Connected Health Cities

End of Project Report

WP4: Workforce Development

Intelligence Dissemination Survey

Quaenam Ltd in partnership with Lancaster University

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INTRODUCTION

Background

The Connected Health Cities (CHC) Information Dissemination survey was developed and circulated between February and April 2018 with a view to improving the CHC team's understanding of how business intelligence reports, and general business intelligence outputs relating to health service activity, were typically disseminated within healthcare organisations across the NHS.

The requirement to undertake the survey arose following a review of the current progress of the various North West Coast (NWC) Connected Health Cities workstreams, soon to be published as the 'NWC CHC Strategic Review Report', which identified a series of potential challenges around the effective dissemination of the innovative intelligence currently being developed within the NWC CHC work programme.

The NWC CHC programme was initially set up to deliver a 'demonstrator model' that would highlight how a 'learning health system' (LHS) could operate within the NWC and the review highlighted that while all the work currently being undertaken within the programme was producing excellent outputs in line with the required project outputs, the plan for ensuring that this work could be re-introduced and embedded into local systems, and processes, required further investigation.

The review team wanted to understand how information and intelligence were currently being disseminated within, and across organisations and wanted to support these investigations with some facts and evidence wherever possible. The team included individuals with experience of working to deliver business intelligence within healthcare organisations and their anecdotal observations suggested that a deeper dive into local practice for intelligence delivery was required.

The Survey was developed as a consequence of these observations and was focused on understanding the following:

- The nature of operational intelligence delivery and dissemination within health and care organisations
- Common challenges faced by information teams in disseminating intelligence across their organisation
- Successes that have been driven by effective delivery of intelligence within, and across, organisations
- How best practice in any one area might be shared and adopted in another area

The survey was made available via Survey Monkey on the 16th of February and the last response was collected in late March, though the survey remained 'live' and available until the end of April.

The existence of the survey was marketed through networks and groups dedicated to intelligence professionals within healthcare, such as the Skills Development Network (https://www.skillsdevelopmentnetwork.com/home) and the Association of Professional Healthcare Analysts (AphA) (https://www.aphanalysts.org/), who circulated the survey links to their members through mailshots and newsletters. The CHC team also promoted the survey through direct links with professional colleagues and at a range of intelligence leader events.

Survey responses were collected online at the NWC CHC Intelligence Dissemination Survey site (https://www.research.net/r/CHC_IntelligenceDissemination).

In total, 16 responses were collected during the 'live' collection phase.

The response rate was disappointing, which may reflect the lack of capacity this professional group has to respond to surveys that are non-mandatory and are not perceived as adding value to their day-to-day task lists. However, despite the fact that this volume of responses cannot be considered to offer the basis for robust statistical analysis, the responses have provided some highly informative results.

This report presents an analysis of the responses from this survey.

Survey Design

The survey was developed by the CHC team and consisted of 25 questions designed to identify who engaged with the survey, what type of organisation they worked for and what were the key obstacles and challenges they faced in delivering successful business intelligence services within their organisations.

The questions were grouped into the following sub-groups:

- Your organisation
- Current intelligence delivery processes
- Intelligence skillsets within your organisation
- Obstacles to efficient intelligence delivery
- Sharing successful intelligence improvement projects
- Your information

The questions presented in the survey were as follows:

1. What type of healthcare organisation do you work for?
2. What is your role within the Informatics Team in your organisation?

3. Approximately, how many whole time equivalent (WTE) information staff are directly involved in the production of data analyses outputs for your organisation?
4. Who are the key end-user groups for intelligence and analysis outputs in your organisations?
5. How does your organisation currently deliver intelligence and analysis outputs to your end-user groups?
6. What data outputs are your information team responsible for delivering across your organisation?
7. Approximately, how many 'raw data' source systems does your organisation need to access to support the delivery of your business intelligence needs?
8. How do you access, and manage, the data sourced from these different systems?
9. Do you have specialist staff with any of the following dedicated business intelligence skillsets within your organisation?
10. Does your organisation access specialist staff with the following dedicated business intelligence skillsets from external organisations?
11. Does your organisation work with partner organisations to deliver more integrated, complex business intelligence outputs on clinical pathways and service delivery?
12. In your opinion, do any of the following obstacles impact on your information team's capacity to deliver against their objectives?
13. In your opinion, would any of the following actions improve the capability of your organisation's information function to deliver their information output requirements?
14. If the CHC Programme developed new algorithms and indicators relevant to your organisation, would your organisation be interested in adopting those outputs?
15. If the CHC Programme developed new algorithms and indicators relevant to your organisation, how would you prefer those outputs to be delivered to your end user groups?
16. Does your organisation collect case studies highlighting improvements driven by data and intelligence outputs?
17. Does your organisation have a platform, or approach, to enable successful data-driven case studies to be shared within your organisation?
18. Does your organisation have a platform, or approach, to enable successful data-driven case studies to be shared externally with peer organisations and partners?
19. Does your organisation collect case studies highlighting improvements in your analysis delivery process?
20. Does your organisation have a process for sharing improvements in your analysis delivery process with peer organisations and partners?
21. Does your organisation have a process to help other peer organisations and partners adopt your own successful practice?
22. Would you like to learn more about the Connected Health Cities Programme and related work?

23. Would you like to receive a report with the outcomes of this survey?
24. Would you like to work with us to take forward any positive outcomes resulting from this survey?
25. Please provide your contact details

These questions consisted of a mix of multiple choice questions, somewhere the responder needed to select a single option for certain questions and other choice-based questions where multiple options could be selected as required.

Additional information was required if certain options were selected and manual free-text entry fields were enabled to capture any additional comments provided by the responders.

The survey was published online via Survey Monkey in mid-February and analysis of the report took place in late-April and early May at which point the link to the survey was disabled.

INTELLIGENCE DISSEMINATION SURVEY RESULTS

Your organisation

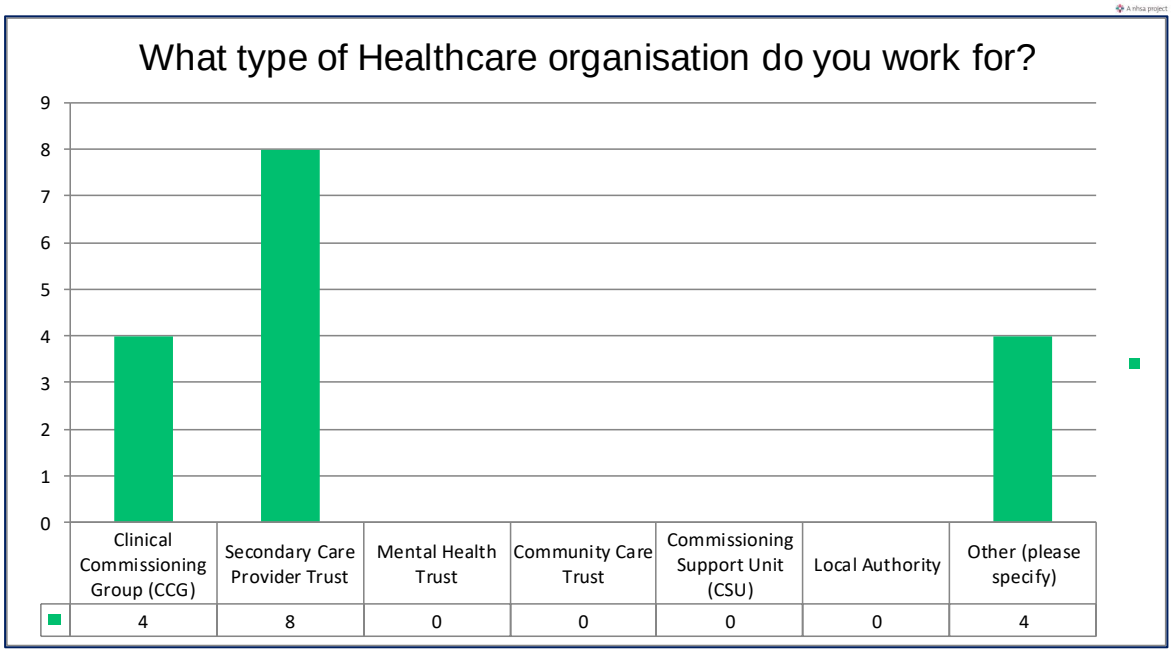
Question 1 - What type of Healthcare organisation do you work for?

The first series of questions were focused on clarifying the nature of the responders' roles and organisations.

Users were given a selection of options and asked to pick one of the following:

- CCG
- Secondary Care Provider Trust
- Mental Health Trust
- Community Care Trust
- CSU
- Other

Of the 16 responses received to this question, the breakdown of organisations is shown in the diagram below.



The main responses were received from eight information leads working within secondary care providers of healthcare, with four responses coming from Clinical Commissioning Group (CCG) Information leads and four responses from leads within other organisation types.

The organisations represented within the 'other' group consisted of:

- Two information leads from Mental Health Trusts
- One information leader from NHS Digital
- One information leaders from NHS Improvement

Unfortunately, there were no responses from other key organisations involved in the NHS Intelligence landscape particularly from the Commissioning Support Unit teams, or from Community Care organisations or Local Authorities despite these organisations receiving invites to participate.

