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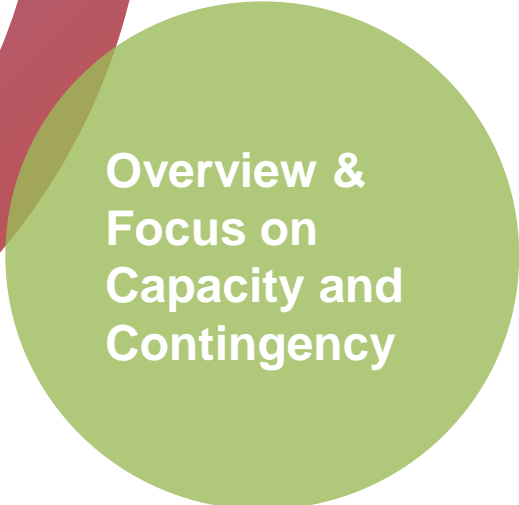
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Decontamination Collaborative Programme



Overview &
Focus on
Capacity and
Contingency

Contents

- **Context in numbers**
- **Programme Priorities – Outcomes and Objectives**
- **Programme Update**
 - Capacity Programme**
 - Contingency Programme**
 - Harmonisation Programme**
- **Focus on Standard Design & Improvement Model**



Context in numbers

14

CDUs across NHS Scotland

374

Theatres serviced

600
+

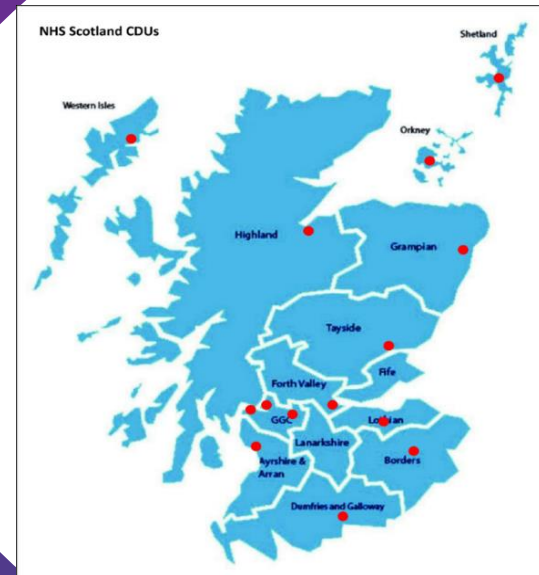
Staff

40+

Million items processed per year

85%
to
95%

Utilisation in 4 largest CDUs




Programme Priorities

- **Deliver collaboratively**
- **Focus on**



resilience and
improved
sustainability



expansion in
capacity and
improvements
in contingency
arrangements



**Decontamination Services
provided by CDUs**

- **Delivery via**



Capacity
Programme



Contingency
Programme

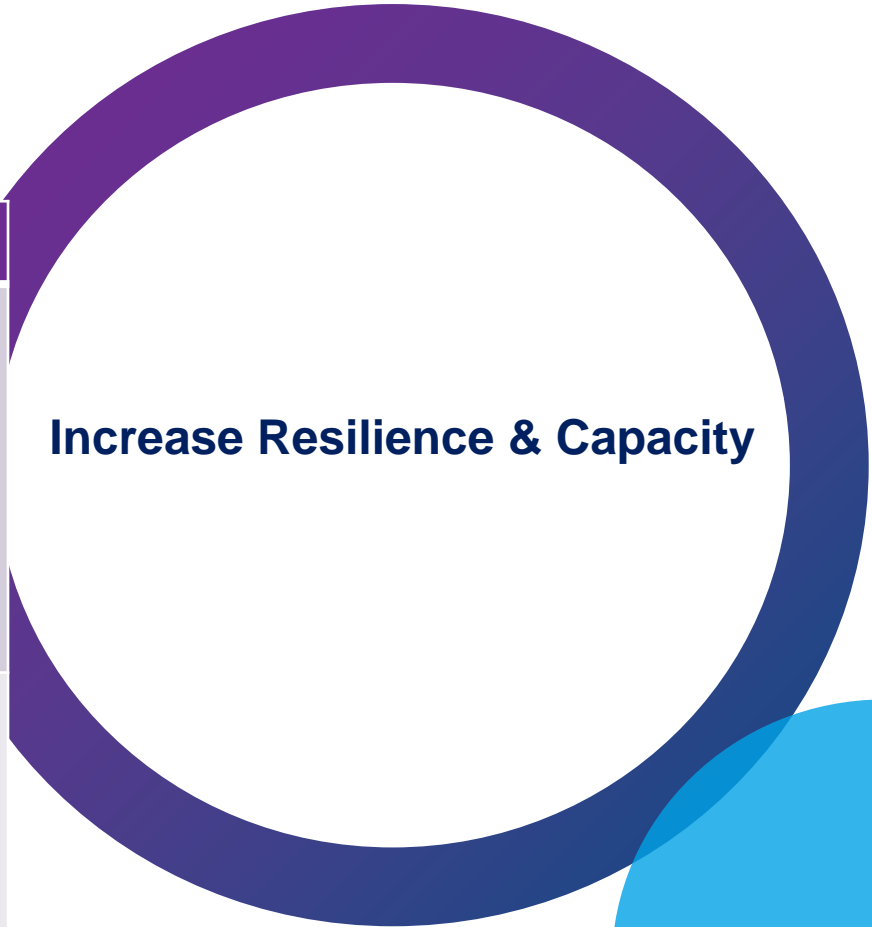


Harmonisation
Programme

Capacity Programme

Resilience in the Service requires sufficient capacity. Four large CDUs are high volume and high utilisation (80-95%), and run near their capacity limits. These constitute single points of failure for the service as a whole.

