Surrey Wide Data Strategy

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Executive Summary

More than ever data insights are being used to improve the quality of our public services. The 2021 National data strategy, UK Industrial Strategy, Digital Strategy and Government Transformation Strategy all indicate that a better use of data can drive growth and productivity, improve the quality of our public services and position the UK as a leader of the next wave of data-enabled innovation. Data is recognised in the Government's National Data Strategy as a strategic asset and the 'great opportunity of our time, offering the possibility of a more informed and better-connected future.'

Across Surrey, and in line with the Integrated Care System (ICS) development, we recognise the potential collaborative working and data sharing brings. *Integrating care: Next steps to building strong and effective integrated care systems across England*, first published in November 2020, announced the expectation for Integrated Care Systems (ICSs) to "develop shared cross-system intelligence and analytical functions that use information to improve decision-making at every level". As a system, we have ambitions to build a truly interoperable data ecosystem to help deliver better care/services to our residents now, and in the future. With the ICS Development plan underway, we have the ideal opportunity to become truly data-enabled and build a sustainable data capability; using data to not just understand the performance and monitoring of services, but also to help plan and prepare for the future, predicting issues before they arise.

This document presents the Surrey Wide Data Strategy, its ambition to build a data ecosystem to enable partners across the system to access the information they need at the right time, in the appropriate level of detail to drive improvements and better outcomes for citizens and workforce. In this strategy we present the purpose, and the progress made to date through insights derived from system-wide stakeholder engagement, public view, our current position as a system and maturing ICS in relation to data and technical infrastructure. We present a summary of the findings to date and outline at a very high level the data architecture and operating model proposed for further development of a system wide data sharing platform and Intelligence Function.

An integrated approach to our health and care intelligence across the system, by building a collaborative analytics function, is recognised as a key enabler to transformation reform across health and social care.

The Surrey wide data strategy is forward thinking and we will harness the contribution of other public bodies, employers, voluntary sector and not just restrict the input to ICS members. The devolution context from July 2022 provides an opportunity to overcome organisational boundaries to provide Surrey the chance to bring together data and information that have traditionally been disparate and siloed in order to create a longitudinal view of the citizens' care need, utilisation and spend and also bringing in other wider determinant data.

The Surrey Wide Data Strategy closely aligns with the ICS Development Plan and other key strategies, including the Surrey County Council Data Strategy and work of the Surrey Office of Data Analytics (SODA). These initiatives are bringing partners together from across the county to look at how data sharing can be improved and what a collaborative analytics ecosystem might look like, to deliver better services to Surrey residents.

The Surrey wide data strategy team and Ethical Consulting have been working across Surrey, with a focus on the ICS for the last 6 months to identify and articulate the strengths and challenges we have

across the system in effective information and data sharing. We present recommendations, in line with regional and national NHS thinking around data sharing architecture and operating model.

We held over 15 workshops in total between December 2021 and February 2022, engaging more than 100 staff from 15 organisations across Surrey, including District and Boroughs, Surrey Heartlands, Surrey Police, Surrey County Council, and members of the third sector.

Through the feedback we were able to determine key priorities, strengths for collective focus and heard the resounding desire to work collaboratively at system-wide level. The workshops have also been useful at highlighting the some of the complexities of working at a system and place-based level and the challenges that will need to be addressed. Key challenges included Information Governance, use of common language and definitions pertaining to data and considerations for a culture and mindset shift.

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High-level principles to guide a common approach in areas such as data architecture, ways of working and information governance have received broad agreement, signalling that this work is moving in the right direction and allowing us to establish a common ambition and clear focus.

1. **Each organisation across the system will name a member of their senior leadership team to join an advisory panel -** a new way of working across partners and organisations

2. **Creating a data sharing ecosystem (a data mesh) –** a new way of working which addresses data management, data quality and IG considerations as well as the technical mechanisms for exchanging and managing data into a central data platform.

3. **Building or procuring a central data platform (a data Lakehouse)** into which data can be shared from around the data mesh and which can be accessed by appropriately authorised users and analysts across Surrey.

4. **Creating a data governance function and data management team** to support the mesh and the platform. This is a highly skilled group of data, architecture, analysts and data managers who will develop and support the solution for the ICS and across providers, partners alike.

5. **Creating a centralised IG function across the ICS** bringing in expertise from around partners and creating a responsive and open IG model to support these new ways of working with data.

6. **Undertake meaningful consultation with service users regarding how we use their data** – ensure public engagement and trust is at the core of the data strategy

Through the discovery phase of the data strategy, we have established that we do not currently have platforms capable of extension to meet our use cases as currently procured or deployed in the system.

The Surrey Care Record and PHM platform are core current data sharing assets which should remain in place to support current use cases and be incrementally enhanced as provider ability to share richer data sets is developed. However, the Graphnet platform is not technically suitable for extension to meet real time data sharing where required and operational reporting for example.

The full Ethical report contains significant detail on specific use cases for data sharing to support initial conversations in an early market engagement phase prior to inform the development of detailed specifications.

We propose an iterative approach to developing the solution, focusing initially on the work undertaken to date in the development of the ICS. We then propose moving to the wider system to onboard new providers. By so doing, we hope to demonstrate that the new data sharing solution can offer tangible benefits to partners by reducing some administrative and reporting burdens.

We propose investigating options for direct care (leveraging the SyCR/PHM and new Cerner architecture) and integrating new data sources as they develop (i.e., remote monitoring data and other forms of patient reported data) as well as external data sources such as Ds and Bs and wider determinants of health data. Over time and as we develop or procure the central data platform, we will retire duplicated solutions and reduce the number of reporting and analytical solutions we have in place.

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We have created an open dialogue with our stakeholders form across the system, this includes NHS, Local Authority, third sector, Police, District & Boroughs and other partners. This has led us to understand in great detail the strengths and challenges of working collectively and collaboratively.

Central to all the work we do, are our residents and patients. We have sought their views through the existing Surrey Citizen Panel and asked residents about their support and trust of public institutions sharing data. The survey was conducted online in January 2022 and it received a total of 987 responses. Overall, the public support data sharing and public services handling their data for improving healthcare services and products. However, their confidence in the ability of all organisations sharing data was lower.

In the concluding section of the document, we propose next steps to support the testing and development phase across partners and a roadmap to take us to the next level of detail and pave the way for the next phase of implementation. Our findings indicate that to be truly data enabled requires not only changes to our data, tools and technology, but also to our ways of working, skills, resources, people and opportunity to continually improve. Therefore, a key focus of this strategy is to advocate the right conditions for the system to become data enabled by initiating a shift in mindset, culture, behaviours, and ways of working.

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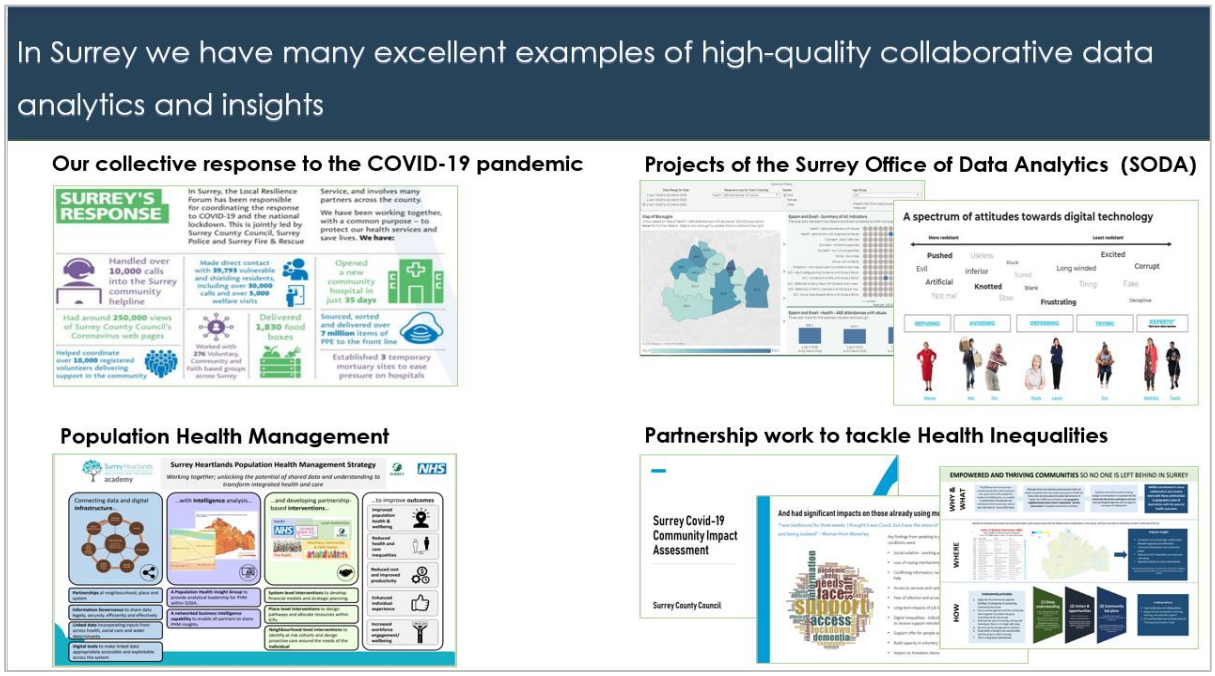
1. Introduction

One of the biggest sources of untapped potential in the public sector is data, and we are now in a position to optimise this asset across the whole system, in a joined-up way to tackle issues now and help prepare us for the future. There is now a real urgency to make demonstrable progress in the data and digital landscape – the risk of not doing so has potentially serious consequences. We have an opportunity to leverage existing strengths and harness the excellent use of data across all areas of our system to drive data and digital transformation.

Our response to the global coronavirus pandemic has demonstrated the strengths of partnership working and illustrated the benefits of information sharing, being able to draw upon the right intelligence at the right time. The way in which we have worked together and responsibly shared data across organisations to not only understand the disease, but to provide rapid response and support to the people of Surrey. This has only been possible through the analytical collaboration between the NHS, local authorities and other partners. System-wide analytical working is crucial to inform planning decisions that address cross-system priorities to deliver the best health and social care for local populations and support improved and equitable health and wellbeing. For this to happen, a multi-disciplinary approach is needed that requires analytical teams to work seamlessly with digital and IT, information governance, finance, people/workforce, service redesign, quality improvement, clinical, local authority teams and wider system partners, including Voluntary community faith sector and Police.

In Surrey we have many excellent examples of high-quality collaborative data analytics and insights, ranging from our collective response to the COVID-19 pandemic, activities led through the Surrey Office of Data Analytics (SODA), to the Population Health Management (PHM) programme, and our partnership work to tackle health inequalities. By harnessing the breadth and depth of data across our partner organisations and through the power of collaboration we have addressed issues that transcend organisational and geographical boundaries to strengthen our cross-department and system wide work.



The Health and Wellbeing Board and ICS Executive have commissioned a System wide data strategy to describe the vision and purpose for data to underpin our models of care at a Surrey level. This data strategy lays the foundations and sets the direction of travel to develop a system wide approach to how we can leverage existing strengths across the Surrey system to advance the better use of data across all of our partnerships and make recommendations for change. In this first phase of the Surrey Wide data strategy we focus on the ICS development within which effective data management is central to the requirements to become a thriving ICS.

Our vision is to build a truly interoperable data and analytics ecosystem comprising of shared data across a range of ICS partner organisations across Surrey (health, local authority, police, third sector) to help deliver better care/services to our residents now, and in the future. This will enable the aims of an ICS, strengthen collaboration, support informed decision making and evidence-based recommendations to:

- **Improve population health and health care**
- **Reduce health inequalities**
- **Enhance productivity and value for money**
- **Improve commissioning and operational decision making at a county level**
- **Support broader social and economic development**

There are four pillars which form the foundation of our data strategy.

The strategy defines our ambitions for data at a System level, with a focus at ICS level in the first phase. This is particularly opportune as we have the upcoming legislation and framework to progress rapidly to meet the new requirements and duties of an ICS. Through this we identify and catalogue our existing data assets (people, process, and technology/ environment and licenses) as well as our IG and support functions. It will identify the current barriers and blockers to effective and timely data sharing and look to the impacts on our system performance caused by those impediments.

