Title: Test and Trace Paper – NPHET

Author: Damien McCallion
Organisation: HSE
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Action required:
☐ For noting
☑ For discussion
☐ For decision

Approved for future publication: YES/NO (remove as applicable)
1.0 Executive Summary

- All pillars of the testing pathway are operating at maximum capacity (*referrals, swabbing, laboratory testing and contact tracing*).
- In the past week 206,256 laboratory tests were completed, this is the highest volume of lab tests completed to date in a 7-day period.
- Community referrals have increased by 10% in comparison to the same time-period last week while community positivity is now at 19.4%.
- Swabs completed in the community was 169,934, this is an 8% increase in comparison to the same time-period last week.
- The highest day over the past week reached 27,960 swabs (including test centre and outbreak referrals) which is in excess of our standing capacity.
- Monday, 22nd November 2021 reported the single highest day for testing referrals to date. Over 36,610 referrals were recorded in total, with 16,111 of these being self-referrals.
- Additional surge capacity has been put in place through private agreements, utilization of the Defence Forces, new community swabbing recruitment campaigns and engagement with private healthcare providers. This will bring in an additional 3,000 tests per day.
- People will have to wait longer in some areas for an appointment but the areas impacted can change on a daily basis. Again, the public health guidance is being re-iterated in relation to symptomatic people ensuring they self-isolate until they are 48 hours’ symptom free minimizing any impact of a wait for an appointment.
- The median end to end TAT for a not detected result in the Community is 1.2 day
- The median end to end TAT for a detected result in the Community is 2.7 day
- Serial testing continues in residential care facilities (22 cases identified in the current cycle) and food production facilities (63 cases identified in the current cycle).
- A key service improvement to release CMP capacity is the automation of call three (call to close contacts to book a test) introduced on the 2nd of November.
- A key service improvement recommended by NPHET was to introduce antigen testing for vaccinated asymptomatic close contacts which went live on Thursday 28th October (>3,500 per day).
- Over 94,000 antigen tests have been reported through the public antigen results portal.
- The HSE continues to engage with the Rapid Antigen Advisory Group, chaired by Professor Mary Horgan.

2.0 Service Status

The Test and Trace system is now operating at surge and is under severe pressure. Further demands on the testing system in recent weeks, due to clinical referrals and close contacts, has led to delays in accessing the testing services. We are continuously and actively monitoring the demand status, considering the evolving needs and potential service demands in the context of increasing virus transmission within the community. However, the Test and Trace system has now reached capacity and prioritisation measures are now needed to reduce pressure on the system.
3.0 Current Trends

- From the 17th – 23rd November, there were c.201,345 community referrals. Overall, total community referrals have increased by 10% in comparison to the same time-period last week while Community positivity is at c.19.5%.

- From 17th – 23rd November, there were:
  - 109 international travel portal referrals (↓ 42% compared to last week)
  - 110,565 self-referrals (↓ 0.4% compared to last week)
  - 35,362 GP referrals (↑ 65% compared to last week)

- Over the last 7 days, the number of swabs completed in the community was 169,934, this is an 8% increase in comparison to the same time-period last week. The highest community swabbing day over the past week reached c.27,960 swabs. This translates into delays in getting an appointment for self-referrals in most areas excluding the west of the country.

- Approximately 97% of GP and Close Contact referrals received an appointment on the same day or on the next day.

- Total daily capacity is currently at 29,500 at surge levels, of which 24,500 is in Community Test Centres.

- From the 17th – 23rd November, there have been approximately 206,256 lab tests reported in community, private and acute labs.
• In the community, over the last 7 days (17th – 23rd November), the median end-to-end turnaround time from referral to:
  ➢ SMS for not detected tests was 1.2 day
  ➢ Communication of a detected result by call was 2.7 days
  ➢ Contact tracing completed, for detected results was 2.7 days

• Of those tested with close contacts during the same 7-day period, the average number of close contacts was 3.2.