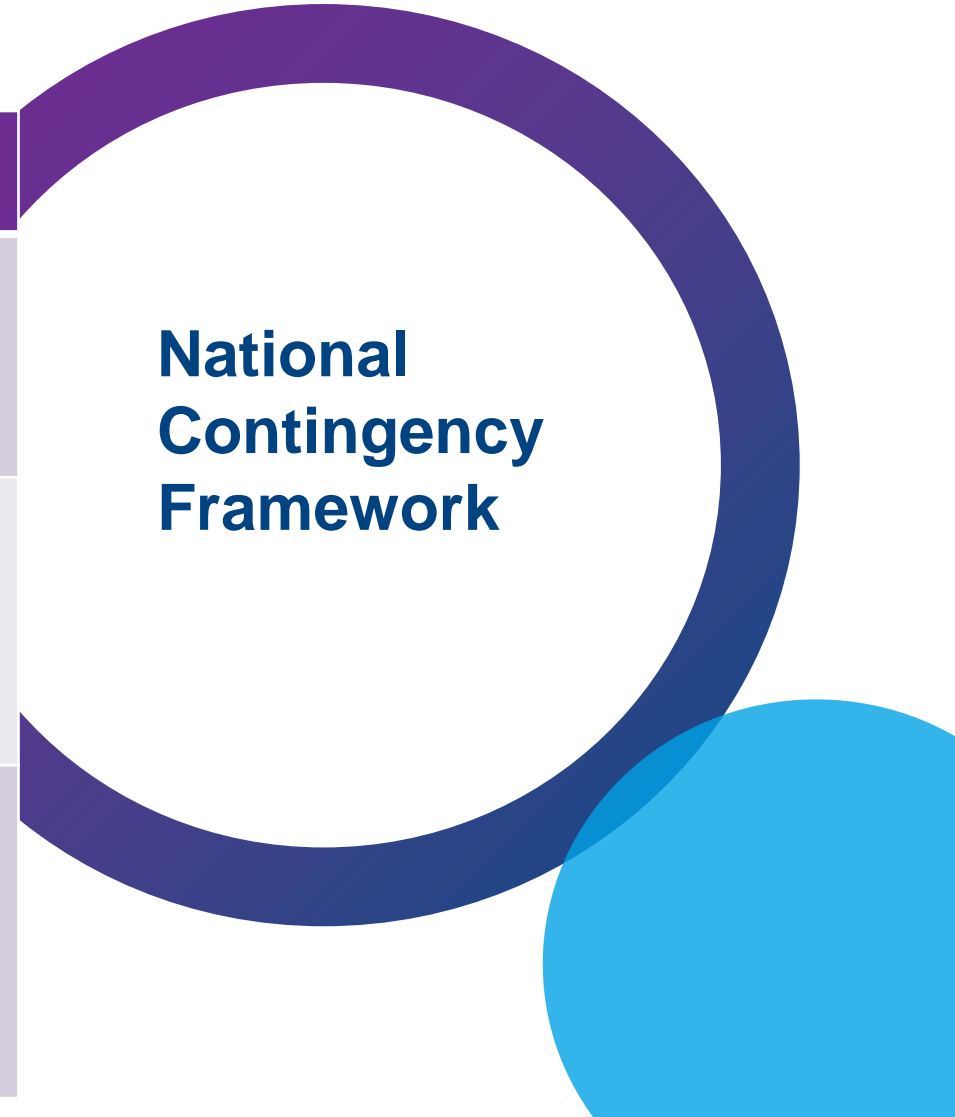
Element	Status	Next Steps
expansion in capacity and improvements in contingency arrangements	Outline PAMS document being drafted. SLWG assessed Board EAMS data to inform current state of CDUs. Significant data collection such as Board CDU Capital Equipment Plans, environmental performance, functional suitability data to be collated.	Draft PAMS to be presented to RSFG and the Programme Board in November 2022 that will advise on current state and size of investment needed to address backlog , equipment needs and point towards infrastructure options for addressing capacity demands
resilience & improved sustainability	The development of a standard CDU design and guidance model. Working with Belimed, the objective is to develop a model that can accurately predict an equipping requirement for a CDU based upon certain criteria. The baseline model is now completed. The next step is to work on the Meta Model.	Aim to have results as part of the presentation for the NHS Assure Conference in November.



Contingency Programme

A resilient service also requires safe, controlled, and effective arrangements for contingency between CDUs. But CDUs' diverse practices and systems across a range of areas work radically against combining resources for effective offsite contingency. This requires a national contingency framework, and a range of harmonisation programmes

Element	Status	Next Steps
Local Business Continuity Plans	Boards confirmed BCPs via Survey Top 6 risks identified Local Risk Assessments in place	<ul style="list-style-type: none"> • Validation of BCPs e.g. BS accreditation being considered • BC Training for CDU Managers • Develop SOPs for top 6 risks – priority is cleanrooms
Regional Contingency Plans	Informal and ad hoc Regional mutual aid arrangements in place but gaps in staff and process intra-operability. Some Boards have 3 rd party SLAs to fill gaps	<ul style="list-style-type: none"> • Staff harmonisation project • Track and Trace project • 3rd Party Agreement being developed
National Contingency Plan	Informal Mutual Aid arrangements Capacity assessment matrix in place 3 rd Party suppliers engagement. Development of 3 rd Party Requirement	National 3 rd Party Contingency Agreement in place 1 st Quarter 2023 Review of Regional BCPs



Contingency Programme (contd)

