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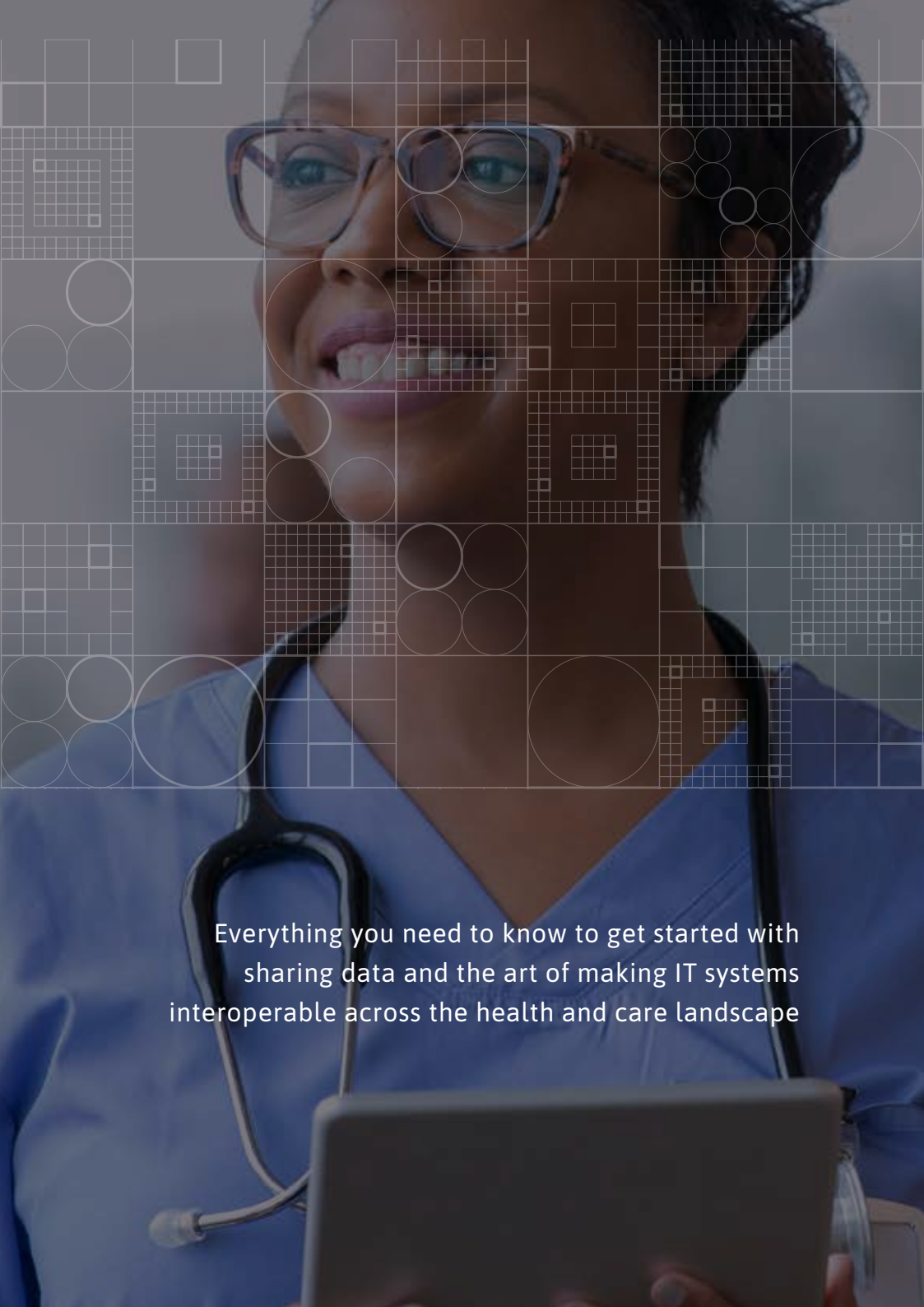
Interoperable Digital Care

AN ESSENTIAL GUIDE TO SHARING ANY DATA ACROSS ANY CARE SETTING

Everything you need to know to get started with sharing data and the art of making IT systems interoperable across the health and care landscape

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Collaboration between health care providers has become a priority in recent years. Underpinned by the Long Term Plan, the NHS has placed increasing emphasis on the need for local health and care organisations to work together, both operationally and strategically, to plan, prove and manage services throughout a local area.

