

## Quality Improvement – The Way to Tackle a Pandemic

In the midst of a crisis, it's important to adopt scientific, robust clinical and management practices. But what makes these truly effective are human factors such as creativity and flexibility. The ability to listen to these human factors and incorporate them into the formal structures is at the heart of the HSE's Quality Improvement (QI) approach to stemming the spread of the pandemic. Here is a summary of the background and applications of this QI approach.

The global spread of a virus – a pandemic – presents a unique set of challenges to society. Unlike a dramatic and relatively short-lived natural event like a tsunami, or a man-made terrorist attack, the impact of a pandemic is felt slowly at first, building by stealth, so that by the time it has fully registered, it's already almost out of control. The challenges posed by such a threat are immense. Key among them are pressures on the general health system and staff, the urgent search for a cure or vaccine and most critically, the need to stem the spread throughout the community while treatments and solutions are sought. This challenge in particular – stemming the spread - is best met with robust and innovative systems for contact tracing, a rapid and scalable training system and an openness to collaboration and continuous improvement. In short, a Quality Improvement (QI) approach. This is the approach adopted by the Contact Management Programme (CMP), led by Mr. Kilian McGrane, Programme Manager and Dr. Sarah Doyle, Specialist in Public Health Medicine and Clinical Lead.

### Timeline ... Chapter by Chapter

The story of Contact Tracing during the pandemic can be divided into chapters. We refer to the origin and spread of the pandemic from Wuhan, China, across Europe and reaching Ireland in February 2020 with the ensuing increase in infections and hard-won “flattening of the curve” in April/May as “Chapter One”.

During the earliest days of the pandemic, Chief Clinical Officer, Dr Colm Henry asked National Director of Quality Improvement, Dr Philip Crowley to urgently assemble a number of public health work streams to tackle the issue of Contact Tracing, through the lens of QI methodologies. Members of the National QI Team working with Public Health colleagues, the National Women and Infants Programme, the Office of the Chief Information Officer, and many other HSE staff, and using information gained from observing and managing initial cases of COVID-19, set about designing and testing a process that led to the development of the CMP.

Over the following weeks and months, the spread of the virus was reduced through a combination of enforced restrictions of movements, the commitment and dedication of people working at all levels of healthcare, appropriate clinical treatment of those infected and the operation of this central Contract Tracing system supporting public health. The early version of this system was paper-based and tested by army cadets working out of the basement of Dr Steevens Hospital in Dublin. By mid-March, the web-based CovidCare Tracker (CCT) system was introduced for contact tracing and the operation was rapidly scaled up to meet the challenge. By the end of April, nearly 2,000 people had been trained, working out of 11 contact tracing centres around the country with capacity to make

5,000 calls a day. And these efforts bore fruit. By the beginning of the summer there was a notable reduction in the number of people testing positive for COVID-19 and so the number of Contract Tracing Centres (CTCs) were consolidated to one in Galway.

But the story didn't end there, as we know. The beginning of "Chapter Two" was marked by the sharp increase in the number of people testing positive for COVID-19 in August/September and most notably with an increase in the rate of spread of infection throughout the community. The increase in demand for CTCs was met and, at the time of writing, there are six in operation, making over 31,000 calls in one week and growing fast. Over 1,000 people have been trained during this chapter to support the surge in case number and calls undertaken every week.

### The Contact Management Programme - A Quality Improvement Approach

Placing QI at the heart of the development of the CMP brings a dynamic combination of strengths. On the one hand, you have relatively formal, process-controlled mechanisms such as Improvement and Measurement methodologies and best practice in Governance. But these are balanced by the human elements of Leadership, Person and Family Engagement and crucially, Staff Engagement.<sup>1 2</sup>



**Figure 1: The Framework for Improving Quality**

Quality Improvement enablers specific to the CMP programme were: design, education, delivery and the ability to scale up and down in a flexible manner.