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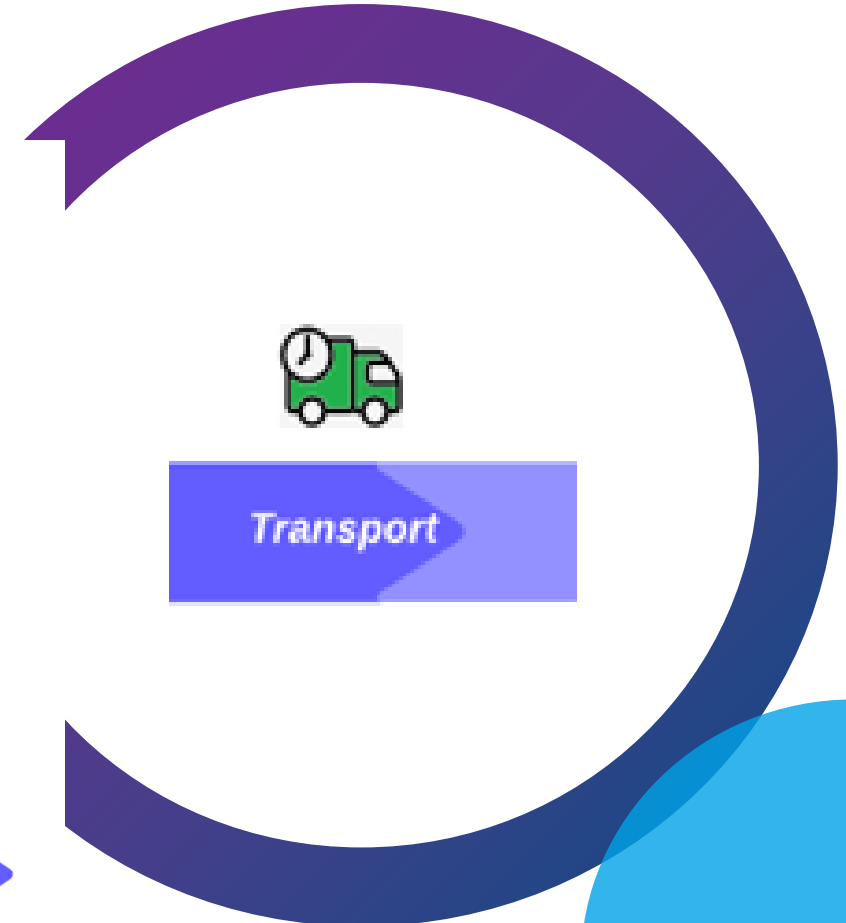
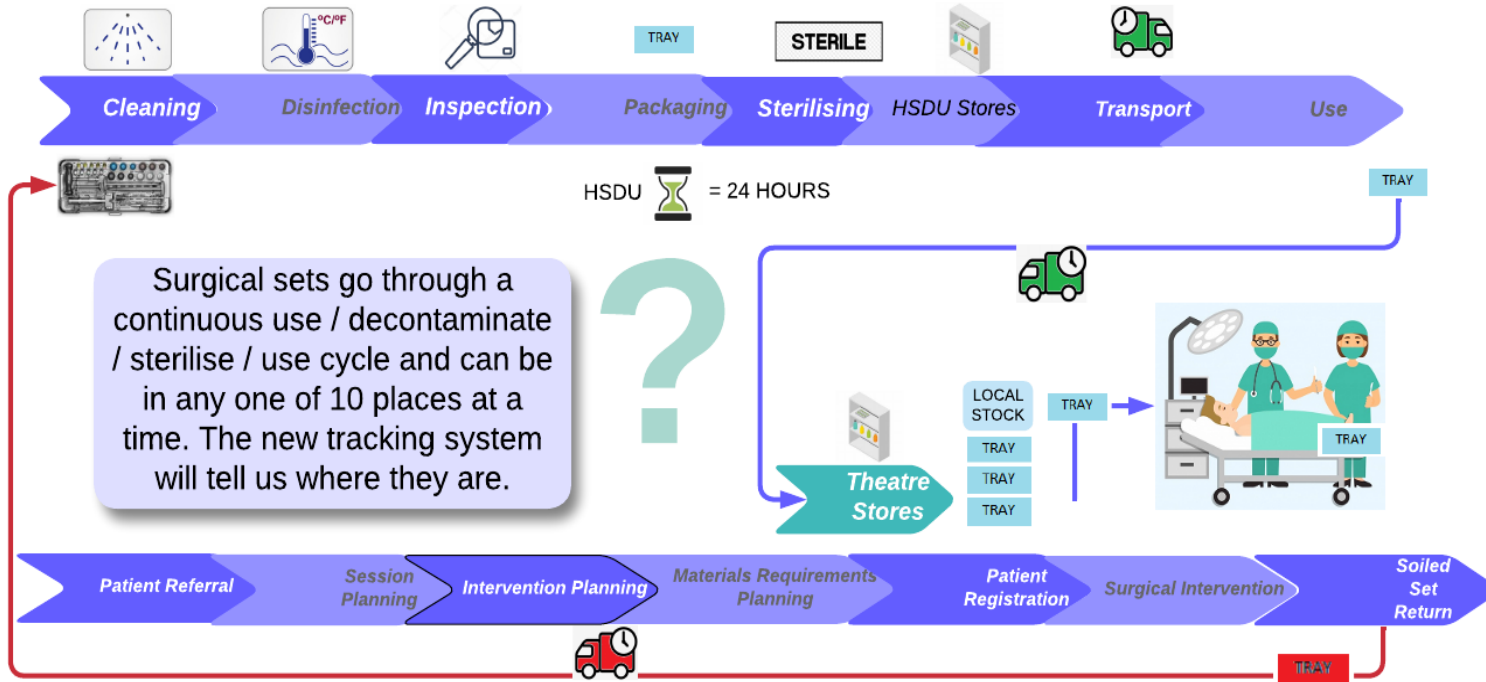
Element	Status	Next Steps
Staff	Variation in JDs and Job titles and skill sets. Review commenced with comparatives of the Decontamination career path and posts as described on both Institute of Decontamination Science (IDSC) and NHS Education for Scotland (NES) websites.	Review of comments received by DCPG. SLWG developing a current v. future state - Job titles/ description/bandings and training pathways. Seek agreement of DCPG on future state Develop Business Case
Track and Trace	in 2021, there were 6 different tracking systems in use; systems from different suppliers do not communicate directly with one another; and the contract lengths and end dates vary considerably, making rationalisation difficult.	SLWG set up to outline requirements and seek national solution for the interoperability of IT systems tracking product manufacture across Central Decontamination Units in NHSS to enable more robust contingency. Looking to find a software solution that will link Boards' current track and trace systems under a common interface. Will investigate external market for a potential solution.



