



**INSIDE:**

**A CONVERSATION WITH  
CHRISTINE CHAPMAN  
(VP OF TRAKCARE)**

**REMOTE  
IMPLEMENTATIONS /  
GO LIVES**

**A BRAVE BUT CRUCIAL  
IMPLEMENTATION FOR  
CHINESE HOSPITAL  
GROUP**

**ROME WASN'T BUILT IN  
A DAY. BUT ITS COVID  
HOSPITALS WENT LIVE  
IN WEEKS.**

**LIFE ON THE  
FRONTLINES OF A  
'NIGHTMARE' PANDEMIC**

**SARS-COV-2 ANTIBODY  
TESTING**

**WRITE A REVIEW AND  
RECEIVE A \$25 VISA  
GIFT CARD FROM  
GARTNER**

## From the Desk of Dimitri Fane

Director of Product Management, InterSystems TrakCare®

The last introduction I wrote for this newsletter started as so many other articles do these days, with “As I sit at my desk at home...” This was not so long ago, yet working remotely was enough of a novelty that it warranted a mention. Not quite 8 weeks later, it feels the whole world has changed, and I’m ready to say (with apologies to Doc Brown from the classic 80’s film Back To The Future): “Desks? Where we’re going we don’t need desks.”



**Dimitri Fane**  
Director of Product  
Management

While international work travel remains in the more distant future, we are in fact slowly returning to newly reconfigured offices. What does seem clear is that the world we’re going back to will be different; many of the workarounds we have put in place urgently will become commonplace. Virtual healthcare is here to stay, mobile lab testing will continue to grow, healthcare will be changed in ways we couldn’t imagine just a few months ago, and technology will continue to enable this transformation. Our teams and our clients have become used to meeting virtually, and this will allow us to speak more often and spend more time working collaboratively.

For example, I’m finding it more natural and easier to set up video meeting with clients, which means we can speak more often and not wait until I am able to travel to their region. While the COVID-19 pandemic continues to lead to tragic loss and pain, we’re also witnessing innovation and transformation in response at a pace we’ve never seen. Large organizations are delivering digital transformation projects at a speed that would be unheard of before. It would be inappropriate to suggest that there’s a silver lining to the pandemic, but I do hope that we learn as an industry that it’s possible to deliver value in short bursts and incrementally, and that some of the lessons learned will lead to benefits in the future. Speeding up time to value, working iteratively, and becoming more agile and creative in response to clinical and business challenges will lead to a better future for all of us.

This issue covers some of the ways our clients are adjusting to the new normal. We've had our first major virtual go-live. This was a resounding success; there are lessons learned for us and our clients, to be sure – but we have proven it's possible. Virtual go-lives show a lot of promise: not only could they lower costs, but they may also enable us to leverage a broader range of experienced people who wouldn't necessarily be able to travel to every go-live.

We'll also highlight how some of our clinical staff have temporarily returned to the front lines in order to assist with the COVID-19 pandemic in their countries. We are all extremely proud of our clinical staff who are taking time out to work on the front lines, and I'm pleased we can highlight some of their stories.

Speaking of change, it is my great honor to introduce a very special video interview. Christine Chapman, Vice President of TrakCare, decided to retire after a long and distinguished career in healthcare technology concluding with nearly two decades at InterSystems. In this interview, my colleague Joan Ostergaard speaks to Chris about her career and her thoughts on where we've been and the future of healthcare technology. Many of you have been lucky enough to meet and spend time with Chris, or to hear her speak at one of the many customer symposiums she has addressed over the years. All of us at InterSystems have been profoundly lucky to work with her and learn from her as she helped to shape TrakCare, InterSystems, and the global healthcare IT industry. She has been recognized outside of InterSystems as one of the most influential women in healthcare technology and has had a positive impact on the people around her, our products and our business. We will all miss working with Chris on a day-to-day basis but wish her well on the next steps in her journey and look forward to hearing where the road takes her.

Please enjoy this issue. As always, I invite you to get in touch if you have any questions or comments about topics covered in this issue of OnTrak.

