Information Improvement Roadmap

Cwm Taf Morgannwg University Health Board

November 2022

Executive summary

Good-quality data is fundamental to providing the right care

Better clinical data delivers better patient outcomes – enabling improvements in the efficiency and effectiveness of care, improving future clinical decisions and ultimately improving patient outcomes.

Grant Thornton have been supporting Cwm Taf Morgannwg University Health Board to review their elective capacity and identify areas for potential improvement. Throughout the work we encountered fundamental issues with clinical data which made it difficult to draw consistent, meaningful conclusions. These issues result in a lack of confidence, ownership and understanding of data by clinical and operational teams.

Based on our experience of working with NHS organisations we have outlined the expectations for clinical leadership to the production and use of information, and the benefits this will provide to the organisation. As our previous work demonstrated, the use of clinical data by services identifies issues and leads to improved ownership of the data produced and reported.

We have developed a high-level road map designed to move the organisation to a point where clinical teams are routinely and frequently producing and using clinical data that they have faith in. This is outlined at a high-level below and described in more detail within this document.

The health board has a detailed digital strategy that includes a focus on increased analytics to support clinical decision making. However, there are a number of constraints that are impacting on progress in this area, particularly related to the resources and infrastructure available to support improvement, and the limitations of national systems and historic national policy.

Clinical and corporate staff working together to complete the practical tasks outlined in the roadmap will ultimately lead to the behaviours exhibited by high-performing organisations when using data to improve the quality of services.

Short term 0-6 months	Medium term 6-18 months	Long term 18-36 months
• Focus on the three pathways covered by our previous work • Build on the engagement with clinical and operational staff already established • Work collaboratively to address data quality issues identified through our previous work	• Use the learning form the short-term activities to scale- up activities to divisional level • Ensure improvement activities are clinically-led and align to clinical delivery across divisions and sites • Provide support and training to improve use of information by service and operational staff	• Build on the foundations from the first two phases to establish the board as an intelligence-led organisation • Develop a single version of the truth reporting suite for use by clinical teams - linking performance, activity, outcome, finance and workforce data. • Integrate the use of good quality information into an organisation wide approach to quality improvement • Use advanced analytics to improve patient care, reduce clinical variation and address health inequalities • Establish a clinically-led assurance framework for all clinical data across the health board

Introduction

Background

Our work completed to-date and purpose of this document

Background to the work

Grant Thornton have been supporting Cwm Taf Morgannwg University Health Board to review their elective capacity and identify areas for potential improvement. This support has comprised:

- A review of demand and capacity was undertaken within Orthopedics, ENT, Gynecology, General surgery and Urology.
- This was followed by a review of day case opportunity was undertaken focused on:
  - Urology – cystoscopy
  - General surgery – cholecystectomy
  - Gynaecology – hysterectomy

As part of the work we set up a clinical working group with individuals and teams who already had ideas for change and who will help gain momentum locally. We used a series of task and finish groups to gather a shared understanding of the problems to be solved which is essential at the beginning of any change initiative.

We identified short term changes that could be simply implemented by the teams on the ground as quality improvement initiatives and have identified larger scale Health Board programmes of change to improve the delivery of daycase activity. This included identifying areas where services could review and improve their data.

Appendix A outlines the approach taken to pathway analysis and some of the issues encountered.

Purpose of this document

This document is designed to provide a roadmap to **establishing clinical leadership to the production and use of accurate information**.

Throughout the work we encountered fundamental issues with clinical data which made it difficult to draw consistent, meaningful conclusions and to undertake the activities agreed as originally requested.

As part of our support, we agreed to develop recommendations for improvement to support the health board to improve its clinical information. To do this we have:

- Made specific recommendations to address the issues identified through our day case pathway reviews, in conjunction with clinical and operational staff – these are included in appendix 2
- Used our experience of working with NHS organisations to outline expectations for clinical ownership and use of information, and the support required to facilitate this
- Developed a high-level roadmap for improvement in data quality and the use of data by services, with clear deliverables over short, medium and long-term. The short term aspects will focus on the three pathways, the medium term focuses on scaling learning across other services, and the long-term will look at the strategic implications for the organisation as a whole.

We will present the Roadmap to key executive and clinical stakeholders, and use feedback from these session to provide recommendations to support the Board on its on aspiration to become a data-driven organisation.

Current position

Information challenges encountered during our work

We encountered multiple data challenges when aligning demand and capacity data and when seeking to link and analyse data across pathways.

These challenges make it very difficult to establish an accurate view on pathway effectiveness and will impact on operational decision making.

