



GIG
CYMRU
NHS
WALES

Iechyd a Gofal
Digidol Cymru
Digital Health
and Care Wales

Digital Health and Care Wales Information & Analytics Strategy 2023-2026

BACKGROUND AND PURPOSE

Digital Health and Care Wales is a trusted partner in NHS Wales, leading on the provision of digital and data services, delivering some of the biggest healthcare information technology and data projects in the UK.

We are now in our third year as a Special Health Authority, constantly seeking ways to innovate and improve while continuing the consistent delivery of core services.

Our organisation's Integrated Medium-Term Plan (IMTP) has partnership and innovation at its heart, to deliver our strategic missions with our Clinical Directorate playing a vital role in ensuring the success of those partnerships with organisations providing front line clinical services to patients. The Clinical Directorate Operating Model is structured in three divisions to support the delivery of our IMTP and other core work, including the clinical software products and information services we offer:

- Information, Intelligence and Research
- Information Governance and Patient Safety
- Clinical Informatics and Business Change

Information, Intelligence & Research Division

This part of the Clinical Directorate comprises the Information Services, e-Library Services and Research & Innovation teams. Collectively these teams are responsible for driving better value and outcomes through research, innovation and data. The teams are also responsible for expanding and improving the use of digital and data for clinical users, care providers and other key decision makers within health and care.

In 2022, DHCW published its first Research and Innovation Strategy with the overarching ambition of working with others to develop knowledge, innovation and insight for service improvement, transformation and better healthcare outcomes. Following its approval, a formal function was established in early 2023, with a delivery plan and associated milestones now prominent in DHCW's IMTP.

This Information & Analytics Strategy is the next stage to further develop the approach of realising Value from Data.

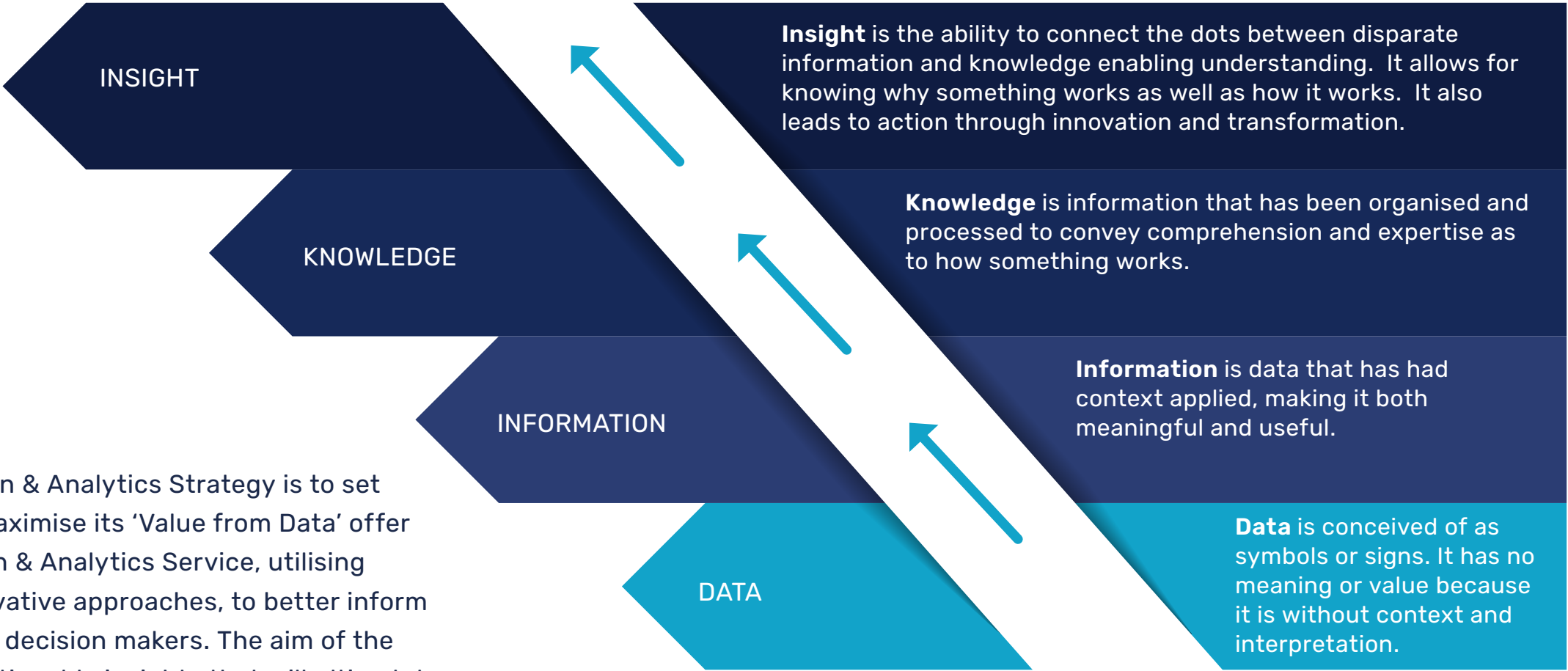
What is Information & Analytics?

