Customer Case:
South Central Ambulance Service and Omda Optima Predict

The South Central Ambulance Service (SCAS) uses Omda Optima Predict to model critical operational decisions and determine long-term strategy. Under the SCAS Director of Planning and Performance, Steve West, the software has become an increasingly crucial component of the service's decision-making process.

SCAS serves a large and geographically diverse region encompassing Berkshire, Buckinghamshire, Hampshire and Oxfordshire. It receives approximately 1.2 million 999 calls and attends 500,000 incidents every year. Like many UK ambulance services, it faces recruitment and staffing challenges while attempting to work within a tight budget. At the same time, high hospital handover times are stretching the service's available resources to the limit. SCAS regularly operates at 80-85% utilisation, which ranks amongst the highest in the world.

As the designated Omda Embedded Resource at SCAS, Matthew Macleod provides in-depth analysis and modelling expertise to ensure the service extracts maximum value from Omda Optima Predict. Having worked within and alongside the SCAS team for the last three years, his extensive understanding of the challenges ambulance services face enables him to apply his analytical and statistical expertise in a more focused and targeted manner.

"At SCAS, we model simple questions, such as where do we put this new ambulance

base?" Matthew explained. "But we also model more complex questions, such as the optimal fleet mix proportion at different utilisation levels?" This means Omda Optima Predict is involved in decision-making at every level of the SCAS organisation.

Having a measurable impact on our emergency heroes' day-to-day lives

"In a recent staff survey, shift overruns were ambulance crews' single biggest concern. Using Omda Optima Predict, we were able to suggest new end of shift restrictions to SCAS that enabled the overruns to reduce. It's had a massive impact on staff."
– Matthew Macleod, Operations Research Analyst, Omda

As well as modelling more straightforward operational decisions, such as where SCAS should place ambulance stations, Omda Optima Predict has a noticeable impact on the everyday lives of our emergency heroes. This is best illustrated by the case of shift overruns and end-of-shift restrictions. Matthew explained that overruns occur when a shift extends beyond its allotted time without prior agreement from the employee. This differs from overtime, where the additional hours are pre-arranged.

"SCAS had a big problem with employees going into overruns. They had policies detailing what type of incidents ambulance crews could attend in the last 60 minutes of a shift," he noted. "By changing the end-of-shift restrictions in the model, you can manipulate how available a crew is towards the end of their shift. The less available they are, the more likely they finish on time.

However, the less available crews are, the more you limit service capacity."

In an employee survey, ambulance crews cited shift overruns as their biggest workplace complaint. "At the time, a lot of shifts were overrunning," Matt explained. "Through our modelling, we reduced overruns and suggested mitigation of any performance issues by advising SCAS to implement a small number of additional resources. This drastically reduced overruns and It's had a massive impact on staff."

While the benefits to those emergency heroes who work in ambulances are clear, the shift modelling also impacts the service as a whole. Employees are less likely to phone in sick or make mistakes when you reduce overruns, while burnout and staff turnover become less of a concern. "There was a real knock-on effect for the staff with fatigue and absence," noted Steve. "But there are other concerns, too. With the Working Time Directive, if you finish 90 minutes late, you start 90 minutes later the next day because you've got to have an 11.5 hour break between shifts by law. That's really tricky to plan for. Likewise, if one crew finishes late, the next crew is sitting at the station waiting for a vehicle to go out in. There's a lot of waste, high costs and unhappy staff."

"By reducing overruns, you reduce costs," continued Matt. "You don't have to backfill crews, and there's less time spent investigating mistakes. These are all positive performance outcomes associated with ensuring crews finish on time. Additionally, the more appealing you can make the job to staff, the more likely you are to be able to recruit and retain employees."

Providing a safe environment for experimentation and innovation

"The ability to try new ideas and model absolutely anything is enormously valuable. It stops us from making expensive mistakes. Expensive in both a financial and human sense."
– Steve West, Director of Planning and Performance, SCAS

For Matthew, SCAS derives significant value from the way Omda Optima Predict facilitates a more open and experimental approach to innovation. "Our goal is to have a model that resembles real life as closely as possible. Then the service has a sandbox." This sandbox allows for a world of possibilities. "SCAS can model anything, and we can tell them the performance outcomes without them having to risk implementing it in real life, in the community."

Steve also spoke about how the software gives SCAS a more rounded view of the impact of operational decisions. "We can now look at outcomes across performance, utilisation and shift overruns. We understand the impact from both a patient perspective and a staff perspective and have a much more balanced overview. Previously, we tried everything out in the live environment. And that has a real impact on the quality of care patients receive."

Historically, ambulance services were managed on gut feeling, experience and basic spreadsheets. Today, Omda Optima Predict gives SCAS accurate and definitive answers to some of the most pressing operational questions it faces. This encourages the SCAS team to approach problems in new, interesting and innovative ways.

"Because Omda Optima Predict is safe, you can come with your wacky idea or out-of-the-box thinking, and we can model it and tell you what the consequences will be," Matt pointed out. "It's the power of the simulation software. You don't have to try things in real life to understand outcomes."

Matt illustrated this by discussing the way SCAS's use of the software has changed over the years. "At the beginning, modelling issues were restricted to a small team. Now, it's much wider in scope. Everyone, from the CEO to individual dispatchers, funnels questions through Optima." This more collaborative approach encourages creative thinking and ensures fresh ideas are generated at every level of the organisation. By facilitating bottom-up innovation, as well as top-down innovation, Omda Optima Predict provides an outlet for different perspectives and allows distinct voices to be heard.

