Contact Tracing Service

Future Service Delivery Model

Introduction

1. The Contact Tracing Service (CTS) currently operates on the basis of a manual system. It was deliberately designed to be person centred and use qualified and skilled staff to call people who had tested positive for Covid-19; take them through a structured interview to determine their close contacts and then call these contacts to advise them to isolate in order to break potential chains of infection. This approach worked well when numbers of positive cases were relatively low. The purpose of this paper is to secure policy support for a future service delivery model that deviates from the original in order to meet the increased demand.

Background

2. PHA was planning for an increase of cases in the Autumn and Winter months due to the usual higher prevalence of respiratory illness at these times as well increasing numbers of Covid tests. Modelling supplied by our data scientist at the end of August suggested that by the end of September we would be dealing with 300 cases per day – rising (if no restrictive measures were put in place) to about 1200 cases per day by the end of October. We therefore planned an increase in our workforce to deal with these numbers.

3. However, at the beginning of October we saw case numbers rise to around 900 each day (some days surpassing 1000) and this has been sustained ever since. Our data scientist's most recent modelling shows that whilst current restrictions will slow the escalation, we can expect to receive at least 3000 positive cases per day by the end of the year. Additionally, new testing streams such LAMP and LFT will increase the volume of positive results.

Proposal

4. PHA has been considering how to best manage this increase in workload and the purpose of this paper is to set out our preferred option which is a system

that prioritises a digital approach and uses the human expertise in a more targeted way to support those who cannot utilise the digital solutions; to focus on higher risk cases where a digital response may not capture the nuance of their circumstances and direct the appropriate response; to introduce "reverse contact tracing" to try to determine the source of infection rather than just identify forward links; and to undertake more complex work on investigating hotspots and clusters to better target our response to the disease.

Digital Products

5. There are a number of digital products that have been introduced to enhance the contact tracing process:
    - The stopCOVIDNI proximity app that sends anonymous alerts to people via Bluetooth when they have been in close contact with a phone whose owner has advised they have received a positive test result;
    - The digital self-trace (DST) platform that allows cases to input their own contact details; and
    - The introduction of a text message service to advise contacts that they have been identified and must isolate. We do not follow this up with a call.

6. Whilst these have helped the service contact cases and contacts in shorter times, the primary method of tracing remains calls to cases. Around 20% of cases take up the DST method to input their own details. CTS follows up with those cases who do not utilise the platform and we have improved productivity and increased capacity to do so. We are currently (and for the last number of days have been) reaching around 70% of index cases within 24 hours and over 80% within 48 hours. We are reaching more than 80% of contacts within 48 hours.

Alternative Options

7. We acknowledge that this will be less achievable using our present model when case numbers rise again. To maintain our current methodology will

require further significant recruitment of tracers and support staff (including medics) as well as additional office space and equipment. We continue to increase our headcount but there will come a point when this is not the optimum solution.

8. We have also considered the option to adopt a risk stratified approach whereby only more complex index cases are dealt with by the CTS and the majority of cases are called by a lower-skilled tier of staff - either internally or contracted out to a third-party supplier. This would free up capacity in the CTS but at the same time would require a system for determining which cases are complex and how to support the lower tier of staff. Colleagues in Scotland have recently adopted this approach and the expected benefits have not been realised– in fact early indications are that this has increased pressure on the middle tier staff.

Digital Primacy

9. We therefore propose a hybrid approach whereby our primary response is digital and this is supported by a CTS that will make and receive calls to investigate complex cases and support those who are unable to utilise the digital platform.

Uptake of Digital Products

10. In order to increase the uptake of DST we require a mass media communications and engagement programme. PHA has been using its own social media to promote the platform and we are using all media opportunities to advise of its availability. However uptake has remained steady at around 20% of cases. England reports that about 30-40% of positive cases use their equivalent of DST to provide details about their close contacts.

11. NISRA reports that 85% of households in NI have access to broadband internet. Almost 500k people have downloaded the stopCOVIDNI app and we believe therefore that uptake of the DST platform can and should be higher if it were better publicised. As an example - the vast majority of Pillar Two tests

are booked online. Between 1-25 October there were 158k P2 tests carried out. 4000 of these were booked with the 119 telephone service and around 1000 booked through NI Direct. This shows that there is a willingness and ability to use online portals.

12. Currently we issue a text message to everyone who receives a positive test result (and has provided a mobile phone number) including a code to log on to the DST platform and identify their close contacts. The following day, the CTS calls those people who have not used DST to input their contacts' details. Close contacts receive a text message advising them to isolate. We will shortly implement a reminder text message to cases to encourage them to use DST.