Finally, the data strategy will set out options to create a data operating model and technical environments and an outline roadmap.

2. Case for Change

"Across the public sector, difficulties around data sharing present significant barriers to delivering more joined-up services to residents. Too often individuals are required to provide the same information to multiple agencies, risking duplication, and increased room for error. The inability to join-up different data entries about residents can also mean that vital signs of risk or vulnerability are missed, sometimes with serious consequences[1]."

Collaborative data analytics presents a unique opportunity to harness the breadth and depth of data which each organisation in Surrey holds to ensure that the work we do both individually and collaboratively is the best it can be for our residents, patients and communities.
Across Surrey we already have many examples of high-quality collaborative data analytics, ranging from activities led through the Surrey Office of Data Analytics (SODA), to the Population Health Management (PHM) programme, the Tactical Information and Analytics Cell (TIAC) work of the Local Resilience Forum during the Covid-19 response, partnership work to tackle Health Inequalities, the Surrey Care Record, our cross system Data Governance Group and much more. It is however acknowledged by partners in Surrey that siloed working, fragmented data across numerous systems, and low appetite for risk are the main barriers currently hindering a more effective use of data. Individual teams do not always have the capacity and skills to deliver new insight – and often focus on performance management rather than actionable insight.

There are a shared set of Surrey wide challenges that by their nature cross organisational boundaries, they are the reason that we need to do collaborative data analytics. These are problems that can only be tackled by sharing data, working together and developing joint solutions.
There are many issues that can only be fully understood and tackled by sharing and analysing data across partners. Some examples include frailty, mental health, domestic violence, youth crime and gangs, homelessness, substance misuse, loneliness and many more.

These problems affect our residents, patients and communities in complex and multidimensional ways and are recognised by a range of public bodies, voluntary sector organisations and businesses across

[1] KPMG – A problem shared: Sharing data across local public services.

Surrey. Within each organisation we have our own ways of framing and understanding these problems. Part of the value of collaborative analytics is to develop a joint articulation of these problems, providing the intelligence and the benefits of insights to support joint solutions to tackling them.

Across the ICS and our partners up to 70% of the time we spend on data is spent on non-value adding tasks such as working out whether we have the data and how to access it, rather than analysing it and getting the insight we need to effectively manage the system and outcomes for citizens.

Sharing of data happens, but is:

- Piecemeal – data sets much larger than required are passed around manually between partners
- Unpredictable – formats are poorly documented, inconsistent and require re-engineering to be useful
- Brittle – prone to error/failure
- Baffling – the same data is shared many times or shared, changed, and then shared again
- Unreliable – data quality issues in source systems are not fixed, but repeatedly corrected in downstream systems

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Why is collaboration important?

Collaboration can address issues that transcend organisational and geographical boundaries by strengthening cross-department and organisational sharing and collaboration with data. If partners improve the way they collaborate across the system, they can also provide better skills development opportunities for staff, and shape the technology market by speaking with a collective voice.

- Data tends to deliver most of its value when it is shared.
- Technology delivers the most value when it is scalable.
- Common standards and approaches are sometimes needed (e.g., for data sharing) that only work if all organisations take part.
- Organisations with the same requirements can save money through efficiency, economies of scale or by finding an answer once on behalf of all partners.

What are we doing about this?

Data is recognised in the Government's National Data Strategy as a strategic asset and the *'great opportunity of our time, offering the possibility of a more informed and better-connected future.'*

To meet this ambition and harness the power of data, the Health and Wellbeing Board and Integrated Care System Executive have commissioned a Surrey-wide data strategy. The steering group for this work is being chaired by Gavin Stephens, Surrey Police Chief Constable.

What will this mean for citizens?

In a system where data is collected into a single source of the truth, shared and used multiple times for primary uses, citizens will experience a number of key benefits:

- increased understanding of and confidence in the health and care system to help individuals navigate it to inform their own care journey
- improved patient experience.
- accelerated care journeys as interventions are streamlined

It will allow our health and care teams to deliver person-centric services by enabling them to:

- identify and target population cohorts that will benefit and be most impacted by interventions
- engage them and enable them to take control of their own lifestyle and care choices
- provide targeted preventative, proactive and coordinated interventions
- monitor and evaluate their compliance with goals and interventions and eventually outcomes

3. Discovery Phase

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The first phase of the data strategy is appropriately termed the Discover phase, as this is the stage in which we truly understand our current capabilities, limitations and opportunities to evolve. Four active workstreams have been driving this phase of the data strategy:

1. **Stakeholder engagement** - working with partners at a system and placed based level, to define the vision and opportunities for data sharing and collaboration.
2. **Data and technical infrastructure** - through the stakeholder engagement collating input to design high-level options/recommendations for an infrastructure that supports the vision. Examine the current technical & data landscape, engage with the technical community across the partnership organisations and identify a set of data and technical architecture models that could be implemented to meet the joint Surrey Wide data requirements.
3. **Data/analytics operating model** - mapping the analytics capability and requirements across partners to develop the operating model and make recommendations. The aim is to create a scalable solution to link and bring in any datasets, including data pertaining to population health, workforce, direct care, operational planning and reporting.
4. **Communications and engagement** - focussed on ensuring partners, workforce, patients, and residents are involved and kept up to date on progress and plans. Ensure alignment with other strategies and priorities.

There are crucial interdependencies between the different workstreams, for example the technical and data infrastructure workstream, must align with the workstream focused on the operating model and ways of working, which in turn is informed through the engagement and communications strategy.

3.1 Stakeholder engagement

Data is everybody's business and everyone's responsibility –our systems, our workforce, our communities, leaders and managers, our politicians, academic institutions, businesses and most importantly our residents. Our data strategy sets the direction of travel and provides recommendations for the next phase of our data maturity and evolution.

During the first phase of the Data Strategy development, we engaged with stakeholders across the system, focusing on system-wide needs and challenges, and those at place.

We developed different engagement mechanisms, including:

- Surrey-wide and place-based workshops
- A survey with stakeholders
- A public consultation
- Data Communities of Practice
- Showcase at existing boards and networks across the system

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3.1.1 Workshops

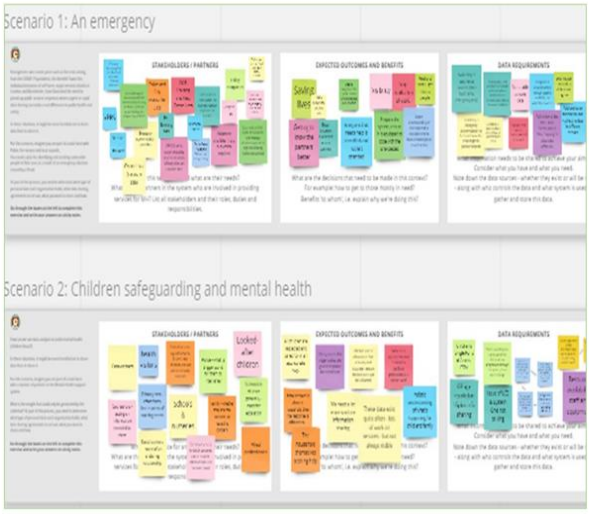
We have held over 15 workshops in total between December 2021 and February 2022, engaging more than 100 staff from 15 organisations across Surrey, including District and Boroughs, Surrey Heartlands, Surrey Police, Surrey County Council, and members of the third sector. These were online 2-hour workshops, and we used Miro Boards to collect feedback, which we have left open for ongoing feedback.

Despite the challenge of competing priorities and pressures (e.g. COVID-19, Winter pressures, workforce leave) the workshop sessions were well attended and were very productive resulting in ample insight.

Through the feedback we were able to determine key priorities, strengths for collective focus and heard the resounding desire to work collaboratively at system-wide level. The workshops have also been useful at highlighting the some of the complexities of working at a system and place-based level and the challenges that will need to be addressed. Key challenges included Information Governance, use of common language and definitions pertaining to data and considerations for a culture and mindset shift.

High-level principles to guide a common approach in areas such as data architecture, ways of working and information governance have received broad agreement, signalling that this work is moving in the right direction and allowing us to establish a common ambition and clear focus.

- **Over 15 System wide and Place Based workshops completed, further workshops scheduled** - a real desire to work together at scale.
- **Highlighted areas for collective focus**, including PHM, emergency planning, tackling problems incl. poverty and improving mental health support.
- **Emerging themes to establish a common ambition and clear focus with agreed high-level principles to guide a collective approach** - data architecture, ways of working & IG



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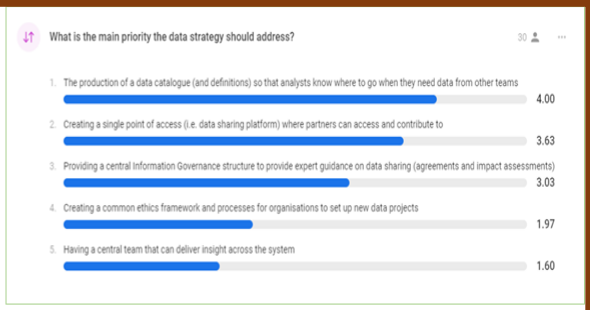
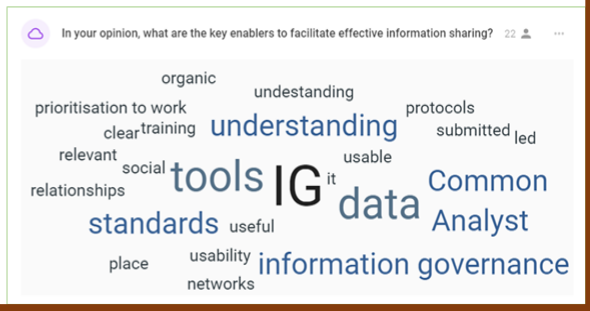
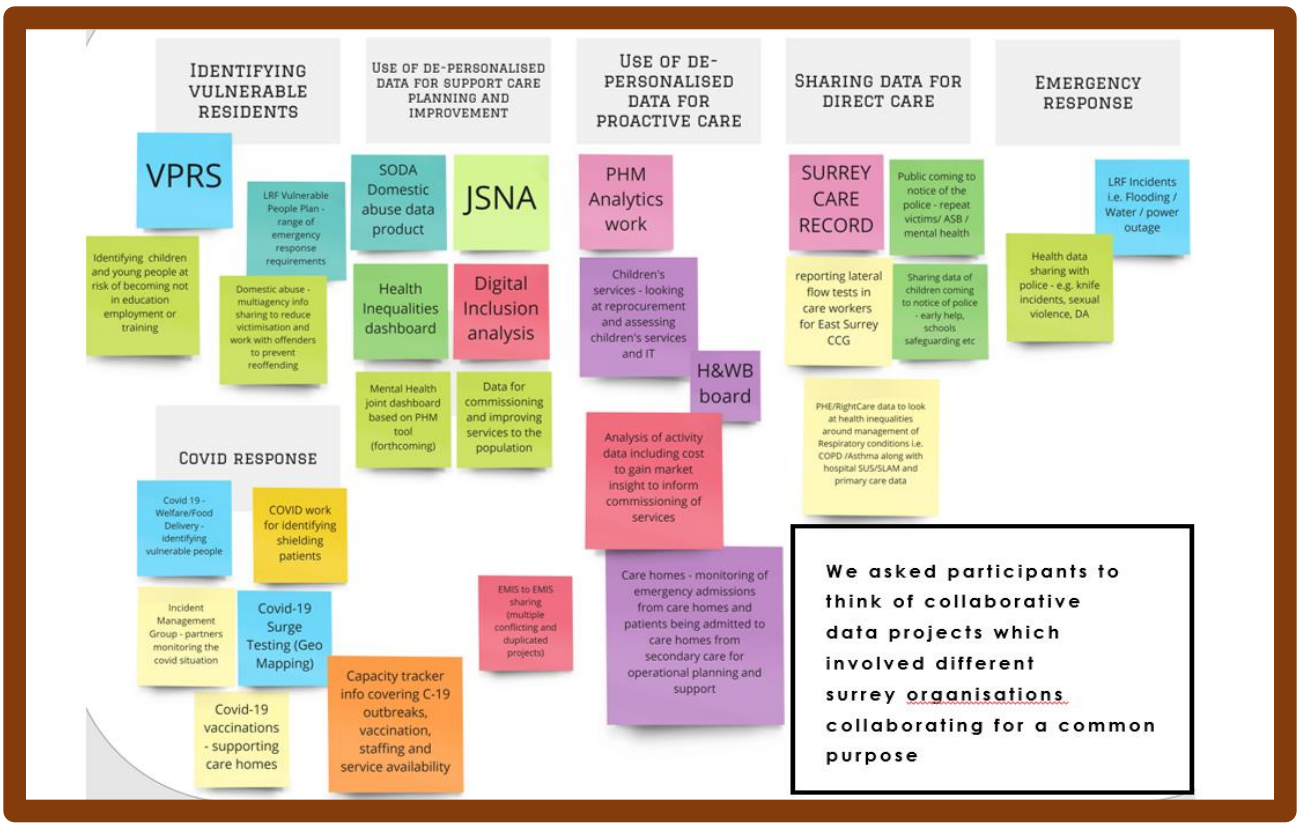
- **Deeper understanding of enablers and barriers to system wide information access and sharing**
- **Key priorities to address within the data strategy** - bottom up and top down





The workshops have highlighted many areas, including population and emergency planning, or tackling complex problems such as poverty or improving mental health support, which would benefit from a collaborative approach, and these provide an opportunity to develop solutions that could be scaled.