If these issues of data consistency, completeness and accuracy persist across all services they will **impact on the Health Board's ability** to:

- Establish a reliable and consistent view of pathway delivery and clinical variation across the organisation
- Develop robust plans to standardise care delivery and clinical pathways across the organisation
- Identify potential improvement opportunities of productivity, quality and costs
- Understand patient need, risk and complexity and plan services to meet these
- Undertake the day-to-day management of services in an efficient and consistent manner

Additionally, these issues result in a **lack of confidence, ownership and understanding of data** by clinical and operational teams. This lack of transparency will lead to a disconnect between operational teams and the health board's senior management team

Issues with data included:

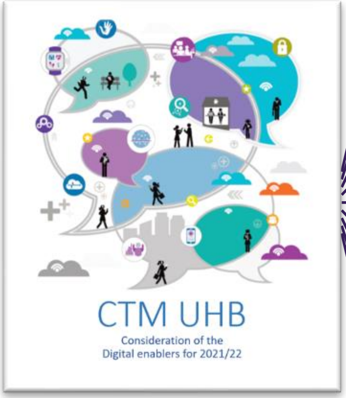
- **Incomplete activity and waiting list coding** – significant numbers of records with diagnosis or procedure coding were incomplete or uncoded
- **Daycase recording** – some patients who go home on the same day are not being recorded as daycase, either because they were not planned as such or because data recording is incorrect
- **Recording of outpatient procedures** – outpatient procedures are identified within activity data, but not included in capacity templates
- **Allocation of outpatient capacity to new and follow up** – new to follow up ratios in the capacity data for some specialties do not reflect the activity actually delivered
- **Inconsistent approach to capacity data reporting across ILGs** – the data is captured and reported in different formats in different localities
- **Issues with naming conventions** – specialty categorisations varied across the activity and waiting list datasets received, and recording of consultant and site sometimes use free text fields
- **Availability of risk and complexity data** – ASA scores and other risk and complexity measures are not readily available from central, even if they are recorded in clinical systems

The Board’s strategy for data and digital

Using digital enablers to build healthy communities together

Objectives in the digital strategy

- Supporting our population to increasingly manage their health and wellbeing, maintaining their access to care services, support networks, to clinicians and other care teams wherever they are & whatever their circumstance
- Supporting carers and clinicians to be able to continue to provide care effectively and safely, in a joined up way, where they have access to the clinical records and notes they need, and they can rely on the hardware (such as PCs), broadband connectivity and the systems wherever they are and whenever they need them
- To work with all users to provide them with digital tools, knowledge and training for the environments we are operating in, whilst taking the opportunity to address some of the health inequalities prevalent in our community and embed digital as a way of working – done in a way that we learn, and continually improve the productivity and satisfaction of working in a digital way and in a covid environment
- Support quick proactive and effective decision making – providing patients and protection teams with rapid access to triage and information
- Supporting users – patients, clinicians, members of the protection and surveillance community and those redesigning systems in being proactive or at least quick to react to the changing situation and environment, empowering and providing with the intelligence to make better decisions in respect of achieving these strategic objectives and enact them



CTM UHB

Consideration of the
Digital enablers for 2021/22

Information improvement solutions in the strategy

- Maximise the opportunity to digitise data by reducing unstructured manual data entry
- Provide real-time access to intelligent clinical information to service users, operational and clinical professionals via accessible digital tools
- Making best use of clinical systems by optimising their configuration to make data entry easy and standardised by reducing variation
- Provide the local digital tools and data required to support effective care
- A standards based single view of information across services and sites with high availability
- Empowering staff and clinicians to integrate the use of data into their practice through protected time, targeted support and training
- Increase the digital literacy and data awareness of the workforce through the provision of training and supporting the best use of data
- Exploiting technology and innovation to create information efficiencies and improve user experience alongside improvements in data quality
- Services are supported by using analytical data and insight collaboratively for decision making in transformation and clinical delivery

Constraints

Issues that will affect the Board’s ability to implement the road map

National

- National approaches and policies have historically not been aligned with the objectives of the organisation’s digital strategy, and has limited its scope
- National systems are ‘locked down’ and in places limit access to data which limits the ability to deliver this roadmap – an open architecture is required to balance local and national priorities
- The revised National Clinical Framework and new National Data Resource strategy outline updated national aspirations for data, but current national arrangements does not yet support these aspirations

Infrastructure

- To meet national requirements the health board needs more resilient information management services and fit-for-purpose data visualisation platforms.
- To deliver a responsive service the Health Board requires a resilient infrastructure and data architecture, using consistent technical data standards
- Without the above, there is limited opportunity to exploit complementary technologies such as AI and automation

Wider challenges that will impact on information improvement

Resource

- Challenges in clinical engagement are compounded by increasing activity and system pressures, and the time data entry currently takes via eForms
- Training to support digital and analytical skills is resource intensive exacerbated by geography and multiple care settings
- There is limited analytical and training resources available, with difficulties in attracting analytical and digital talent
- Competing pressures for resource and prioritisation of information improvement