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INTEROPERABILITY.
HIGH PRIORITY
FOR THE NHS?

Interoperability remains the highest priority for NHS IT leaders. According to the findings of the 2019 NHS IT Leadership Survey, it is the number one concern for 78% of NHS IT leaders. Yet today far too many healthcare providers still lack vital data resources – such as a single view of up to date, accurate patient data 24 hours a day.

Instead, many healthcare providers are constrained by over-lapping and often inconsistent records. By the need to sign in and out of multiple systems to pull together detailed patient records; even the requirement to telephone different service providers, especially within social and mental health, to simply discover the latest information regarding a patient.

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A single trusted view of patient information, including letters and test results, is a vital component not only of effective collaboration but also improved patient experience. For clinicians, it means no more time wasted searching for up to date records. For patients, it means providing information, such as GP name and medication, just once rather than every time they see a new clinician. Furthermore, the ability to securely share data across multiple healthcare providers, from GPs to hospitals, mental health services and social care teams provides a platform for a completely new way of working.

Is vital information hidden within departments and systems? Is the patient record inaccessible to the people who need it most? Whatever your starting point, in this guide we outline the key areas to consider when building a data sharing strategy.

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DATA ENABLED TRANSFORMATION

Fast access to trusted, accurate and consistent data provides a foundation for improvement at every level – from immediate and rapid decision making to improving the patient experience to creating better care pathways and using rich analytics to better understand population management and trends in population health.

While STPs (Sustainability and Transformation Plans) and ICSs (Integrated Care Systems) outline the strategic route towards organisational collaboration, the day-to-day challenge is to find a way to effectively and securely share data between stakeholders.

With data residing in multiple disparate systems, the technical and cultural barriers associated with data sharing have, in the past, constrained innovation and the ability of organisations to achieve effective collaboration.

Over the past few years, many organisations have embarked upon digital transformation projects in a bid to improve data sharing. Still, the situation across the NHS is very mixed, resulting in a very different experience for both clinicians and patients.

Do clinicians require multiple logins and passwords to access patient data or does a single sign on offer all the latest patient information?

Are patients enduring repeated tests requested by different clinical teams or are diagnostic tests/results requested and shared digitally, without risk of duplication?

How much progress has your organisation made towards creating a single view of patient data, and exploring that trusted resource to improve efficiency, to enhance the patient experience and to create innovative service collaboration?

DIGITAL PROCESSES

✓ Do you have automated digital workflows and care plans?

✓ Have you stopped transferring patient notes by paper or fax?

✓ Are diagnostic tests/results requested and shared digitally, without risk of duplication?

✓ Does real-time data support clinical decision making?

✓ Is data being used to manage patient flow through your organisation or care system?

Download our free checklist to assess the level of data sharing within your organisation

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DATA SHARING SCENARIOS

Every aspect of health and care service provision is dependent upon data. There are a myriad of opportunities to share data to improve collaboration – which scenarios relate to your organisation's goals and requirements?

The patient experience can be improved by sharing data between hospital departments – even the simple provision of radiology and pathology results to all wards can transform the patient experience and reduce costs by avoiding duplication of tests. Combining initial patient registration as soon as they enter the hospital – either on a ward or at A&E – with messaging technology, ensures that every downstream system recognises that individual. From transfers to tests to specialist consultations, every patient activity is recorded and available to all individuals delivering patient care. Data quality improves, reducing the risk of error, as does patient

well-being, staff productivity and infection control, due to fewer paper transfers.