• From the 17th- 23rd November, there were:
  ➢ 31,131 call 1s (↑ 21% compared to last week)
  ➢ 31,144 call 2s (↑ 26% compared to last week)
  ➢ 4,522 call 3s (↑ 11% compared to last week)

• Recruitment of staff to support swabbing and contact tracing is ongoing. As of the 22nd November 2021, 807 contact tracing staff have been hired and placed. Of the 807 contact tracing staff, 721 have been hired and retained as part of the dedicated workforce supporting contact tracing function whilst the 86 remaining are deployed staff from the HSE and other public service roles.
4.0 Current Capacity

National standing capacity for swabbing is 21,500, while surge capacity overall is now at 29,500 (increasing to >33,500 by mid December 2021). This includes community swabbing, serial testing, home and mobile, private providers and acute hospital swabbing. There are 35 community swabbing centres and an additional 3 community swabbing centres operated by a private operator under HSE NAS governance are now operational in Dublin, Cork and Limerick. This gives a total of 38 centres. Work is ongoing to increase the number of centres with discussions ongoing with one additional operator.

Standing capacity for laboratory testing is 30,000 tests (25,000 community and 5,000 acute hospitals). A surge plan is in place to increase to 36,000 (31,000 Community Tests and including 5,000 acute).

Standing capacity within Contact Tracing is 4,045 for both Level 1 and Level 2, with surge capacity at 5,455. Based on current headcount, Contact Tracing is approaching maximum capacity and the average capacity for the past 7 days is 5,595. (This number will change on a daily basis depending on rostering of staff and excludes the Defence Forces support which has now been agreed)

Table 1. Overview of standing capacity and surge capacity

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Standing Capacity</th>
<th>Surge Capacity</th>
<th>Surge Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swabbing</td>
<td>21,500</td>
<td>29,500 (22nd November)</td>
<td>33,500 plus TBC (20th December)</td>
</tr>
<tr>
<td>Swabbing – Community</td>
<td>15,000</td>
<td>21,500*</td>
<td>21,500</td>
</tr>
<tr>
<td>Swabbing – Home &amp; Mobile</td>
<td>1000</td>
<td>1000 (and NAS mobile teams to increase from 29/11)</td>
<td>Expected increase in NAS mobile teams in week beg 29 Nov</td>
</tr>
<tr>
<td>Swabbing – Private Providers</td>
<td>1,500 (expected to increase to 3,000 by 29/11)</td>
<td>4,000 plus TBC</td>
<td></td>
</tr>
<tr>
<td>Swabbing – Serial Testing**</td>
<td>500</td>
<td>500</td>
<td>3,000</td>
</tr>
<tr>
<td>Acute</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Laboratory</td>
<td>30,000</td>
<td>36,000**** + daily tests (7-day notice period to access additional capacity)</td>
<td>Laboratory capacity at higher levels contingent on offshore availability</td>
</tr>
<tr>
<td>Laboratory - Lab 1</td>
<td>15,000</td>
<td>17,000</td>
<td></td>
</tr>
<tr>
<td>Laboratory - Lab 2</td>
<td>6,000</td>
<td>7,000</td>
<td></td>
</tr>
<tr>
<td>Laboratory - Lab 2 (offshore)</td>
<td>3,000 (~) (7-day notice period required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laboratory – Lab 3</td>
<td>4,000</td>
<td>4,000</td>
<td></td>
</tr>
<tr>
<td>Laboratory - Acutes</td>
<td>5,000</td>
<td>5,000****</td>
<td></td>
</tr>
<tr>
<td>Contact Tracing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1: Call 1+Call 2</td>
<td>2000</td>
<td>2800</td>
<td>Technology solutions will be applied to manage demand.</td>
</tr>
<tr>
<td>Level 2: Call 3</td>
<td>2045</td>
<td>2645</td>
<td></td>
</tr>
<tr>
<td>Total Call Capacity (L1 +L2)</td>
<td>4045</td>
<td>5455</td>
<td>5,595</td>
</tr>
</tbody>
</table>

* Short-term surge capacity, not sustainable beyond a number of days
** Serial testing programmes will commence on 6th Dec and expected volumes will be 21,000 per week with 7-day testing
***Average per day
**** Acute hospitals are running consistently at 5,000 presents significant challenges
5.0 Future Scenarios/Model and Impact

The Test and Trace Programme are working with IEAMG to model the scenarios with particular emphasis on swabbing demand. At this point the key indicators of concern are:

- Increase in referrals for testing of 10% in comparison to the same time-period last week meaning people are delayed in some areas in receiving a test appointment (this was a 10% increase having already been at limit of capacity)
- On peak days we have taken c. 25,388 swabs in the community which means people are delayed in some areas in receiving a test appointment
- Community positivity has increased to c.19.5% which impacts on contact tracing response time

The last iteration of the E2E demand modelling was published on 18th November 2021. This included all components of testing demand as usual, including, most critically, those driven by current high Covid-19 incidence in the community.