Organisational

- Lack of clinical ownership of information hampers discussions around transformation and organisational performance
- Organisational restructure into divisions will result in changes to governance structures, which will further impact ownership of reporting outputs by service leads
- Different hospitals are using differing systems and practices
- A move to consistent pathways across sites will result in further changes to clinical practice and data capture

Using data for improvement

The importance of clinical information

Good quality information to enable evidence-based decisions

Good-quality data is fundamental to providing the right care to the right patient in the right place. Patient-level information is integral to the decisions that need to be made across multiple services, pathways and organisations in order to manage current services, reducing in unwarranted variation, and determining the future models of care

The Welsh health service is structured to function with a **collaborative, integrated approach** to designing, planning and delivering health services across local areas. Increased collaboration between sectors and settings will create more joined up patient pathways, supported by digital technology.

Information needs to describe the whole patient pathway which means the data and methodologies for capturing, managing and reporting information must be **consistent and comparable** across the settings and services. The reliability of data in non-inpatient settings such as community services is just as important as inpatient data.

To manage and improve the quality of care**,** clinical and operational staff need access to high-quality data that describes the needs of the patients and the treatments received. **Better clinical information enables more effective and efficient care**, improving the quality-of-care plans and streamlining care through a clearer understanding of the patients treated.

Accurate information will ensure that **decisions made at a senior level** within hospitals, and across the health board, can be **made with confidence** in the assumptions being drawn from the board's clinical information.

Better clinical data delivers better patient outcomes – enabling improvements in the efficiency and effectiveness of care, improving future clinical decisions and ultimately improving patient outcomes.

From our experience of supporting the improvement of clinical data across the NHS, processes need to function effectively across all areas of the data pathway to produce good quality information that can be used by service to improve care.

Inputs – the way data is entered into systems by clinical, operational and administrative staff

Systems – how clinical systems are configured to support data capture and output

Data management – the way data is extracted, stored and manipulated within the organisation

Reporting – the rules defining how information is reported locally and nationally

Service engagement – service-level understanding, ownership and use of clinical information

Governance – the organisational controls and policies in place to ensure its information accurately reflects the care delivered

Establishing a data driven culture

Learning from our work with other organisations

The importance of a data-driven culture in healthcare is becoming paramount as organisations face unprecedented challenges in delivering complex care to an ageing population in an economically challenged environment.

Decisions relating to care delivery, planning and investment are all underpinned by quality data. Likewise operational and clinical performance can only be improved by utilising good data to highlight opportunities and areas of need.

All organisations will have limited potential if they aren't supported by a culture of data and analytics. To instil a culture ownership it is important to support clinicians and managers to be good consumers of data-driven insights. Collaboration between the analytical information could also be improved to ensure data-driven innovation and ownership of performance data address data needs of end users – whether they be clinicians, senior managers.

- **focus on quality improvement rather than simply delivering productivity performance target**
- understanding of the data its accuracy and deficiencies
- **continual engagement with clinical and operational teams**, engage individually alongside team engagement
- proactive in the use of data to support clinical and operational transformation
- Create an iterative and **proactive feedback loop** for clinicians and operational mangers

The National Clinical Framework outlines clear aspirations to establish local and national learning health systems that will drive development of NHS clinical services. **The activities outlined in this roadmap will enable the health board to meet the goals of the framework**.

Clinical and operational ownership of data

Supporting clinical and operational staff to make better use of data

Using data for improvement

	Behaviours	Impact
Leadership	When boards and clinical leaders understand the importance of data quality and their role in data governance, the management information in an organisation improves.	This leads to improved decision-making, delivering increased value and benefit for the patients served.
Data Accessibility	Enabling data to be contemporaneous and accessible improves the organisational appetite for engaging in performance information, and its use in underpinning change and improvement.	The value of data and its outputs improves as it becomes readily available, creating greater investment and appetite for information. This leads to evidence based decisions and improved structured approaches to quality and performance.
Data Literacy	Improving organisational data literacy by facilitating a digital and data culture delivering the required skills allows for the best utilisation of data.	Ensures staff are equipped with the ability to make decisions based upon data insights, whilst improving the reporting culture. An increased knowledge base collectively informs and enriches the data and digital strategy
Data Quality	Creating a culture of good quality, timely and accurate data. Placing data quality at the forefront of reporting culture so that it is disseminated and owned throughout the organisation	Improvement in the quality of data impacting patient care, organisational reputation and effecting the evidence that quantifies quality, performance and supports decision making
Training & support	Provide a comprehensive training and support offer to staff ensuring effective use of clinical systems. Tailored to functional role with an understanding of outputs and reporting dependencies within pathways and systems.	This creates standards and an understanding of the impact of inconsistent or poor use of clinical systems. Tailoring training and support creates a culture of data ownership and greater awareness of downstream impacts of poor practice.
Governance	Health leaders should ensure that there are robust governance processes in place within organisations and across Health boards to support the provision and use of accurate information	The cascading of consistent information through an established governance structure creates transparency and ownership of both challenges and opportunities throughout the organisation.