Sharing data between hospitals, trusts and CCGs has historically been somewhat challenging, primarily due to duplicate systems (eg EPR/PAS). The NHS has promoted mergers between these organisations in order to consolidate testing (eg pathology alliances), streamline commissioning and build health and care strategies that are aligned to existing STP/ICS footprints. Areas are becoming more connected and solutions are being implemented to enable cross-boundary co-operation and facilitate service reallocation

across a region. The new focus is on 'systems within systems', using smaller local partnerships within neighbourhoods, scaling up to places, then systems to support a far wider geographical area.

It is essential that clinicians in urgent care situations have access to the latest patient information at the point of care, particularly where end of life care plans are in place. Every minute counts for **ambulance staff, 111, NHS24** and local triage services. In some areas such as Bradford, nurses have been trained to go out alongside police to deal with street triage and hospital liaison in the community where an incident is linked to mental

health. Having access to the right records at the right time ensures people get the right assessment and help they need faster, preventing escalation and unnecessary hospital admissions.

Sharing data between primary and secondary care is becoming more straightforward with the development of Healthcare Gateway's MIG (Medical Interoperability Gateway) and more recently, NHS Digital's GP Connect, where the 4 countries across the UK are working closer together to share benefits and best practice on national programmes, to use services like GP connect across boundaries to help reduce costs.

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DATA SHARING SCENARIOS

Cont…

These solutions provide data in an easier to share format – providing key patient information, from latest medications to allergies, to everyone within the secondary care environment. If you're a secondary care provider without the resource or integration skills in house, there are several accredited partners ready to work with to help gain access to primary care patient records.

Introduced in 2019 Primary Care Networks (PCNs) enable greater provision of coordinated and integrated health and social care, similar to existing cluster networks in Wales and Scotland. GP practices are not only required to work together, but also with local community, mental health, social care, pharmacy, hospital and voluntary services. This raises challenges of sharing data within the network (organisations using different EPR/PAS systems) and also with secondary care. MESH (Message Exchange for Social and Healthcare) is one tool for enabling data to be shared with secondary care including discharge documents. GP networks themselves could benefit from technical consultancy to define data sharing requirements and find the best solution such as an interoperable clinical record.

With HSCN (Health and Social Care Network which replaced N3), the Scottish Wide Area Network (SWAN) and Public Sector Broadband Aggregation (PSBA) in Wales, it is possible to securely **share data between all relevant health, social care and communities**, providing a foundation for joined up service provision and minimising the danger of at-risk individuals falling through the gaps between services. Hospitals are driving this data sharing model, increasingly looking to push their data out in the broader community to ensure everyone within the health and social care networks understands the clinical issues affecting a specific individual. Over time that information flow will become bi-directional, providing clinicians with vital insight into a patient's social and care background.

Voluntary organisations and hospice care, are also becoming aware of the benefits of inclusion within the data sharing framework to ensure completeness of all patient records. Fast access to trusted NHS patient data will replace the telephone conversations and manual checking of paper-based records required to verify patient drug regimes, for example. In addition to releasing more time to care, integration will eradicate the need for data transcription, avoiding the risk of error.

The importance of being able to pull together information from multiple organisations within an area is increasingly recognised as a result of the Covid-19 pandemic. From tracking health trends to supporting early intervention and identifying at risk groups – such as those with Type 2 diabetes – anonymised population health

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DATA SHARING SCENARIOS

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data can support better planning and resource management, as well as targeted social prescribing and non-clinical intervention. Extending this insight to local authorities can also provide vital insight to support and manage local lockdowns as and when required.