[Dimitri.Fane@InterSystems.com](mailto:Dimitri.Fane@InterSystems.com)

## **A Conversation with Christine Chapman (VP of TrakCare)**

[Watch Joan Ostergaard, InterSystems Marketing Manager, interview Christine Chapman.](#)



## Remote Implementations / Go Lives

### COVID-19 Ushers in a Rousing Remote Go-live

As New Zealand went into one of the world's strictest lockdowns to thwart the spread of COVID-19 in March, teams from one of Auckland's premier hospital groups, MercyAscot, and InterSystems were working on a go-live of TrakCare's patient administration and billing functionality, the first stage of a full clinical deployment. The team knew the less time between preparation and go live, the higher the likelihood that staff would retain all of the hard work they'd already completed. According to MercyAscot's Project Director, Sarah Gardner, "the longer we waited, the more difficult it would have been."

COVID-19 threatened to derail the effort.

But it didn't.

Instead, employees from the organizations innovated their way to a remote go-live of InterSystems TrakCare, one of the first and few to date. The successful go live, which occurred in mid-May, paved the path for future remote implementations. That experience is all the more vital in a world where disruption is the norm and the ability to be nimble is essential.

According to Nicole Cameron, Professional Services Director for InterSystems, "With the virtual go-live model, location barriers were removed, and the strategies that were implemented were very enabling. It was a massive and successful change."

So, what made the remote launch a success?

- **Strong problem-solving.** A virtual go-live model built the foundation for the implementation, which required a novel work structure, backup resources, and scheduling to allow for some employee downtime. The project also relied on three layers of redundancy, in case an employee's internet access failed during a critical stage such as data migration.
- **Heads-up communications.** Teammates graded issues depending on their complexity, enabling the focused execution of tasks that would rarely pose a challenge in person. Both MercyAscot and InterSystems relied on internal triage processes to accomplish mission-critical tasks. Employees tracked communications to prevent the loss of pivotal information, and everyone became familiar with each other's faces thanks to countless time spent on Microsoft Teams.
- **A trusted partnership.** Had this go-live been scheduled for a year ago, when the relationship was still new, it might not have run as smoothly. "We have created a strong relationship with someone that trusts us to do the job from afar," Cameron notes.

Now that TrakCare is up and running at MercyAscot, all eyes are on the future project milestones that will drive care transformation across the organization. InterSystems, meanwhile, will continue to examine and leverage new ways of working and lessons learned.

"I call it the COVID sandbox. We are playing with ideas that will have a material impact on how we do things in the future," Cameron says. "You might actually get quicker resolution of the issues for customers. We might be able to implement more effectively and with faster turnaround for the client."

First, however, MercyAscot and InterSystems intend to celebrate the remote go-live virtually. And few toasts are worthier than one that honors innovation in service of a more data-driven reality, all amid the worst pandemic in generations.

Learn more about the [remote go-live at MercyAscot](#).

## A Brave but Crucial Implementation for Chinese Hospital Group

In the early days of the COVID-19 pandemic, many people in China did whatever they could to avoid hospitals. But as the outbreak grew and communities enacted stay-at-home restrictions, one team from InterSystems ran to the frontlines.

Six employees set up camp at Amcare's Women's and Children's Hospital's Baodao campus, in Beijing, to execute a TrakCare implementation. Their work had never been so important. Amid the emerging pandemic, clinicians still needed to perform the specialized hospital group's key function: safely marshalling women through pregnancy. After all, nothing would stop babies from being born. And that task required easier access to the information that matters.

"We have seen medical workers who are sticking to their posts to fight the virus," says Luciano Brustia, regional managing director for Asia Pacific at InterSystems. "Thanks to them, the medical needs of the Chinese people are being met."

The employees, including technical and application specialists and a project manager, executed the implementation alongside three remote technicians in February. They wore face masks and avoided public transportation to safely get the job done. TrakCare went live in the hospital later that month, empowering physicians to provide uninterrupted pregnancy tests and other gynecological, obstetrical, pediatric, and reproductive care throughout the pandemic. The project, it turned out, brought vital IT tools to clinicians whose duty to serve patients had never been so imperative and imperiled.