However, despite not selecting the mental health options, the survey did collect representation from two leads within mental health trusts. In addition, the collection of a response from leads within NHS Digital and NHS Improvement, means that the views of those involved with national dissemination of useful health data are reflected within the survey, which is encouraging.

Question 2 - What is your role within the Informatics Team in your organisation?

The survey then asked responders what their role was within the informatics function of their organisation and several options were presented to them as follows:

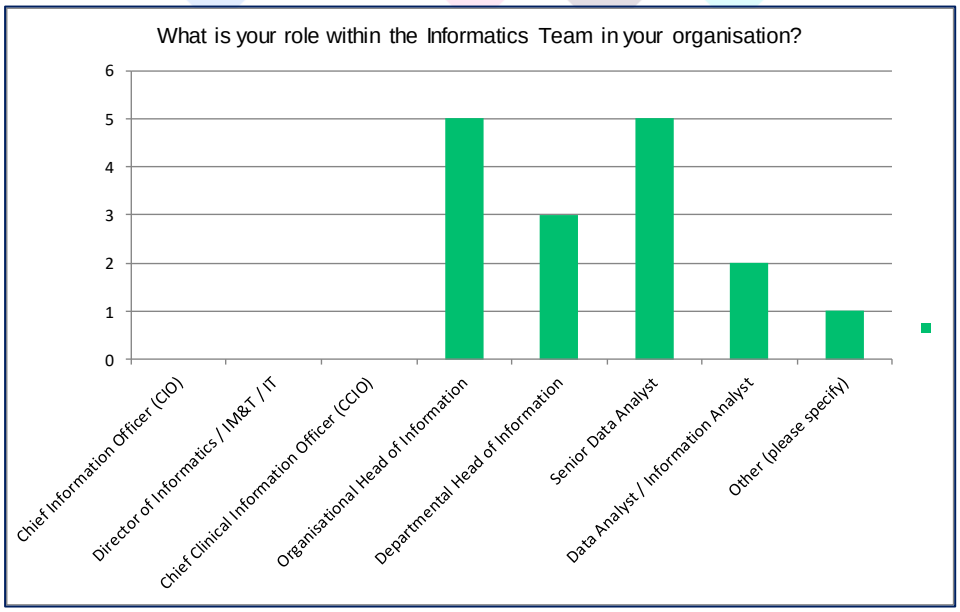
- CIO
- CCIO
- Organisational Head of Information
- Departmental Head of Information
- Data Analyst
- Other

Professional Informatics Staff in the North West have learned lessons from the development of the Information Skills Development (ISD) Network 'North West Informatics Staff census' and the survey team was aware that job titles in use within intelligence functions do not always accurately reflect the specific skillsets and deliverables expected of various intelligence leaders. The interchangeable nature of some job titles *(e.g. Head of Intelligence vs Head of Information vs Head of Informatics or Data Analyst vs Business Intelligence Analyst vs Information Analyst)* and their related job descriptions can be deceptive, and the survey team felt it would be useful to try and narrow down the job titles to a 'core' set to prevent a confusing set of responses.

The list of job titles above was chosen as the survey team felt it accurately reflected the primary job titles currently available across the system.

The 'Other' option was included within the survey to understand what other job titles were being used within this professional area for those who felt this list of job titles did not accurately reflect their job roles.

Again 16 responses were received to this question.



The single response recorded as 'other' was also an organisational Head of

Department for a Secondary care provider, but the comment field highlighted that this leader had a wide range of responsibilities, some of which were more technical than simply information related.

> *"Head of Information managing information reporting, analysis and development. clinical coding, data quality commissioning, medical records, referrals management and outpatient reception, commissioning, applications management includes PAS, theatres, A&E, maternity etc."*

However, for the purpose of this survey, we have grouped this responder with the 'Organisational Head of Information' grouping making this selection equal to six rather than five responses.

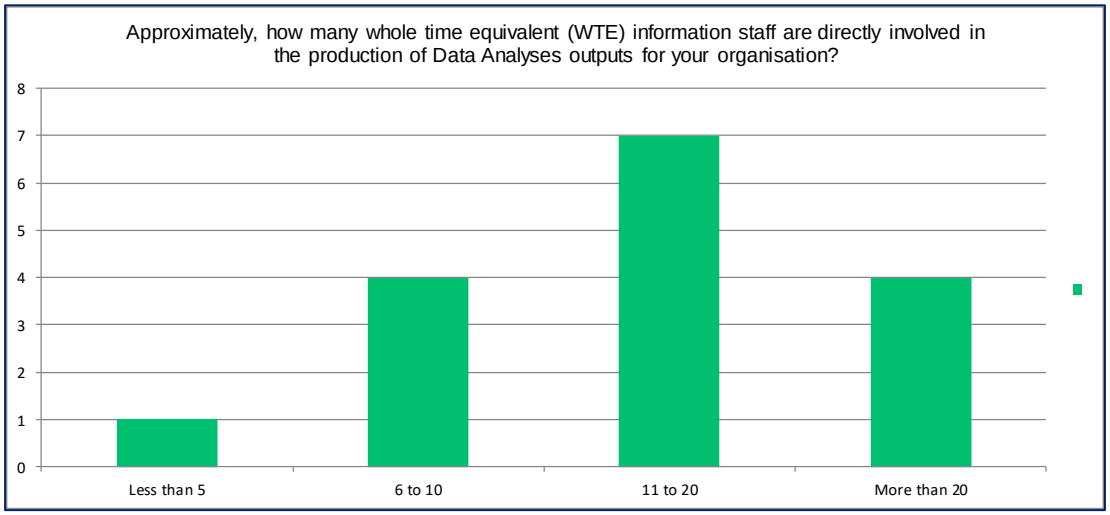
- Of the six 'Organisational heads of information', three were in CCGs and three were in Secondary Care Trusts
- Of the three 'Departmental Information' Leads, two were in Secondary Care organisations and one was a mental health trust employee
- Of the five senior analysts, two worked for a secondary care organisation, one was with a CCG, one was with a national organisation and one was with a mental health organisation.
- Of the two data analysts, one was with a secondary care organisation and one was with a national organisation

This set of responses provided a useful spread of staff across a varied set of employment levels and organisations.

Question 3 - Approximately, how many whole time equivalent (WTE) information staff are directly involved in the production of data analyses outputs for your organisation?

Question 3 was designed to understand the average size of the information department within organisations and the relationship of the size of the department with the type of organisation.

Again, all 16 responders replied to this question with a breakdown of the responses shown below.



Only one organisation reported a team of less than 5 whole time equivalent (WTE) staff, with 11 organisations having information teams of 11 or more WTE.

- The single organisation reporting less than five information team members was a national organisation and not directly involved in frontline information delivery
- Two Secondary Care Trusts and two CCGs reported having teams of six to 10 WTEs
- Two CCGs, four Secondary Care Trusts and one Mental Health Trust reported 11 to 20 WTEs
- Two Secondary Care Trusts, one Mental Health Trust and one national organisation reported having more than 20 WTEs

The spread of information team size and scale highlights a level of variation across organisations that cannot be explained by organisation type alone. It can be reasonably expected that many provider organisations will typically need larger information teams to support all their service delivery reporting needs, and commissioning organisations will typically support smaller information teams as many procure external support from CSUs around reporting and intelligence. However, the range of responses and their relationships to the organisation types suggest that there are more factors at play.

The nature of an information team within an organisation can be determined by:

- The size of the organisation and the range of its activities
- Organisational culture and leadership attitudes to the importance of intelligence
- The organisation's access to, and utilisation of, data management technology
- The organisation's approach to outsourcing versus internal delivery
- The relationships an organisation has within its local health economy

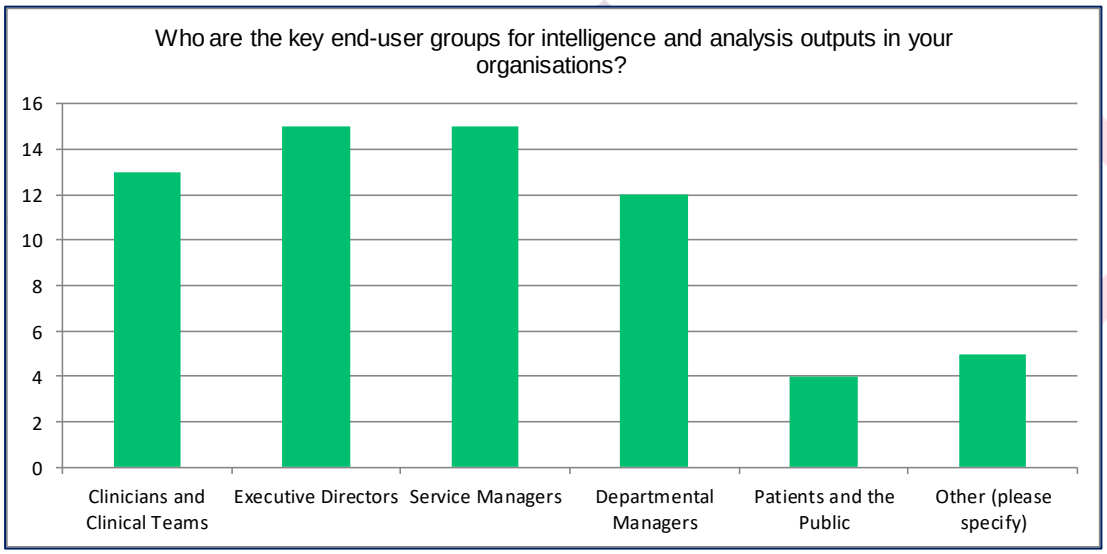
From a CHC perspective, these responses highlight that engaging with health service

organisations will require flexibility to ensure that local organisational approaches to intelligence delivery are properly considered before CHC intelligence outputs can be appropriately delivered to those organisations.