Real-time access to patient discharge information and medication management is also increasingly seen as a platform for addressing bed blocking problems by providing a central operational centre view of beds that are empty/ ready for cleaning/ ready for a patient. In addition

eDischarge and ePrescribing provide vital updates to GPs and everyone involved in patient care regarding the current status of their patients. Integrating a medicine administration application within your data sharing strategy improves efficiency and patient safety and experience.
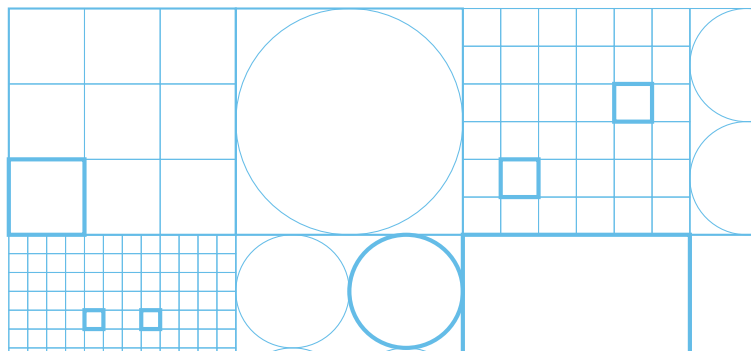
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DATA PRIORITIES

When starting an interoperability project, the tendency can be to connect every system and every possible piece of data you have for a patient. Many organisations are creating vast data lakes or repositories but can end up finding it difficult to extract meaningful data in the right format for those that need it.

The first step is actually to start with your users – which clinicians need access to patient data? Then ask them what they need to see. The best interoperable records are those that collaborate with users from the outset. This co-creation or user-led design guarantees adoption, improving efficiency and protecting your investment.

Once you know what you need, consider where the data currently resides and what format it is in. Your technical architects should advise on the best way to integrate the information, with minimal disruption to underlying systems or data quality and security. This is also where prioritisation comes into its own. It is useful to establish an open data roadmap so that users stay informed and your digital plans stay on track and on budget. Think big, start small and scale fast.
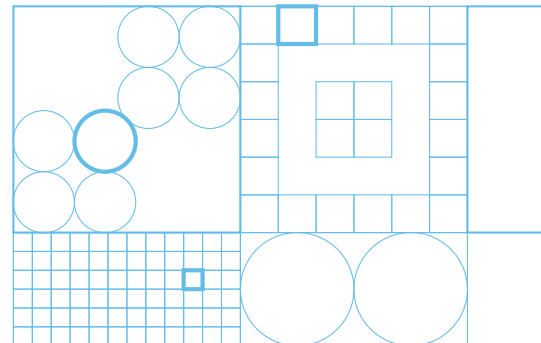
CLINICAL EFFICIENCY

✓ Is data entered into systems once by clinicians, and then shared?

✓ Do clinicians log into one system to access all the patient data they need?

✓ Do healthcare professionals access data they need from wherever they deliver care?

✓ Is data exchanged between systems correctly and without error?

✓ Do healthcare professionals access caseloads digitally, together with patient information?

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SHARING DATA SAFELY

From providing healthcare professionals outside your organisation with access to your data to ensuring all MDTs have access to each other's data, what steps do you need to consider to achieve secure collaboration?

Information governance is a fundamental requirement for safe, effective data sharing. For any organisation within the NHS looking to share data, a data sharing agreement is essential. You may need help with the completion of documents including the relevant technical information, but it will always be the responsibility of the organisation to get the right agreement in place with the partner organisation.

Security requirements are fulfilled through HSCN/N3 access but there are additional considerations. For example, sensitive data – including mental and sexual health information – requires special consideration, especially regarding access. Is the data remaining within the hospital or being shared with the wider community? Suppose it is being shared within the hospital via point to point integration or an integration engine interface. In that case, data access is restricted by the end system, rather than an integration solution. If an interoperable clinical record is being used, that data can only be accessed by users that have specific permission or make an additional request to see sensitive data.

This role-based access control is critical in the protection of patient data. It is also important to consider the patient's wishes especially under GDPR; have they opted-in to share their personal information and do you have this logged so that it's easily visible to clinicians at the point of care?

COMBINING INFORMATION GOVERNANCE WITH INTEGRATION EXPERTISE TO ENABLE SECURE COLLABORATION.

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STRONG PARTNERSHIPS

There are two elements to partnerships – how you work with stakeholder organisations and how you work with your suppliers.