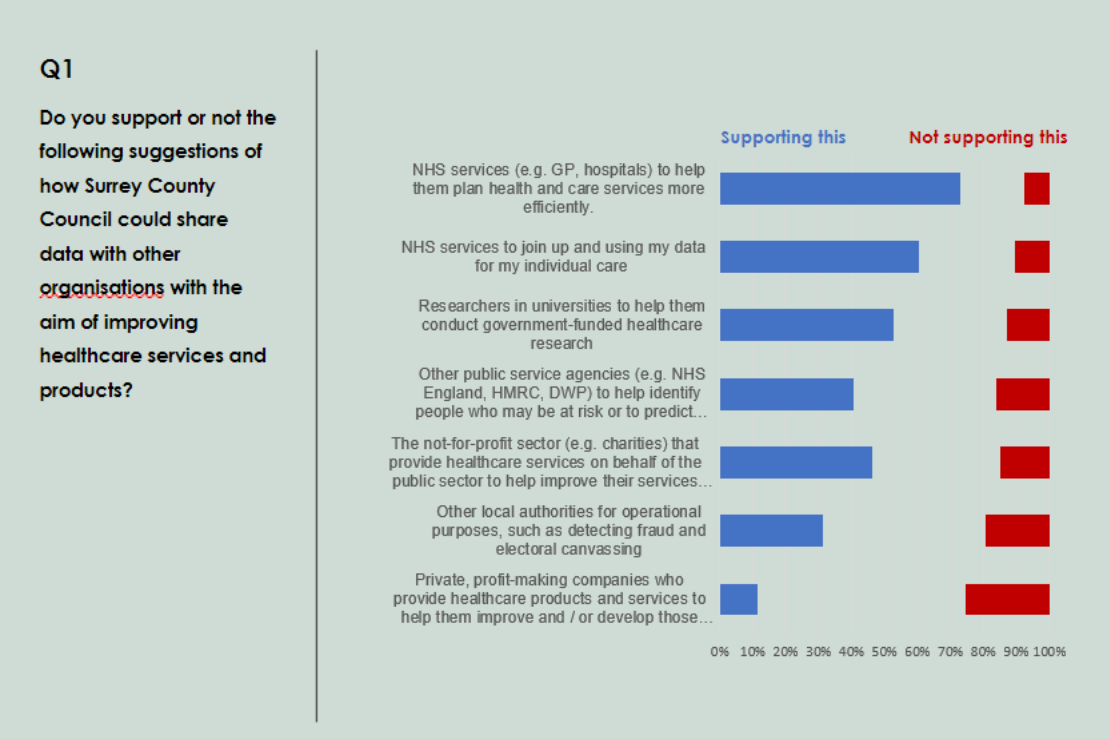
Key to the success of this work is ensuring there are agreed principles supporting the culture and mindset to work collaboratively as well as frameworks for decision making and implementation. Partners will need to focus on specific and measurable areas for improvement to create a future blueprint for ways of working, that can be scaled once established.

3.1.2 Survey

A survey was launched across the Surrey wide system to deepen our understanding of the current partner organisation data analytics, intelligence and insights functions and also to ensure our engagement reaches beyond the workshops (particularly if attendance was not possible due to competing priorities). The surveys have been cascaded to NHS, LA, Police, D&Bs, third sector through communication and engagement channels.

3.1.3 Public engagement

An initial online consultation was launched in January 2022 through the Citizen Survey platform managed by the Research team within Surrey County Council. Its purpose is to understand more about residents' attitudes to data sharing and measure their trust in organisations to look after and share their data appropriately. The consultation closed in February 2022 and received 987 responses. The findings from Surrey's public perception of data sharing survey are shown below.



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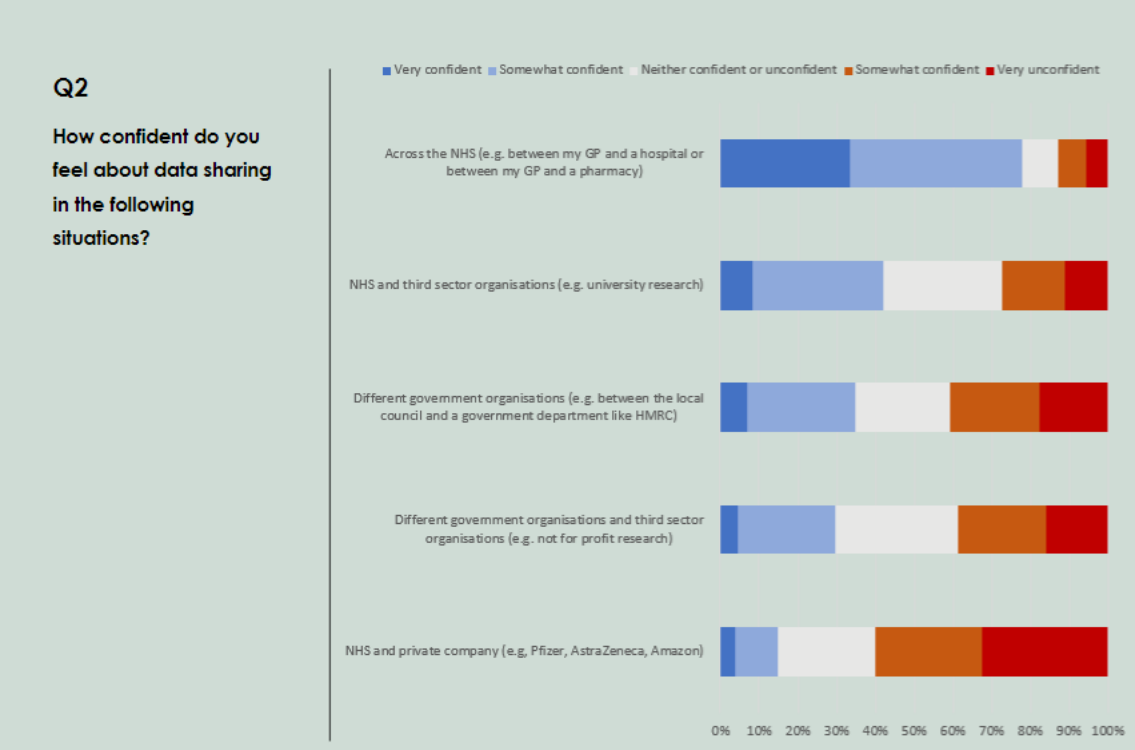
To the first question '***Do you support or not support the following suggestions of how Surrey County Council could share data with other public sector organisations with the aim of improving healthcare services and products?'*** Citizen respondents were very supportive, especially towards data sharing between NHS services for helping them plan health and care services more efficiently and for residents' individual care.

We also asked residents to tell us if *they* ***support or not support data sharing activities between the council and other private and not-for-profit sector organisations with the aim of improving healthcare services and products.***



Note: Please see appendix for raw data

In summary, despite generally the public supporting data sharing and public services handling their data for improving healthcare services and products, their confidence in the ability of all organisations to share data is lower. As part of the next phase of the Data strategy we would need to better understand the lower confidence in specific aspects of data sharing across organisations, and explore the key drivers for overall trust. We will to seek opportunities to improve citizen perception.

The second phase of this data strategy will require a more detailed consultation, this will include focus groups and a more in-depth enquiry on people's opinions and attitudes to data sharing that will inform our future practices and opportunities to improve it.

The findings will be used to inform and support work around data sharing and ethics both for the Surrey Wide Data Strategy and SCC Data Strategy.

3.1.4 Showcase at Boards and Networks

The Surrey-wide Data Strategy is being shared with colleagues across the system, including presentation at the Surrey Forum where it was endorsed by those in attendance, with enthusiasm to align this work with the collective priorities of the Forum.

The Surrey Local Resilience Forum and a number of the organisations represented on the Surrey Forum are also embedded in the data strategy workstreams.

We continue to engage with data users and analysts through the Data Communities of Practice and will be working through this mechanism as part of the next phase of data strategy implementation.

3.2 Current Data Landscape

The current landscape in Surrey for data and analytics systems is overly complex, prone to error/failure, with too many similar systems in use, and much effort spent on tasks like data management rather than higher-value functions such as data insight.

Across the ICS and our partners up to 70% of the time we spend on data is spent on non-value adding tasks such as working out whether we have the data and how to access it, rather than analysing it and getting the insight we need to effectively manage the system and outcomes for citizens.

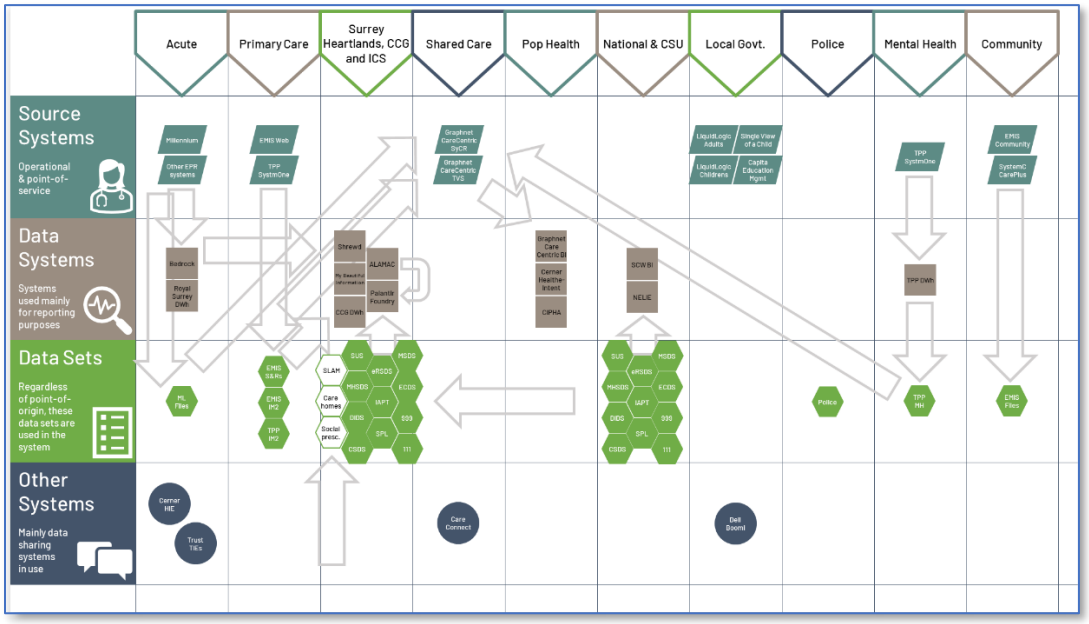


Figure 1 - Existing Data Systems

The current data landscape is fragmented, and it is becoming even more so with time.

- Multiple data partners are used for sourcing the same data, e.g. CSUs
- Data is sourced, interpreted, and then shared again, with differing outputs going to different partners
- The supply of data is at best historical (>24hrs) and at worst unreliable (primary care extracts)
- There is a large proliferation of data management solutions, i.e. over a dozen providers of analytical solutions which are duplicative and costly to manage.