Question 4 - Who are the key end-user groups for intelligence and analysis outputs in your organisations?

Question 4 was designed to illustrate the range of customers health service providers information teams need to be capable of delivering their intelligence outputs to. The nature of intelligence delivery means that reporting outputs need to be designed in a way that is relevant to the specific end-users of that output. Data and charts that are relevant to clinicians, may not have any relevance to an organisation's governing board and the context of delivery is important.

The responses to this question illustrate the range of customer types most health service organisations must satisfy with intelligence outputs.



The survey asked responders to tick all the options they felt were relevant to them and 15 responders completed this question. The responses highlight that almost all the information leads have a core set of intelligence customers comprising executive teams, clinicians, service managers and departmental managers.

Interestingly, only four of the 15 respondees provided data to 'Patients and the Public' and no CCG information lead was included in these responses. There were two secondary care organisations, one mental health organisation and one national organisation represented.

In the 'other' category, the responses included additional end-user groups for their intelligence outputs as follows:

- Public Health Teams (CCG)
- Programme and Project Managers (Secondary Care)
- Strategic Transformation Partnership (Secondary Care)
- Corporate Operations (Secondary Care)

It is obvious from these responses that the primary customers for business intelligence of most health organisations are internal teams, with a limited focus on delivering intelligence outside of their own organisation. Even under the 'other' category, there is no mention of supporting regional or national intelligence services with local data.

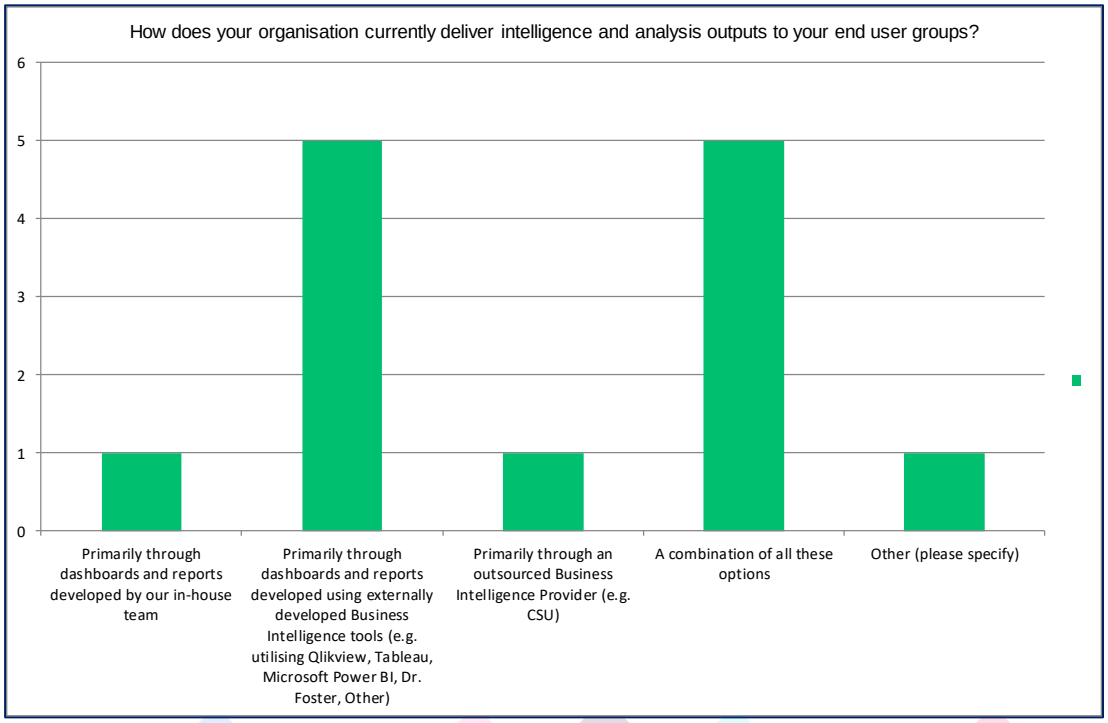
For a regional organisation like the CHC programme which is attempting to deliver new analyses into health and social care organisations, it will be important to ensure that the form and presentation of these analyses are relevant to the customer groupings outlined here.

Current Intelligence Delivery Processes

Question 5 - How does your organisation currently deliver intelligence and analysis outputs to your end user groups?

Question 5 was presented to provide a basic understanding of how organisations disseminate their intelligence outputs within their organisation. The question presented a pre-defined set of selections for respondees to choose from and asked them to choose the option most relevant to their approach.

There were 13 responses collected for this question and the breakdown of responses can be seen in the chart below.



The responses show the various approaches to intelligence delivery in place across health organisations but there are some interesting elements highlighted by the responses.

The single 'other' response details an internal dashboard developed with software not listed in the question and is from a secondary care organisation. The comment supplied was as follows:

> *"Custom in-house BI portal using a combination of .Net dashboards, Power BI and SSRS reporting."*

For this report, we will group this response in with the 'in-house dashboards and reports' category.

The majority of responses from provider organisations show that a common approach is to deliver information via dashboards and reports developed internally or using externally developed Business Intelligence tools. Of those that chose these responses to the question there were:

- Six secondary care organisations
- One mental health trust
- One national organisation

Of the five responses that recorded a combination of approaches:

- Four were CCGs
- One was a secondary care organisation

Only one responder explicitly stated that they primarily receive their service through an outsourced business intelligence provider and that organisation was a secondary care organisation.

The fact that all the CCG are utilising a combination of internal and external development alongside the use of an external BI support agency suggests that CCGs are not currently receiving the full range of BI support that was initially envisaged to be provided by CSUs.

The variance in approaches overall reflects anecdotal evidence that many organisations have built complex intelligence eco-systems over a period of years for a variety of reasons. The rationale behind the selection of these complex combined approaches requires further study but may include any combination of the following factors:

- Limitations of inherited legacy reporting systems
- Inbuilt reporting components within major PAS and internal clinical systems
- Differing approaches to reporting taken within different departments within an organisation
- Resource limitations (financial, technical and human resources)
- Skill shortages within specialist data fields
- Lack of capacity within information teams for developing long-term intelligence strategies
- Lack of senior leadership support for the implementation of long-term intelligence strategies
- Constantly changing national, regional and local reporting requirements leading to tactical responses, rather than strategic responses

The responses to this question illustrate that while the overarching approach to intelligence delivery has common elements to it across organisations (eg. the use of dashboards) there appears to be no single system or supplier that can address all the reporting needs of most organisations. As a result, organisations are naturally forced to adapt common business intelligence tools to fit their specific local needs.

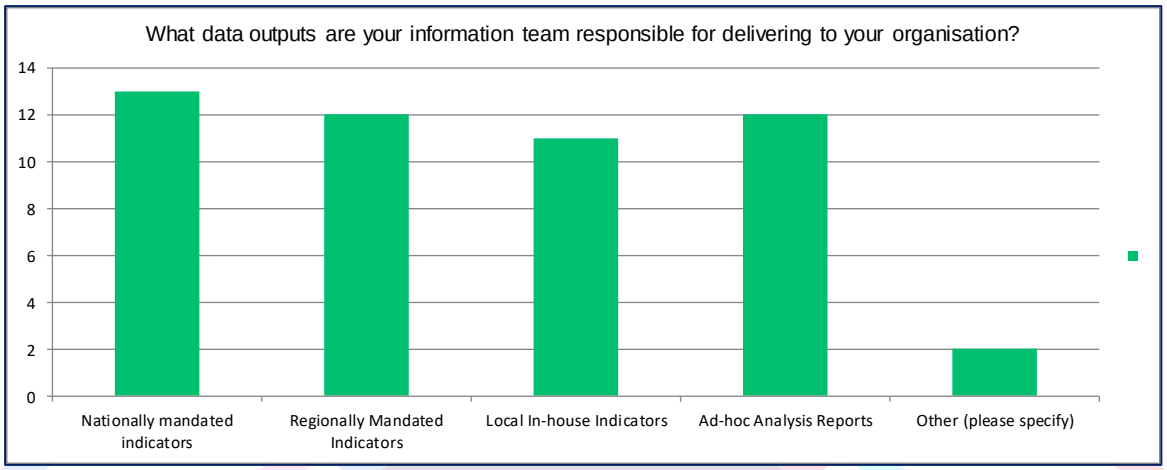
Any organisation looking to deliver intelligence into these environments will have to capable of integrating with these local reporting structures.

Question 6 - What data outputs are your information team responsible for delivering across your organisation?