Stakeholders

Whatever your integration scenario, you'll work with many different stakeholders all at different stages of their digital transformation journey. Effective collaboration is underpinned by strong partnerships – both within a Trust and outside with the wider health and care community. Tactical and strategic cooperation supports the ability to rapidly scale up data sharing such as at the beginning of the Covid-19 pandemic when different clinical teams required immediate access to patient data to support fast diagnosis and treatment plans. Clinical teams work together to deliver complex care for one patient. Cross-geographic collaboration using population health data and analytics can drive strategic initiatives to support the wider community. With a single source of trusted information, every individual, team, department and organisation can focus on the end goal, and build on the shared objective of improved care to drive innovation and change.

Suppliers

There are some suppliers from which you simply procure a service. Interoperability should not be one of them. The digital landscape is constantly changing and together with the fact that health and care produces some of the most complex data requirements, you need a partner with the right skills and experience who understands your goals. A good integration expert will work alongside you from requirements and architecture to deployment and future enhancements. It's important to find a supplier who matches the way you work. If your organisation keeps going 24/7, make sure support is there, and crucially, in your time zone.

COLLABORATION

✓ Do healthcare professionals outside of your organisation have access to your data?

✓ Do patients and carers have access to the information they need?

✓ Do health and care professionals have access to GP data, including medications?

✓ Do members of MDTs all have access to each other's data?

✓ Are your clinicians part of the process when designing data sharing systems?

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BETTER USE OF TECHNOLOGY

Given the pressure on services, no healthcare provider wants to risk disruption due to unnecessary IT change. With the right approach, improving access to data is about improving day to day processes, not imposing unnecessary change or cost. A good interoperability strategy avoids changing underlying and familiar software and focuses on simply joining up the data in existing systems. Rather than big, expensive and time consuming data repositories, or mandating clinicians to embrace new solutions that are often less functionally rich than the existing software.

Essentially, organisations or departments should carry on as before – but with the added benefit of seamless data sharing and a chance to collaborate effectively with other teams as and when required. This can be achieved by an interoperable clinical record being embedded into existing systems, taking seconds to launch real-time information. Optimising existing systems in this way protects the investments of previous years and makes it far more cost-effective to add new systems or organisations into the strategy going forward through incremental clinical programmes.

A further important technology consideration is whether your current interoperability solutions mandate data to be delivered to end systems in a structured format. This can result in complex coding at source. Although standard messaging such as HL7 and FHIR are gaining ground, there remain hundreds of systems in use with multiple formats and unstructured data. An integration engine can help alleviate some of this complexity to make clinical messages shareable across multiple systems. And if you're ready to explore it, a good interoperable clinical record will handle both structured and unstructured data to build integrated care quickly.

Intelligent integration enables data sharing without compromise.

TECHNOLOGY

✓ Do all of your IT systems intercommunicate and pass data between them?

✓ Is there an integration engine or interoperability platform to easily connect new systems?

✓ Do you have an eprescribing solution for safe medicine management and administration?

✓ Are you confident that data is adhering to national standards, eg SNOMED, HL7 and FHIR?

✓ Can your systems deal with both structured and unstructured data?

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TIME AND EFFORT

Creating a data sharing platform sounds great – but what about the business case? Rapid access to accurate, up to date and detailed patient data can transform both day to day activity and strategic planning. Staff spend far less time searching across different systems for the right information – no need to log in and out of different software; no frustrating delays as a result of being timed out of systems; and no need to telephone colleagues in a bid to track down missing information – from test results to next of kin contact details.

With a single sign on solution that provides access to all patient data, staff also have no need to learn every single system – they simply use their core clinical or admin solutions and leverage the highly intuitive interoperable clinical record to search for any other information. In addition to spending less time looking for information and, as a result, more time on patient care, real-time access to patient data provides a platform for rethinking and reconfiguring the way services are delivered – from red & green Covid hospitals to shared access to pathology services.

RAPID ACCESS TO DATA TRANSFORMS THE WAY SERVICES CAN BE IMAGINED AND DELIVERED.