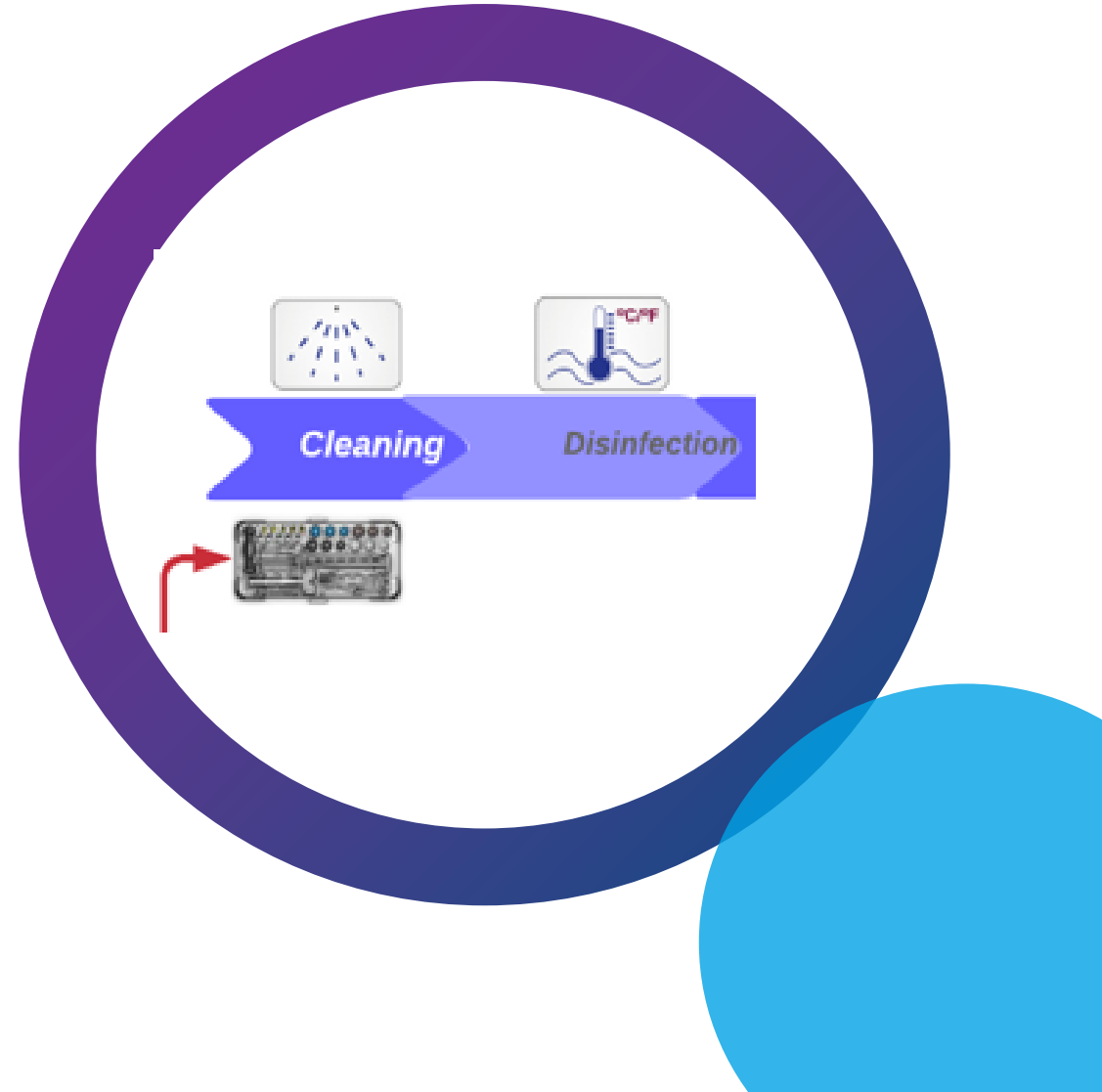
What is a Central Decontamination Unit?

The majority of surgical instruments are re-usable which means they must be cleaned, disinfected to make them safe to handle. They are inspected for fitness for use, packed, sterilised, cooled and dispatched ready for re-use.

