National Laboratories Programme

NHS National Services Scotland

NSS Leadership in the Deployment of COVID-19 Testing Across Scotland

Introduction

On w/c 9th March 2020 the National Laboratories Programme (NLP) Team formally adopted responsibility for rolling out COVID-19 testing to Scottish laboratories. The National Laboratories Programme is led by Jess Henderson, National Programme Director.

The first Joint Covid-19 Diagnostics Group was convened on the 10th March. This group is chaired by Ingo Johannessen who is Joint Clinical Lead for the NLP, and it includes membership from NSS Procurement, Health Protection Scotland (HPS), and the Scottish Microbiology and Virology Network (SMVN).

At the point where this programme of work was initiated, no ground work had been undertaken to assess need and solutions, correspondingly the approach to NHS COVID-19 Testing has been developed and deployed rapidly to date given the urgency linked with the rapid spread of COVID-19.

The NSS Team

The positive results achieved to date have predicated on strong leadership from a number of directorates across NSS, including Programme Management Services (PgMS), Procurement, Clinical Directorate, HPS and National Services Division.

HPS has played a key role in addressing the challenges of COVID-19. They worked with NHS Lothian and NHS GGC to set up their in-house assays at the start of the pandemic and are providing leadership with regards to surveillance requirements and data modelling across Scotland. They form part of the Joint COVID-19 Diagnostic Group which is driving the roll out of testing across the country. They interface with Public Health England at a UK level to ensure that the learnings identified in England with regards to testing are translated into Scotland.

PgMS has provided programme infrastructure and planning in response to the emerging pandemic to ensure that solutions can be deployed once for Scotland and at pace.

The NLP Team has the following structure:

Deployment of Testing Equipment and Reagents into Health Boards

The aim of this workstream is to purchase and deploy COVID-19 testing equipment and kits strategically across Scotland to provide equitable, responsive access to COVID-19 testing.

NSS Procurement has sourced 9 Seegene analysers from South Korea and they are already being deployed into Health Boards, with the first Seegene Nimbus being installed in Grampian this week (w/c 30/03/2020). The remainder will be installed throughout April and this is being managed by the NLP Team in partnership with NSS Procurement to ensure a robust delivery plan and a 'Once for Scotland' approach.

Coupled with this, tracking is being undertaken of HBs who are going live with assays made available for existing equipment. NSS Procurement has purchased the assays on behalf of the country.

When NSS commenced this programme of work w/c 9th March, Scotland was delivering 350 COVID-19 tests a day. At the time of writing, Scotland has capacity to deliver over 2250 COVID-19 tests. This represents a 6 fold increase in capacity over 3 weeks, however it must be noted that these figures remain fluid as they are also based on operational capacity to deliver these numbers.

This growth is attributable to the joint working between the NLP, NSS colleagues and the hard work delivered by our laboratory colleagues across the country. It is forecast that at the beginning of May, Scotland will have the capacity to deliver in the region of 4500 COVID-19 tests a day. It should be noted that additional assays have been ordered from Abbott and these are yet to be factored into the modelling which indicates that current capacity projections are conservative as these assays will be deployed into Lothian and Glasgow imminently and will deliver a marked increase in current forecasting capacity (60,000 tests have been secured for delivery across April and May).

It is currently being explored whether repurposing SNBTS analysers will be possible, which will then add substantial additional capacity to testing. SNBTS has a Roche analyser which could potentially be utilised if an in-house developed assay is applied. There is currently a shortage of Roche test kits so the in-house approach is being explored. This would add 3000 further tests a day to Scottish capacity. In addition, there are Grifol analysers which sit in the lab which could be utilised at a later date when the assay becomes available for this analyser. This again could add substantial capacity.

The logistics capacity of SNBTS is also currently being explored to support the increase in samples travelling across the country.

This is a remarkable achievement and Scotland is punching above its weight globally in terms of NHS testing capacity.

- England plan to scale to NHS testing delivery of 25,000 tests a day which relative to the Scottish population would deliver 2410 tests a day. Currently they are delivering 11,000 a day.
- South Korea are highly regarded as having a robust testing strategy – they are currently delivering 20,000 tests a day which relative to the Scottish population is 2100 tests a day

- Germany are also highly regarded as delivering a high quality testing strategy cited as delivering 500,000 tests a week and are ultimately aiming for 200,000 a day. To be comparable to the current German testing figure in Scotland this means we would need to achieve 4660 tests a day which we are on track to achieve and surpass at the beginning of May

The NLP has been in dialogue with Scottish Government colleagues to ensure that the NHS Testing Strategy aligns with the UK Government approach of having a new centre being set up in Glasgow for delivery of Healthcare Worker testing. Advice from Scottish Government is to continue finding routes to expand testing capacity and this is being executed by the NLP.