STRATEGY

✓ Does management have dashboards displaying data about performance of their services?

✓ Are you making fast progress with your digital strategy to improve patient outcomes?

✓ Do you have short technology deployment cycles of three months or less?

✓ Is your data available to support population health management and vulnerable groups?

✓ Do you have robust business continuity processes for when key systems are unavailable?

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INTEROPERABILITY SOLUTIONS

There is no single starting point for interoperability; and no single solution to achieving digital transformation. So how can you get started and achieve the goal of providing the right data to the right people at the right time? Various methods are currently in use across the health and care ecosystem including;

Point to point integrations – direct connection between two systems. Usually involves a single function and therefore could result in a complex web of coding to unpick if something goes wrong.

APIs (Application Programming Interface) – messenger that sends information automatically between systems. Often is developed and preconfigured by suppliers to enable quick and easy sharing of data held within their systems.

System integrators – middleware applications such as BizTalk that automate business processes. More commonly seen in non-healthcare industries to connect business data within organisations and across their supply chain.

Document management software – captures, stores and shares electronic documents and images of paper-based information. Often are now cloud-based technologies.

Integration platforms – facilitate the exchange of clinical data to support care delivery. Use multiple formats including HL7, DICOM and FHIR. Examples include Health Connect, Rhapsody, JavaCAPS and Mirth.

Shared care records – integrate data from health and care settings into a single patient viewer. Can be limited in functionality and customisation with long deployment cycles.

Interoperable clinical records – connect any data from any source across health and care settings in real-time. Customisable for different care settings and fast deployment cycles.

Your organisation and the stakeholders you need to share data with, could be using any combination of these methods. A technical consultant experienced in interoperability should help map out the best way to bring them together, and clean them, without having to rip and replace any individual solution (unless it is unstable).

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REFRAMING THE ISSUE - IMX

To support each organisation's path towards digital maturity ReStart has developed IMX (Interoperability Matrix) specifically for the UK health and care market. IMX provides a straightforward interoperable tool kit that delivers rapid access to data from a range of existing systems and enables data sharing with any system, across any health and social care environment.

IMX is flexible and scalable, enabling organisations to think big, start small and scale fast. Whether the goal is to integrate all applications and IT systems or add solutions one by one, IMX provides a cost-effective interoperability solution.

IMX's five complementary solutions including an interoperable clinical record (IMX-CR), integration, technical consultancy, support and partner technology – can be customised to support each organisation's digital challenge. Use one, or many, in any combination, to create the interoperability solution required.

ReStart is entirely supplier-agnostic and can integrate unstructured or structured data - IMX never requires the use of specific formats, saving time, resource and budget. We simply provide the right data, at the right time, from existing systems, which means clinicians and admin staff are not forced to adopt new software or new ways of working – they just have rapid access to all the patient data in one place, when they need it.

IMX Interoperability Matrix

THE USE OF OPEN SOURCE, STANDARDS-BASED TECHNOLOGY MEANS THE IMX CLINICAL RECORD IS FULLY INTEROPERABLE WITH ANY OTHER SYSTEM IN THE HEALTH AND CARE MARKET.

IMX-CR Clinical Record

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FUTURE GROWTH

The pace of change throughout health and social care has been accelerated as a result of the Covid-19 pandemic. Collaboration has been achieved on an unprecedented scale and that is now driving organisations at every level to explore opportunities to work together quickly and efficiently to deliver immediate efficiency and better insight into population health.

Building data sharing excellence within a hospital, provides the foundation for wider, community based collaboration.

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ASSESS YOUR DATA SHARING

The speed of change is significant; having provided interoperability services for over 15 years to 70 Trusts ReStart is well placed to enable that change and support organisations across the NHS reap the benefits of effective data sharing and collaboration.

Use our free checklist to assess the level of data sharing within your organisation.

Email your completed checklist to one of our experts and we'll get in touch with you for advice on what to do next.

Click here to download our free checklist

For more information, please contact us to book a consultation with a technology expert.

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