The decontamination journey



Cleaning & Disinfection



Inspection



Inspection



Packaging



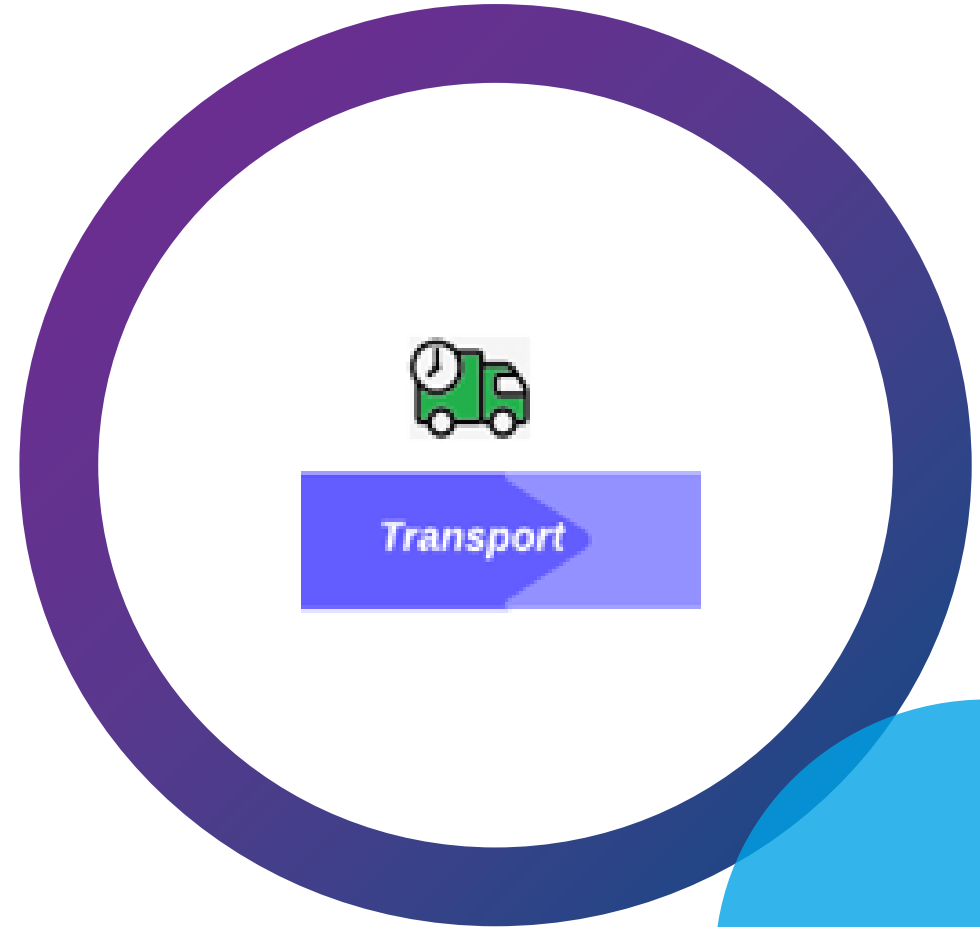
Sterilising



Stores

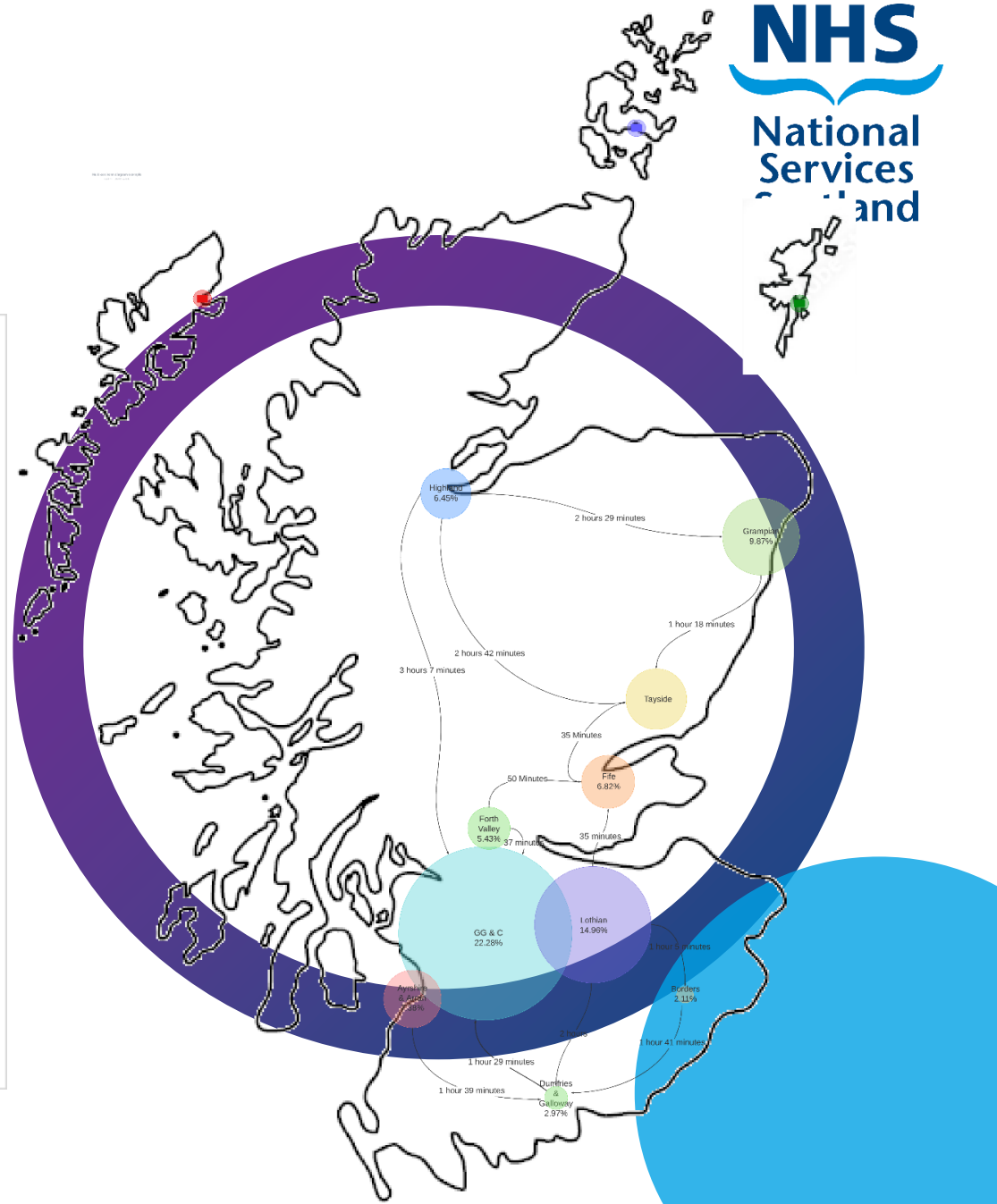
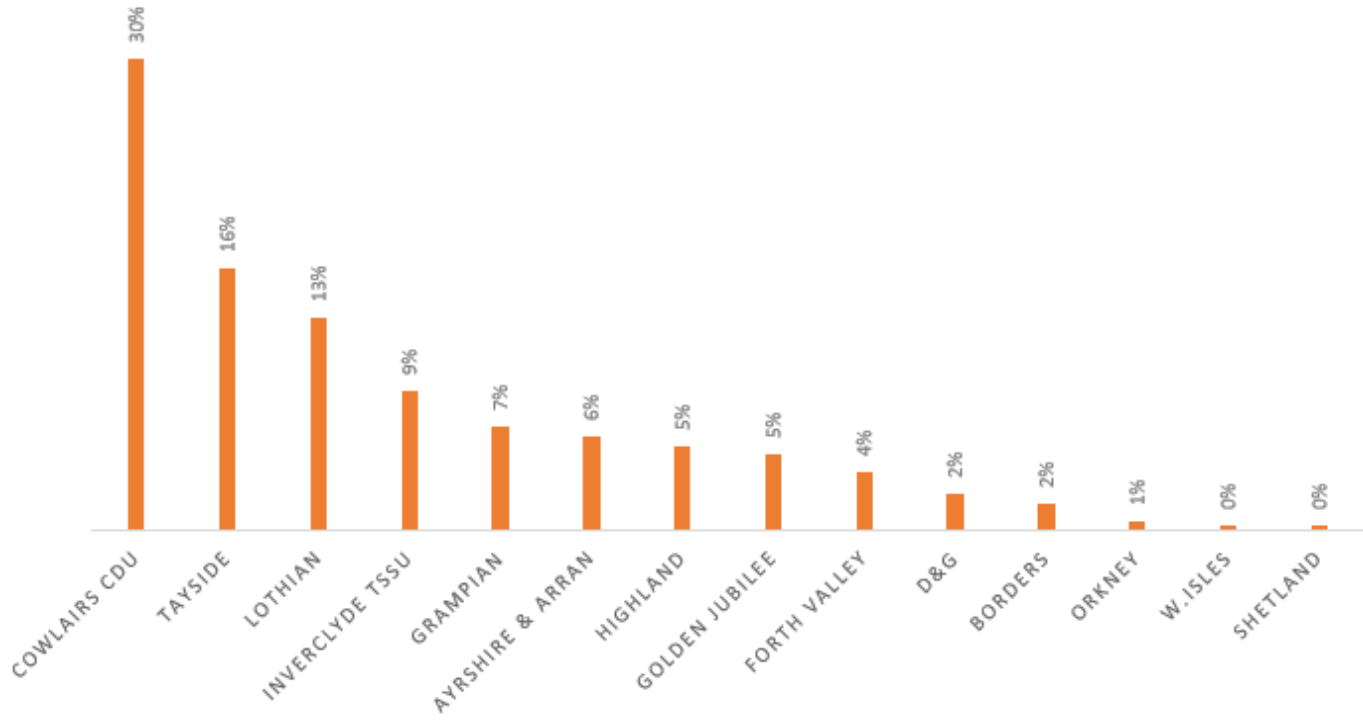


