

# INTEGRATED DIGITAL CARE RECORD

## BRADFORD & AIREDALE

### INTRODUCTION

The Bradford & Airedale Integrated Digital Care Record (IDCR) allows care professionals to access citizens' information when and where they need it.

The region has a long history of joining up health and care information, enabled by digital technology, having been one of the first areas to work with the SystemOne integrated record.

SystemOne is a major component of the IDCR but it is part of a wider interoperability landscape and a digital vision which relies on information flowing between systems and organisations, and across boundaries.

### AT A GLANCE

SCALE

M

S = < 5 organisations  
M = 5-10 organisations  
L = 10+ organisations

MATURITY

4

0 – No planned programme for sharing data  
1 – Sharing one data type or planning data sharing  
2 – Sharing two data types (inc. GP) at read only  
3 – Sharing three or more data types at read only  
4 – Sharing three or more data types, with write capability

\*for the purpose of comparison the data types are GP, Acute, Community, Mental Health, Adult Social Care, Child Social Care

### HOW THE INTEGRATED DIGITAL CARE RECORD IS BEING USED

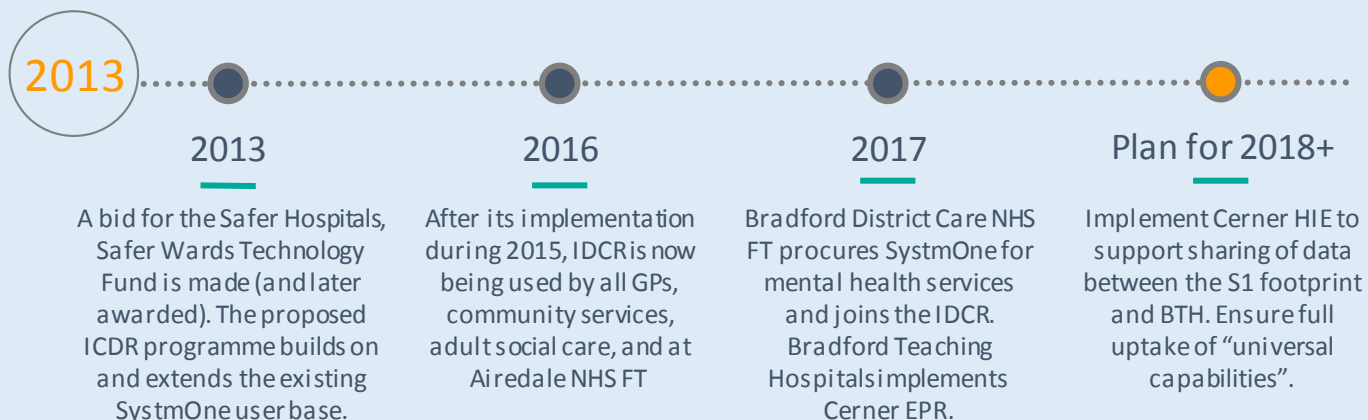
Individual Patient Care	Care Planning & Coordination	Health & Care System Management	Population Health Management	Research
LIVE	LIVE	IN FLIGHT	IN FLIGHT	LIVE



Our digital journey to a fully interoperable electronic health record is at the heart of our planning, and is central to our overarching principle of *People First – Digital First*.



### TIMELINE



**28,000** views per month of the GP record from acute

**85** GP practices contributing to the shared record

Approx. **630k** population

## LOCAL CONTEXT

- The IDCR was developed out of a successful bid for the NHS England Safer Hospital, Safer Wards Technology Fund. The project aimed to deliver a future proofed technology platform which allowed multiple organisations to realise the benefits of an integrated care record.
- SystmOne was chosen as the basis for the IDCR solution due to its widespread use in the area, which reduced the need for additional investment, and the fact that the product's functionality met the requirements of the organisations involved.
- However, despite the prevalence of a single system, the region is clear that its strategy has always been one of interoperability. Bradford Teaching Hospitals NHS Foundation Trust (BTH), for example, chose Cerner Millennium as its electronic patient record, with a view to exchanging data with SystmOne via Cerner's Health Information Exchange (HIE).
- BTH went live with Cerner Millennium in September 2017. Work is ongoing on the HIE component, which is due to be implemented later in 2018. The integration will mean users of Cerner Millennium will see a combined view of data sourced from SystmOne in a tab in the hospital record. Similarly, SystmOne users will be able to see a summary of BTH data in their records.

### FOCUS ON: GETTING THE FOUNDATIONS RIGHT



After the original IDCR programme, which we delivered with investment from the Safer Hospital, Safer Wards Technology Fund, we concentrated our efforts on system optimisation and data quality improvements. The Local Digital Roadmap then allowed us to focus on development and to strategically realign our priorities to exploit new and emerging technologies. The formation of our Digital 2020 Board is helping us take the record to the next stage.