3.2.1 Key Themes Arising

Some common themes emerged from over 40 interviews and multiple workshops with providers and wider stakeholders

Theme 1. **Difficulty of accessing existing data**.

- Stakeholders reported that rich data exists in their own and their partners systems, but it is difficult to access this in a usable, timely, and cost-effective way. GP, community provider data sets in particular
- Acute data is easier to access but a common Cerner data integration mechanism would be beneficial for cross trust data sharing and into the core data platform
- Shared data sets such as Surrey and TVS Shared Care Records are valuable but difficult to add to in order to enrich PHM capabilities

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Theme 2. **Making data work across functions**.

- Vocabularies, coding, and data standards do not align. Data coded in an acute setting for charging purposes may not meet the needs of PHM for example
- Difficult to match person and other data across domains. i.e. the NHS number is not universal

Theme 3. **Building trust around shared data**.

- Widespread reluctance to share data for a range of reasons from distrust as to how the data could be used, lack of resources to support data sharing externally (IG in particular) and data quality issues (in many cases, the data does not exist or cannot be physically shared)
- IG is often reactive and focused on restricting access to data

Theme 4. **Divergent approaches to data management.**

- Approaches to pseudonymisation and re-identification of data is not consistent across the system and complicates data governance
- Management of opt-outs to personal data sharing. Duplication between national and local opt out schemes

Theme 5. **Interoperability between data sources and systems**

- Open data standards such as FHIR are meaningless to non-health organisations
- Emerging health areas do not have well-developed data standards, i.e. social prescribing and online consulting

3.2.2 Data Principles

Through the work to date, the data strategy team and the wider data community have proposed a set of data sharing principles which should underpin the next stage of development of the platform

1. **Data Management**: **W*e will manage data as an asset for the Surrey partners and for the public***
   a. Data is understood and valued. It must be owned, managed, and used responsibly, whilst leveraging its value wherever possible.
   b. Data sets shall have a complete governance & ownership model (IG, business/clinical, technical) with a managed data lifecycle.

2. **Data Sharing**: ***We will ensure all data sharing shall be governed by an appropriate data-sharing agreement***
    a. We will use the Surrey Heartlands information sharing agreement for all health and social care activities where partners are joint controllers of personal data being processed
    b. We will seek to use fully anonymised personal data for non-direct care purposes wherever possible and where not possible, de-identified / pseudonymised data will be used
    c. We will have an agreed common method of managing opt outs for non-direct-care activities and pseudonymising data so this can be linked together

3. **Master Data**: ***We will collect data once and minimise duplication***
    a. A common data vocabulary across Surrey. Calling things the same name across organisations, labelling data in the same way is critical if we want to share it and all benefit from it. A common vocabulary must be used, and data definitions are available, understandable, and consistent across organisations and partners
    b. Effective governance of reference data sources shall ensure where master data exists, all partners reuse it. Master data shall be governed by the Surrey Heartlands Data Governance Group

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4. **Data Quality**: ***We will actively manage data quality across the data ecosystem***
    a. Data owners and custodians will actively monitor and measure data quality, and ensure it is fit for use, including timeliness and quality
    b. Promote reuse of data and avoid duplication. Avoid duplication of data and provide one version of the truth to support effective and efficient re use of information. Where possible, data should be re used across systems. Collect once, share many times

5. **Data Availability**: ***We will make data available to any appropriately authenticated device, application, and cloud environment***
    a. The data platform must incorporate high availability/maximum availability design, including across vendors
    b. The solution must have portability across multiple cloud vendors/platforms

6. **Data Openness**: ***We will ensure open and non-sensitive data is open by default***
    a. Users have access to the data they need to do their job. Data will be available for appropriately authorised users on demand to fulfil their services and freely collaborate and share information within that function. That function may and often will span multiple organisations.

7. **Data Standards**: ***We will make data available in open standards-based formats as far as possible***
    a. Data will be made available through open standards-based APIs
    b. Shared datasets between services are discouraged in favour of the use of APIs

8. **Data Security**: ***We will follow a 'privacy by design and default' approach when developing solutions that utilise personal data***
    a. We will ensure that all transfers of personal data between organisations and systems are appropriately secured and encrypted

b. Access to data systems shall be via strong authentication only and by a common mechanism across all partners
c. We will regularly and proactively audit access to personal data shared by partner organisations
d. Data security controls will be appropriate and not excessive

3.2.3 Principal Use Cases

Early in the project, four major use cases were identified with particular focus on the ICS landscape in line with the first phase of the data strategy. These have been consistently used in discussion with stakeholders and to shape the proposal. A detailed report contains significantly more granularity in use cases and more detailed requirements for Operational Planning. These will form the first use case for exploring the central data platform.

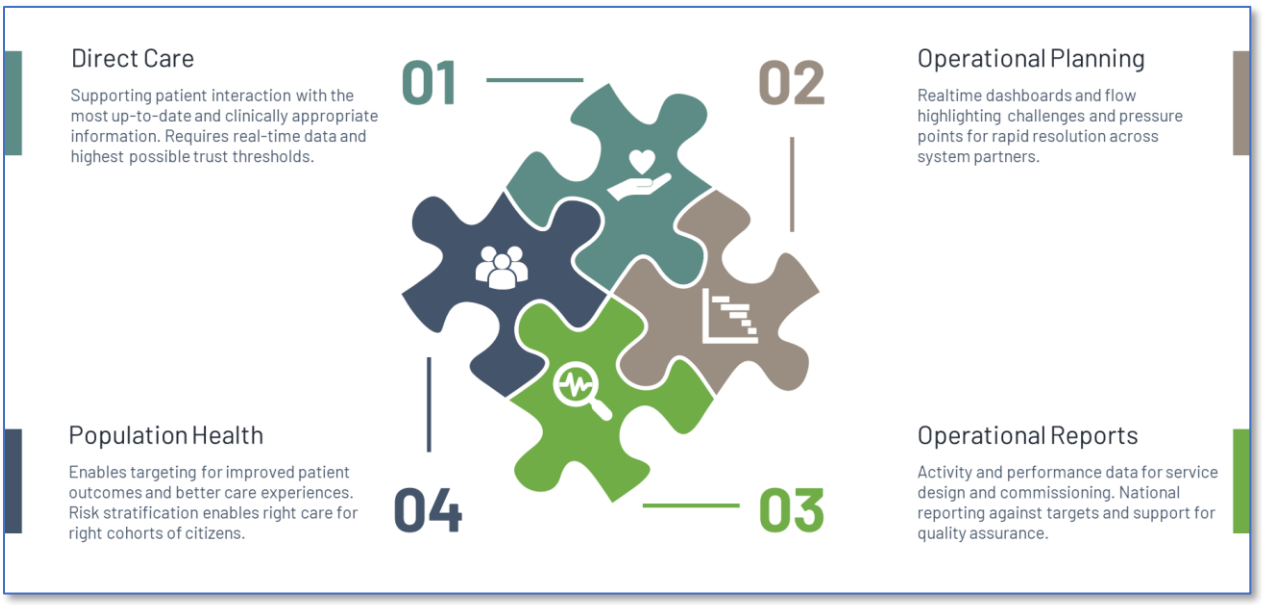

Figure 2 - Principal Use Cases

- **Type:** descriptive, diagnostic, predictive, or prescriptive
- **Identifiable:** Identifiable, or de-identified (aggregate, anonymised, pseudonymised)
- **Timeliness:** near real-time, recent, historical
- **Structure:** structured (and coded), or unstructured, e.g. image, audio
- **Access:** the end-user of this information and the use they put it to
- **Retention:** is the data discarded after use, or stored on the platform?

For further detail see Appendix 1

3.2.4. Proposed Model

To meet the needs of the use cases and providing users with the best fit of functionality, the proposal is for Surrey to develop the following four major components of a modern, flexible data sharing architecture and ecosystem. As identified during project analysis, Surrey's problem is as much effective data management as it is a technology short-fall.

Data Mesh model of operation.

A data mesh is a network of data-sharing partners governed by agreements around ways of working.

The contracts that enable participation in the mesh includes data-sharing agreements, information security, transport mechanisms and commitments around timeliness and quality of data shared into the central data platform. A core team of data professionals manage the mesh and work collaboratively with partners to ingest data into the core platform.

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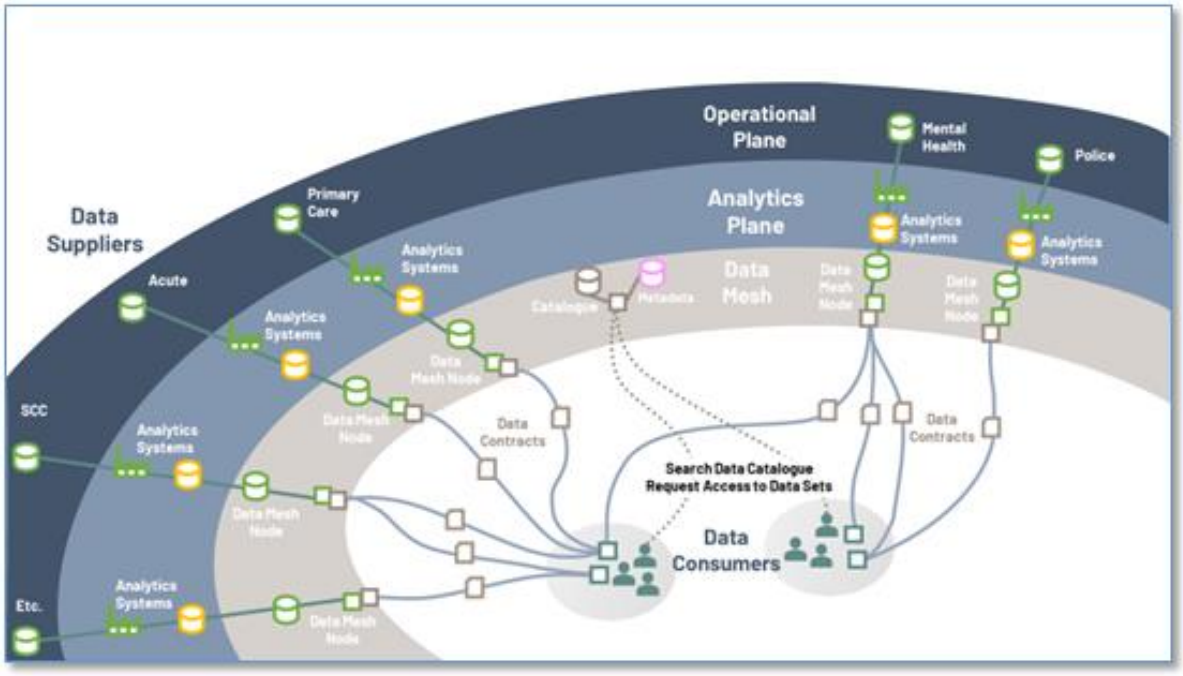

This strategy aims to put structure in place to support data sharing and make best use of each partners capabilities and improve them over time as data management and sharing matures across the system. The components of the data sharing eco-system, the mesh are as follows.

Operational Plane – these are local systems in use within the partner organisations. There are hundreds of these, and these are ultimately the *generators* of data.

Data Suppliers: multiple data supplier organisations collaborating around a data exchange mechanism. Partners are responsible for managing their data and sharing it such that it can be productively consumed by the other partners.