Transport & Use



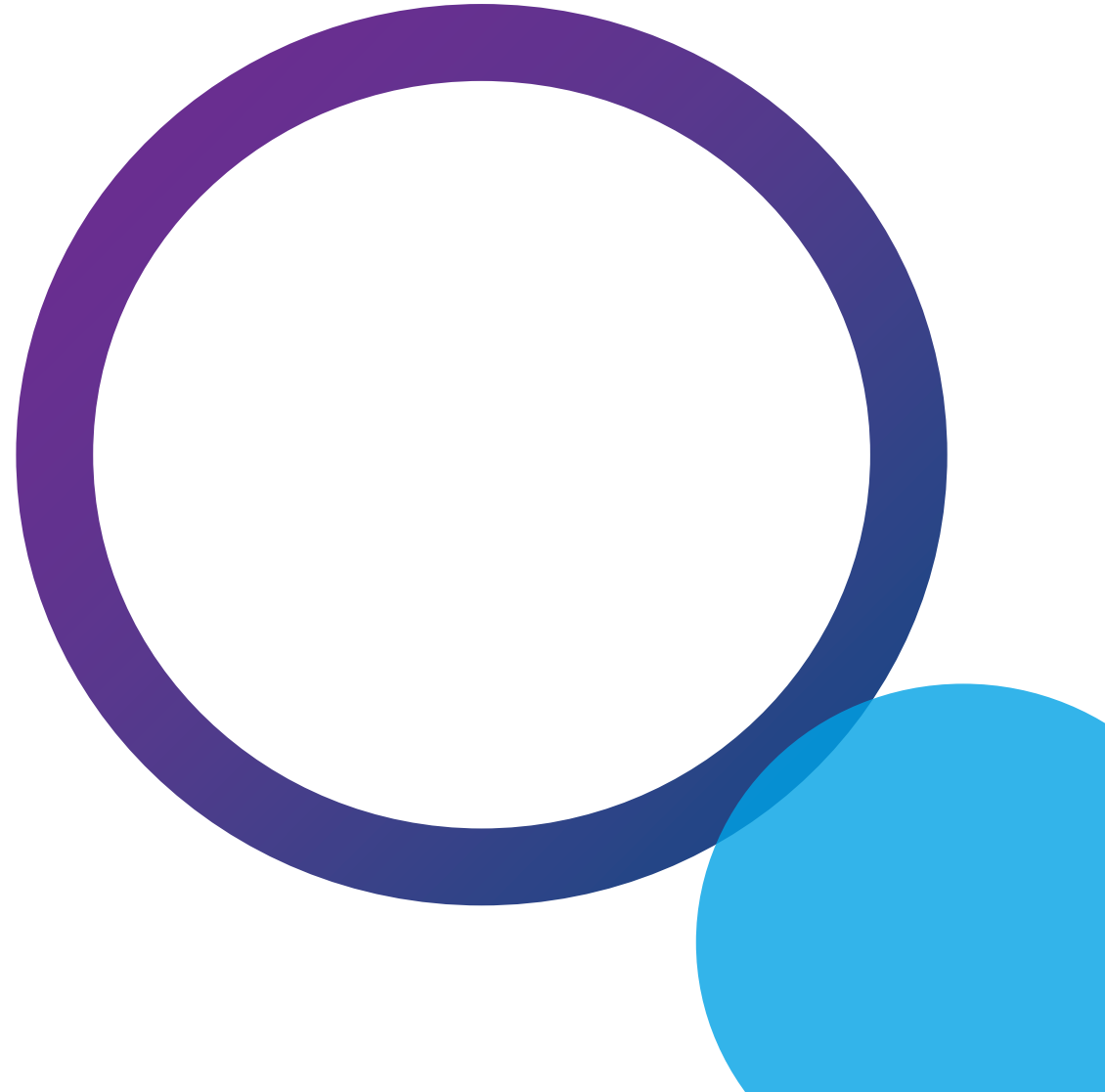
Central Decontamination Unit by Utilisation

SHARE OF ITEMS PROCESSED (2019)



Standard Design & Improvement Model – what is it?

- **A digital model that replicates a scenario we want a better understanding of**
- **Helps to sense check equipping requirements**
- **Enables potential resilience solutions to be evaluated**
- **Support capital investment planning**
- **Supports consolidation of service delivery model through common design**



Standard Design & Improvement Model

Resilience in the Service requires sufficient capacity. Four large CDUs are high volume and high utilisation (80-95%), and run near their capacity limits. These constitute single points of failure for the service as a whole.

Element	Status	Next Steps
1. Equipping model	<ul style="list-style-type: none"> Model can reliably 'sense check' equipping requirements for a CDU using defined inputs such as planned production proposed shifts and staff. <p>Complete.</p>	<ul style="list-style-type: none"> Fragility model
2. Fragility model	<ul style="list-style-type: none"> Create a meta model using multiple instances of the equipping model to simulate the status quo and is used to illustrate existing fragility. Capability variations that exist across existing CDU's need to be built in. Practical distance limitations need to be built into the model <p>Complete</p>	<ul style="list-style-type: none"> Build in limiting factors such as: <ul style="list-style-type: none"> ✓ Distance. ✓ Capability: Certain product types or equipment require specific validated arrangements in the CDU e.g. robotic instruments. Not all CDU's reprocess these.
3. Resilience planning model	<ul style="list-style-type: none"> Simulate "what if" scenarios to visualise the impact new capacity may have on the fragility model. Resilience arises from capacity redundancy in the system. One unit or n+1? <p>Under development.</p>	<ul style="list-style-type: none"> Incorporate a resilience philosophy into the planning model. Evaluate scenarios that provide the 'best fit' for improving local and national resilience and present these. Model the impact of capacity redundancy in the system and n+1. Link these with the design model.