DHCW has a Strategic Mission, to “Drive better value and outcomes through innovation”. We are responsible for bringing together many forms of data that relate to the health and care of the citizens of Wales. This data, in its raw form, holds limited value to the services and citizens that it relates to, however, through the transformation of data into information, knowledge and ultimately actionable insights, ‘Value from Data’ can be achieved.

Value from data therefore refers to the process of using data-related techniques, technologies, and analytics to derive meaningful insights, improve decision-making and ultimately enhance patient outcomes, as well as health and care services.

Purpose of the Strategy

The purpose of the Information & Analytics Strategy is to set out how DHCW proposes to maximise its ‘Value from Data’ offer through a national Information & Analytics Service, utilising expert data analysis and innovative approaches, to better inform health and care providers and decision makers. The aim of the service is to strive towards actionable insights that will ultimately deliver improved outcomes and experiences for Welsh citizens.



KEY STRENGTHS, WEAKNESSES & OPPORTUNITIES

As part of ongoing engagement with stakeholders and the DHCW information services team, the organisation’s performance management activities and associated Directorate Reviews, we have identified the key strengths, weaknesses and opportunities of our current service provision. The aim of our strategy is to build on our strengths, address the weaknesses that impact our service and to utilise available opportunities.

Strengths

National Information & Analytics Service. DHCW is in a unique position within Wales, with its responsibility for collecting data from across health and social care. The analytical capabilities that can be applied as a result is great.

Performance & Delivery. The team has delivered an impressive portfolio of a range of information services and data products over the years and has adapted to the changing needs of the health and care service.

Professional Development. The information services team has a successful track record of recruiting into graduate level posts and investing in the development of staff. As a result, the team comprises skilled data analysts who are experts in their field.

Weaknesses

Specialist skills not being fully utilised. The data analysts within our teams aren’t always able to fully utilise their skills in areas such as data modelling or artificial intelligence, even though there is a willingness to do so – the asks on the team are often more focused around requests for information and dashboards.

Demand for real-time data. Our role has changed significantly over the last few years, moving from the team dealing with monthly datasets, with environments and processes designed with those in mind, to a demand for real-time (or close to real time data). Whilst we are attempting to accommodate such requests, it’s clear that our own service will need to adapt and change accordingly.

Not always data driven. As a data and digital organisation, we need to ensure that information drives the technology, rather than the other way around.

Communicating delivery and our capabilities. Our stakeholders aren’t always aware of what data assets we have available, what products we have developed and what we are able to develop on their behalf.

Opportunities

National Data Resource. The National Data Platform and associated tools will open-up access to more datasets, with sophisticated analytical tooling and Secure Data Environments (SDE's) available for the team to be able to focus more on the national information and analytics service offering.