How services can use data for improvement

Going beyond business-as-usual to improve quality

Data quality improves when it is used for decision-making. Our experience of working with health organisations has shown that when information is used by clinical teams to inform their management of services, the quality of the data used improves.

Services should routinely used information and reporting as part of their **day-to-day business**. Structured activity reports, performance KPIs and capacity information will underpin all business meetings, and representatives from corporate services such as HR or finance should routinely attend weekly meetings with services.

Alongside the business-as-usual use of information, high performing organisations use data in a structured and directive manner to undertake a **collective, clinically driven process of improving quality**, where all aspects of service delivery can be considered and their inter-play fully understood. This would include:

- establishing a clear understanding of the current state, based on accurate and relevant information established through engagement between clinical, operational and corporate staff
- ensuring the use of adequate additional information to contextualise performance, such as benchmarking (both internal and external), best practice and clinical developments
- defining a set of improvement aims and expected outcomes, supported by a detailed set of metrics
- producing evidence-based plans for service delivery in line with the improvement aims, using the demand & capacity tools developed for the Trust
- monitoring and measuring improvement and change using these metrics, and then reviewing aims and performance at key milestones to extend, reset or change improvement aims.

This effective use of information will support the implementation of any quality improvement methodology. The ultimate aim for any organisation should be to **create a clinically-led collaborative learning environment** at service and divisional level, which results in ongoing quality improvement. This is particularly important when working across multiple hospitals and settings.

The fundamentals of good quality information

Getting the basics right to support better decision making

The National Data Resource Strategy outlines a clear vision for the use of data and expectations for how data is produced, managed and reported.

Our work with the health board demonstrates that more work is required to get the fundamentals of data quality and usage right before it can maximise the benefit of its information.

Data completeness

- Missing or incomplete data challenges the integrity of reporting
- Clinical activities and pathways should be aligned to data capture to ensure comprehensive datasets
- Clinicians need to describe the patients and the care delivered accurately and completely within the clinical systems

Data standardisation

- Creating data standards, with mandated fields defined entry options
- Rationalising options and variables where appropriate through the use of drop down options and pre configured fields
- Standardise data entry across geographies and care settings where appropriate

Structured data

- Minimise free text options to create a structured data architecture
- Removal of user options, pick lists limited to agreed codified fields
- Where scanning hard copy information ensure the use of reportable metadata is attributed

Digital data capture

- Where possible data and information to be captured via core clinical systems
- Clinical systems configured and aligned to service delivery and pathways
- Automatic checks should be built in at key points of the data pathway, including when data is entered, extracted from systems and loaded into the data warehouse

Reporting

- Dynamic and accessible reporting with contemporaneous data
- Coproduced and co-owned reporting, satisfying clinical and operational requirements alongside core statutory needs
- Training and engagement in providing analytical support into insights and development of reports and reporting tools

Feedback loop

- An embedded information improvement cycle that improves data quality.
- Use reporting tools to connect those that create and enter data with the output.
- Highlight performance deficiencies in data quality and data capture benchmarked against internal peers

A road-map for information improvement

A road-map for the short, medium and long term

Build on the engagement from our work and scale-up improvement

The following pages outline a high-level road map designed to move the organisation to a point where clinical teams are routinely and frequently producing and using clinical data that they have faith in. This will enable the service and operational teams to move beyond business-as-usual to focusing on improving quality.

As our previous work demonstrated, the **use of clinical data by services identifies issues and leads to improved engagement and ownership** of the data produced and reported. As such, the roadmap describes practical tasks for clinical and corporate staff to undertake together to review and improve information reporting. Ultimately the road map leads to the activities that high-performing organisations undertake to use clinical information to improve the quality of services.

The roadmap will maximise the benefit of the engagement already established by our work, and will use the learning from this engagement to support moving to a structured approach to clinical engagement and ownership at divisional level.

The roadmap is split across short, medium and long term actions covering a three year period, as summarised in the graphic to the right.