CDU Equipping & Design Model

Digital Model Variables & Limitations Criteria

Model variables

CDU

- Operating hours (hours per day, days per week)
- Staff on shift
- Product range and distribution
- Product receipt frequency

Contingency CDU limitations

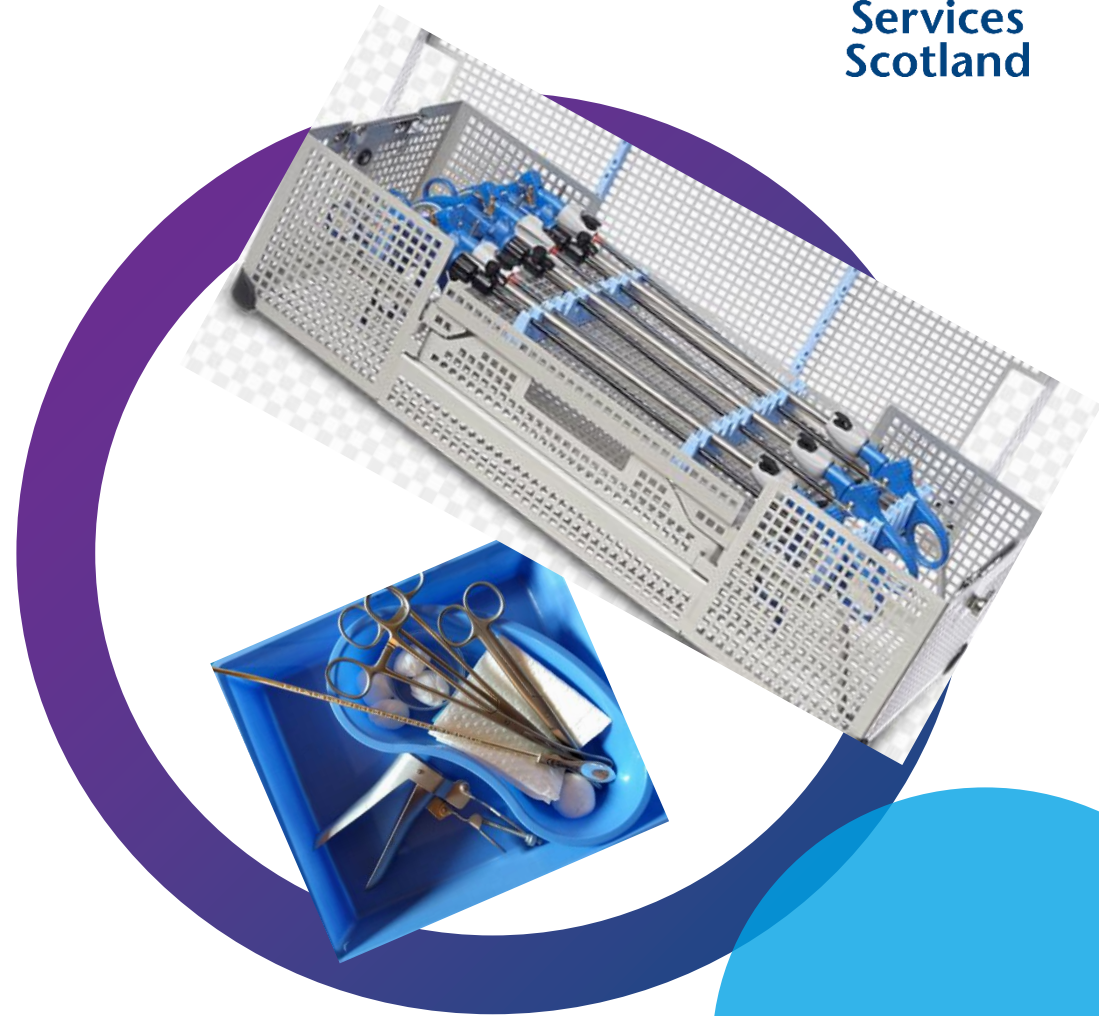
- Distance (too far away)
- Capability (Certain decontamination processes not available for all instrument types e.g. robotic)
- Capacity limitation (Over and above it's own use)



Variables & Limitations

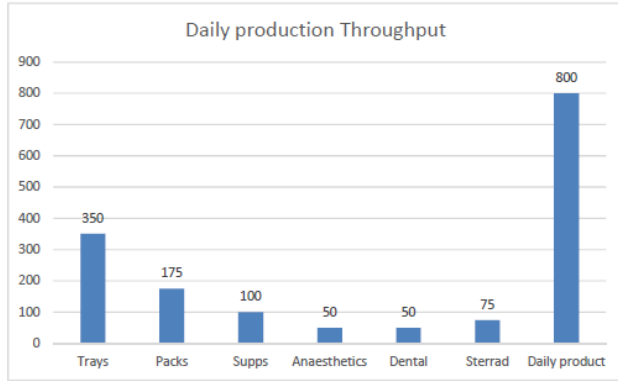
Product to DIN conversion

- **Washer Disinfectors and Sterilisers have capacity measured in DIN Volume.**
- **Products have different volumes so not directly comparable to DIN**
- **1 DIN = 480mm (W) x 250mm (L) x 50mm (H)**
- **Need to take production range requirement and convert to DIN Volume to estimate machine requirement**

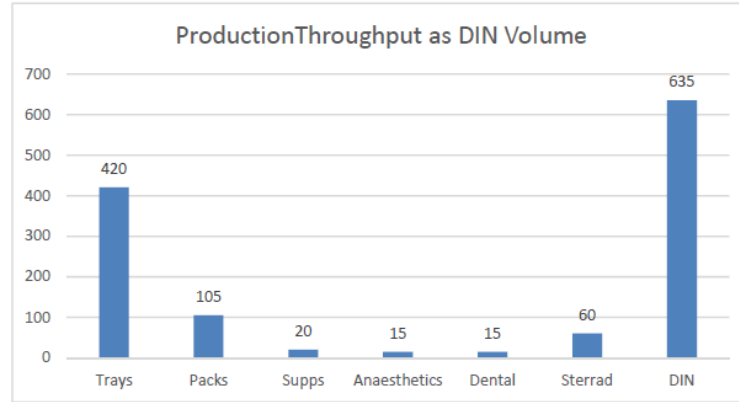


Product to DIN Conversion

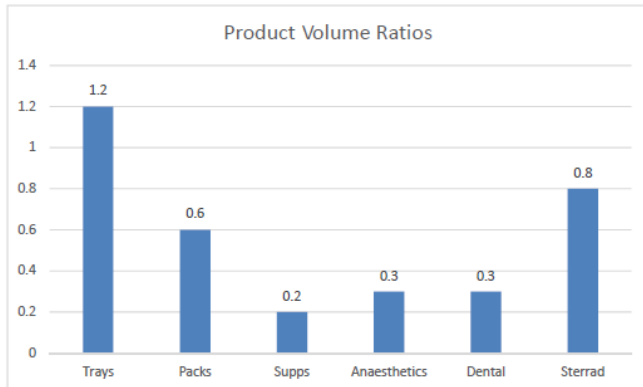
	Trays	Packs	Supps	Anaesthetics	Dental	Sterrad	Daily product
Quantity	350	175	100	50	50	75	800