In the following months, InterSystems employees remained connected to customers in Chinese healthcare organizations. TrakCare experts provided round-the-clock technical support, remote coordination, and on-site services.

The implementation at Amcare's Baodao campus stemmed from a 2016 partnership between the private hospital group and InterSystems. By this February, TrakCare had already gone live in three facilities and one clinic in Beijing. Amcare and InterSystems understood that the company's newest acquisition, the Baodao facility, couldn't wait for the unified healthcare information system. Once launched, TrakCare would establish a single source of truth for clinical, administrative, and financial information, with the insights to fuel stronger clinical decision making and support care collaboration.

While the implementation occurred at the height of China's struggle with COVID-19, its implications will span far beyond the pandemic, helping the next generation of children enter the post-pandemic world unharmed.

## Rome Wasn't Built in a Day. But Its COVID Hospitals Went Live in Weeks.

By March, when the Italian region of Lazio directed Gemelli Hospital to lead its clinical response to COVID-19, the pandemic had turned the world's attention to the nation. Italy instituted a strict lockdown as the death toll climbed, chiefly in the northern regions. Rome, where Gemelli is based, was bracing for impact. Hospital leaders had to build up the city's defenses, and they had to do it quickly.

So, Gemelli got to work. In mere weeks, the organization opened the Columbus COVID-2 Hospital in its polyclinic, providing 21 intensive care units and 32 beds, and turned a nearby Marriott hotel into an 80-bed hospital where COVID-positive patients could quarantine after discharge. Suddenly, international media focused not on Italy's struggles, but Gemelli's successes.

What received less attention were the rapid-fire remote technology implementations that fortified the work of Gemelli's dedicated physicians and nurses. Gemelli IT staff and InterSystems, for instance, took a single week to launch InterSystems TrakCare at Columbus. The Marriott followed weeks later, going online April 1. The prestigious university hospital's mobilization went on to underpin Italy's remarkable turnaround in its fight against COVID-19, which saw new case and death counts fall and an entire society reemerge from a panicked slumber.

Gemelli's speedy implementation of TrakCare in both hospitals aided clinicians in a sprawling effort to screen all patients, connecting COVID-19 testing data in a central location. Physicians and nurses received alerts the moment the laboratory identified a positive patient. The technology empowered the hospital to locate COVID patients and separate them from others. Clinical decision support tools and visualizations illuminated trends in prescribing data, helping Gemelli execute medication management, and develop standards of care.

The launch had several factors working in its favor. For one, Gemelli and InterSystems teammates moved decisively on the remote go-live, a new approach for each organization. They used automation tools to transfer data and virtual programs to train users. IT specialists remained available to guide and troubleshoot for Gemelli employees. Then there was TrakCare itself, whose regional edition drew on previously established workflows, security groups, and localized compliance mechanisms. The personalized system also came ready with favorites and simplified configurations for physicians. And they were familiar with TrakCare, which went live in Gemelli just months before, in late 2019.

In the end, however, the major reason for success was Gemelli's leadership. Instead of hesitating, they jumped at the challenge. They set up their clinicians to succeed with two new COVID-19 hospitals, running on an integrated source of information that allowed physicians to focus on what mattered most: patients.

## Life on the Frontlines of a ‘Nightmare’ Pandemic

For Callum Cox, the hardest part of working in United Kingdom hospital during the COVID-19 pandemic was consoling his intensive care unit patients’ distraught family members. Restricted from entering the hospital, loved ones received updates on a patient’s condition only through a daily text message and phone call. Horror stories on the evening news filled in the blanks. Only when a patient was dying was a single visitor allowed to risk infection to come say goodbye. “Patients had a tube in everywhere. Machines were beeping and screaming all day,” Cox, who worked three long nursing shifts per week this past spring, says. “Families didn’t know what was going on. They were scared.”

But when patients came off ventilators, Cox was there, cellphone in hand, ready to reunite families that had spent days, if not weeks, in distress.