Question 6 was included to give a high-level view of the types of reporting outputs health organisations are expected to supply as part of their core delivery requirements. Respondees were given a pre-defined list of options and asked to tick all that applied to their organisation.

13 responses to this question were recorded and they highlight that practically all organisation intelligence teams are required to report on nationally and regionally mandated indicators as well as their own local indicators and unplanned ad hoc analysis reports.

The responses to this question are to be expected, but it is worth noting that for many organisations within the health environment there can be several hundred individual indicators that are expected from intelligence teams and this list is fluid and ever-changing.



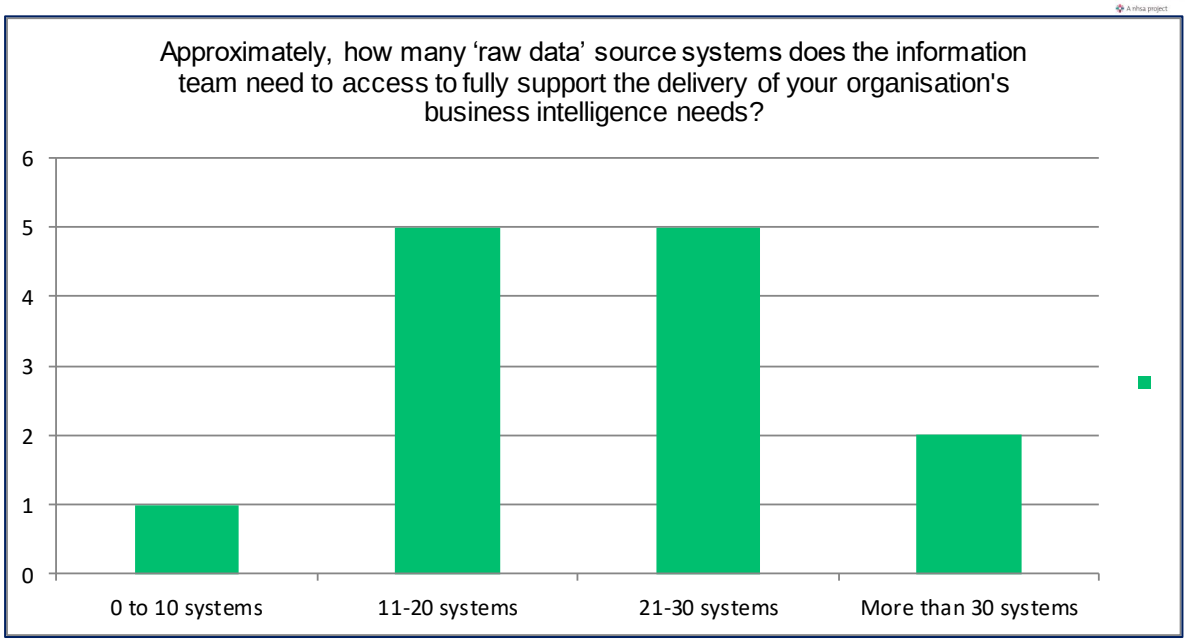
Two organisations also completed the 'other' option and they listed the following additional requirements:

- Demographic/geographical Information System Data (CCG)
- Strategic Transformation Partnership (STP) Information (secondary care organisation)

Generally, the responses to this question are aligned with what the survey would expect.

Question 7 - Approximately, how many 'raw data' source systems does your organisation need to access to support the delivery of your business intelligence needs?

This question was selected, as a follow-up to the previous question, to understand how many data systems an information team would typically need to access to fully support their reporting requirements. A range of pre-defined grouped options was presented to the respondees and they were asked to select a single option most reflective of their organisation.



The responses clearly indicate that the volume and range of systems necessary to support organisational intelligence teams are significant. Of the 13 responses received, 12 indicated that they need access to more than 11 individual data source systems.

One secondary care lead indicated that they require access to less than 10 individual systems, but this is very clearly an outlier organisation in this context.

The responses captured to this question support the view that accessing the source data necessary to support efficient and effective business intelligence reporting is not straightforward.

Any external business intelligence provider needs to consider whether their tools add to this complexity or simplify it.

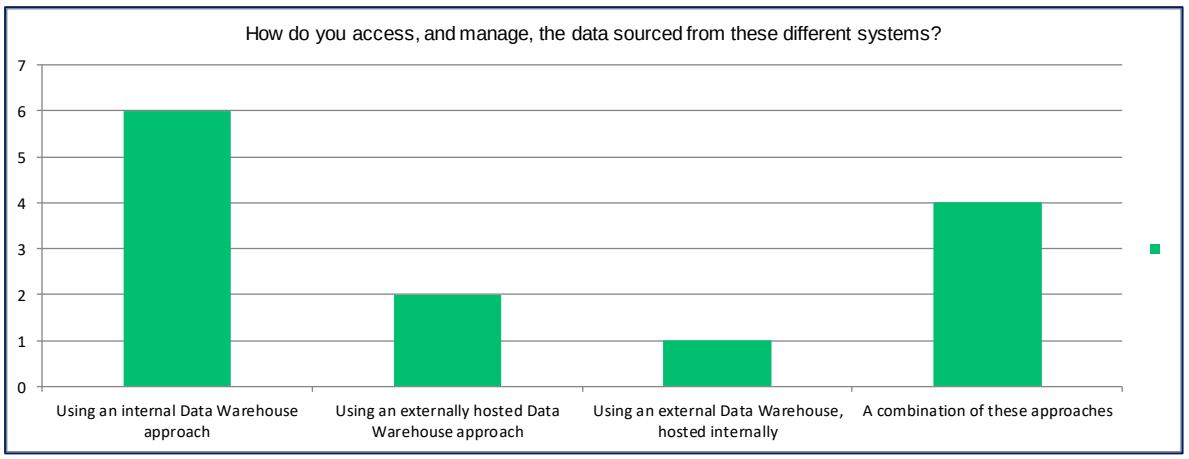
Question 8 - How do you access, and manage, the data sourced from these different systems?

Question 8 was developed to understand if data warehousing technology was in use within health organisations and to what extent. Responders were asked to choose all of the statements that applied to their internal data management approach from the following list:

- Using an internal data warehouse approach
- using an externally hosted data warehouse approach
- using an external data warehouse system, hosted internally
- our organisation hosts data extracts in local databases without a central data warehouse approach

- Our organisation does not directly manage ‘raw’ data sources
- Other

There were 13 responses to this question and the breakdown of responses is in the chart below.



Two additional options were available for selection:

- Our organisation hosts data extracts in local databases without a central data warehouse approach
- Our organisation does not directly manage ‘raw’ data sources

It is encouraging that neither of these options received any selections and that all 13 responders are using some form of formal data warehousing to support their intelligence function. This was reflected across all organisation types that have undertaken the survey.

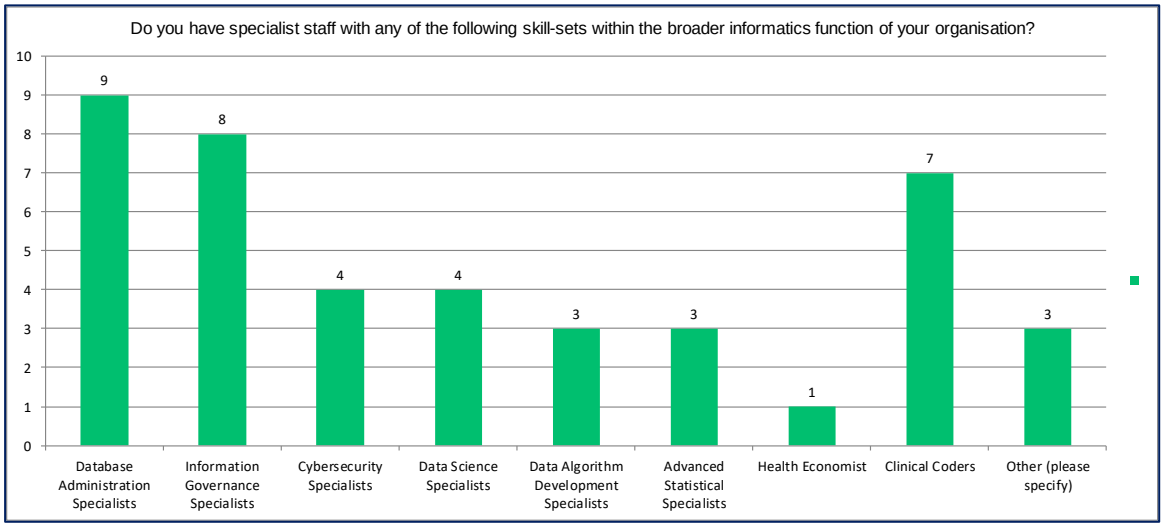
Intelligence Skillsets within your organisation

Question 9 - Do you have specialist staff with any of the following dedicated business intelligence skillsets within your organisation?

Question 9 was included to get a sense of the volume of informatics staff within organisations who possess highly focused and specialist information skills.

A list of specialised information skillsets was presented to responders and they were asked to select all the specialisms that could be found within their information functions.

12 responses were received, and the breakdown of selections is in the chart below.