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Data Consumers: data is supplied through the data mesh to data consumers

a. This is 'data as a service' (DaaS), managed through data contracts for access and participation
b. A data consumer can search the data catalogue and apply for access to data sets, starting an approvals workflow process that includes the data owner
c. Data consumers in this context could be any of the Surrey data partner organisations, e.g. ICS, local government, or police; or indeed other organisations and/or the public, depending on the data set and data-sharing agreement
d. Data users, from within the consumer organisations, could be analysts, professionals, managers, data scientists and data engineers

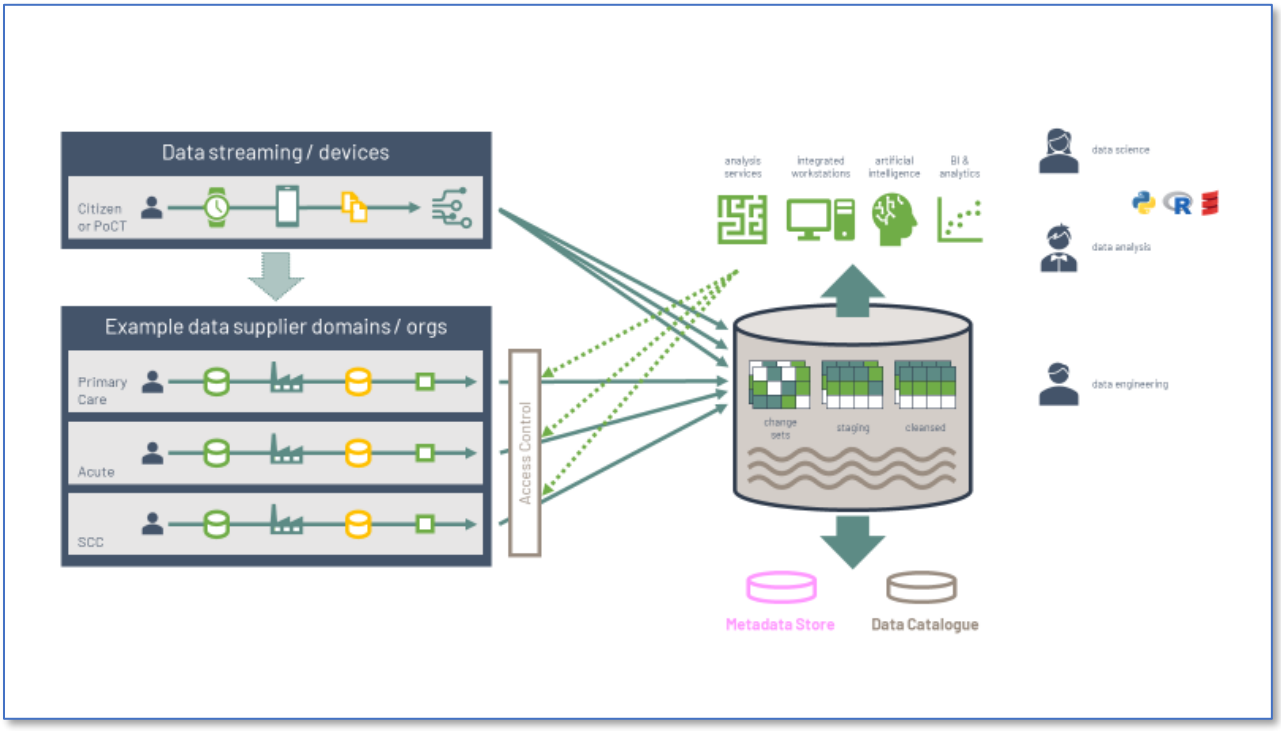
Data Contract: a data contract is a standardised agreement between data supplier and data consumer. Data contracts cover data contents, format, quality, timeliness, availability, access requirements, purpose of use/usage restrictions etc.

Data Lakehouse

A core Surrey wide data platform to support reporting and analytics across Surrey, focusing initially on the ICS and our partners. It is proposed that this platform follow a Data Lakehouse model, providing the best trade-off between tooling, efficiency, speed, and cost.
The core components of the architecture address the data issues identified through the engagement and offer solutions which meet the data principles set out and agreed between partners.

- **Catalogue:** track data sets and contracts in a data catalogue, which stores information about the data sets, and is searchable by data consumers. This allows us to identify and label the data across systems
- **Metadata:** store metadata and lineage information to support the tracking of data flows across the partnership and throughout the mesh. Lineage can also be used for system audit purposes.
- **Security Policy Engine:** operate centralised security systems that apply controls and support secure access to the data sets shared.

The core platform logical architecture is as follows:



The diagram above shows a high level structure for the central data platform and how it connects to a range of devices and data sources. The design means that we can add data sources into the eco-system as we evolve.

Data from devices (such as virtual and remote monitoring devices and personal fitness devices) can be streamed directly into the platform and used for analysis and planning.
Data from providers such as health, social care (and eventually any provider who can meet our required technical and information goverannce standards) is managed within their systems (minimising disruption to current ways of working) and imported into the central data platform through recogised data standards.

The core data platform manages the data, cleansing it, de-duplicating it, matching and compiling it. Eseentially preparing it for analysis and insight. Anonymisation will evolve to take place in the platform but we use external Data Services for Commissioners Regional Office (DSCRO) in the medium term. We wil store data catalogues and dictionaries in the central data store.

The analytics layer sits over the top and will be designed by the Surrey analytics community and support local analytics and move us from retrospective commentary to proactive and predictive analytics.

Creating a data governance function and data management team

The platform and ecosystem requires co-ordinated data governance and ongoing management . There are a number of central components to support this: The core platform and the centralised functions underpinning the mesh will require a Central Intelligence function. This core team will need to operate

Surrey-wide. In all likelihood, this means under the umbrella of the ICS, being a single incorporated body with accountability across all health partners in the system and a significant fundholder.

This core team will have a variety of responsibilities:

- Manages the metadata store and catalogue, including an audit function
- Runs the accreditation process for new joiners/data sets. This includes:
  - Central Information Governance team
  - Cyber-security (Cyber) and Secure Operations (SecOps)
- Data analyst support (to agree data content and format for the new data sets)
- Manages the core platform and roadmap development – split with platform supplier, depending on technology selection
- Engineers the data coming into the core platform, merging datasets, cleansing where appropriate

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Creating an ICS IG function and operating model

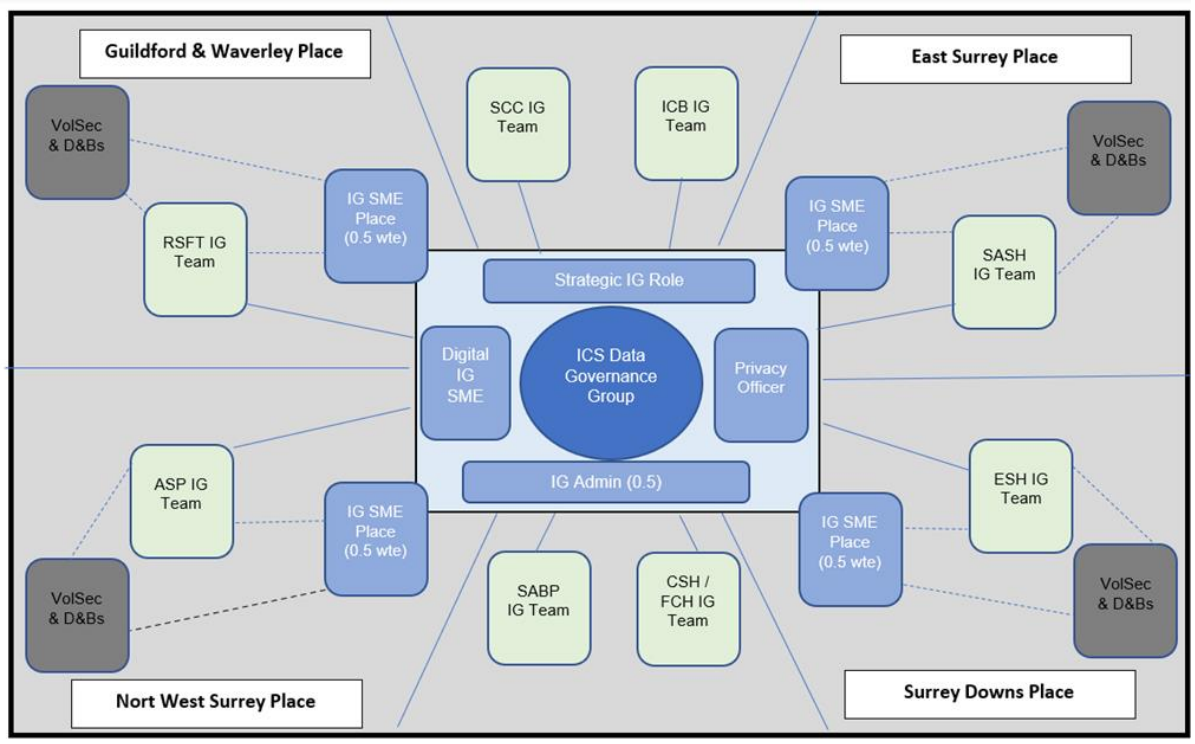
The Data Strategy and associated road map requires IG resources as follows:
A central IG function (Hub) is required to undertake the following activities on an ongoing basis on behalf of all partners involved:

- Onboarding of new partners (Data Contributors / Consumers) and local / national data-sets and data-flows;
- Management of data sharing contracts and data usage agreements;
- Initial and regular reviews of Data Contributors' compliance with the requirements specified in the Data Sharing Contracts;
- Reviews of accreditation for ICT systems utilised and the suppliers of these;
- Maintenance of central Privacy Notice explaining how data will be used and individuals' rights with respect to this sharing;
- Management of opt-outs / objections and other information rights related requests received from individuals;
- Co-ordination of proactive and reactive audits of ICT systems and usage of data accessed by partners;
- Handling / reporting of any suspected or actual data related incidents occurring.

The central function is supported by IG resources within partner organisations (Spokes) that:

- Provide assurance regarding the IG maturity of that partner and their data / systems;
- Undertake local auditing of usage of data to ensure that this complies with agreed conditions;
- Support appropriate access to data by those that require it, including de-identified data where appropriate.

This resourcing model aligns with that proposed within the Target IG Operating Model for Surrey Heartlands ICS, as detailed in the diagram below. In the following phase of the data strategy the model will require expansion, and inclusion of wider system partners including third sector, police, third sector and incorporating a trusted research environment.



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3.3 Operating Model and Ways of Working

Our vision is to have a central data and analytics ecosystem comprising of shared data across a range of partner organisations across Surrey including health, local authority, police and third sector. Within this are our aims are to improve population health and care, tackle inequalities, enhance productivity and value for money and support broader social and economic development.

It is essential that our operating model aims to support both our local and our system wide strategic goals. The Surrey 2030 Vision, The ICS Development Plan, ICB Health & Care Strategy, Population Health Management Strategy, The Joint Health and Wellbeing strategy and our JSNA (Joint Strategic Needs Assessment) goals should all align to our operating model, as well as aligning to the National Data Strategy and the NHS long term plan.

3.3.1 Partners and Partnerships

The Surrey Health and Wellbeing Board provides Surrey-wide systems leadership for integrating health and wellbeing services, promoting partnership working to secure the best possible health and wellbeing outcomes for residents. The Board agreed a new 10-year strategy in 2019 for partners to work with communities to tackle the wider determinants of health (such as the built environment) and improve wellbeing. In 2020, the Board merged with the Surrey Community Safety Board to help services

intervene early to address factors that bring people into contact with the police and criminal justice system and lead to poor health.

Surrey Heartland's Integrated Care System (ICS) is a partnership of health and care organisations working together to improve the health and wellbeing of our local population. The membership includes the clinical commissioning group and Surrey County Council (Commissioning Organisations) as well as the healthcare providers in primary care, secondary care, mental health & community care and the ambulance service (Provider Organisations)

The Integrated Care Board (ICB) is a statutory committee with executive level membership from each of the partner organisations, and responsible for producing a health and care strategy

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The organisations within the Surrey Heartlands ICS work closely together to deliver integrated care which means all the partner organisations will need to share data in order to take forward key transformation activities and achieve the planned improvements in care delivery and financial efficiency. Partner organisations will have signed data sharing agreements in line with information governance requirements to facilitate cross system analysis and support population health management. The ICB will produce a health and care strategy which align with the joint health and wellbeing strategy for Surrey.

HealthWatch Surrey is an independent champion that gives Surrey residents a voice to improve, shape and get the best from local health and care services.

Emergency services ('Blue Light') are coterminous with county boundaries.

- Surrey Police;
- Surrey Fire and Rescue (part of Surrey County Council);
- South East Coast Ambulance Service (Surrey, Kent, including Medway, West Sussex, East Sussex and north east Hampshire)
- Surrey Search and Rescue (for example missing persons, water rescue, drone imaging)

The Surrey Environment Partnership brings together Surrey County Council and the 11 district and borough councils to manage waste in the most efficient, effective, economical and sustainable manner possible. Together, they are currently updating the county's Joint Municipal Waste Strategy to introduce measures such as a deposit return scheme for cans and bottles and introducing a 'plastics tax' on packaging containing less than 30% recycled plastic.