- Design – Covid-Care Tracker brought an end to end dimension to Contact Tracing and this now sits within the overall test and trace end to end setting. Key features of this end to end test and trace system include: Test results are uploaded to CCT, CTC callers make three different calls with each call serving a purpose; Texts have now been

<sup>1</sup> For an overview of the Framework for Improving Quality Improvement in the HSE, see <https://www.hse.ie/eng/about/who/qid/framework-for-quality-improvement/framework-for-improving-quality-2016.pdf>

<sup>2</sup> For comprehensive links to Quality Improvement Toolkit, see <https://www.hse.ie/eng/about/who/qid/nationalsafetyprogrammes/national-quality-improvement-toolkit.html>

introduced for speed in informing—people of their test results, whether COVID-19 is detected or not detected as well as informing people that they have been identified as close contacts.

- Education – Callers complete two weeks of education and training before they take their first “live” call. Such measures as the pre-learning, combination of hard and soft skills, observation and peer support within CTCs and importance of staff support are critical when making these calls.
- Delivery – There are seven Contact Tracing Centres across Ireland and Internal Teams including Public Health Policy and Practice, CCT Design, Education and Training, Internal Communications, Knowledge Management and Reporting etc. Each CTC is staffed with an operational lead responsible for scheduling and many other tasks, a Covid Care Tracker Super User and a public health doctor is available for all health-related questions. Contact Tracing is delivered using a four-step approach – Case, Contacts, Control and Active Follow-Up (See Figure 2)
- Scale-Up: Given the speed of growth of the Covid-19 virus and likelihood that this or other viruses will be with us indefinitely, the ability to scale up and down is one of the most important features of the QI approach. This ability draws on a combination of frequent testing, learning and robust processes modelling which inform training and resourcing. It also deploys flexibility and creativity that comes with a human intervention and listening to people, their families and staff. (See insert. “Standard Training and Savvy”).

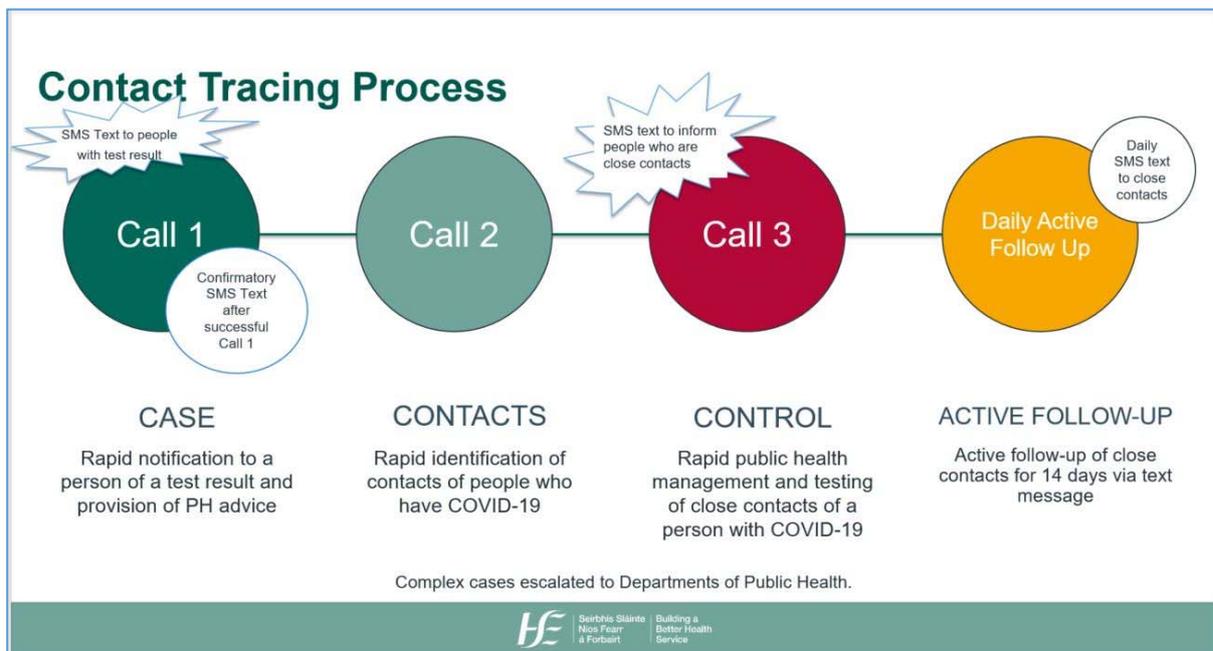


Figure 2: The Contact Tracing Process

## Human Factors

Underscoring these functions and the structures and processes that emerge from them is the CMP QI team's commitment to human factors. There is a recognition that great care needs to be taken for the staff deployed across the health system in these new and extremely challenging times. One example of one such care is "Schwartz Rounds", a structured process whereby staff are facilitated in sharing the sometimes considerable emotional pressures of their work. Given the mobility and contact restraints presented by the virus, this emotional support is provided by some health services and may possibly be provided virtually, in some CTCs through "Team Time".