Trays	Packs	Supps	Anaesthetics	Dental	Sterrad	DIN
420	105	20	15	15	60	635



Example ratios						
Din	Trays	Packs	Supps	Anaesthetic	Dental	Sterrad
	1.2	0.6	0.2	0.3	0.3	0.8

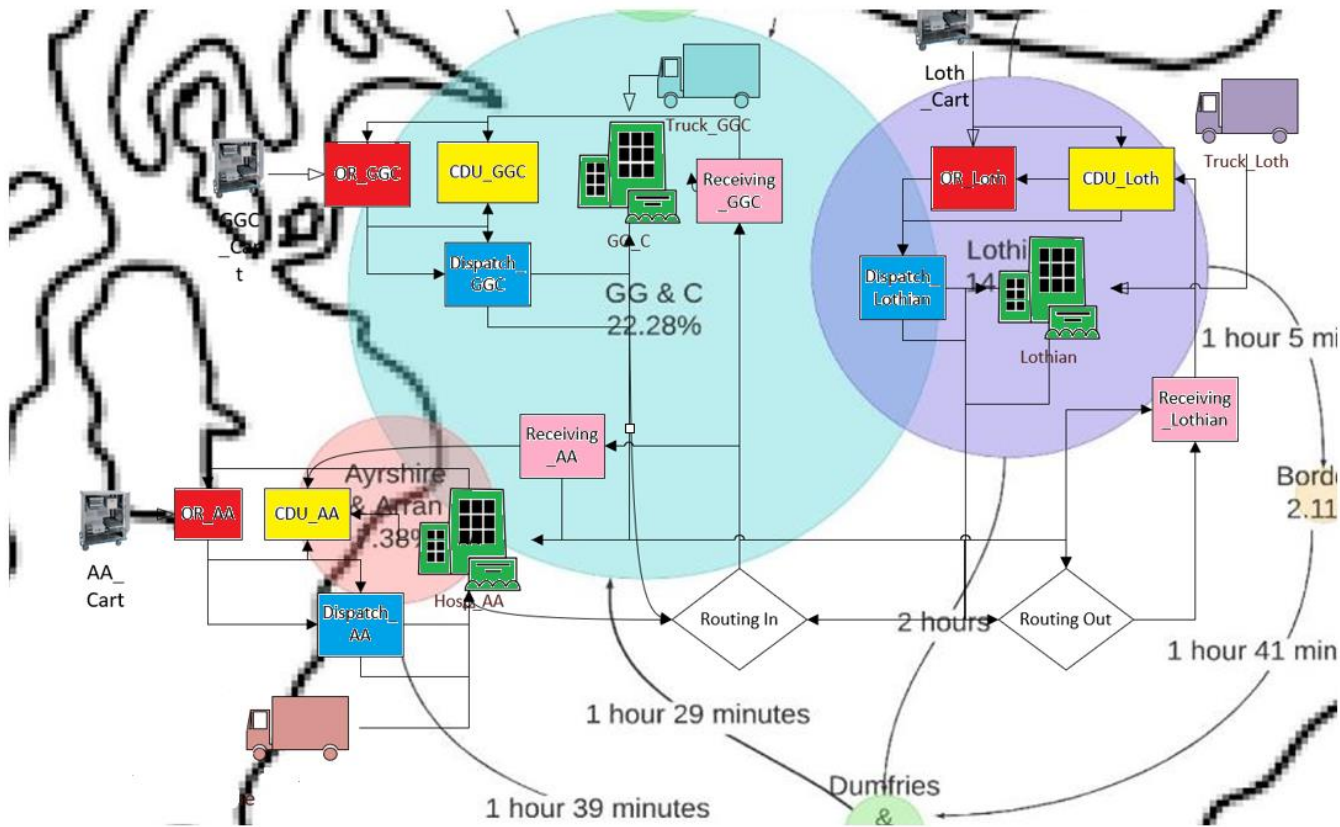


800 Product = 635 DIN

(in this case)



The model



Model variables

CDU

- Operating hours
- Staff on shift
- Product range
- Product receipt frequency

Contingency CDU

- Distance limitation
- Capability limitation
- Capacity limitation

Standard Design & Improvement Model – Next Steps

A resilient service also requires safe, controlled, and effective arrangements for contingency between CDUs. But CDUs' diverse practices and systems across a range of areas work radically against combining resources for effective offsite contingency. This requires a national contingency framework, and a range of harmonisation programmes

Element	Status	Next Steps
4. Design model	<ul style="list-style-type: none"> Establish operational mode baselines for CDU since the operational mode determines the design footprint. How many hours a day/week will it be operational? What size should it be? To do 	<ul style="list-style-type: none"> Use the planning note to inform procurement decisions that allow a modular build framework to be established with provision possible from a group of providers.
4. Design and cost model	<ul style="list-style-type: none"> Revise the planning note to use language that discusses the design requirements for CDU's in terms of duty and service. To do 	<ul style="list-style-type: none"> Revise the planning note (SHPN13 Part 1) to provide a specification language that is compatible with modular build Evaluate the potential cost of the 'best fit' models.
3. Resilience planning model	<ul style="list-style-type: none"> Link the resilience model to a 'model' building design footprint to estimate potential capital spending requirements Simulate "what if" scenarios to visualise the impact new capacity may have on the fragility model. To do. 	<ul style="list-style-type: none"> Evaluate the scenarios that provide the 'best fit' for improving resilience and illustrate the potential costs for each scenario.



CDU Equipping & Design Model

Standard Design & Improvement Model – 4 Outputs Summary

1. **Single model for equipping estimation**
2. **Meta model to illustrate existing sterile services fragility**
3. **Meta model to work through potential resilience improvement scenarios**
4. **Supports design & build**
 - Revised planning note to support modular build
 - Establish CDU operation mode baselines for modelling
 - Establish baseline building design footprint for build cost estimation



Thank You



Any Questions?