Support for Research & Innovation. With the establishment of DHCW's R&I function, there are more opportunities for DHCW to support, lead and collaborate in this area through the provision of data, information and analytics.

Artificial Intelligence (AI). With the creation of a new AI Commission between DHCW, Welsh Government, Health Education and Improvement Wales and Public Health Wales, our Information and Analytics Service is in an excellent position to utilise and embed new AI technology and approaches (for example, Generative AI, Natural Language Processing, Machine Learning, etc), that will further enhance and improve our service offering.

Collaboration. Building effective collaborative opportunities with key partners (for example, NHS Executive, Public Health Wales, Health Education and Improvement Wales, SAIL databank, etc) to collectively address information and analytics needs across Wales.



VISION

Drive 'Value from Data' through the provision of a national information and analytics service for health and care in Wales, that facilitates service transformation and improves patient outcomes.



STRATEGIC AIMS

To deliver our vision, we will focus on four strategic aims:

1

AIM One

Provide a national information and analytics service that embraces innovation.

2

AIM Two

Focus on the quality, value and user experience of our service and products.

3

AIM Three

Maximise our offer and value through effective collaboration.

4

AIM Four

Develop our profession and invest in our people.

1

Strategic Aim 1:
Provide a national information and analytics service that embraces innovation.

Where do we want to be?

- To be a reputable and leading service provider for our partners and stakeholders, with a focus on value from data.
- Our service will be robust and responsive to service needs and will focus on the greatest health and care challenges.
- To adopt and incorporate new approaches and innovations within our service model.
- To fulfil our role as an Official Statistics Producing Body.
- To support delivery of our Research & Innovation Strategy.

How will we do it?

- Offer national solutions that provide better value for the health and care system (for example, a national benchmarking solution; Find, Recruit & Follow Up service to support clinical trials in Wales; Urgent and Emergency Care dashboard, etc).
- Ensure our service provision has sufficient support and service management arrangements in place, particularly where services are deemed critical.
- Create an environment where the team can test and develop new innovative approaches relating to data and analytics (for example, artificial intelligence approaches, data modelling, etc).
- Following our baseline review of official statistics publishing capabilities, we will develop a delivery plan for meeting the expected requirement and standards.

Using Data for the COVID-19 Response

In the very early days of the pandemic, the information team recognised the importance of creating a bespoke COVID Datastore which fed many of the vital reports that were used throughout the pandemic. Various existing datasets were brought together, along with some very COVID specific datasets, such as data collected for COVID testing (both PCR and LFT tests), 'Test, Trace and Protect' and COVID vaccinations. This data was presented in the COVID Datahub, making information available to the service, Welsh Government and Public Health colleagues, for essential service planning and to inform policy.

DHCW also had to create a Shielded Patient List, taking a vague set of clinical criteria, and searching through health records to identify those clinically vulnerable individuals who met those criteria. We already held much of the required data within our data warehouse, but there were also new datasets that we had to acquire for the first time.



2

Strategic Aim 2:

Focus on the quality, value and user experience of our service and products.

Where do we want to be?

- We want our service to be responsive, to meet the needs of the users and to make a difference.
- We want the information that is presented to users to be high quality and accessible, to provide further knowledge and to ultimately lead to actionable insights.
- We want users to inform and engage in the design and future direction of our data products and service.
- We want to be involved at the right stage of product design so that any associated data requirements are considered appropriately and factored in at the relevant stage.
- We want our products to be safe and quality assured, with clear governance.

How will we do it?

- We will apply the knowledge and expertise of transforming data, gained over many years, to apply best practice to the development of our products and services.
- We will follow the Centre for Digital Public Services design standards in development of our data products to ensure that user centred design remains a key feature.
- We will build feedback and evaluation into products, which can be considered and incorporated into ongoing design and improvement.
- We want to build effective engagement and communications with our stakeholders to capture their views and understand their information and analytics needs.
- Through effective governance (i.e. WIAG, Power BI Assurance, etc), ensure that Information & Analytics is incorporated into the design and build of core systems and portfolios of work.
- Develop common design standards and best practice guides for information products (both for what we develop and for what is published by other teams within DHCW).