The One Surrey Growth Board is the key strategic partnership for the economy and 'whole place'. It provides the 'Place' counterpart to the Surrey Health and Wellbeing Board. It brings together key stakeholders, such as the LEPs and University of Surrey, and has a strategic focus on Surrey's economy, homes, infrastructure and quality of life.

The Surrey Employment and Skills Board provides a collective voice for employers on skills issues that impact growth and productivity across key sectors in Surrey. It brings together knowledge, expertise and experience in the county to influence the skills agenda, and to develop solutions to the skills needs of Surrey's employers.

Other partnerships include, Universities: University of Surrey, Royal Holloway University of London, University of the Creative Arts, Businesses and Government Departments.

There are over 5,700 VCFS organisations in Surrey, supported by key infrastructure organisations.

See Appendix 2 for additional key Partnerships.

3.3.2 Context and Scope

Current intelligence outputs are a product of analyst access to data and evidence, specialist skills and knowledge, and independent software solutions. Analysts, and individuals providing analytical support, insights and outputs are dispersed across a number of agencies and organisations including:

- Surrey Heartlands Integrated Care System
- Frimley Integrated Care System
- 5 ICPs – 25 PCNs – 122 GP Practices
- 1 County Council
- 11 District and Borough Councils (different geography to the ICS)
- 1 Police Force – 3 Divisions
- 5 large acute NHS providers
- 4 community providers
- 1 mental health provider
- Multiple other wider determinant systems and third sector

Each partner organisation in Surrey will continue to require local business intelligence services for their own local reporting needs, for example to deliver contractual obligations or statutory and mandatory reporting requirements. However, as part of the Surrey wide data strategy we are focussing on our collective efforts to deliver integrated multi-agency products and as such, a whole systems intelligence approach is required. Examples of this include:

- Improvements for integrated health and care services for patients/citizens
- Better identification and targeting of hard-to-reach groups
- To develop more preventative approaches to managing population health
- Support our citizens to remain healthy and active
- To reduce inequalities within the system
- For planning, designing, and financing integrated services
- Surrey Community Vision

We have engaged with partners across the wider system, including Police, District & Boroughs and third sector. Whilst this first phase of the Surrey wide data strategy is focused on the development of an ICS Intelligence function, the following phases of the data strategy will encompass our wider system partners.

The current “As Is” analytical landscape is shown in Appendix 3.

3.3.3 The System Intelligence Function

In order to define and develop a System Intelligence Function, there are several requirements including establishing a dedicated, joint system wide analytics and insights team that is structured appropriately to respond to analytical requests from any part of the system to create coherent, logical and robust outputs for actionable insight.

The Intelligence Function supports leaders across the ICS and wider system to make better decisions through the systematic use of timely and relevant evidence. Through grounding decisions in robust analytical intelligence that draws on wide multi-disciplinary knowledge and expertise, we can respond and support targeted, more effective use of resources.

The Intelligence Function will promote innovation and inform decision-making at all levels of the system, from strategic decision-making about cross-system transformation, to planning care and managing operations at place level, to applying near-real time population-based insights at District & Borough, PCN/neighbourhood level. This function will need to be closely linked to a wide range of stakeholders, including system- and place-level leaders, operational managers, Council functions, public health, and frontline staff, who will provide steer on the types of tools and analyses required to help understand population need, set population-based budgets, and deliver proactive clinical and operational working. Moreover, the Intelligence function will be flexible and agile to work across the wider system footprint, which will include Police, District and Boroughs and the third sector. In this way, the Intelligence Function is well placed to deliver the ambitions and activities of system wide activities, including SODA.

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In addition to responding to the needs of decision-makers, the Intelligence Function will also drive cross-system priorities, producing analyses and evidence that identify areas of opportunity and ultimately enable the coordination of care across systems, place and neighbourhoods by supporting operational workflow management between different care providers.

One key purpose of the System Intelligence Function will be to support a Population Health Management (PHM) approach care, including by developing a detailed understanding of our population's health and care needs, including granular intelligence on inequalities across different population groups. This will be powered by a person-level, linked data set, which should evolve to include information about the wider determinants of health. The System Intelligence Function will support leaders at all levels to tackle health inequalities and drive down unwarranted variation in care quality.

Together with other teams across the system, beginning in the first phase with the ICS, the Intelligence Function will support staff to proactively use analysis to drive transformation. Intelligence professionals and clinicians across the ICS will have access to a Population Health Management platform that performs standard analyses, such as population segmentation and risk stratification, so that care can be targeted and personalised to the greatest effect. As population health analytics develops further, our focus will shift from condition management to the use of predictive risk factors to aid early detection and the prevention of ill health.

Another key role of the Intelligence Function will be to drive high standards of evidence-based decision-making. In any given scenario, the desired intelligence may not always be available, and as such it will be the role of the Intelligence Function to advise decision-makers when their evidence is not fully fit for the specific issue at hand, ensuring that uncertainty and other limitations of data are understood and responded to accordingly, and thus helping to maintain high standards not only in the quality of intelligence but also in its application.

3.3.4 People, Training and Development

Organisational design is a critical element of how the operating model will enable integrated, collaborative ways of working.

It is important that this analytical workforce is upskilled to understand data from parts of the system as well as exposure to different ways of working, skills and expertise.

As part of the next phase of the Surrey Wide Data strategy, we plan to undertake a skills and capability assessment from across the system to develop a skills matrix which will inform our training and development strengths and needs. We aspire to develop a training and development model that champions learning, integration and joint working across partner agencies. As part of this model we will focus on recruitment, and retention through clearer career pathways for analysts and other colleagues in health and care.

Collaboration at an ICS level to develop a fit for the future analytic workforce with effective career development structures is critical. We will develop a strategy to build the required resource capacity and skill mix for our future analytics capability.

3.3.5 Ethics

We propose the formation of a Data & Digital Ethics Committee to:

- Provide strategic oversight and scrutiny of the key Data & Digital programmes
- To ensure consistent best practice application of the ethical use of data in all programmes
- To ensure that a valid IG framework is in place to support the effective sharing of data for the benefit of the citizens of Surrey

3.3.6 Recommendations for an Operating Model

There are a range of possibilities for consideration:

- **Dispersed** - Analysts are embedded within organisational teams without a central team or formal co-ordination.

- **Functional** - Vast majority of resources remain within current organisations, but there is some central support e.g. for standards and training.

- **Centre of Excellence** - A Centre of Excellence drives creation of standards, facilitates sharing between functions, and undertakes some tasks, but the majority of work and people remain within organisationally aligned teams.

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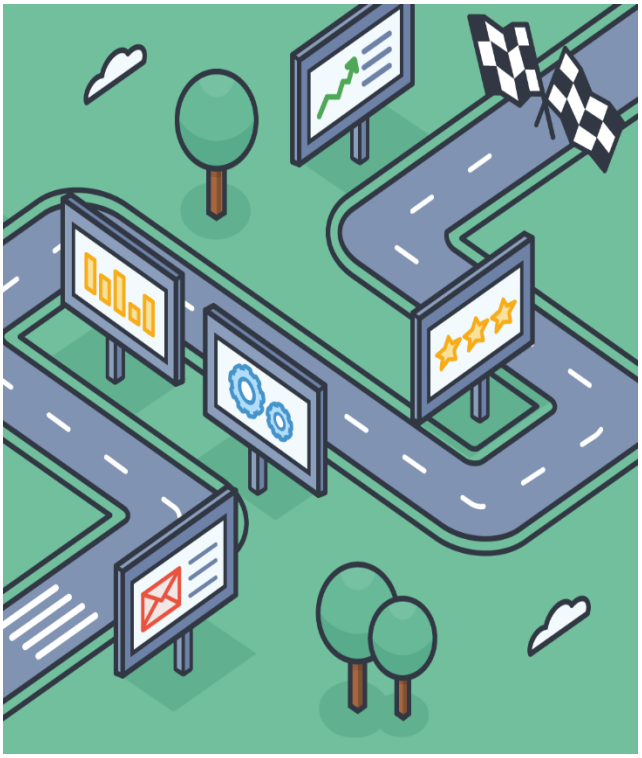
- **Hub & spoke**- A central hub provides advanced capabilities, drives priorities, aligns local activities, and facilitates sharing. Functions drive local execution, customisation, and more tactical function-specific analysis.

- **Centralised** - All analyst resources sit within a centralised team. All reporting and analytics is owned by the Centre of Excellence and undertaken through engagement with the Centre of Excellence

The second phase of the Surrey wide data strategy will explore and co-design the wider system Intelligence function.

4. Next steps



In line with the ICS development plan, the immediate next steps are to develop high level costs to support an outline business case for the ICS. This step will involve testing the proposed models and exploring key questions related to the platforms, functionality and most importantly data operating models. This work is aligned with the creation of the Surrey digital and data investment roadmap and costed investment plans.

The Surrey Wide data strategy will enter the next phase of testing, implementation and mobilisation. This will include establishing the associated workstreams with membership from across the system. These workstreams will be tasked with the next phase to provide that granular insight to define the design principles, recommendation and detail underpinning the four pillars - Purpose, Infrastructure, People and Opportunity.

We will maintain ongoing stakeholder engagement and communications throughout the next phase of the strategy. As part of the ongoing engagement we will develop a change management approach to reach the new Operating Model – including culture and mindset shift through adoption of a large scale change strategy.

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5. Appendices

Appendix 1: Use Cases

01 – Direct Care

Direct care – in the sense of face-to-face clinician/patient interaction – implies a real-time and clinically reliable data set. The best Surrey-wide *longitudinal* record (combining data from multiple sources) is the SyCR (or the TVS system), but this data is subject to time-lags – aggregated from a variety of sources in bulk overnight – and is by its nature, summary.

Partner-to-partner data-sharing in support of extended patient pathways/direct care is more commonly the preserve of integration technologies, i.e. messaging-based interoperability solutions like the Cerner HIE found in the Surrey Acute Trusts. Exploiting those capabilities and integrating that data into to Surrey wide data platform is the recommendation.

There is another example of direct care: piping intelligence data, discovered by the data platform, back into those systems. This scenario might include e.g. notifying clinicians of a high disease risk-factor for follow-up within a consultation. Or management and actioning of prioritised waiting lists across the system and across providers.

Examples of the Direct Care use case which can be explored with suppliers include:

- Referrals between health domains
- Future appointment scheduling from shared patient tracking lists
- Real-time access to mental health and housing data in support of a section 136 assessment

02 – Operational Planning

The operational planning use case – also called 'command centre' or (as currently used in Surrey), 'surge hub' – is a close to real-time view of service pinch-points across the system. With a constant feed of operational information, a picture can be built up which allows service improvement, e.g. redirection of patients to other services.

This use case is especially interesting when we think about the levels of analytics:

- **Descriptive** – a near real-time view of current service/problems
- **Diagnostic** – a system which explains why service issues are happening for human resolution
- **Predictive** – it becomes very powerful when the system can look forward to problems that will occur in the future, allowing time to put mitigation in place
- **Prescriptive** – employing AI, such a system can tell managers what to do about forthcoming problems, provide models that describe the impact of making those changes, and even reroute services accordingly/automatically

The challenges of aggregating this data are large, especially considering the number of potential data partners involved and the mobility of some of the systems, e.g. ambulance location information. The cost of narrowing the gap from, say, 15 minutes to <1 minute may well outweigh the benefits and certainly for the predictive/prescriptive levels of analytics, is largely unnecessary. Equally, a view of future appointments across Acutes does not need to be real-time.

From a service and recovery point-of-view, this is a crucial use case, but one that is very difficult to meet with the current estate. Except for a few pilots, most data are collated periodically and must then be processed through various data layers before being presented. The ultimate solution will be to proactively send these data to APIs around the core platform and/or provide query mechanisms into the supplier systems so data can be fetched on demand/frequently.

Examples of the Operational Planning use case are:

- Status dashboards indicating bed-state across Acute trusts, or awaiting discharge into the community
- Predictive dashboards for urgent care, correlating data against time periods (Friday nights in winter) and events (football matches, bank holidays)
- 111 and ambulance services activity, tracking and utilisation levels
- Significant activity in 111, Acutes, external events that will impact on GP, or *vice versa*

We propose using this use case to develop the thinking around the solution and engaging with suppliers in initial conversations.