0-6 months

Short term

- Focus on the three pathways covered by our previous work
- Build on the engagement with clinical and operational staff already established
- Address data quality issues identified through our previous work
- Establish reporting and feedback loop to support ongoing improvement

6-18 months

Medium term

- Use the learning form the short-term activities to scale-up activities to divisional level
- Ensure improvement activities are clinically-led and align to clinical delivery across divisions and sites
- Provide support and training to improve use of information by service and operational staff
- Ensure adequate resources are available to support long-term improvement aims

18-36 month

Long term

- Build on the foundations from the first two phases to establish the board as an intelligence-led organisation
- Integrate the use of good quality information into an organisation wide approach to quality improvement
- Use advanced analytics to improve patient care, reduce clinical variation and address health inequalities

Road map: short term (0-6 months)

Delivering immediate improvement in identified pathways

Area	Clinical and service activities	Corporate support activities
Roles, responsibilities and resources	• Agree roles and responsibilities for improvement across cystoscopy, cholecystectomy and hysterectomy pathways to address issues outlined in appendix B, using task and finish group membership to maintain momentum • Ensure senior clinical ownership and input into of data improvement activities • Ensure service and operational staff understand data definitions and reporting requirements • Agree a structured approach to engaging corporate staff with service staff, outlined in appendix C	• Establish clear roles and responsibilities to support activities across BI, system config, clinical coding and other relevant areas • Review BI and IT resources available to support activities outlined in this document and the expectations in the National Data Resource strategy to ensure adequate resources are available, including the data infrastructure necessary to deliver a responsive service
Coding completeness	• Undertake review of targeted sample of incomplete coded activity and waiting lists to understand drivers • Work with administrative staff to ensure waiting list coding completed effectively • Engage with coding and BI staff to ensure adequate information available to support coding • Review completeness of coding and TCI list on a weekly basis	• Align current clinical system data entry points to clinical pathway, identifying recording points aligned to staff groups • Provide reporting capabilities at point of data entry to evaluate current data quality, completeness and highlight current gaps. • Provide and embed timely, dynamic reporting to quantify improvement in coding completeness.
Capacity information	• Ensure alignment between reported activity and capacity planning • Establish single approach to capacity planning across sites • Identify outpatient procedure slots, and ensure first and follow up slots are plan as used • Review capacity templates against reported activity once work completed on a monthly basis	• Provide prospective capacity information to teams consistently across sites • Develop monthly reconciliation reports to support improved alignment between clinical activity and capacity information • Establish a consistent approach to clinic template management with a centralised level of grip where appropriate.
Additional clinical information	• Work with central staff to support improved use of additional clinical information (eg ASA scores) within central information • Improve the identification of pre-op assessment activity within clinical data • Improve the identification of cystoscopies in the data • Reduce use of free text fields by having clear definitions of how different types of activities should be recorded, which should be consistent to all hospital sites, localities and specialties	• Work with service staff to improve the clinical relevance of activity data recorded • Ensure consistent configuration of clinical systems across all sites aligned to individual pathway – where possible ensure this data is available in central data warehouse • Continue to develop digital solutions to extracting clinical information from central systems – engage clinical staff to ensure process is as effective as possible • Create digital alternatives to manually captured data fields
Reporting and feedback loop	• Review the reports and information available to services to support service management, as outlined in appendix C • Support central staff to update report to meet requirements • Use reports routinely in service management meetings • Establish and formalise feedback loop to BI and other corporate teams	• Identify and map existing reporting structures for identified pathways to establish reporting baseline • Engage with services and update reports based on feedback received • Routine analytical attendance at service management meetings and clinical forums to support the use of reports and ensure their accuracy

Road map: medium term (6-18 months)

Scale-up short term improvements to divisional level

Area	Clinical and service activities	Corporate support activities
Capture learning from short term activities	• Review data improvement achieved across cystoscopy, cholecystectomy and hysterectomy pathways • Identify learning that can be applied across divisions and sites • Develop programme of improvement based on learning to be deployed at divisional level • Establish clinical champions based on the successes of the first phase of work	• Review learning from first phase to understand implications on central resources • Define and implement SOPs and approaches for improved data capture based on learning from phase 1 and as outlined in appendix C • Develop technical work programme to support divisional ownership of information improvement roadmap
Programme approach to improving information and its use	• Implement a structured process of service engagement across each division that establishes clinical ownership of data capture and reporting at a service level in line with appendix C • Monitor progress through a centralised, clinically led programme board – report progress to a board committee and measure against the expectations of the National Clinical Framework • Integrate monitoring of clinical data quality and use of reports into divisional performance management meetings	• Agree adequate resources to support the proposed programme od service engagement across each division • Establish DQ forum structure with links into existing governance structures • Establish scalable reporting structure to quantify improvement across agreed metrics including completeness and general data quality. • Create mechanism for feedback of data into existing service forums
Clinical alignment and data consistency	• Ensure the arrangements for moving to care streams at the health board have clearly defined digital and informatics strands that focus on the consistency of clinical information • Support central staff to reduce variation in data capture process and understand the implications of any changes to care delivery • Routinely review monitoring and reporting to ensure data capturing an reporting aligns to the work harmonising care delivery	• Ensure senior information and digital engagement is available to inform the review of care streams. • Establish data and information baselines for new structures to enable the need for managing improvement in data capture. • Enable reporting to measure the variation between different services and stage posts within service.
Data literacy	• Provide training to operational and clinical staff to improve data literacy skills • Use structured programme approach to support operational staff to improve use and understanding of reporting. • Identify Clinical and service engagement forums to embed reporting information into their agendas.	• Provide support and a training needs analysis (TNA) where gaps in data literacy are highlighted by developing data quality reporting. • Supporting a programme of peer support and champion/super user networks to engender best practice • Support for clinical teams to develop knowledge base for data insights
Policies and strategies	• Ensure senior clinical ownership and leadership to all data and informatics strategies • Include responsibilities for the production and use of information in all service and divisional leadership roles • Provide clinical leadership to discussion with national organisations to address constraints caused by national policy • Review resource implications of long term strategies on service and operational staff	• Develop and implement a revised data quality policy and a use of information policy to inform the long term aspirations in this road map aligned with the NDR expectations • Ensure digital strategies for the health board will address the issues identified • Engage with national organisations to agree timescales to address constraints caused by national systems • Review resource implications of long term strategies on central and corporate staff