Before the pandemic, it would’ve been inconceivable that Cox would be in such a position. He has been out of the hospital for the past two years, working as an application analyst for InterSystems to ensure that his team’s software supports clinicians. When COVID-19 struck, however, he and several other nurses employed by InterSystems heeded the call, faced their fears of infection, and ran to the frontlines when patients and fellow clinicians needed their expertise most.

Silvia Marzoli, an application analyst for InterSystems who previously spent nine years as an ICU nurse in Italy, recalls the moment she decided to return to the hospital. When she realized the magnitude of the COVID-19 outbreak, she called former colleagues, who said they were floundering with limited personnel and resources. In two days, she had signed a contract to perform weekend shifts at a nearby hospital, on top of her day job. “I preferred to stay in than stay out of this situation,” Marzoli says.

Providing care was more challenging than usual. No one knew which treatment to use for the seriously ill, each patient required plenty of time, and patients kept coming in, she notes.

In the U.K., Cox and Andrew Seal, an InterSystems application analyst with 15 years of ICU nursing experience, remember sweating through layers of personal protective equipment. They rarely removed the gear, as masks and gloves were scarce. The equipment inflamed once-simple tasks, like speaking with a physician.

Seal, who considered the pandemic a “nightmare” and responded by taking two overnight ICU shifts per week, spent his first day caring for a patient of the same age, who had no comorbidities. COVID-19 had devastated the patient, making survival uncertain. Seal saw himself in that patient. “But in a few weeks, the patient was better,” the nurse says. “I played a part in getting the patient off the ventilator and getting them back on the way home. So that was a proud moment.”

Still, the frontlines were fraught with risk. Cox, who has a wife and two babies, partook in a grueling ritual to prevent infecting them. He woke up, showered, drove to work in clean clothes, placed them in a locker and donned his scrubs, and did his shift. Then he showered at the hospital, left the scrubs behind, wore his commuting clothes, and disinfected his car upon arriving home. Finally, he changed into new clothes in the yard and cleaned his personal items.

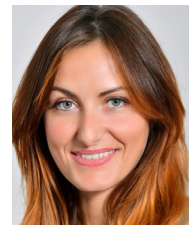
When the number of COVID-19 hospitalizations began waning in the U.K. and Italy, the three InterSystems employees returned to their typical routines. But will they charge the frontlines if the pandemic calls for it? “Oh, yeah,” Marzoli says, “if they need us again.”



**Callum Cox**



**Andrew Seal**



**Silvia Marzoli**

## SARS-CoV-2 Antibody Testing

By Russ Leftwich MD, Senior Clinical Advisor, Interoperability



**Russell B Leftwich MD, Senior Clinical Advisor, Interoperability**

Since January there has been much in the news about testing for COVID-19, the disease caused by the Severe Acute Respiratory Syndrome associated Coronavirus 2 (SARS-CoV-2). More recently there has been the appearance of antibody tests, also referred to as serology, for this coronavirus. But what is the difference in these tests and what are antibody tests? The test done “to see if you have COVID-19” is a test that detects genetic material from the virus itself, usually testing a swab from the nasal passages or fluid from the lungs. The antibody test involves a sample of blood to see if your immune system has responded to the virus by producing antibodies.

**What are antibodies?** Antibodies are proteins produced by a particular type of cell in the immune system called B-cells. Antibodies are produced in response to a foreign substance in called an antigen; in this case the SARS-CoV-2 virus. Antibodies, also called immunoglobulins, are Y-shaped protein molecules. The tip of each arm of the Y is an area which binds to a specific area of an antigen and fits like a piece of a jigsaw puzzle only to that area. The SARS-CoV-2 virus may have dozens, even hundreds of such distinct areas each recognized by a different antibody molecule. When there is an antibody response the immune system produces a family of antibodies recognizing different specific areas on the virus. This is called a polyclonal response, because each member of the family of antibodies is produced by a different clone of B-cells. And, two different individuals will produce two different families of antibodies based on their own genetics. When the immune system encounters an infectious agent for the first time, whether it is a bacterium or a virus, it first produces Immunoglobulin M (IgM). IgM starts to appear several days after the infection starts. A few days later, a second type of antibody, Immunoglobulin G (IgG), starts to appear. Both IgM and IgG are families of antibodies to the SARS-CoV-2 virus. The IgM produced usually starts to disappear within a few weeks. The IgG antibodies in the blood continue to increase for several weeks and may remain for months before they disappear.