03 – Operational Reporting

Operational reporting is the bread-and-butter of business intelligence in the region. It is the largely descriptive analytics that report what has happened for activity tracking and payment purposes. Examples of this use cases are the many statutory reports that need to be produced by the data partners, the national submissions of activity, and the commissioning reports from secondary care.

Quite what operational reporting constitutes is dependent on the organisation. Most of the individual organisations within Surrey produce their own reports and submit them to national bodies independently. In the early days of the future platform, this is not likely to change.

However, reporting that already crosses organisational boundaries, e.g. the CCG data warehouse, should be an early candidate for migration to the centre – indeed it is likely to form the backbone of that platform, as will the team managing the capability currently.

There is also a good, consistency argument for submitting all national returns via the platform as a precursor to more of the actual reporting effort being tackled on the core system. In many cases, producing the reports within partner organisations is costly and can be error prone. How and when the 'centre' takes on more responsibility for the function will be investigated , though as partner organisations are onboarded, we'll need to evaluate on a case-by-case basis. See §**Error! Reference source not found.**.

Examples of the Operational Reporting use case are:

- A&E performance against wait-time targets
- Referral to Treatment waiting times
- Commissioning returns (CDS) from Acute
- Cross-organisation outcome reporting demanded of the ICS

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04 – Population Health

A small number of use cases are supported to date by the Graphnet platform, that is available for use across the system. These focus on the real time, direct clinical care needs in the main. Separate to this however, there is a need to have much greater analytical capabilities and datasets to support a wide variety of other use cases relating to strategic level analytics for more longer-term analysis

Population health is best served by the widest possible sources of data, and it will take time to build up this capability. To date, sourcing the data, ensuring it is covered by the right sharing agreements, and that it is harmonised usefully has proved an arduous task.

As the ICS comes into being and as so much of its success will be measured against improving population outcomes, the demands on population health data systems will grow.

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As stated, the pop. health use case benefits from data from a wider-range of systems, with local government information being especially useful. Focus should be given to improving the flow of information from these other sources (social, environmental). The traditional demand of a pop. health system is that it should present an aggregate view of determinants across a health system. 'Drilling' into the record should (access controls permitting) allow a clinical/social user to identify individuals to target for intervention.

Examples of the Population Health use case are:

- Identifying cohorts of people living with Frailty at risk of deterioration
- Determining links between physical and mental health, e.g. people with a long-term condition suffering from non-treated anxiety
- Targeting patients from socially deprived backgrounds with dependency issues

Appendix 2 - Partners and Partnerships

Surrey Community Action (SCA) is a county-wide independent charity which supports voluntary and not-for-profit groups with advice and services to help them operate more effectively. In addition, there are five Councils for Voluntary Services that lead on providing infrastructure support to VCFS organisations across the county.

The Community Foundation for Surrey brings together local philanthropists with local organisations that need funding and other resources. In 2019/20, the Foundation awarded over £2 million in grant funding across over 445 grants in Surrey. It has also played a key role in Surrey's local response to coronavirus through its Coronavirus Response Fund, which has supported 100,000 people locally and awarded £1 million to charities and voluntary groups to enable them to respond to local needs.

The Surrey Association of Local Councils provides infrastructure support to 82 parish, town, village and community councils. This includes training, networking and representing their interests with agencies across the county.

Organisations supporting a strong Surrey economy

• Surrey is a member of two Local Enterprise Partnerships whose role is to bring together private, public and not-for-profit sector organisations to agree local economic priorities and deliver projects that drive economic growth and productivity.

• Enterprise M3 – covers West Surrey and most of Hampshire, serving a population of 1.52 million people and 89,700 businesses, and generates £49 billion Gross Value Added (GVA) for the UK economy.

• Coast to Capital – covering Croydon, Greater Brighton, East Surrey and West Sussex, serving a population of over 2 million people and home to major international brands, such as Body Shop and Canon, and delivers £50.7 billion GVA for the UK economy.

• The Gatwick Diamond initiative is a business led partnership covering East Surrey and West Sussex, with a goal of growing new and established companies to ensure the area thrives. It aims to grow the region's existing jobs base, attract new jobs and secure investments from companies that closely match the industry strengths of the area.

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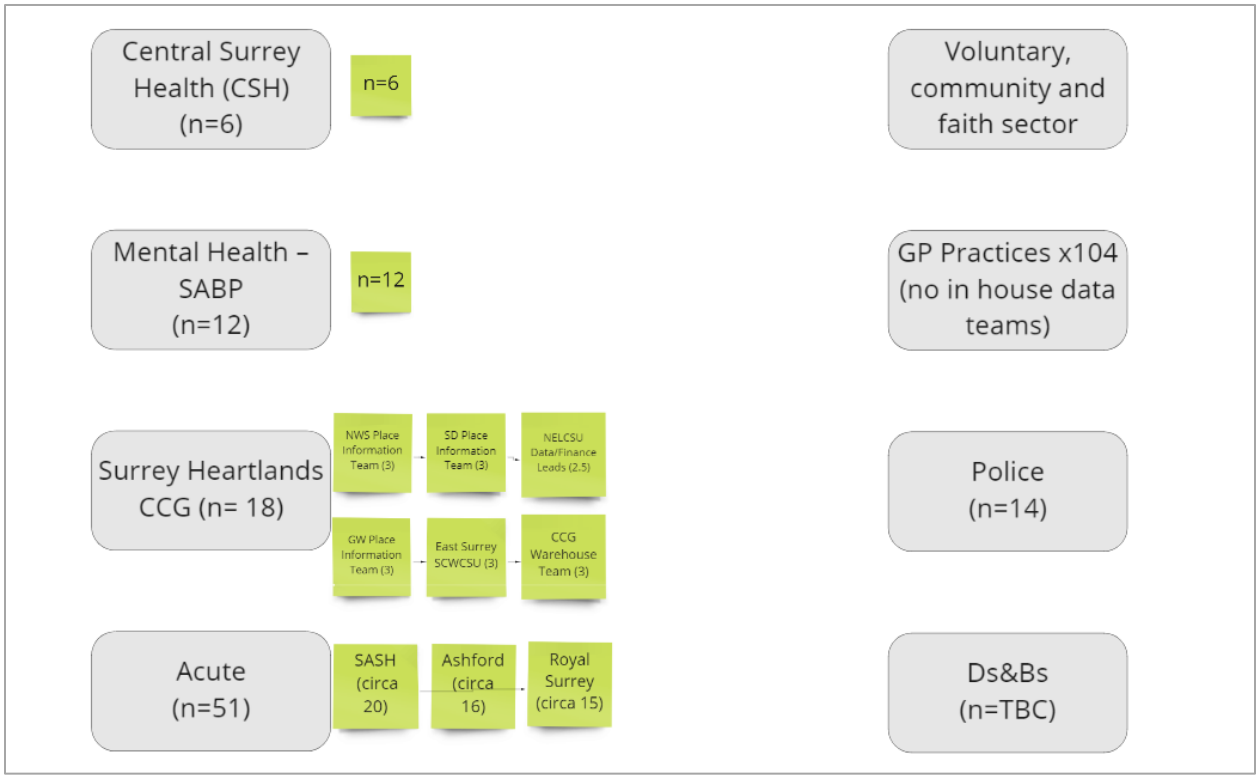
- Surrey Chambers of Commerce
- Federation of Small Businesses
- Institute of Directors (Surrey)

Appendix 3 – System Wide Analytic, Insights and intelligence teams

Appendix 3.1: Wider System Analytic Teams


Central Surrey Health (CSH) (n=6)
n=6
Voluntary, community and faith sector
Mental Health – SABP (n=12)
n=12
GP Practices x104 (no in house data teams)
Surrey Heartlands CCG (n= 18)
NWS Place Information Team (3)
SD Place Information Team (3)
NELCSU Data/Finance Leads (2.5)
GW Place Information Team (3)
East Surrey SCWCSU (3)
CCG Warehouse Team (3)
Police (n=14)
Acute (n=51)
SASH (circa 20)
Ashford (circa 16)
Royal Surrey (circa 15)
Ds&Bs (n=TBC)

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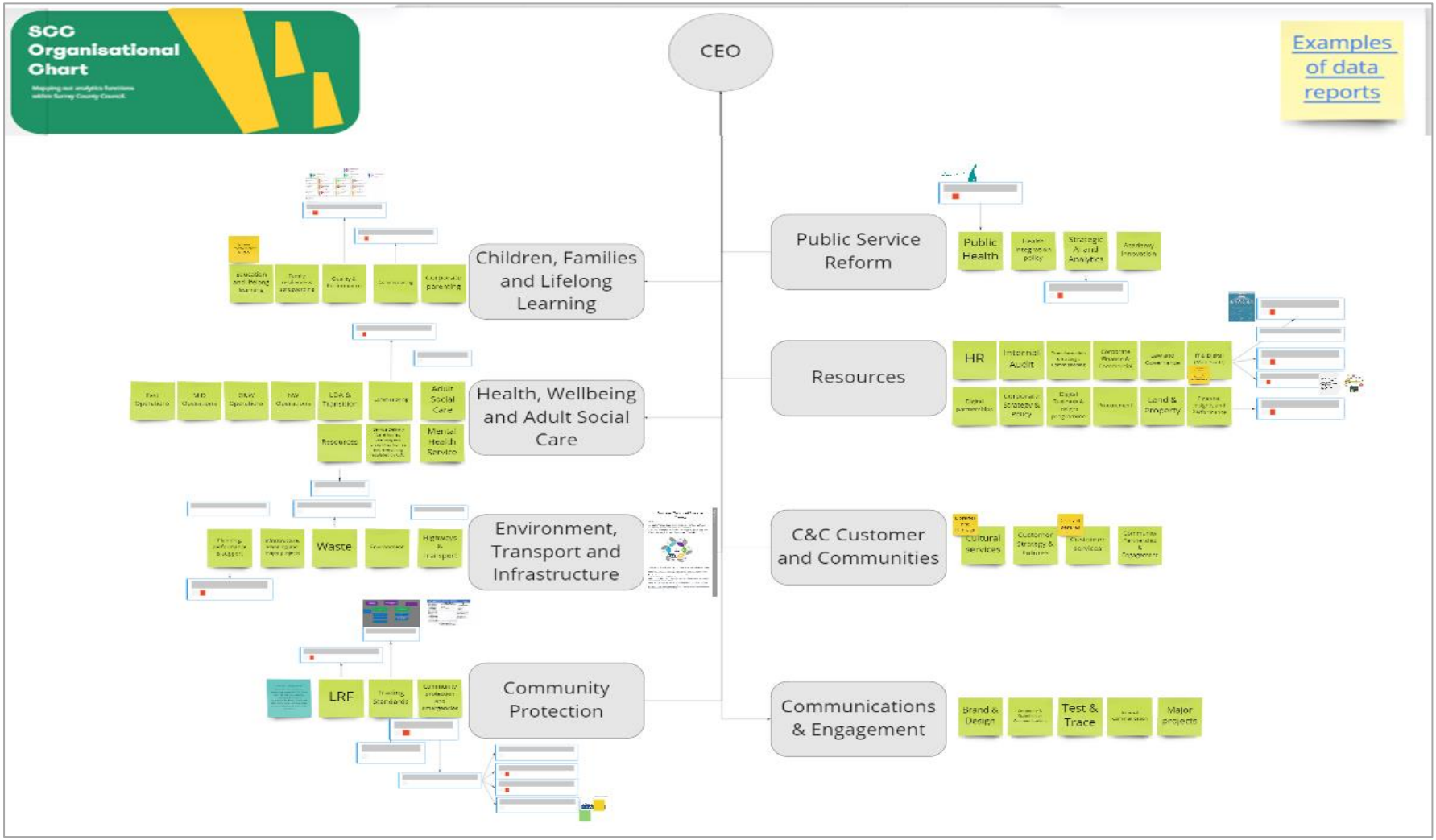
Appendix 3.2: Surrey County Council Analytic, Insights and Performance Teams.