Database administrators, information governance specialists and clinical coders are common to many organisations and it was not a surprise that these options were selected by many of the responders. 75% of organisations recorded having internal database administrators, 66% recorded having internal information governance specialists and nearly 60% recorded internal clinical coders.

More surprising was the number of additional specialists that were included in the responses:

- Four provider organisations (three secondary care and one mental health trust) recorded having internal cyber security experts
- Three secondary care trusts and one CCG recorded having internal data science specialists
- Two CCGs and one secondary care trust recorded having internal data algorithm developers
- Two secondary care trusts and one CCG recorded having internal advanced statistical experts
- One CCG recorded having an internal health economist
- One secondary care trust included specialist 'data modelling' skills within the 'other' category

In fact, one CCG and one secondary care trust recorded having a data scientist, a data algorithm developer and advanced internal statistical skills. The nature of the recording process for the survey does not allow us to distinguish if these specialist roles are all filled by a single individual or multiple staff, but these types of specialists have not typically been employed within health organisations historically.

The CCG response included a comment within the 'other' section which indicates:

"These functions do not necessarily need to be carried out by a specific person -

they are skills and knowledge that information analysts possess as part of their skillset."

However, while some analysts may possess these skills, and obviously this is the case within this specific CCG, many health data analysts do not possess these advanced skills, and this is reflected by the fact that only a limited number of responses selected these skills as being internal to their organisation.

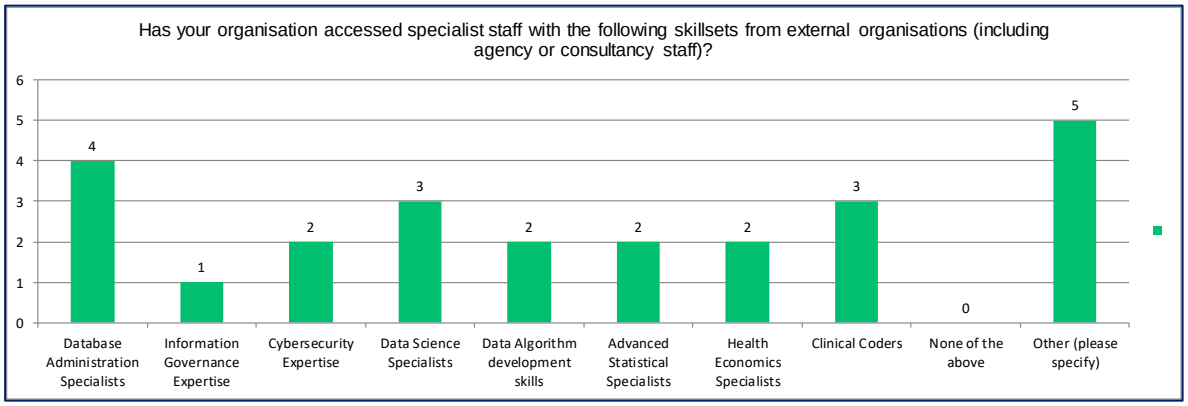
It is also of interest that there is one CCG that has recorded having an internal health economist.

It may be that these responses reflect a growing recognition of the need for more complex data analysis skills within healthcare and a willingness of organisations to fund these roles internally. Historically, specialists of this nature would be employed under short term contracts to complete specific projects, but as the volume of data available to organisations increases and the tools to extract improved value from these growing data volumes develop, organisations are beginning to employ these specialist individuals directly and as a core part of their intelligence teams. This would be very encouraging if this proves to be a correct assumption.

Question 10 - Does your organisation access specialist staff with the following dedicated business intelligence skillsets from external organisations?

Question 10 provides a follow-up to the previous question and aims to understand whether organisations who do not have those specialist data skills in-house look externally to access those skills when they are required.

Again 12 responses were received to this question, with the breakdown as below.



Of the 12 responses, only four organisations reported that they had never accessed any type of external intelligence specialist support and all of those organisations were secondary care trusts.

Two CCGs had accessed external clinical coding specialists which is untypical as

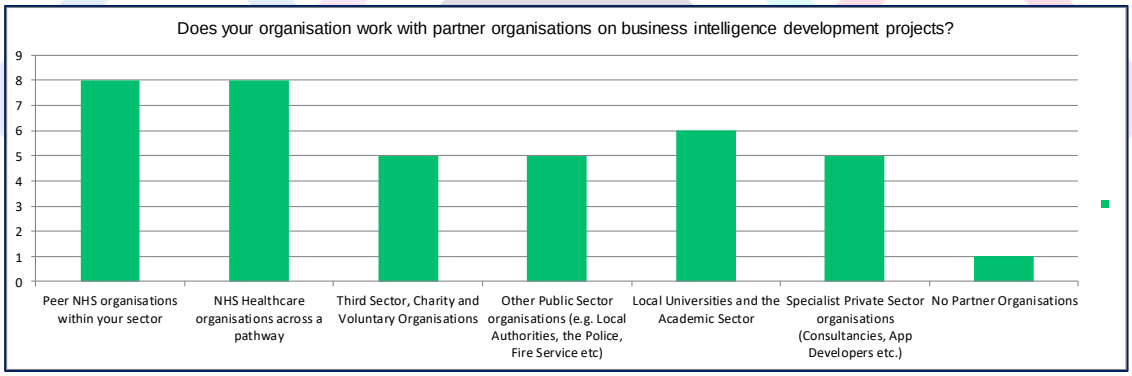
CCGs do not have responsibility for delivering clinical coded records but can be impacted seriously as organisations if they do not fully understand the quality of the clinically coded records they receive.

The primary takeaway from these responses is that most health organisations will engage with external intelligence and data expertise if required and that most have at some point utilised these experts to support their internal delivery of intelligence.

Question 11 - Does your organisation work with partner organisations to deliver more integrated, complex business intelligence outputs on clinical pathways and service delivery?

Question 11 was included in the survey to provide a simple baseline view of whether organisations worked collaboratively with partner organisations around information and intelligence projects.

The responses suggest that many organisations have engaged in collaborative business intelligence projects, with only one organisation stating that they had 'No partner organisations'.



It is also encouraging to note the range of partner organisations that respondees have identified and engaged with.

All 12 respondees stated that their organisation has worked with at least one type of partner organisation on a business intelligence development project. Some key points to note:

- Only one secondary care trust recorded working with the third sector, charity and voluntary organisations
- A mental health trust was the only respondent who stated their organisation had no partner organisation
- Four secondary care trusts have engaged with the local academic sector, while only two CCGs reported that
- Three CCGs and two secondary care trusts have worked with 'other public sector' organisations

These responses suggest there is a willingness within most organisations to engage with partners in business intelligence collaborations and a history of these partnerships already in existence. However, the source data highlights that most organisations tend to work mainly with peer NHS organisations, but only a small subset of organisations work across all the external selections presented.

Five organisations appear under each of the non-NHS categories, suggesting that those organisations are keener to engage externally with non-NHS data providers, while seven organisations responses suggested that they engaged only with other NHS, or public sector bodies.

Obstacles to efficient Intelligence Delivery

Question 12 - In your opinion, do any of the following obstacles impact on your information team's capacity to deliver against their objectives?

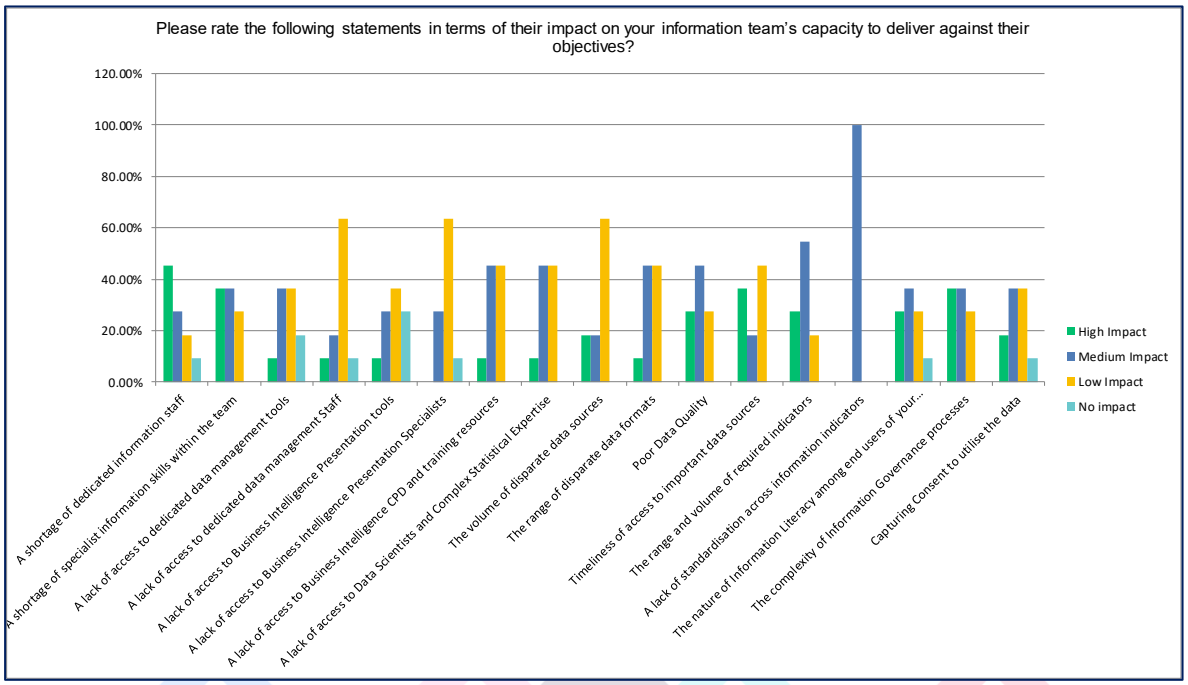
Question 12 asked responders to rate a series of statements in terms of their impact (High/Medium/Low/No Impact) on the team's ability to deliver their intelligence objectives.