**Are all the SARS-CoV-2 antibody tests the same?** By early May 2020 well over 100 antibody tests were available. Each test was developed separately. Some of the tests tested for IgM, some for IgG, some for both. Tests determined that antibody was present or absent. Although it is possible to measure the level of an antibody present, the titer, none of these tests actually do so. There is very limited information about the accuracy of the available tests, but it has been observed that some of the tests have a high false positive rate and that two or three different tests done on the same individual may not agree on the presence of antibody. In the US over 20 different SARS-CoV-2 antibody tests were removed from the market because of inaccuracy.

**What do we know about antibody responses to SARS-CoV-2?** As with most infections, IgM to SARS-CoV-2 starts to appear in some individuals about 3-5 days after the start of infection. But, depending on the sensitivity of the antibody test, it may be 3 weeks before some individuals show IgM to SARS-CoV-2. IgG to SARS-CoV-2 begins to appear a few days after IgM. A small percentage of individuals, around 5% who have COVID-19 with symptoms and a positive test for the virus appear not to develop antibodies even when they have recovered from COVID-19. How is this possible? The answer is that antibodies are not the primary function of the immune system which eliminates a current viral infection. Antibodies are however the primary protection from a future viral infection.

Does the presence of antibodies mean immunity from future COVID-19? The answer is that we do not know the answer. We do not yet know whether the antibodies present will prevent future infection with SARS-CoV-2. And if they do, we do not know how long levels of those antibodies will remain high enough to provide protection. Antibodies that protect from future infection are referred to as neutralizing antibodies. There can be some assessment of the neutralizing capability of antibodies by taking antibodies from a recovered COVID-19 patient and using them to block SARS-CoV-2 infection in other animals, but the only absolute evidence is the prevention of re-infection of a human during an outbreak of the SARS-CoV-2 virus. The goal for a vaccination against COVID-19 is of course to induce high levels of neutralizing antibodies in a high percentage of individuals who receive the vaccine. Once again, the only absolute evidence that such antibodies are present, and the vaccine is effective is exposure of vaccinated individuals to SARS-CoV-2 in a future outbreak.

Testing for antibodies to SARS-CoV2 will be of increasing importance as this pandemic evolves. It will be of critical importance to increase the understanding of the antibody response to this coronavirus and to understand what is being measured by the various antibody tests. Of perhaps greatest importance will be the ability to assess the accuracy of different antibody tests and how they compare to one another. The first step in this will be appropriate coding of the various tests to reflect the origin of the specimen tested, the identity of what is being tested, the method used to include the specific device, the encoding of results, and assessment of the predictive value of each test. Only then can we assess the level of protection of individuals by their antibody levels, the effectiveness of vaccines, and develop our knowledge of how to control COVID-19 at a population level. The practices around coding for tests related to COVID-19 including the antibody tests for the virus will be addressed in a future article.

## **WRITE A REVIEW AND RECEIVE A \$25 VISA GIFT CARD FROM GARTNER**

Your feedback is valuable to us – and to peers who may be considering their next technology purchase. Take a few minutes and write your review on InterSystems TrakCare: [gtnr.it/2CzFovz](https://gtnr.it/2CzFovz)

Gartner will ask you to sign in with LinkedIn or create a free Gartner account so they can verify your identity.

*\*Quantities are limited, and Gartner must approve the survey to qualify for the gift card. Gartner will not approve reviews from resellers, systems integrators or MSP/ISV's of InterSystems. Survey must be completed by Dec. 31, 2020.*

**WRITE A REVIEW  
AND RECEIVE  
A \$25 VISA  
GIFT CARD FROM  
GARTNER\***