Digital Proxy

13. Going forward we would aim to increase use of DST to a level to be agreed in collaboration with key stakeholders. We would request support from behavioural and design experts to develop a system to encourage uptake of the platform. We envision an element of proxy support whereby people would call and a call handler would input the details into the platform on their behalf. This would mirror the services provided by NI Direct for symptom checking and test booking. NI Direct may not have capacity to provide this additional service on our behalf so it may be that PHA provides the service directly.

14. This is an ambitious target. However, citizens can and do use the online portal for booking tests. The DST platform is no more complex. We believe that an effective comms campaign would significantly increase uptake – particularly when the collective and individual benefits of self-service are stressed.

Risk Profile

15. In order to ensure that people who present a potentially higher risk profile are assessed correctly; we propose building an algorithm that would highlight key complexities using the initial data provided in the Central Test Registry upload. We have requested that ethnicity data is included in the upload

proforma and are considering if there would be value in including occupation data. However, both of these fields – whilst potentially useful – are optional in the test booking platform. In the case of occupation it is also very poorly completed, with an almost 3:1 ratio of the field being left blank as to completed.

16. We do however receive other information through CTR that may be useful in flagging potential complexities. This includes age, post code and if they are a key worker (noting that a key worker is a broad church and only included on Pillar 2 test results).

17. Potentially high risk cases would be screened out before they are invited to self-trace and be escalated to a Tracer to complete the usual structured interview. Additionally, in order to capture potential high risk cases who do complete self-trace (for example those who report zero or unusually high numbers of contacts) we will develop a further algorithm to ensure these are examined before being closed and follow contact made if necessary.

Quality Monitoring and Assurance

18. In order to further quality assure the process we will develop a rolling audit programme whereby we check a number of closed cases and potentially continue to manually trace a baseline sample each day to monitor consistency. This will require further consideration and input from our analytical team.

Contact Information

19. The introduction of text messages to close contacts has improved the time taken to advise them to isolate, it has however meant a corresponding drop in the information known about contacts. We will explore the potential to develop a system whereby close contacts are also invited to complete a self-service platform to give some more detail about themselves such as date of birth, address, occupation etc. This would allow for enhanced analysis of the disease and at the same time electronically link contacts and cases to make it

easier to identify when contacts become cases and support enhanced tracing. This will require support from designers and developers beyond what is currently planned. The Digital TTP programme team have been made aware of this given the resource implications.

Enhanced / Reverse Tracing

20. Enhanced tracing (asking cases for details of their movements up to seven days before the onset of symptoms) is designed to identify the source of infection rather than just the potential onward transmission. This has been an aspiration for some time and we have had early discussions as to how to introduce this system to NI. The IT system changes are not the main challenge. The key issue is the additional call time for those cases where DST is not taken up. Experience from England indicates that this adds an additional 10-15 minutes to the call and that callers are willing to provide the information. However, if we can offset this with a significant uptake in self-service then the impact should be manageable. England has indicated that experience shows cases using the digital platform are content to provide the additional information required for enhanced contact tracing

External Support

21. We envisage a significantly different delivery model for contact tracing if this approach is endorsed. It will require considerable external support for its design and delivery – particularly from our IT partners who have developed the technology infrastructure so far. We will also require support in respect of the human factors and how best to design the service to support all citizens. This could come internally from PHA expertise as well as from colleagues in third party providers such as the Innovation Lab and Big Motive – both of whom have supported us in the past.

Capacity for Additional Activity

22. An increased uptake of self-trace will free Tracer capacity and we suggest that this is used with additional training to support health protection colleagues

in investigating hotspots and clusters in order to enhance the epidemiological work.

Workstreams

23. A series of work streams will be required in order to implement this proposal. They include:
    - Comms and engagement;
    - Digital architecture and support;
    - Analytics & information;
    - Quality monitoring and assurance;
    - Training; and
    - Operations and logistics.

    Each stream will maintain links to the others and consider a range of common issues as well as its own discrete objectives. Common issues include:
    - Risk;
    - Resource;
    - Equality and diversity;
    - Behavioural science and human factors in design; and
    - Security and governance.

Oversight

24. The PHA programme board will retain oversight of the work and will nominate one individual to assume management and leadership responsibility. The programme board is responsible to the PHA CEx who will subsequently report progress to the DoH TTP Oversight Board.

Timing

25. There is a window of opportunity whilst restrictions remain in place and cases have started to decrease. If this is maintained, the coming weeks would are ideal to commence the project. Realistically it is likely to take several weeks to complete the preparatory work with a tentative implementation date of end of November.

Next Steps

26. If you are agreeable to this approach, PHA will – through the programme board – establish the appropriate mechanisms to design and implement the new system. Regular updates will be provided by the CEx as frequently as required, but at least fortnightly to the TTP Oversight Board.