Road map: long term (18-36 months)

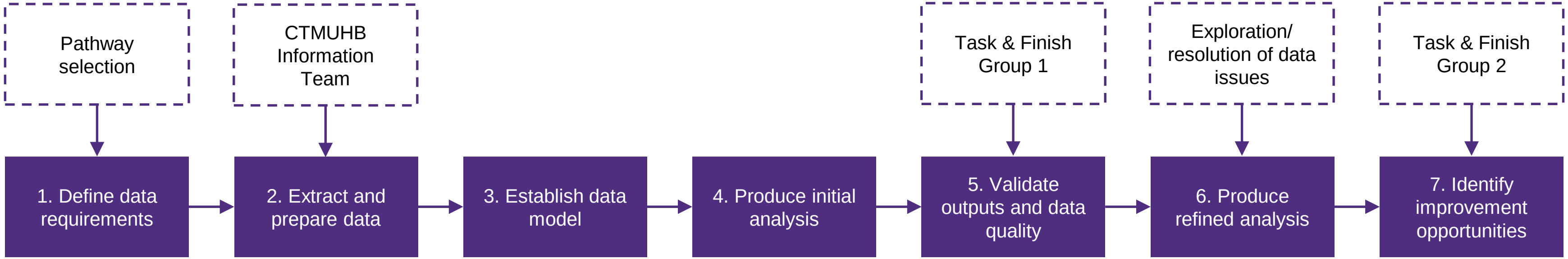
Building on success to become an information-led organisation

Area	Clinical and service activities	Corporate support activities
Establish a board wide approach to use of information	• Formalises the approaches established in the previous two phases as business as usual, aligned with the National Clinical Framework • Ensure clinical ownership of the approach across all divisions and sites • Mandate use of data in business cases proposals and service performance management • Defined use in productivity metrics and improvement planning linked to all job planning and appraisals	• Develop an executive and wider clinical leadership group to integrate and normalise best practice use of data • Outline expectations of executive corporate staff when working with services • Develop a performance framework to be agreed with divisions based on agreed metrics and data sources • Ensure resources are available and aligned with activities agreed
Integrated clinical reporting suite	• Work with central teams to develop the content and user interface for a, integrated reporting clinical reporting suite • Align board reporting through clinical and operational structures down to granular team level with a consistent hierarchical reporting structure. • Ensure reporting supports clinical priorities, so that services use the reporting to support business as usual	• Develop a single version of the truth reporting suite for use by clinical teams - linking performance, activity, outcome, finance and workforce data. • Enable and facilitate the standardisation of reporting across sites, systems and corporate domains • Ensure the data infrastructure and reporting platforms are fit for purpose and support clinical requirements
Align with quality improvement	• Align information improvement with the health board's approach to quality improvement • Establish combined clinical leadership to the use of QI data for plans informing quality improvement and service design • Include the effective use of information in the quality improvement training materials • Develop case studies for the use of information to develop, implement and monitor quality improvement	• Provide dedicated QI analytical support, as part of the board's wider BI team, to provide advance analytics to support quality improvement • Develop bespoke QI data reports to support service improvement, and produce routine monitoring of measures of quality and to respond to QI work • Ensure training is available to support Staff are to improve the quality of services through the use of data and analytics alongside evidence based QI techniques
Population health and clinical outcomes	• Ensure data production and reporting provides a comprehensive understanding of the health needs of the population served • Use improved clinical data to underpin collaboration across health and social care • Develop formal board plans to address population health needs, and address health inequalities across the health board	• Provide dedicated population health analytical support, as part of the board's wider BI team, to provide advance analytics to support population health management • Support the collection of accurate and complete data on need, activity, outcomes of care and resource use • Develop effective data sharing protocols with other agencies where appropriate
Clinical data assurance framework	• Establish a clinically-led assurance framework for all clinical data across the health board • Support record level reviews across all data sources to ensure data produced accurately reflects the care delivered • Report the outcomes of the assurance framework to a board committee as part of the health boar's data quality policy	• Establish a dedicated data quality team that audits patient level data • Provide insight and reporting tools aligned to assurance framework objectives. • Create reporting dashboards or similar tools to monitor levels of assurance around internal and external data - ensuring all DQ objectives are met