Some of our aims include taking stock of what we've achieved and making sure we're getting the most out of the technology available to us – optimising and ensuring full uptake of the “universal capabilities” for example. We're also looking at staff development to ensure all our staff feel equipped and confident to support our digital aims. In the future we envisage them helping patients with ‘prescribed’ self care technology and apps.

Our vision goes far wider than our immediate partner organisations. We have a significant flow of patients across boundaries and we need to enable information to flow in the same way. Cancer provision works on a regional basis for instance, so restricting our aspirations to the IDCR footprint would not necessarily enable smooth and safe transition; interoperability is undoubtedly the way forward. We are cognisant that we need to further strengthen the foundations we've put in place and move forward confidently to exploit digital opportunities for our population.



**Simon Wilson, Deputy Director of Digital and Technology  
Airedale Wharfedale and Craven CCG, Bradford City CCG and Bradford Districts CCG**

## THE INTEGRATED DIGITAL CARE RECORD SUPPORTS...

### INDIVIDUAL PATIENT CARE

- The majority of the IDCR user base uses SystmOne, including all 85 GP practices, community and mental health services, adult social care teams and Airedale NHS FT. SystmOne is an integrated clinical system, which was designed on the premise of “One Patient One Record”.
- The fact that so many teams contribute to SystmOne makes it an exceptionally rich and clinically valuable resource. Care professionals input their side of the story into the same record (although the information can be viewed and filtered in different ways). This gives a much more comprehensive and accurate insight into a patient’s current care status than would otherwise be achievable with separate records. With access to the bigger picture, care professionals can make decisions with confidence. Patients benefit from a better experience and staff save time because they do not have to chase for information.
- Care professionals add information into the record through a variety of means, including clinical templates, forms and care plans, which are coded in the background. These structured methods of capturing information facilitate data sharing and comparison. Bradford and Airedale teams have spent considerable time developing standard templates.



### CARE PLANNING & COORDINATION

- The richness and level of integration of the SystmOne record, as well as the range of collaborative tools and in-built communication methods that it offers, makes it a powerful resource for care planning and coordination.
- IDCR has enabled a number of innovative shared care initiatives which allow staff from different teams and organisations to work together to deliver coordinated services. Examples include:
  - [Palliative Care](#)
  - [Telemedicine Hub](#)
  - [Integrated District Nursing](#)
  - [E-Consultations](#)
  - [Integrated Health Visiting](#)
  - [Virtual Ward](#)
  - [Respiratory](#)
  - [Bradford’s Healthy Hearts](#)
  - [Nephrology](#)
  - [Bradford Beating Diabetes](#)
- When the HIE component of the BTH Cerner project goes live, there will be further potential to join up care between BTH and the other partner organisations. Hospital users will get a view of information from SystmOne, while GPs will have access to patient management plans, future scheduled investigations, outpatient appointments and blood test results to help them provide continuity of care.



## THE INTEGRATED DIGITAL CARE RECORD SUPPORTS...

### RESEARCH

- The IDCR enables the collection of anonymised data at scale in support of research, such as the pioneering Born in Bradford (BiB) project, via a “black box” solution.
- The Bradford Institute for Health Research, The University of Bradford, and the Digital Health Enterprise Zone are key stakeholders leading Bradford’s health research agenda.
- The prevalence of a single system (i.e. SystmOne) has benefits when it comes to data aggregation because it allows for more seamless data linkages to be made.
- Future plans include extending the research portfolio, and using IDCR data for population health management.



## BORN IN BRADFORD

- Born in Bradford (BiB) is a pioneering longitudinal cohort study tracking the lives of over 30,000 Bradfordians to find what influences the health and wellbeing of families.
- The research falls into three key areas:



### The Born in Bradford Study

This tracks the health and wellbeing of over 13,500 children, and their parents, born between March 2007 and December 2010. Studying children from before birth is a powerful way of understanding the many influences that shape our lives.

### Better Start Bradford Innovation Hub

This part of the BiB research started in 2016. It aims to recruit 5000 families living in selected areas of Bradford to see the impact of early life interventions on the health and wellbeing of mothers and children.

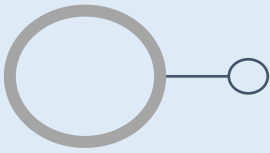
### Catalyst for change

Additional research projects are evaluating and developing new interventions to improve health, for example focusing on reducing childhood obesity, increasing physical activity, improving oral health and mental wellbeing.