The strategic deployment of testing work is going well with the collective efforts from stakeholders across NSS, SMVN, HPS and out in the Health Boards, led and supported by the NLP.

Academic, Public and Private Sector Partnerships

The partnerships workstream is led by NLP and is critical. It seeks to expand capacity through identifying highly skilled volunteers who would be willing to work in NHS laboratories during this crisis. It also seeks to identify laboratory space in all three settings to provide bolt-on testing where demand exceeds capacity in NHS laboratories. This workstream is critical for a number of reasons:

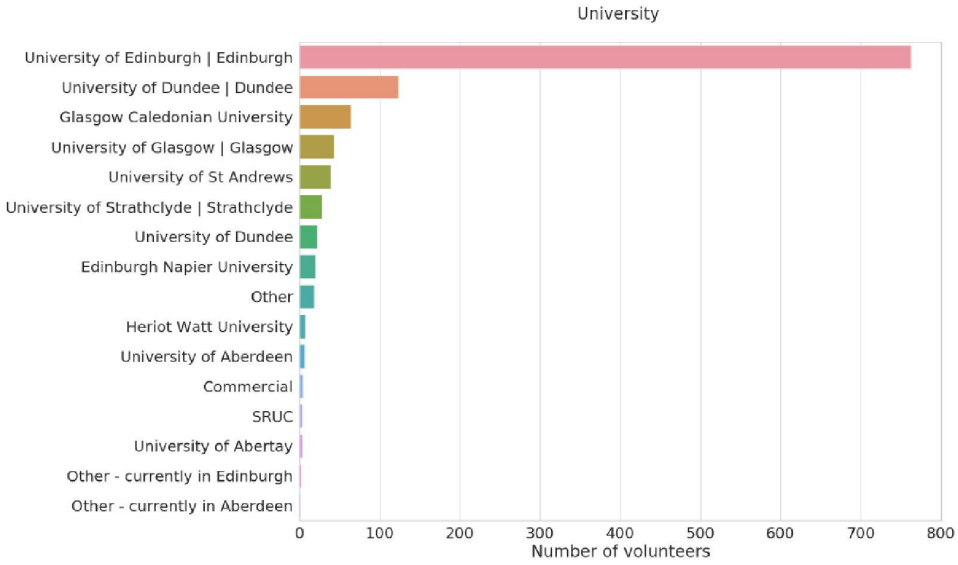
1) It has been highlighted that COVID-19 could potentially drive staff absence at a rate of 20%. Already in one Health Board a staff absence rate of 10% has been seen within the laboratories
2) Increasing demand for COVID-19 testing with a requirement for rapid turnaround will become increasingly challenging to deliver
3) Staff across all laboratory disciplines (and not just within microbiology and virology) are likely to be impacted and, therefore, additional capacity is required across all disciplines to ensure delivery of the current trimmed service approach that laboratory medicine has adopted (see https:// www.rcpath.org/ uploads/ assets/ f5123842-950f-49c5-bf69ed866a7ca3da/ Prioritisation-deferral-of-pathology-laboratory-work.pdf)
4) Demand may exceed capacity to deliver COVID-19 testing within laboratories, and additional capacity must be sourced from elsewhere to deliver resilience at times of peak demand