Aligning long-term strategy across the entire organisation

As a complex organisation comprised of an enormous number of teams, departments and trusts, the NHS often struggles to align all its moving parts and ensure everyone is on the same page. In some cases, Omda Optima Predict's ability to provide independent analysis and data-driven outcomes enables the various elements to sidestep organisational issues and coalesce around a neutral source of information and insight.

Matthew described how a recent shift redesign helped align strategy across diverse NHS teams, leading to superior outcomes. "SCAS gave me a forecasted data set for their anticipated call demand over the next few years," he began. "With that forecast, I determined the staffing increase required

to match the anticipated rise in demand. We modelled staff rotas for the next five years, then ten years, then further into the future."

The way SCAS used this data to create a coherent strategy shared by all stakeholders is impressive. "The modelling brings together a wide range of teams. Take the Estate Team as an example. If we anticipate SCAS will need an extra 50 people in three years' time, the Estate Team needs to think about how and where they will be based."

"Without our models, they may choose to upgrade an existing base to accommodate the staff increase," Matthew continued. "But our models can tell them that we don't need those 50 employees in that area, we need them in another area. The model prevents wastage and suboptimal investment. It unites the organisation's entire strategic future and helps all the diverse elements of the SCAS and NHS structure come together and talk to each other."

Steve noted that this has prevented SCAS from making potentially catastrophic errors in the past. "There was a big push nationally to close ambulance stations and move into big super-centres in urban areas," he began. "Southampton and the New Forest is a good example. We did a lot of modelling in the software, and every model we ran showed that consolidating services in Southampton would decimate performance in the New Forest. It enabled us to push back and argue the move wasn't beneficial. At the same time, it allowed us to put a figure on the cost of maintaining performance if we moved those services."

Quantifying the impact of decisions and measuring healthcare outcomes

"Omda Optima Predicts is an extremely valuable safety net. It gives you a different perspective on all the nuances of a decision, all the unseen things humans can't account for."
– Matthew Macleod

In the past, quantifying the effect of strategic decisions could be extremely difficult. For SCAS, Omda Optima Predict changed that. Matthew meets the entire SCAS team weekly to evaluate recent performance data. Omda creates a detailed report that includes a comprehensive performance breakdown covering the last seven days and discusses the findings.

Steve discussed how this analytical capability was a revelation. "Before we worked with an Embedded Resource, Omda Optima Predict was seen purely as a simulation tool for impact analysis on big projects. But our Embedded Resources made us realise that Omda Optima Predict has powerful analytical features, too. We get an analysis of the previous week's performance and can start looking at various scenarios. What if we had more cars out there last week? What if we distributed our resources differently? How would that have affected our performance? The weekly performance review acts as the drum beat within the organisation."

Matt explained how this enables SCAS to take a more proactive approach when addressing performance issues. "If they see a particular area has been a problem, they identify it quickly. The software allows them to pick up on performance trends while still in their early stages. And they can also model responses to see what would happen if they redistributed resources in a certain way."

The software also enhances SCAS's ability to justify additional resources and attach a cost to those resources. Matthew offered a more

detailed explanation. "Omda Optima Predict helps SCAS make the best use of its resources. They don't have enough, so optimisation is essential. However, the software also puts SCAS in a strong negotiating position when it goes to the commissioners. It can demonstrate that it has squeezed every last drop from the resources currently at its disposal."

An ambulance and its crew typically costs around £600,000 a year. If the models say SCAS needs five or six ambulances to mitigate the effects of moving a hospital, the software enables it to go to the decision board, explain that cost and ask where the money to cover it is coming from. "In the past, SCAS has been able to get that finance from the commissioning bodies to mitigate the effects of operational decisions," Matthew recounted. "Optima can quantify the impact of a decision. It's an evidence-based approach and gives SCAS considerable negotiating power."

An essential modelling solution that impacts every aspect of service provision

"Omda Optima Predict will only become more embedded and more central to NHS strategy and planning as people realise that data-driven decision-making is the way to go."
– Matthew Macleod

Over the years, Omda Optima Predict has become an increasingly important component in SCAS decision-making processes. From hard pressed crews on the ground whose shift overruns were reduced, to those at the top of the organisation responsible for negotiating additional resources, the software impacts every level of the SCAS hierarchy.

Its ability to accurately predict outcomes means SCAS uses the software as a safety net, running every relevant decision through the models to account for unforeseen complications and prevent policy mistakes. This offers the organisation extra security while also allowing for more innovative thinking and a 'no idea is off the table' approach that only benefits a service that is always looking for ways to do more with less.

For Steve, the software has more than demonstrated its value. But it's also the way Omda Optima Predict continues to evolve that impresses. "We've learned to trust Optima's accuracy down to seconds, and it's proven its credibility on several occasions. The Embedded Resource understands what our operational challenges are and what our working environment is like. As a result, Omda Optima Predict product development is linked to what's going on in the UK ambulance service. For instance, Matthew was intrinsic in building our predictive analytics capabilities. That wasn't a part of the original Omda core software offering, but it's now central to our operations. They really understand the dynamics playing out in the ambulance service."

SCAS's use of Omda Optima Predict illustrates how important modelling solutions will be to regional ambulance services and the NHS as a whole over the coming years. The software optimises available resources, improves workplace conditions for stretched frontline staff, ensures SCAS is on top of problems as quickly as possible and provides indisputable evidence that helps justify allocating new resources. As we work alongside SCAS in the future, we look forward to seeing how it leverages Omda Optima Predict to deliver improved healthcare outcomes and continue transforming ambulance services in the south of the UK.