The statements presented were as follows:

- A shortage of dedicated information staff
- A shortage of specialist information skills within the team
- A lack of access to dedicated data management tools
- A lack of access to dedicated data management Staff
- a lack of access to business intelligence presentation tools
- a lack of access to business intelligence presentation specialists
- a lack of access to business intelligence CPD and training resources
- A lack of access to data scientists and complex statistical expertise
- The volume of disparate data sources
- The range of disparate data formats
- Poor data quality
- Timeliness of access to important data sources
- The range and volume of required indicators
- A lack of standardisation across information indicators
- The nature of Information Literacy among end users of your information outputs
- The complexity of information governance processes
- Capturing consent to utilise the data
- Other

11 responses were received for this question and the breakdown percentage

responses are shown in the chart below.



The key issues highlighted by responders, where over 50% of responses were high or medium impact, were as follows:

- The range and volume of required indicators (82% of responses – nine responses)
- A shortage of dedicated information staff (73% of responses – eight responses)
- A shortage of specialist skills within the team (73% of responses – eight responses)
- Poor data quality (73% of responses – eight responses)
- The complexity of information governance processes (73% of responses – eight responses)
- The nature of information literacy among end users (64% of responses – seven responses)
- The range of disparate data formats (55% of responses – six responses)
- Timeliness of access to important data sources (55% of responses – six responses)
- Capturing of consent to utilise the data (55% of responses – six responses)
- A lack of standardisation across information indicators (100% reported this to be of medium impact – 11 responses)

A key issue for the CCG responses was the timeliness of access to key data with two of the three CCGs recording this as high impact. CCG responses, in general, tended

to remain at the medium impact level, with one CCG classing the lack of staff and access to specialist tools as high impact.

For secondary care trusts, the issues that attracted the most 'high impact' responses were staff shortages, a lack of specialist staff and issues around data quality. These responses also highlighted that there are significant concerns within this group around the nature of information literacy amongst their end users. This selection poses a series of questions for CHC, as one element of the programme's work is to improve the levels of information literacy within healthcare staff, particularly non-information professionals.

One of the secondary care leads commented that they felt an additional issue was:

> *"Focus on backward-looking reports full of indicators instead of analysis of underlying issues affecting these indicators."*

This issue may arise due to the volume and range of the current list of indicators that many organisations must report on. While reviews of the national list of required indicators have been undertaken by NHS Digital and others with a view to refining and reducing this list, ultimately the number of indicators remains significant. Many of these indicators may no longer be relevant as the health delivery landscape changes and do not offer intelligent support for service improvement and redesign where significant pathway concerns exist. The introduction of new national data collections such as the new emergency care dataset, while important, further complicates this issue and adds new delivery pressures on hardworking information departments and the related data systems necessary to support new intelligence requirements.

This issue was also a key issue for the single Mental Health Trust. This responder also commented that:

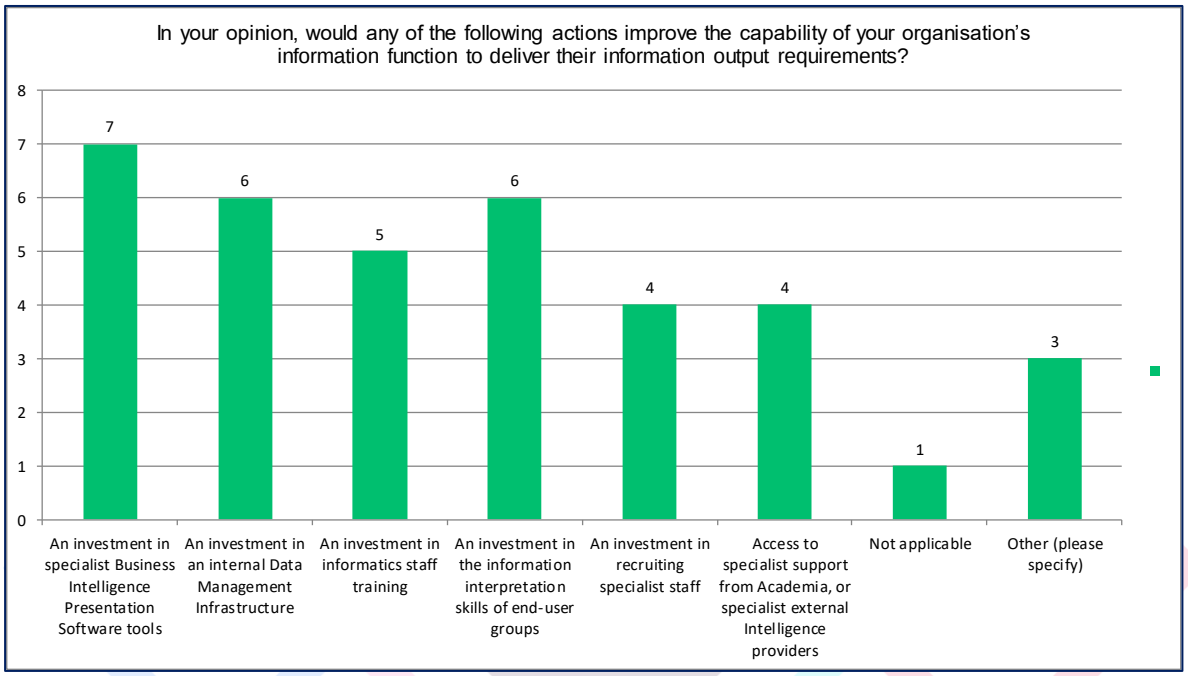
> *"We have addressed quite a few of these issues over the last few years by; securing additional funding to help our capacity and resilience; purchasing and deploying Tableau 18 months ago, having a dedicated data warehouse team to deal with the disparate systems and bring them together into a warehouse. Before this time, a lot of the top questions would have been high/medium impact."*

This specific response highlights the potential that an effective data management approach, with the specialist staff in place, can have on reducing the impact of many of these common issues.

Question 13 - In your opinion, would any of the following actions improve the capability of your organisation's information function to deliver their information output requirements?

Question 13 presented a series of options to responders to try and understand what actions they saw as key to improving their current intelligence services. A range of options was presented, and users could select all the options they felt would be helpful to their organisation.

11 responses were received, and they are presented in the chart below.



Understandably, almost all of the responders would ideally like to see a range of investment in their services and most chose a range of options to reflect this. Only one organisation, a CCG, stated that none of the options were applicable to them.

Investment in business intelligence tools was the most selected option overall, but investment in information infrastructure and in training for end-users was also very important for the information leads who responded.

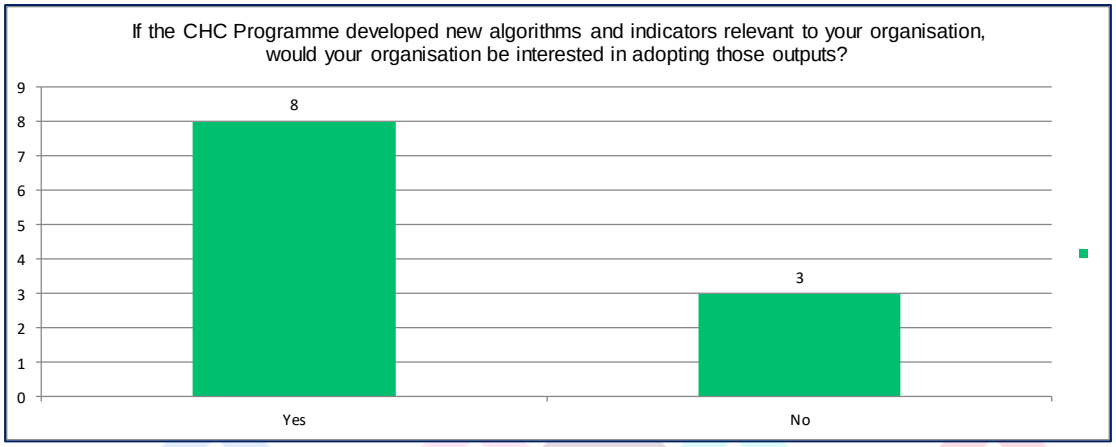
The importance of investment in informatics staff was exclusive to secondary care organisations, as was the requirement for information interpretation training of end-users.

The desire to see greater access to academia was shared across two secondary care trusts, one CCG and one mental health trust.

The underlying message from these responses is that information leads feel that there is scope for investment in their services to improve their capability to deliver their services.

