxfordshire		Strong potential for alternate manufacture. Some constraint on ability to export
Moldex	Both HC and Non-HC.	https://www.moldex-europe.com/en/products/fip-masks/	No		Strong potential for alternate manufacture – or expanding their HC range at expense of non-HC
GVS	Primarily HC	http://www.gvs.com/	Yes		Approach to consider alternate manufacturing options
Dräger	Primarily HC	https://www.draeger.com/en_uk/Home	Yes (need to confirm which products)		Approach to consider alternate manufacturing options
Avon Protection	Non-HC (Nuclear)	https://www.avon-protection.com/	Yes		Approach to consider alternate manufacturing options
Valmy SAS	HC	http://www.valmy.eu/	France		Export stock severely constrained already.
Medline	HC	https://www.medline.eu/uk	Unknown		Confirm location of manufacturing facilities
Alpha Solway	Non-HC	https://www.alphasolway.com/	Unknown		Evaluate use of Non-HC product
Delta Plus	Non-HC	https://www.deltaplus.eu/en/	Unknown		Evaluate use of Non-HC product
Trend	Non-HC	http://www.trend-uk.com/index.php?l=en&c=UK&	Unknown		Evaluate use of Non-HC product
Uvex	Non-HC	https://www.uvex-safety.co.uk/en/	Unknown		Evaluate use of Non-HC product
Portwest	Non-HC	https://www.portwest.com/	Unknown		Evaluate use of Non-HC product
SafeAid	Non-HC (Rail)	https://safeaidsupplies.com/about-us/	Yes (need to confirm which products)		Evaluate use of Non-HC product

Alternate PPE Suppliers – Non Exhaustive Example FFP3 (continued...)

Supplier	Primary Industry	Link	UK based manufacture?	Contact	Notes / Action
CMT	Construction	https://www.cmt.co.uk/about-us/	No - Distributor	Irrelevant & Sensitive	Contact to determine stock levels and appropriateness of products
Bryson	Construction	https://www.bryson.co.uk/ppe-workwear/face-masks	No - Distributor		Contact to determine stock levels and appropriateness of products
CSS	Construction	https://constructionsitesupplies.co.uk/	No - Distributor		Contact to determine stock levels and appropriateness of products
LeeBrothers	Construction	https://www.leebrothers.co.uk/	No - Distributor		Contact to determine stock levels and appropriateness of products
SMI	Construction	https://www.smigroupuk.com/about-us/	No - Distributor		Contact to determine stock levels and appropriateness of products
Rexel	Manufacturing	https://www.rexel.co.uk/uki/	No - Distributor		Contact to determine stock levels and appropriateness of products
Brammer	Manufacturing	http://www.brammer.co.uk/about.htm	No - Distributor		Contact to determine stock levels and appropriateness of products