As well as considering the staff delivering the vital services, the QI team also puts the recipient, or person at the centre of their ongoing care. The CMP QI team has established strong and regular contacts with patient representative groups and encourages the human connection throughout the process.

## Continuous Improvement

Caring for the Human factors isn't just an ethical consideration, it also bears fruit. Only people can fully adapt, adjust and learn when plan meets harsh reality, especially in a fluid landscape like a pandemic.

A military strategist once said, ***"No plan of operations reaches with any certainty beyond the first encounter with the enemy."*** (Helmuth von Moltke). In other words, "Plans are vital, of course, but be prepared to adapt!"

Each element of the Quality Improvement approach is subject to ongoing and continuous review and improvement. Each adjustment is tracked so that the plan not only evolves organically, but its path of growth can be traced, particularly important in a crisis. Full commitment to the principle of continuous improvement requires a degree of humility, acceptance of mistakes and a culture of openness and availability. These principles are strongly endorsed and evident across the whole CMP team.

## Summary/Conclusion ....

Reflecting on the months since the arrival of the virus and establishment of the Contact Management Programme, QI National Director, Dr Philip Crowley commented: "There can be no doubt that the Covid-19 pandemic has tested and will continue to test our community to a degree not seen for generations. Equally certain is that we will rise to overcome the challenges as they present themselves, wave after wave. How can we be so sure of this? Because we will fight the pandemic with a powerful combination of the best of people in Ireland working in our health services, proven quality systems and human centred flexibility and creativity enabling continuous improvement."

In other words ...

***"A culture of person-centred quality care that continually improves."***

## Adding to Standard Training with Years of “Savvy” – Galway Contact Tracing Centre, Ballybrit

Nowhere in our fight against Covid-19 is a human centred QI approach more evident than in the Contract Tracing Centre in Ballybrit, Galway (“A Day in the Life of a Contact Tracing Centre.”). One of the earliest to be established, the Galway centre was also the only one left open at the end the Spring when the spread of virus subsided. And when the levels of infection started to rise again in late summer, Galway, like everywhere else, had to flex and expand to its former size and beyond. In Chapter 1, dedicated healthcare providers such as Audiologists, Occupational Therapists, Speech Therapists and Dentists volunteered or were reassigned from their respective departments. All received the standard training but supplemented it with their own vast person centred experience to deliver a sensitive and quality service. However, the departments from which these people had come needed them back and so Contact Tracers were recruited to replace them in the autumn. Before leaving, the dedicated teams at CTC Galway established a Mentoring system, a tailored form of training new recruits which combined the quality processes laid down and refined over time, improved by their own experience and savvy.

They may no longer be situated in Ballybrit CTC, but their legacy lives on after them.

## Reacting to a Crisis

On the weekend of 15<sup>th</sup> to 18<sup>th</sup> October, a surge in positive cases temporarily exceeded the CTCs’ ability to speak to all positive cases individually and to gather all their “Close Contacts”. Swift recognition and acceptance of the situation helped the CMP team adapt and deal with the problem in a timely and pragmatic manner. Specifically, the people affected, roughly 2,000, were communicated to with a special SMS message asking them to identify and notify their own Close Contacts and asking them to contact their GP and seek a test. Isolating this cohort of people for a period of time and asking them to get in touch with their Close Contacts themselves drew some criticism, but it was necessary to allow the CTC’s focus on the still high volume of day to day calls needed in the period after that weekend without becoming overwhelmed again and falling further behind. When the backlog was cleared, there was a personal call with all involved checking how their contact tracing went. The learning from this experience will form the basis for an improved, more automated contact tracing system in future iterations.

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