Actual COVID-19 activity then, and more recently, was most aligned with the 26th August 2021 “Pessimistic-Reduced” (with allowance for reduced childhood susceptibility to C-19) IEMAG scenario, which were tailored for HSE modelling by shifting 45 days to the right with a 1.7 scaling factor applied to case numbers. (Note: tailoring of IEMAG forecasts was required given that these are over 2 months old and have been superseded by recent disease activity in excess of forecasts – HSE met with Philip Nolan on Monday 22/11/2021 and is now linking on updated IEMAG forecasts).

Overall, these modelled levels of Covid activity present an outlook of significant sustained strain on the testing system – in particular on community swabbing. The outlook under the “Pessimistic Reduced” IEMAG scenario tailored for HSE modelling showed the following totals for the next four weeks which present a challenge to the current surge capacity model.

![Week Commencing | Community Swabbing | Laboratory](image)

<table>
<thead>
<tr>
<th>Week Commencing</th>
<th>Community Swabbing</th>
<th>Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>29/11/2021</td>
<td>227,944</td>
<td>244,402</td>
</tr>
<tr>
<td>06/12/2021</td>
<td>231,601</td>
<td>254,475</td>
</tr>
<tr>
<td>13/12/2021</td>
<td>222,374</td>
<td>246,656</td>
</tr>
<tr>
<td>20/12/2021</td>
<td>212,606</td>
<td>230,172</td>
</tr>
</tbody>
</table>

We note that the End-to-End Test Trace system is currently escalated to surge mode, with particularly high strain apparent on community swabbing. We also note that the strain felt in other parts of the End-to-End Test Trace system, albeit this is constrained upstream by the ability of the community swabbing capacity to meet the sustained high volumes of demand.

Based on the described current demand scenario above, we performed analysis on the backlog likely to emerge due to potential capacity shortages. We tested a number of scenarios where the daily swabbing capacity was altered. The outputs from this showing the outlook for the next six weeks is presented in the below graphs. Based on the outlook for demand, swabbing capacity needs to be at a level of c.30k per day to meet expected demand on the basis of current testing capacity so as to avoid significant backlogs.

Finally, we note that the current situation is changing and uncertain. More up to date COVID-19 activity projections have recently been provided by IEMAG and next week’s testing demand update will reflect the most up to date information available in this respect.
Community Swabbing Backlog – Central Scenario – 18th November

- Projections assume that a delay in swabbing of 3 or more days, results in an individual being untested.
- Central scenarios and range capacities result in a negligible backlog in community swabbing as a result of projected case levels in the Central scenario.
- Increasing swabbing capacity indicates the extent of this backlog.
6.0 Surge Response Considerations

The national SARS-CoV-2 testing policy, incorporating the ‘case definition’ is informed by NPHET, and operationalised by the HSE within the C-19 Test & Trace Programme.

As part of the planning process shared with NPHET and the Department of Health, HSE has previously shared its surge response plan including:

- **Swabbing Capacity**: Additional sites and site capacity, including the introduction of pop-up facilities and more recently the addition of private swabbing capacity to support surge activities with a capacity of approximately 30k per day
- **Clinical Diagnostics Capacity**: Increased across community and hospital settings from >2k per day to 15k per day, and at current surge level operating in excess of 30k PCR test capacity per day
- **Contact Tracing**: Additional efficiencies and mechanisms introduced to support the contact tracing process, including the addition of technology to enable individuals to identify close contacts and book follow on tests and other automation
- **Antigen**: Introduction of antigen testing for ‘Asymptomatic, Vaccinated Close Contacts’ in line with NPHET guidance, and in accordance with the HSE surge response plan (August 2021) to utilise antigen as C-19 testing capacity reached a daily threshold of 20k tests. With the further introduction of antigen for primary school close contacts from 29.11.22

Notwithstanding these actions, the demand for testing continues and is forecast to continue for a number of weeks into December. HSE is also mindful that in the event antigen testing becomes widely available in the build up to the holiday period, PCR testing (confirmatory PCR testing) capacity will come under additional pressure as individuals seek to obtain confirmatory PCR tests. As the Test and Trace programme approaches its surge limit, it is prudent to consider other measures that may be required on an interim basis until such time as the testing demand has stabilised.