Question 14 - If the CHC Programme developed new algorithms and indicators relevant to your organisation, would your organisation be interested in adopting those outputs?

Question 14 asked whether organisations would be interested in incorporating external algorithms and indicators into their local reporting systems, specifically those provided as outputs from the CHC programme.



Most respondents, eight out of 11, indicated that they would consider adopting CHC indicators, while three expressed concerns about doing so. Those who selected the 'no' option provided the following comments to explain their response:

- It depends on what they are developed for and whether we already have something in place
- Do not require support
- More and different indicators are not the answer. It creates further reporting burden reducing analytical capacity to invest it in more reporting

These comments need to be taken into consideration by the CHC team if they wish to encourage organisations to adopt their reporting outputs as the concerns they highlight are valid. The CHC understands that any algorithms developed through the programme need to be relevant to the organisations they wish to partner with but must also be conscious that the intelligence outputs are not simply adding to an already burdensome list of indicators. The value of any specific CHC outputs must clearly be outlined before organisations will engage.

One responder who indicated a willingness to engage with CHC commented:

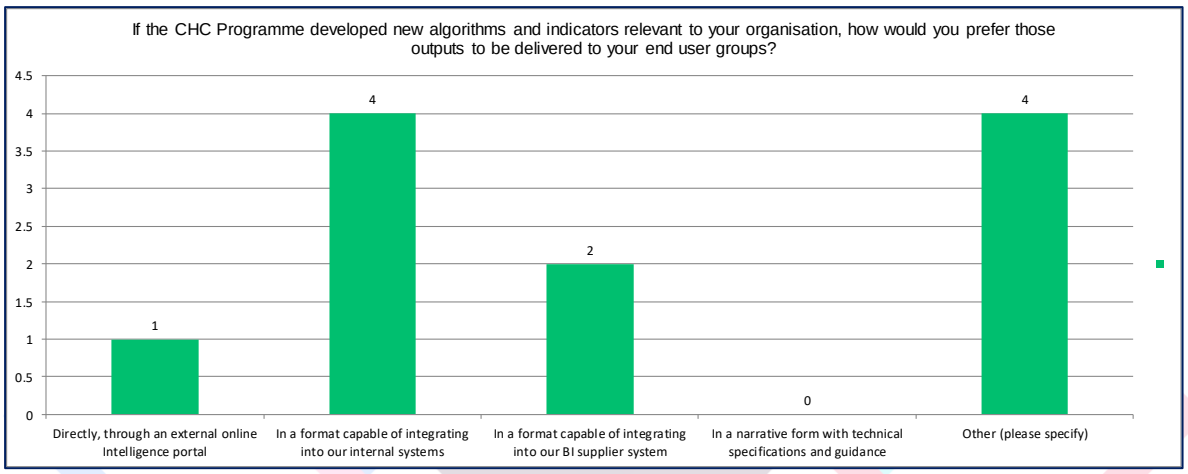
- I have said yes but without more information around what these are and what they would do for us, then difficult to answer this question

This concern will need to be addressed as CHC prepares to market its intelligence outputs going forward. Unless an organisation can see a specific benefit from their perspective, additional algorithms do not necessarily help.

Question 15 - If the CHC Programme developed new algorithms and indicators relevant to your organisation, how would you prefer those outputs to be delivered to your end user groups?

Question 15 was included in the survey to develop an understanding of how the CHC team could deliver any outputs from their algorithm work into organisations.

11 responses were received and only one responded that an external intelligence portal would be the preferred method of delivery. None of the responses were keen on a narrative approach to delivery, even if that narrative included the instructions and specifications necessary to implement the algorithms internally.



Four responders selected the 'other' option and left comments:

- Integration with existing systems would be key - for example, it would be extremely helpful to have patient-level algorithms that could be linked to hospital, community datasets and other key datasets.
- Ideally would rather work in partnership with CHC programme so we could help develop these together (but also in a format capable of integrating into our data warehouse)
- Both integrated into our internal BI systems; as well as technical guidance to replicate the indicators in our internal KPI reporting solution
- A mixture of above

Each of these comments supports the integration into local systems, with one particularly interested in engaging at an earlier stage of algorithm development.

This is a key message for the CHC team and clearly highlights a preference for incorporation into local systems as a preferred approach to intelligence delivery. This aligns with earlier responses requesting that additional indicators do not simply add to the access overheads many organisations already experience gaining access to new data.

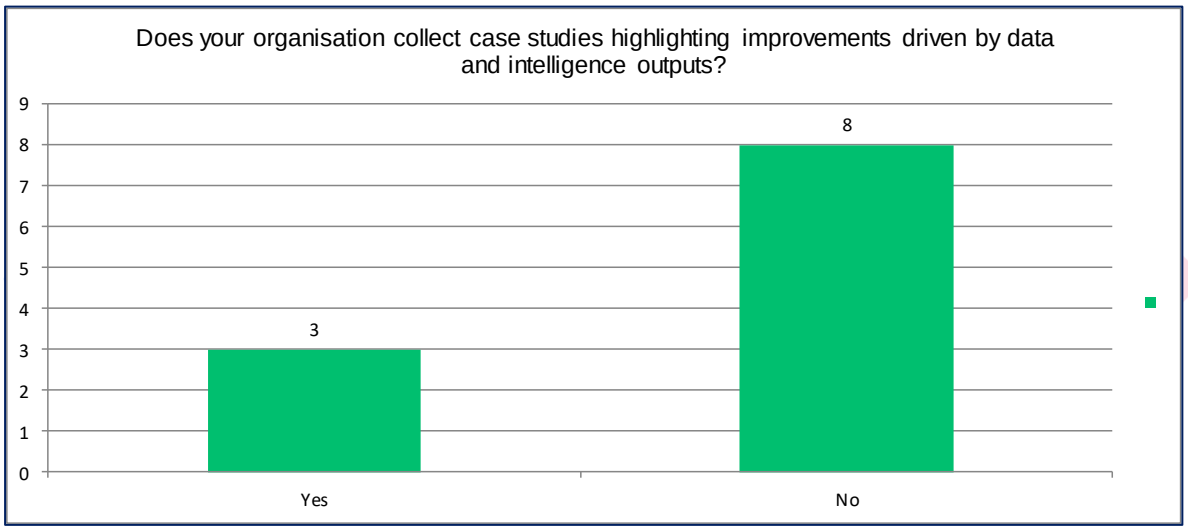
Sharing successful Intelligence Service Improvement Projects

This section of the survey focused on understanding how organisations currently share successful intelligence projects within their organisations and with peers.

Question 16 - Does your organisation collect case studies highlighting improvements driven by data and intelligence outputs?

Question 16 asked whether organisations developed case studies focused on highlighting improvements within their organisations driven by intelligence.

11 responses were received with a clear outcome that many organisations do not do this as a core deliverable. Eight organisations reported that they did not collect case studies.

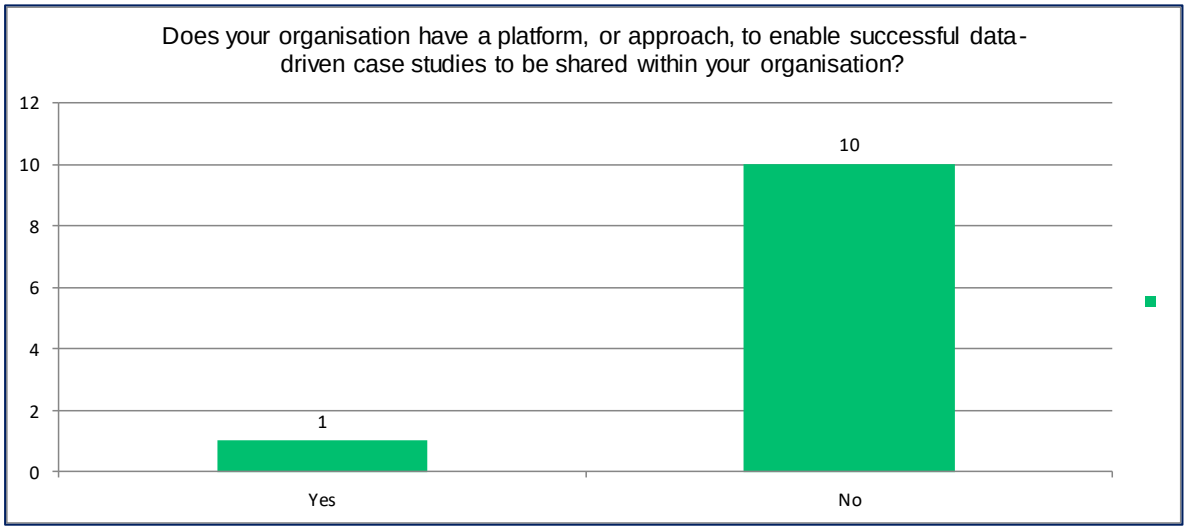


Of the three organisations that did collect case studies:

- One was a Secondary Care Trust
- One was a Mental Health Trust
- One was a CCG

Question 17 - Does your organisation have a platform, or approach, to enable successful data-driven case studies to be shared within your organisation?