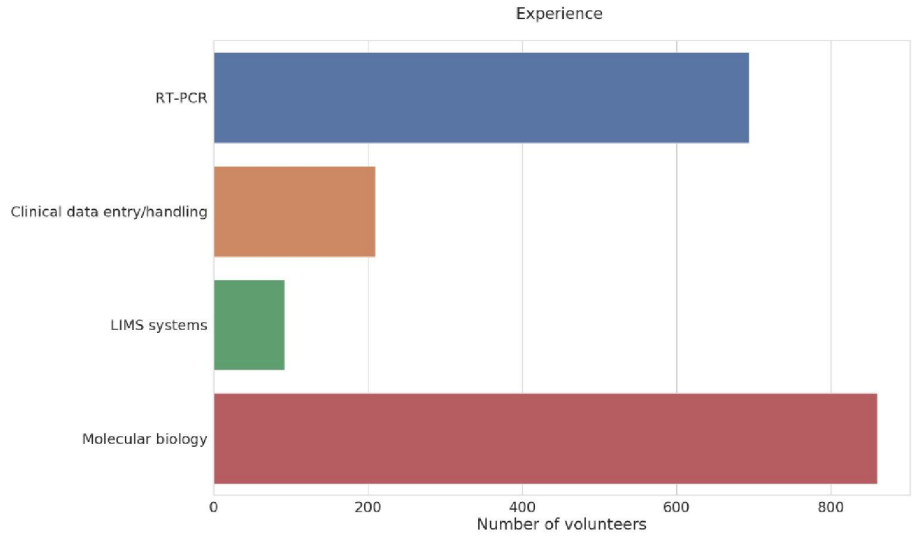
With the COVID-19 pandemic expected to ramp up secondary care demand significantly in coming weeks and months, there is a need to consider creative approaches to bringing flexible capacity to the NHS to deliver responsive, quality assured COVID-19 virus testing. A number of organisations in the academic, public and private sector have come forward to offer support and this paper outlines the approach to mobilising the support available at this time of crisis.

1) Volunteering

Edinburgh University has been working in partnership with NLP to maximise the skills and capabilities of the academic sector across Scotland.

A detailed register of volunteers who would like to offer their skills and capabilities to the NHS at this time of crisis has been compiled. A survey was issued w/c 23rd March and to date has gathered over 1200 volunteers with a range of backgrounds:





There is a cluttered landscape of volunteering initiatives across Scotland, and efforts are being made to align with these.

- Return to HCPC register
- NHS Education Scotland

The NLP/ University of Edinburgh survey which has been issued is more detailed and likely to capture the specialist nature of the scientific workforce so it has been agreed in collaboration with NES that this approach would remain. Where NES does pick up scientific volunteers they

will be referred to the NLP. There are a number of processes in development with NHS Lothian serving as an initial pilot site:

- Putting in place SLAs between Universities and Health Boards
- Needs assessment at Health Board level to understand workforce requirements
- Work with Health Boards to deliver honorary contracts for academic staff to allow them to rapidly enter the NHS
- Development of standard onboarding and induction processes for this unique circumstance. These materials will be added to TURAS
- Development of competency based assessment to ensure sufficient competence when operating at a range of levels – this requires getting academic staff in early before there are serious workforce risks
- Creation of hybrid 'NHS/Partner teams' that are NHS led, resilient and nimble in terms of positioning within either the NHS and/or partner laboratory environment; entails outlining of such teams' template (incl roles/responsibilities) that can be applied across the organisations

It is noted many of these staff will not have HCPC registration and will consequently be required to work under NHS supervision.

There is also potential to bring wider public sector colleagues into the laboratories and a similar approach will be deployed for this group.

2) Utilisation of laboratory capacity

Laboratory capacity will be harnessed across the academic, public and private sectors to support capacity shortages when it is required.

The academic sector holds significant amounts of laboratory equipment. Importantly, in many instances, it applies somewhat different technologies from the large automated NHS 'workhorse' machines, which provides added resilience in terms of diversity of approach across the organisations and prevents them drawing on the same global supply chains. The survey issued has identified that there are a number of PCR machines which could potentially be utilised for COVID-19 testing. This feedback will allow the NLP to identify if some academic laboratories could be utilised for the purposes of COVID-19 testing. In addition, it may identify if there are stocks of reagents and consumables which may help address supply chain issues in the NHS.

The public and commercial sectors also hold significant amounts of PCR equipment. The NLP is currently working in partnership with Scottish Enterprise to identify companies who have high potential for delivering substantial volumes. To date a survey has been issued to a shortlist of 20 companies to understand capabilities and potential volumes which could be delivered on site. Two companies have confirmed support and can deliver 1200 tests a day between them. Further meetings are booked in with other companies to ascertain capacity and willingness to support the NHS. Checks will need to be undertaken to ensure companies have the appropriate accreditation to deliver this work – e.g. UKAS, MHRA or industry equivalence.

A toolkit is being deployed which will contain standard processes and contracts to deploy for each partnership generated. This will ensure that minimal work is required at Health Board level to deploy the new partnership.