Appendices

Appendix A

Our approach – establishing the pathway data


Pathway selection

CTMUHB Information Team

Task & Finish Group 1

Exploration/ resolution of data issues

Task & Finish Group 2

1. Define data requirements

2. Extract and prepare data

3. Establish data model

4. Produce initial analysis

5. Validate outputs and data quality

6. Produce refined analysis

7. Identify improvement opportunities

The key benefits of this approach are:

- It has established a methodology for identifying and extracting pathway related data from a range of separate datasets and linking and consolidating this within a single data model, thereby enabling an analysis of all hospital activity along a patient's pathway.
- The process has been developed in conjunction with CTMUHB's BI team and can be taken forward, refined and applied to other pathways (we are handing over relevant tools, materials and documentation).
- Through increasing the level of clinical and operational engagement with the data, it has highlighted many areas for improving the quality, understanding and use of the Health Board's data – these are being brought together in a separate report containing a road map for improving use of data for improvement in CTMUHB.

Specific data challenge encountered during the work include

- **Availability of risk and complexity data** – ASA scores and other risk and complexity measures are not readily available from central systems, even if they are recorded in clinical datasets
- **Cystoscopy recording** – cystoscopies are hard to isolate within central datasets when carried out in outpatients, and practice appears to vary between sites regarding whether the procedure is recorded as a day case or outpatient procedure
- **Pre-op assessment data** – we were only provided with data covering two sites, and from discussions with the information team it appears pre-op data was not always easy to pull through into pathway data
- **Day case recording** – some patients who go home on the same day are not being recorded as day case, either because they were not planned as such or because data recording is incorrect

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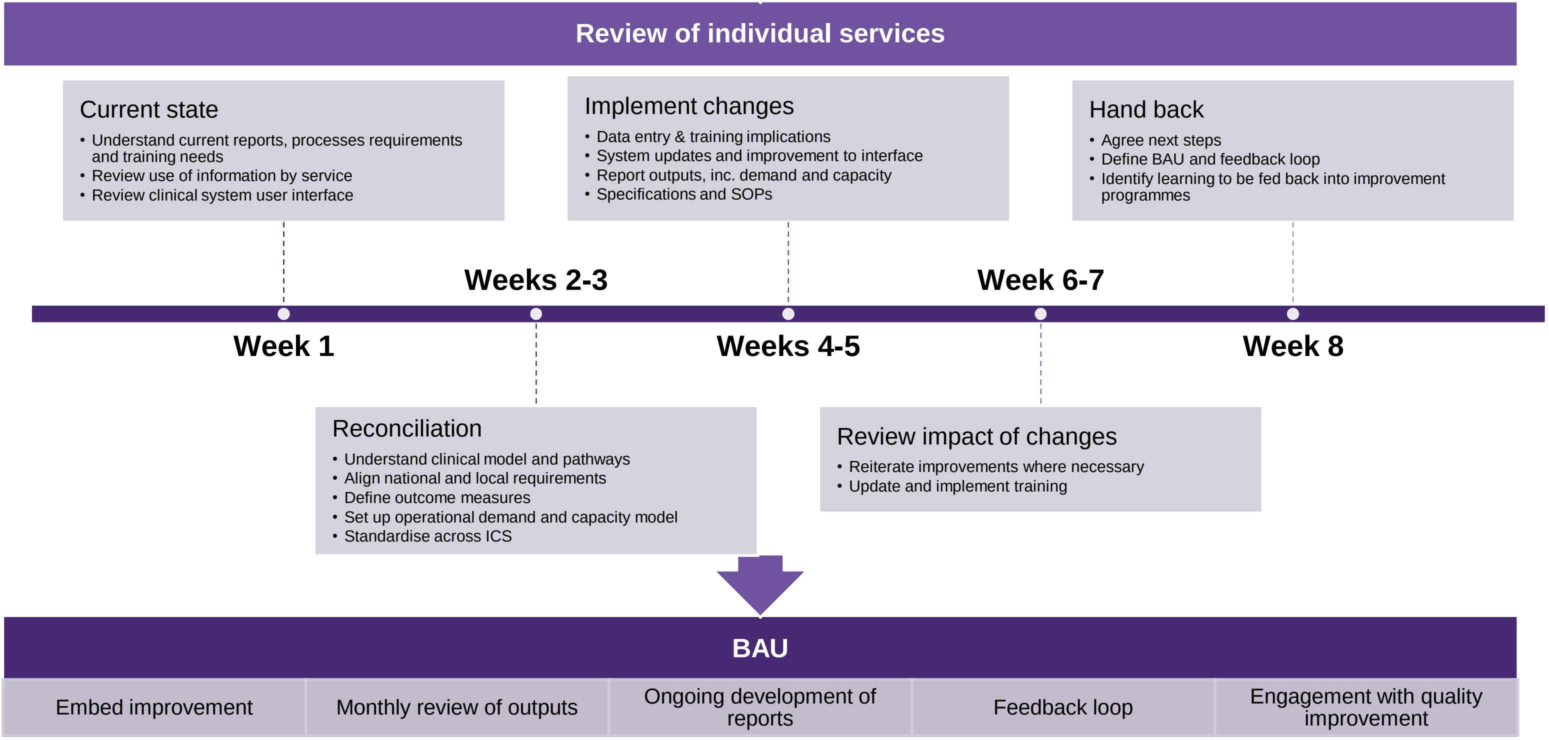
Appendix B