These considerations take account of:

- Alignment with NPHET guidance and public health policy to date
- Maintaining consistency and clarity of communications to all stakeholders
- Ensuring a risk-based approach to designated cohorts and/or actions
- Requirement to secure PCR testing capacity for the most vulnerable cohorts
- Acknowledgement that increasing testing capacity continuously is not feasible within the current self-referral model, and that antigen usage may have a role, in the short-term, taking account of the above

The principal surge mitigation actions proposed are as follows:

**A. Communication Campaign:**

- **GPs**: Asking GPs to assist (where feasible) to encourage individuals not to seek PCR testing unless symptomatic, or under the guidance of the clinician
- **Public Health**: Asking public health to consider alternatives to PCR, e.g. antigen usage in asymptomatic, low risk environments/cohorts, where feasible, and in keeping with public health considerations
- **General Public**: Seek the support of the public to secure PCR testing for symptomatic and vulnerable individuals, highlighting that PCR testing capacity needs to be preserved for symptomatic individuals
B. Self-Referral Pathway (64% of daily testing capacity):
- Route all asymptomatic individuals away from the self-referral testing portal, where feasible.
- Focus on public health advice on infection control and isolation measures

C. Meat and Food Production (1% of daily testing capacity):
- Discontinue current serial testing in meat and food production settings as antigen based screening is currently available to these facilities via DAFM, and serial testing positivity rates for this group have remained low.

D: Residential Care Facilities: (10% upon commencement of serial testing in December)
- While not a preferred option in view of the profile of RCFs, putting the serial testing programme on hold in December, pending the completion of the vaccine booster programme across RCFs might be a further option. This will provide laboratory capacity but impact less on swabbing capacity, as the majority now are self-swabbing.

E: Close Contacts (9% of daily testing capacity):
- In the event that other mitigating steps do not impact on overall demand for PCR testing, we could also switch from PCR to antigen for unvaccinated close contacts, or only the unvaccinated asymptomatic close contacts. Vaccinated asymptomatic close contacts are already in receipt of antigen tests under our recent changes.
7.0 Service Improvement Initiatives

Antigen Testing Screening Programmes

Antigen testing screening programmes have been piloted in Early childcare staff and Residential Care Facilities (RCFs) for Older Persons. The pilot in Further and Higher Education is ongoing and is due to finish next week. Antigen screening continues for the Food Processing sector, as well as testing in some Acute Hospital settings. Antigen results may be collected by the sector (DAFM, Acute hospitals), or are reported via the online system for those carrying out self-tests.

The HSE have also supplied antigen tests to other high-risk groups under the direction of Public Health leads, and engagement is underway to provide antigen testing support to vulnerable and hard to reach groups through Social inclusion partners.

The antigen test numbers reported under identified sectors to date are:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Commenced</th>
<th>Total Tests Completed</th>
<th>Total Positive Antigen Results</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food and Meat</td>
<td>March 2021</td>
<td>128,755</td>
<td>238</td>
<td>Results collected by DAFM</td>
</tr>
<tr>
<td>Acute Hospital</td>
<td>Feb 2021</td>
<td>5,650</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Higher Education</td>
<td>July 2021</td>
<td>3,380</td>
<td>786</td>
<td>May include results from other users outside of the HSE programme</td>
</tr>
<tr>
<td>Early Years</td>
<td>July 2021</td>
<td>2,158</td>
<td>242</td>
<td>Programme now completed</td>
</tr>
<tr>
<td>Residential Care</td>
<td>August 2021</td>
<td>4,852</td>
<td>4 (3 verbal)</td>
<td>Programme now completed</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>144,815</td>
<td>1,303</td>
<td></td>
</tr>
</tbody>
</table>

Vaccinated Asymptomatic Close Contacts;

Antigen testing of close contacts who are fully vaccinated and have no symptoms is ongoing since 28th October. The numbers of close contacts referred through this pathway is increasing with an average of 3,868 tests dispatched daily for the last 7 days, an increase of 20% on the previous week. A total of 80,823 test kits have been sent out since the programme commenced. 22,747 test results have been reported by close contacts – 15,118 negative antigen and 7,629 positive antigen, with 4,403 cases confirmed on PCR testing.

Antigen testing population results

The online system for reporting antigen self-test results is available for any antigen user to report their results, whether part of an HSE programme or other members of the general public. Antigen test results, symptomatic status and vaccination status are self-reported and not subject to validation. The volume of antigen results reported is increasing steadily week on week.