### The aims of Born in Bradford are to:

- learn why most families are healthy and happy but some are not
- use findings to help plan ways to improve health and wellbeing for people in Bradford and elsewhere
- help families improve their lives and the lives of their children as they grow from babies to adults
- work with community groups, health professionals and other services so that we can all make Bradford a better and healthier place to grow up for all families

## TECHNICAL SOLUTION



### PEER TO PEER MODEL

- IDCR is based on widespread SystemOne usage in combination with other interoperable clinical systems.
- All organisations are committed to open standards.
- BTH uses Cerner Millennium as its EPR. The HIE component of the solution is being implemented to allow data exchange between Cerner and SystemOne.
- SystemOne is used in a mobile capacity, both online and offline, across the region, supporting flexible and collaborative working arrangements.

### SOLUTION FEATURES

FEATURE	IN USE
Coded data	✓
Free text data	✓
Bi-directional	✓
Real time	✓
Role-based access	✓
Clinical Portal	✓
Analytics	✓
Write access	✓
Notifications	✓
Alerts	✓
Patient Portal	✓

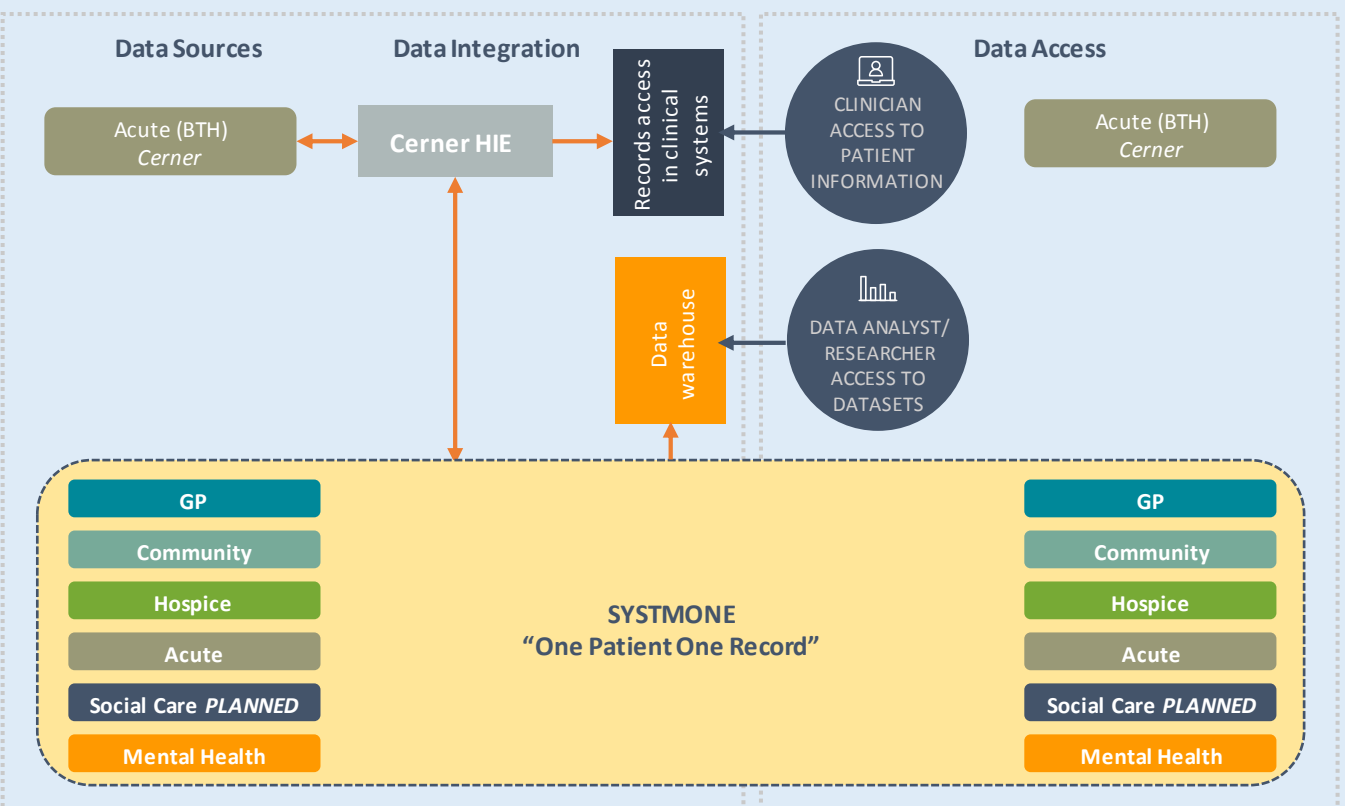
### KEY SYSTEMS IN SCOPE

SITE	TYPE	VIEW	SHARE	IT SYSTEM
Bradford Teaching Hospitals	Acute	Yes	Yes	Cerner/SystemOne
Airedale Foundation Trust	Acute	Yes	Yes	SystemOne
Bradford District Care Trust	Comm	Yes	Yes	SystemOne
Bradford District Care Trust	MH	Yes	Yes	SystemOne
Bradford Council	LA	Planned	Planned	SystemOne
85 GP Practices (3 CCGs)	GP	Yes	Yes	SystemOne
Marie Curie Hospice, Bradford	Pall	Yes	Yes	SystemOne
Manorlands Hospice (Sue Ryder)	Pall	Yes	Yes	SystemOne

### OPEN STANDARDS

STATUS	SNOMED	Read	dm+d	HTML	ITK	HL7	HL7 FHIR
IN USE	✓	✓	✓	✓	✓	✓	
NOT IN USE							
PLANNED							✓

## HIGH LEVEL TECHNICAL ARCHITECTURE



## IMPLEMENTATION

Bradford & Airedale submitted a bid for the NHS England Safer Hospitals, Safer Wards Technology Fund in 2013. The successful bid for £3.3m (which was match funded) enabled the partner organisations to advance their vision of a single integrated record.

The way in which the IDCR has evolved, however, has largely been organic. Innovation has been driven by individuals and teams recognising the potential process redesign.

As the IDCR enters the next phase of its development, the focus is on optimisation and ensuring that successful and innovative uses of the solution are replicated across the region and beyond.

### TELEHEALTH (Airedale Digital Care Hub)

The [Airedale Digital Care Hub](#) is a pioneering service developed by Airedale NHS FT. It provides round-the-clock care support to 500 care homes, palliative patients, and prisoners residing in Prisons and Youth Offender Institutions (YOI) across the country.