Adult social care (ASC)

Contract Monitoring and Performance Team – 6 members

They design performance and outcome frameworks for all services externally commissioned by ASC.
They work with commissioners to build specs for performance monitoring frameworks, facilitate conversations with providers and support brokerage systems to help them with their operations.
Type of analysis include needs assessments, performance management, service evaluations, financial analysis, user engagement, data-based process audits, outcome measurement.
CCSS Tableau Server Inventory

Business Intelligence Team – 5 members

They design performance and outcome frameworks for all services by ASC in line with national statutory frameworks, statutory returns, and assurance frameworks. They work with all data from Adult Social Care except for Commissioning. Click here to access more information.
They specialise in data for decision making and use the data in their possession, as well as national and regional datasets, to provide useful insights to the Adult Social Care leadership team, to CLT (through Deep Dives), work with frontline teams build specs for performance monitoring frameworks and lead on all Tableau reporting and automation. They support business strategies and transformation programmes.
Type of analysis include service evaluations, modelling, user engagement, system mapping, data-based process audits, outcome measurement and more.
They work in the Southeast region, hosting the Tableau dashboard for their reporting (the Association of Directors of Social Services Dashboard, which holds the unvalidated data before it goes to the health department in central gov).
They maintain the VPRS system - running vulnerable adults reports and have strong links with emergency duty teams. They link with BI teams internally and in other authorities and are members of the Surrey Office of Data Analytics.

Public Service Reform

Public Health Team (PHIIT) - 11 members

PHIIT is a specialist data team sitting in Public Health. They design performance and PH outcome frameworks, including for all services externally commissioned by Public Health (e.g., on Substance Misuse, Sexual Health, Weight Management Programme, Tobacco Control Services, etc), and are responsible for the directorate's operational and statutory reporting (e.g., the Joint Strategic Needs Assessment, the National Child Measurement Programme, the Pharmaceuticals Needs Assessment, etc.). They also specialise in data for decision making, and use the data in their possession as well as national and regional datasets to provide useful insights in the following areas:

- Developing models and capabilities
- COVID-19 Surveillance and Vaccination

- Death Surveillance
- Modelling (e.g., Death modelling, predictive analytics, and projections)
- PH Systems (e.g., Hospital Episode Statistics, Primary Care Mortality Database, Births, etc)
- Performance and Public Health Agreements
- Needs Assessments and Audits
- Health Inequalities and wider determinants of health (metrics and Social Progress Index)
- Weight Management
- Better Care Fund
- Public Health intelligence (e.g., Annual Report, Ad-hoc FOI requests, etc)
- Population Health Management

More information can be found at this document, which includes an organigram.

BIA Analytics and Insight – 5 members

Structure TBC. This is a new team, that includes the Population Insight Team

IT & Digital

Data Analytics Centre for Excellence – 6 members

The Data Analytics Centre of Excellence is responsible for driving the analytics mandate across Surrey. They support the Self-Service Analytics Tools – Tableau, SQL Operations Studio, FME and Provalis.
They provide data services, analytics on-boarding and community leadership within the data analytics forum.
The services they offer are:

- Self-Service Analytics: creating, facilitating and enabling a data community within the Council
- Data expertise: unlocking data to be exploited for analytics, insight and smarter service delivery
- Solution delivery: end-to-end analytics solution design and provision
- Analytics market appraisal & evaluation: equipping Surrey to take advantage of the latest toolsets and techniques
- Next generation analytics: developing capabilities within the staff for advanced analytics
- Platform and solution support: Full technical support for analytics platforms, solutions and users

Dev Ops

Looking after the SQL server within Surrey County Council (~1000 databases, which include LCS, LAS, business apps, legal requirements, GIS etc)
They look after all MoT mechanics for all systems within the Council
Mostly use data for performance of their own team, rather than using data for business.

GIS Analytics Team – 3 members

they have some core products ESRI and create maps with different open datasets.

- Portal
- Desktop software
- AGOL

Building GIS products for teams that do not have GIS teams (e.g. culture team, History Nomination programme).
E.g potholes application using API from supplier
GIS data catalogue
Team members

Digital team

Focus of Digital 2022 / 2023

- Working with Executive Directors to articulate Digital Ambition and reflect this in roadmaps
- Focus on moving Digital to the heart of our design
- Moving the focus to delivering benefits, opposed to layering Digital on top of what we have
- Establishing and embed the Digital Operating Model
- Reviewing our programme delivery model
- Working to identify the opportunities or problems that services are trying to solve
- Joining up cross organisation opportunities
- Supporting capabilities commissioning the Data Academy courses for services that need it

Performance Team – 4 members

The Performance team is a specialist data team sitting in the Resources Directorate.

They are responsible for the collection of quantitative and qualitative data to assess corporate performance for the Resources directorate (there is no central function for this within the directorate at the moment), and for the wider corporate performance reporting (which they share with the Corporate Leadership Team, Cabinet and Scrutiny Committees).
They recently embarked on a Resource Directorate Improvement Plan, building a performance framework with all Heads of Services within the Directorate of Resources. This review serves two purposes:

- Operational: what info they need to deliver day-to-day services (including Audits, etc)
- Strategic: understanding what is needed to deliver strategic objectives (currently mostly linked in through KPIs. They currently identified 200/250 KPIs that include quantitative, qualitative indicators and future ambitions.

They will also launch a performance maturity assessment, focusing on 7 key pillars of data maturity.
Considering a review of performance frameworks (2022 - 2023) - Off the back of that they will relaunch a different performance framework

Children, Families and Lifelong learning (CFL)

Analysis and Evaluation - 5 members

Analysis and Evaluation is a specialist data team sitting in CFL Commissioning.
They design performance and outcome frameworks for all services externally commissioned by CFL and are responsible for the collection of quantitative and qualitative data to assess service performance.
They specialise in data for decision making and use the data in their possession as well as national and regional datasets to provide useful insights to commissioners, so they are empowered to develop their strategic approach and contract management activities.
They regularly participate and lead in needs assessments, performance management, service evaluations, financial forecasting, modelling, user engagement, system mapping, data-based process audits, outcome measurement and more.
They maintain strategic links with research institutions and are active members of the Surrey Office for Data Analytics.

Performance, Intelligence and Systems Team – 15 members

The Performance Intelligence and Management Information Systems (PIMIS) team sits within the Quality & Performance Service.
The purpose of the team is to ensure timely performance reports are provided to a variety of audiences and that statutory returns and collections are completed successfully.
Performance reporting is carried out both on a business as usual and an ad hoc basis. Most BAU reporting is produced via Tableau, although the team also uses Excel and other tools for analysis where required.
They work with IT systems staff and operational staff and managers to ensure electronic systems are fit for purpose and exploited to their maximum.
They develop and maintain effective working relationships with operational managers and practitioners to understand their requirements and provide information that is up to date, accurate, accessible, and understandable.

This includes working with the Analysis and Evaluation team and with finance to bring together historic reporting and analysis with forecasting and modelling and with financial data.

Environment, Transport, and Infrastructure (ETI)

Systems, Strategy, and Improvement – 3 members

This team sits within the Planning, Performance and Support service which supports the ET directorate. They are responsible for implementing the IT strategy (attached) that covers data and reporting. They work with data across a whole range of areas and will cover the collecting, extraction and visualisation of data with Tableau and FME (where needed).
They will work in many areas providing all performance reporting (Contractual, Service, DLT) as well as solutions for team to help them manage their processes or projects. Examples of this are Carbon Reduction, Street Works Permitting, Portfolio/Programme tracking and Forward Plans.
They are working to set a standard across to ensure that we are reusing/repurposing data across the directorate and moving all reporting towards being fully digital.
The ETI data strategy is looking to build up and make accessible the data we require to give people to view they need for decision making.
They will be looking to develop other areas such as Business continuity planning, bringing together data from our systems and Unit 4 to give a view of our current capacities for critical activities. This was something that came out of Covid but access to data outside of our service has been hard to get.

Business Intelligence team – 2 members

This is part of the Panning Performance and Support service.
They work provide all performance insights for the Service, directorate performance frameworks. They will analyse data to look for root causes of issues.
They work closely with the Systems, Strategy & Improvement team on dashboard development, using data they have provided for analysis.

Asset Data and Analytics Team – 4 members

This team sit within Highways and Transport but offer support across the directorate. Their main remit is to manage and maintain SCC's network asset data through GIS. They process asset data and present this back through ESRI ArcPortal and ArcOnline.
They will use survey and asset data to produce a inform annual maintenance programmes which are then digitised through maps to provide internal and external staff a view of what is going on, on the highway network.
They provide other service support with GIS where needed, bringing together spatial data into maps to help inform decisions.

FCR Flood and Climate Resilience

The FCR Team is responsible for managing local flooding issues and producing a programme of capital improvement work to reduce flood risk. We also have responsibility for managing the risk of flooding from ordinary watercourses, surface water and groundwater in partnership with other Risk Management Authorities including the Environment Agency, utility companies and Borough and District Councils.

Surrey Waste Partnership Team

This is an external team called 'Joint Waste Solutions'.
They provide reporting through a system called 'SEP' on all waste management within Surrey and work with the D&Bs.
This is funded by SCC, and they are responsible to the analysis and maintenance of waste data with the waste management contractor, Suez.

Community Protection

Emergency management and resilience team – 15 members

This team leads the Welfare groups and coordinates all directorates of the SCC to share information and data. The main use of data in this team is for the Vulnerable People Reporting System (VPRS). This is a system that collates vulnerable people data from partners across Surrey, organised into one database that the team can access and search during an incident/emergency.

Community and Resilience Team

Responsible for all Surrey prepared & other programmes through SCC
Part of this is the flood team, which uses GIS mapping to locate assets and infrastructure.
Head: Sarah Goodman

Data, Digital and Special Projects

Split into a couple of areas (some look more at technology, rather than data itself).
Data team - 2 people
Use data for:

- Scenario-based modelling (application of appliances, e.g., fire engines and vehicles to achieve the best risk coverage)
- Calculating avg response time
- KPI, performance vs Fire & rescue service benchmarking

One person undertakes data collection & quality for performance data to HMIC Police and Fire Rescue, also reporting to Home Office, CIPFA (financial info)

Community Intelligence

Developing capabilities to developing risk analysis for emergency services (e.g. buildings, regulating fire safety - getting info about number of people, height of buildings, escape routes etc) so that when a fire happens, they will know everything about buildings to help allocate resources appropriately. Getting info from Experian, etc collating, comparing it and analysing it - moving it into GIS terminals to highlight specific areas to target.
They use data feeds from ASC, and recently started receiving Children Social Care data too.
Head: Damian Watts

Local Resilience Forum Strategy and Innovation team – 2 members

This team sits underneath the Local Resilience Forum team. This is not a SCC team, but a multi-agency effort among emergency partners and local councils.

1. Currently working on a funding bid to DLUHC which aims at creating a Southeast Regional Information Hub, bringing together Thames Valley + Hampshire, Isle of Wight, London, Kent, and Sussex Local Resilience Forums. The idea is that during an incident all LRF would refer to the MAIC (Multi-Agency Information Centre) and have a regional hub to disseminate information when needed. In peace time, the hub would work on things like horizon scanning, risk assessments, etc.
2. Pending exec approval, the team is seeking to hire a MAIC manager + MAIC officer. These added resources will focus on data re: incidents and vulnerable people data that LRF holds (how it is shared, Data Sharing Agreement and processes that are currently quite bad.

Health and Safety

They have an operations team, but their work with data is prevalently performance reporting (they have a statutory duty to report incidents on an Online Reporting System, OCENS).
Peter Rice (from Fire&Rescue) runs a report a dashboard every quarter, that is presented to Cabinet and CLT against 5 KPIs:

- Total number of H&S incidents
- Number of employee incidents
- Number of 'others' injured
- Percentage of incidents reviewed
- RIDDOR Reports - number of reports.

Trading Standards – 0.6 People

They used to have a BI team but do not have that anymore because of capacity mainly.

- 0.6FTE intelligence post will help with particular investigations.
- Helped by Trading Standards Regional Intelligence Analyst Team (for all the South East) for mapping out complaints (sometimes these have breakdowns).

Coroners

Independent professionals, the service supporting sits within CPG. They don't perform analytics, only data reporting. They have a programme looking at future use of analytics sitting within a wider transformation programme with Fire Rescue.

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