To date, 94,175 results have been entered with an average of 3,122 per day for the last 7 days. 79% of positive antigen results are confirmed cases on PCR testing, an average of 1,538 cases per day.
8.0 Appendices

8.1 Serial Testing Programmes:

- Serial testing of staff in RCFs commenced on 20th June 2020. To date, 888,283 swabs have been completed in 598 facilities, identifying 5,248 detected cases, resulting in an 0.59% detection rate since the beginning of testing.

- Cycle 18 commenced on 8th November. To date, the cycle has completed 5,255 swabs and identified 64 detected cases. This results in a 1.22% detection rate.

- Serial Testing of Staff in Mental Health Facilities commenced on 21st of January 2021. To date, 9,247 swabs have been completed in 93 facilities, identifying 37 detected cases, resulting in a 0.40% detection rate.

- Cycle 11 commenced on the 11th of October. To date, 199 swabs have been completed in 3 facilities, identifying 8 detected cases. This results in a 4.02% detection rate.

- Serial Testing of Staff in Food Production
Facilities commenced on 21st of August 2020. To date, **270,263 swabs** have been completed in **91 facilities**, identifying **1,970 detected cases**, resulting in a **0.73% detection rate since the beginning of testing**.

- **Cycle 16** commenced on 15th of November. To date, **867 swabs** have been completed in **16 facilities**, identifying **26 detected cases**. This results in a **3.00% detection rate**.

![Swabs completed and detection rate per cycle in Food Production facilities](chart)

**8.2 Surge Plan Implemented to date**

Several actions have been taken since July 2021 to reduce the demand on Swabbing and Laboratories and to increase capacity across Contact Tracing, as listed below:

**Referrals and Swabbing**

- Expanded opening hours and enhanced rostering
- Introduced measures to increase swabbing capacity e.g. 3rd party resources, Defence Forces and NAS pop up
- Re-directed public to book tests online and stopped walk-ins to reduce admin activity at test sites and better manage the structure of the day and traffic management at busy sites
- A private testing provider has been engaged to provide additional testing capacity
  - On Monday 15th November, a private testing provider opened a testing centre on the HSE’s behalf, located at Dublin airport, which is now operating at 1,000 appointments daily
  - On Monday 22nd November, the private provider had capacity of 1,242 in Dublin airport and 250 in Cork airport (increasing to 300 appointments per day)
  - A third site has now opened in Shannon (providing 300 appointments per day)
  - All 3 sites will increase capacity to total 3,000 appointments by 26th November

**Laboratories**

- Activated additional onshore and offshore capacity as well as additional capacity in acute hospital laboratories
• Prioritisation of symptomatic cohorts and measures have been taken to temporarily increase turnaround times

Contact Tracing

• Check in calls to increase capacity on calls 1, 2 and 3
• Added case listing contacts onto portal
• Upskilling of 154 Level 2 contact tracers to Level 1 to increase contact tracing capacity
• Reduction of Positive Patient Assessment (PPA) questions to minimum; max call time 25 mins (Call 2A)
• Workforce Management initiatives, including offering part time workers increased hours, offering Contact Tracers working a 4-hour shift overtime during busiest days, re-assignment of CMP Staff to Contact Tracing and temporary re-focus of ring-fenced CMP Contact Tracers assigned to complex settings with Departments of Public Health to CMP core functions
• Reduced Positive Uncontactable Cases from 4 Days to 2 Days followed by a letter
• Introduced a reduction in Contact Tracing Days for flight contact tracing
• Implemented support from the Irish Defence Forces
• Updated work Instructions relating to quantity of attempts made to Close Contacts and Index Patients to 3 attempts over one full workday
• Increased capacity of Data Processing Team to facilitate anticipated demand arising from new School’s process
• Amended exclusion criteria for Book a Test portal to increase volume of users who are eligible
• Updated pre-Call 2A SMS to encourage increased use of the ‘List Your Contacts’ portal, and remove any reference to outbound CTC calls
• Only gather contacts associated with 9 Public Health priority areas, for example, hospitals, RCF, travelling community, etc
• Amend current exclusion criteria on List Your Contact to allow more patients to use portal, for example schools etc.
• Suspending validation calls to service-users who opt to utilise the ‘List Your Contacts’ portal
• HSE Communications team to enhance publicity of the ‘List Your Contacts’ portal and encourage its use by service-users.

End