The Hub acts as single point of access for expert clinical and social assessment, diagnosis, advice and support and is staffed by an experienced multidisciplinary team comprising nurses, therapists and paramedics.

Some of its services are delivered via a secure two-way video link, which offers real advantages for complex patients suffering from multiple comorbidities who prefer to be seen in their own environment.

The Hub is enabled to a large extent by the IDCR, which provides clinicians with a comprehensive insight into patients' current and historic care, including medication, which leads to more informed decision making.

### FUTURE AMBITIONS

The next phase of the Integrated Digital Care Record programme will focus on:

- Implementation of the HIE solution to integrate Cerner and SystemOne
- Exploiting and expanding e-discharge
- Expanding e-consultations
- End to end e-ordering and results
- Remote video consultation
- Nursing home record access
- Real time data analytics
- Full national systems utilisation
- Open APIs from other care settings
- Patient portal APIs
- Self care data exchange

## GOVERNANCE

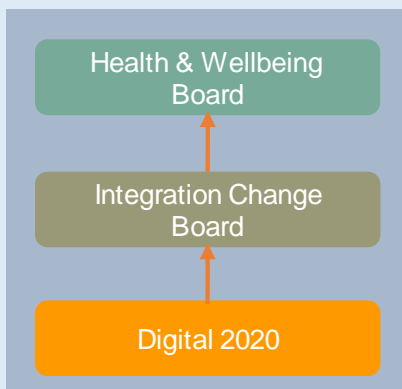
The IDCR Implementation Board was set up following the successful Technology Fund bid in 2013. The Board ensured delivery against the plan for which funding was awarded.

The IDCR Implementation Board has subsequently transitioned to the Digital 2020 Board which oversees multiple work streams, including IDCR, Data Sharing and IG, Digital Innovation, and Business Intelligence.

The Digital 2020 Board has high clinical and academic involvement. Current members include researchers at The University of Bradford and Digital Health Enterprise Zone (DHEZ), and the CCIOs from each of the partner organisations. It is chaired by the Chief Executive of Airedale NHS FT, the Head of Informatics at Bradford Teach Hospital is the Exec Sponsor CCIOs. IT delivery partners are soon to play an active part too.



There was a conscious effort to make the Digital 2020 Board diverse and comprehensive, with strong clinical engagement and leadership, and representation from academic colleagues and IT delivery partners.



The Digital 2020 Board reports to the Bradford-wide Integration Change Board, chaired by the head of the Council which in turn reports to the Health & Wellbeing Board, ensuring all partners and patient representative groups have a view of any decisions made.

## CONSENT

IDCR currently uses the SystemOne consent model which requires explicit consent at the point of care in order to access shared information. A break-glass option is available and the system has a full access audit trail.