Clinical Data Science - Natural Language Processing (NLP) and Machine Learning (ML)

This Welsh Government, WIDI (Wales Institute of Digital Information) and ESRC (Engineering and Physical Sciences Research Council) funded collaboration involving DHCW and the University of South Wales, has centred on the development and testing of methodologies for the extraction, analysis and subsequent use of unstructured text-based data from systems managed by DHCW.

A vast amount of clinically rich 'unlocked' data is contained within such systems. NLP enables the extraction and transformation of such data with ML being used to process and analyse through the application of complex algorithms. Two PhD and two MSc students embedded within the organisation have to date successfully completed and published work utilising these techniques. These projects have included obtaining data from systems such as Welsh Care Records Service (WCRS), Welsh Clinical Portal (WCP), the ISD Data Warehouse and the Electronic Staff Record (ESR), examining areas such as appropriateness of clinical decision taking, referral tracking, the reasons for patients not attending for appointments and in a separate study with our People and OD function, the automated analysis of workforce data using JDs and information extracted from ESR.



3

Strategic Aim 3:

Maximise our offer and value through effective collaboration.

Where do we want to be?

- We want stakeholders to have a good understanding of our capabilities and the data assets that we have access to and what we are able to process.
- We want stakeholders to be aware of the available data products and information that we have published and for it to be of use.
- We want to offer an accessible service, with sufficient processes in place for logging information and analytics requests, so that users needs are met and in a timely manner.
- We want to influence and contribute within key programmes and projects, so that our needs are reflected in the development of new systems and at the correct stage.
- We want to influence and contribute within key groups and networks, to avoid duplication and waste and to ensure that our data assets and limited resources across the system are maximised.
- We want to attract and harness effective collaborations with other NHS organisations, industry and academia partners, where there are opportunities to collectively share knowledge, expertise and resources.

How will we do it?

- Produce a catalogue of all information products, that is accessible and available to stakeholders.
- Design processes for information and analytics service requests, that effectively captures the requirements of the requester, any associated resource commitments and timescales.
- Grow our internet/web presence both internally and externally facing, to effectively advertise our capabilities and the work that we have delivered.
- Ensure that we have appropriate representation on key programmes and projects so that information and analytics needs are captured and understood.
- Ensure that we have appropriate representation on key groups and networks, where we can engage effectively on our information and analytics capabilities.
- Commit to a schedule of stakeholder engagement events where we can bring together information specialists with key decision-makers to explore the art of the possible in terms of the use of data.

From hackathon to Last Year of Life population dashboard

At an NHS Wales Modelling Collaborative data hackathon event, held in May 2022, information specialists within DHCW teamed up with palliative care consultants to explore opportunities for using routinely collected national data, to provide new information and insights into people approaching end of life.

The key “problem” that the palliative care specialists raised was that they did not have sufficient information about people approaching end of life, especially at the population level, and as such they were unable to effectively assess the quality of care provided to this group of people. The lack of data was also hampering any attempts to properly design and plan future service provision.

The team quickly agreed that the information specialists would pull together as much data as they could about people in their last year of life, including all the various health services that they had interacted with and then to present this data in a dashboard, in a way that was understandable, engaging and insightful to the end users. Through effective collaboration, the team developed a solution

providing users with a longitudinal view of each individuals service encounters during their last year of life (including the types of service and the length of encounters with those services).

Clinicians involved in this hackathon noted that the insights from the dashboard allowed opportunities to interrogate the services being used by their patients and enabled them to see where they need to make interventions.

Following the launch of the dashboard, there has been a lot of interest from other clinicians and service leads and a keenness to develop the dashboard further and to also carry out some more in-depth research which would take into account the perspectives of the patients and their families, with the aim of better understanding the quality of services currently provided and helping to design the services of the future.