Detailed data recommendations based on our review of pathways

Area to address	What we found	Proposed way forward
1. Consistent recording of activity	• **Day case recording** – some patients who go home on the same day are not being recorded as day case, either because they were not planned as such or because data recording is incorrect • **Cystoscopy recording** – cystoscopies are hard to isolate within central datasets when carried out in outpatients, and practice appears to vary between sites regarding whether the procedure is recorded as a day case or outpatient procedure • **Issues with naming conventions** – specialty categorisations varied across the activity and waiting list datasets received • **Free text fields** – recording of consultant and site appear to use free text fields in some systems and therefore generate some inconsistencies	• Clarify and strengthen standard operating procedures for data recording • Provide clear definitions for how different types of activities should be recorded • Apply these consistently across all hospital sites, localities and specialties • Remove free text fields wherever possible • Identify where additional training is needed and implement a focused training programme
2. Accurate and complete clinical coding	• **Incomplete activity and waiting list coding** – significant numbers of records with diagnosis or procedure coding incomplete or uncoded • **Incomplete procedure coding**– relatively high number of NULL values in procedure coding in admitted patient and theatre datasets	• Provide clear documentation and guidance to coding staff • Extend clinical coding audit activity • Implement a targeted programme of training and support
3. Standardised capacity recording and reporting	• **Recording of outpatient procedures** – outpatient procedures are identified within activity data, but not included in capacity templates • **Allocation of outpatient new and follow up in capacity templates** – new to follow up ratios in the capacity data for some specialties do not reflect the activity actually delivered • **Inconsistent approach to capacity data reporting across ILGs** – the data is captured and reported in different formats in different localities	• Agree a CTM-wide approach to capacity recording and reporting • Document the process • Standardise systems and templates • Collate and review data centrally • Provide feedback to clinical and operational colleagues on any identified data quality issues
4. Centralised management of data	• **Availability of risk and complexity data** – ASA scores and other risk and complexity measures are not readily available from central systems, even if they are recorded in clinical datasets • **Pre-op assessment data** – we were only provided with data covering two sites, and from discussions with the information team it appears pre-op data was not always easy to pull through into pathway data	• Continue to work towards centralised data repositories and systems to bring consistency of data capture, management and reporting across sites and care settings • Identify how ASA scores and other risk and complexity measures can be brought together into central datasets and reporting
5. Clinical and operational engagement with data	• **Clinical confidence in health board data** – in all phases of our work we found that clinical confidence in health board data presented back to them was generally low • **Engagement with data and analytics** – clinical engagement was weak at the start of the pathway analysis work but improved markedly through the process • **Data literacy** – we found examples where understanding of data definitions and recording procedures was relatively low	• Continue to build clinical and operational engagement with dashboards and reporting, with clear avenues for support, feedback and queries • Extend pathway analysis to additional pathways and additional components of the pathway • Identify training and development needs for building towards a data-driven approach to clinical service delivery, based on high levels of data literacy and using methods such as statistical process control to drive continuous improvement

Appendix C

An approach to engaging with services on information and reporting



Review of individual services

Week 1

Current state

- Understand current reports, processes requirements and training needs
- Review use of information by service
- Review clinical system user interface

Weeks 2-3

Reconciliation

- Understand clinical model and pathways
- Align national and local requirements
- Define outcome measures
- Set up operational demand and capacity model
- Standardise across ICS

Weeks 4-5

Implement changes

- Data entry & training implications
- System updates and improvement to interface
- Report outputs, inc. demand and capacity
- Specifications and SOPs

Week 6-7

Review impact of changes

- Reiterate improvements where necessary
- Update and implement training

Week 8

Hand back

- Agree next steps
- Define BAU and feedback loop
- Identify learning to be fed back into improvement programmes

BAU

- Embed improvement
- Monthly review of outputs
- Ongoing development of reports
- Feedback loop
- Engagement with quality improvement

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