The model is currently being reviewed in the light of GDPR and other developments in the area to ensure it offers safe and appropriate access for those who need it.

Consent for secondary uses is currently administered by BTH at the point of research approval.

### KNOWLEDGE SHARING

- Once the decision was made for BTH to adopt the Cerner solution, proactive approaches were made to other organisations using Cerner products. This led to a joint decision with Calderdale & Huddersfield NHS FT to implement one instance of Cerner. Supported by the Information Commissioner's Office, this approach means clinicians have access to records for patients crossing boundaries.
- The IDCR team has developed a number of reciprocal relationships with other local shared care record areas in order to share knowledge, reduce costs and increase efficiency across the NHS.

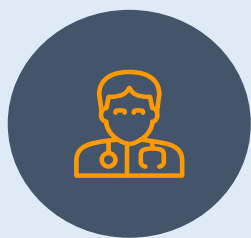
## SUCCESS FACTORS



### STRATEGY

#### FUNCTIONALLY RICH INTEROPERABLE SOLUTION

- There were a number of reasons for choosing SystemOne as the basis for the IDCR but its wealth of functionality was a significant factor.
- The product met individual organisations' requirements, while its information sharing capability and collaborative tools supported integrated working approaches from the outset, allowing teams to design and adopt new and innovative processes.
- SystemOne could be rolled out without the need for major new IT investment or solution development, which meant the focus could be on implementation and adoption.
- The aim was never to preclude organisations from procuring other systems, but to promote interoperability and the use of standards in order to maintain flexibility and choice.



### CLINICAL COLLABORATION

#### COLLABORATIVE WORKING

- "Clinicians working together well" is cited as critical to the success of the IDCR programme.
- Collaborative working relationships have developed organically, built on a common desire to drive the IDCR forward and get the most out of what it offers.
- Clinicians across organisations were involved in the development of the IDCR and have worked tirelessly to make it a success.
- Clinicians often had the same concerns which needed to be satisfied:
  - Information to be shared securely
  - Benefits to the patient
  - Sharing with the right teams, correctly & appropriately



### INFRASTRUCTURE

#### SHARED SERVICES & INFRASTRUCTURE

- The IDCR project has enabled the region to develop its IT resilience.
- The IT teams across the partner organisations worked collaboratively to enable the sharing of services and networks.
- Sharing the IT infrastructure has enabled clinicians to access patient records from any part of the estate across Bradford & Airedale. This has especially been of benefit to district nurses and clinicians involved in palliative care.



## LESSONS LEARNED

### INFORMATION GOVERNANCE

**Challenge:** Managing coal-face operational requirements ensuring compliance with information governance boundaries during periods of significant change, including the enablement of the new Enhanced Data Sharing functionality in SystmOne and the effective 'go-live' of GDPR on 25th May 2018. Assessing the impact of changes across a diverse user base in multiple organisations requires a significant amount of collaboration and effort often within very tight timescales.

**Lessons Learned:** To ensure safe and robust delivery, you must have appropriate clinical and operational expertise working alongside you at all times, demonstrating confidence and consistency and keeping it simple wherever possible. It is important to determine what is appropriate and proportionate bearing in mind the breadth of the work that needs to be carried out in the context of the current ways of working, and manage expectations accordingly. Professional resources with the ability to support the IG process are vital.

### DEALING WITH DUPLICATION

**Challenge:** Clinicians working across acute and community teams, such as dieticians and therapists employed by BTH but providing services in the community, currently have to use both Cerner and SystmOne leading to some duplication and a less satisfactory user experience.

**Lesson Learned:** The digital team is currently working with the clinicians in this situation to work up a solution. Single-tap access to systems has helped improve the user experience while HIE rollout will support an easier transition between systems.

### DAY-TO-DAY VS ROADMAP

**Challenge:** During times of significant organisational change and ongoing operational pressures, attention is often diverted from Digital 2020 work to fixing the issues of the day. There is a danger that momentum is lost and the focus slips away from the more challenging and resource intensive elements that are to the right of the roadmap.

**Lessons Learned:** Appropriate senior Programme level resourcing is critical to keep things moving forward. Having a clearly defined plan and aligned roadmap helps secure necessary investment and aids engagement for successful delivery. A Programme function is important in maintaining quality and visibility of Risks and Issues at board level. Operational fire-fighting will always win-out so having adequate resources to support you on the journey is a must.

### FURTHER INFORMATION

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INFORMATION CORRECT AS OF 27/04/2018

LINKS

Born in Bradford  
 IDCR Case Study  
 Bradford District & Craven LDR

Produced in collaboration with [NECS](#) and [Accenture](#)