4

Strategic Aim 4:

Develop our profession and invest in our people.

Where do we want to be?

- We want to attract the best talent into our team.
- We want to retain staff and offer opportunities for career progression, with clear pathways for information and analytics specialists.
- We want to create opportunities to work across the specialist information areas (for example, primary care information, cancer information, value in health, etc), whilst also ensuring that we have a resilient team.
- We want to develop our leadership opportunities.
- We want to build and support the information and analytics profession, so that these skills are appreciated and understood. We want to support our staff to use their skills to derive the maximum value from data.
- We want to embed research and innovation into our working practices.
- We want to live the values of the organisation and embed them throughout our working practices.

How will we do it?

- Through ongoing engagement with academic partners and other key recruitment events and opportunities, discuss our service and associated roles.
- Ensure our job descriptions are clear and are appealing to prospective applicants.
- Through more effective engagement with partners, offer a comprehensive service that utilises the skills and capabilities of our workforce.
- Undertake regular skills analysis to understand our capabilities and any skills gaps.
- Commit to a schedule of further development opportunities for our staff (i.e. leadership development, Welsh language, wellbeing, etc).
- Influence established training programmes and academic education programmes, to reflect our skills gaps and needs (i.e. National Data Resource – Analytics Learning Programme, Wales Institute of Digital Information, etc).
- Look for opportunities to promote and embed the organisations values in our day to day activities (for example, team meetings, development reviews, reporting activities).

Supporting Apprenticeships

Rhannu & Dysgu (Share & Learn)

The Information Services Team has a successful track record of supporting and hosting apprenticeships, with apprentices going on to secure substantive data analyst posts within the team.

The team has recognised the value in investing in these apprenticeships and developing individuals through supported learning and practical work placements.

The team holds regular sharing and learning sessions which all information staff are invited to participate in. Staff are encouraged to share a project or a piece of work that they have been involved in so that others are aware and can pick up any particular techniques, methodologies or approaches that may be useful for them in their own areas of work. These sessions have been useful for colleagues to share learning, as well as developing their presentation skills.



OUTCOMES

A delivery plan will be developed in support of this strategy, which will include clear actions and timescales to support the strategic aims and high level actions that have already been described. The outcomes of the delivery of this strategy are:

- Stakeholders are aware of and are able to access, the full capabilities of the DHCW Information & Analytics service.
- We are able to access timely health and care data and can utilise sophisticated analytical tooling to support the needs of the service.
- The service is sustainable with requirements, timescales and associated resources fully understood and captured.
- The service maximises opportunities to achieve 'value from data', both in its unique role as a national provider of information and analytics, and in collaboration with partners.
- Evidence of use and utility of our products and service is captured.

EVALUATION AND MEASUREMENT

We will evaluate and measure this work in a variety of ways, including:

- Ongoing evaluation and feedback of our products and services.
- Monitoring usage of our products.
- Ongoing performance management against delivery of our business plan and strategy delivery plan.
- Staff retention and recruitment information.
- Monitoring of engagement activities and capture of feedback from these activities.
- Professional Annual Developmental Review (PADR) with our staff.

Our approach will also be regularly reviewed and adapted to respond to any changing needs and ensure learning and continual improvements are made to deliver best practice.

DHCW VALUES

We believe that values are integral to everything we do and will reflect in all interactions with colleagues, stakeholders, and current and prospective customers.



COLLABORATION

- Teamwork
- Supporting and challenging
- Listening and valuing each other
- Reflecting
- Continuous learning



INNOVATION

- Creative thinking
- Courageous
- Transformational
- Embracing change
- Ambitious



INCLUSIVE

- Diversity
- Equality
- Respect
- Fairness
- Equity
- Celebrate success and achievements



EXCELLENCE

- Empowerment
- Quality
- Continuous improvement
- Drive for results
- Pride in what we do
- Accountability



COMPASSIONATE

- Dignity
- Kindness
- Empathy
- Personal responsibility
- Trust