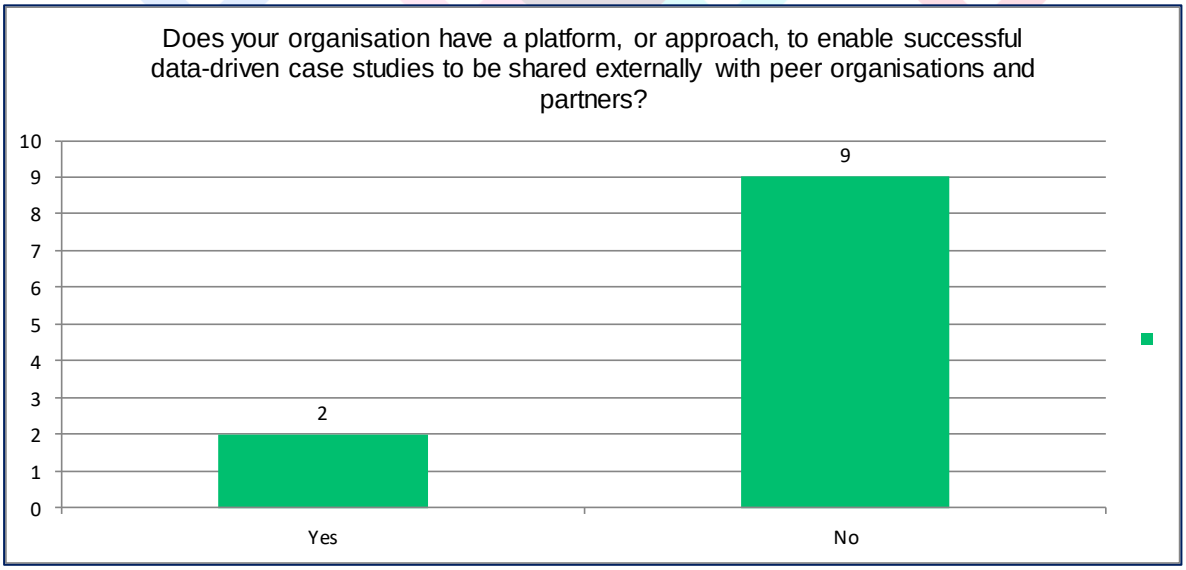
Question 17 followed up on the responses from question 16 and only one organisation, a secondary care trust, had a platform that was used to disseminate case study evidence. This platform was the organisation's internal business intelligence portal.



Question 18 - Does your organisation have a platform, or approach, to enable successful data-driven case studies to be shared externally with peer organisations and partners?

Question 18 explored whether there were external mechanisms for sharing case studies across organisations. Only two organisations reported that they shared case studies externally.

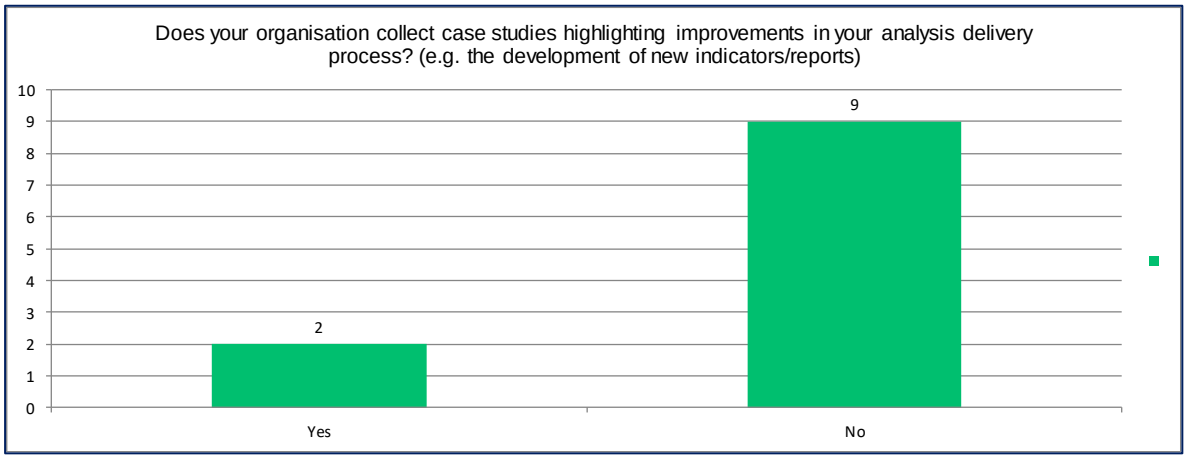
One of these, a CCG, said they used a local meeting of business intelligence leads for this purpose and one secondary care organisation stated they shared successful work out using partner organisations.



It is clear from these responses that there are limited formal opportunities for the sharing of successful case studies and organisations tend not to be focused on sharing their improvements across the system.

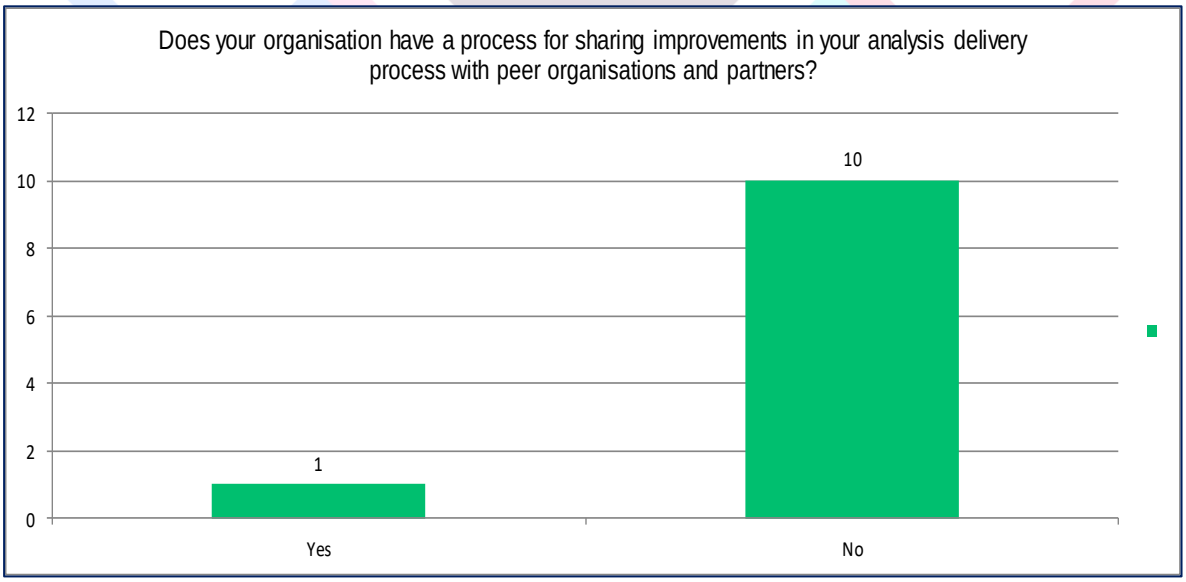
Question 19 - Does your organisation collect case studies highlighting improvements in your analysis delivery process?

The responses to Question 19 mirrored the previous response with nine organisations reporting that they did not collect case studies.



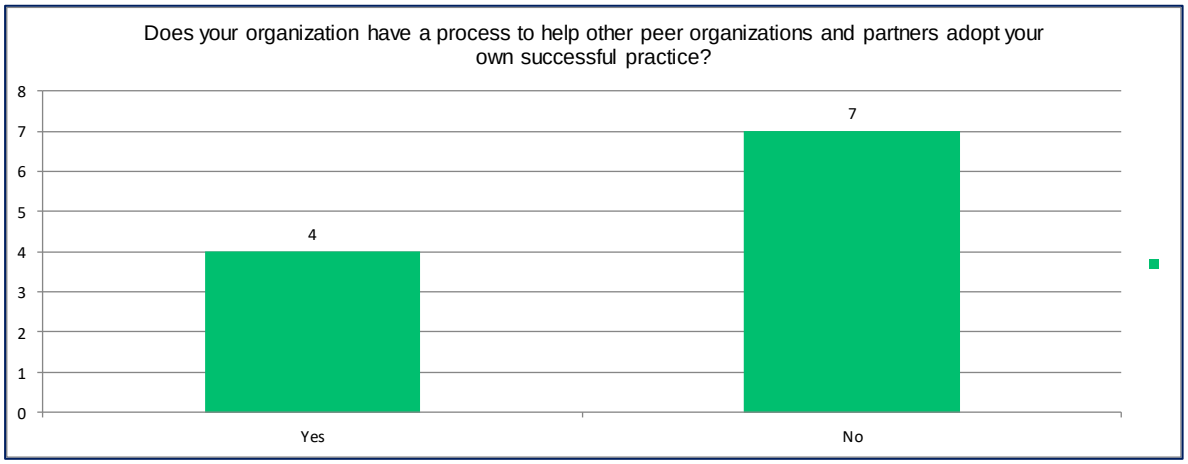
Question 20 - Does your organisation have a process for sharing improvements in your analysis delivery process with peer organisations and partners?

As above, this question only included one response where a secondary care trust lead reported sharing improvements with local provider trusts. No other response highlighted a sharing process.



Question 21 - Does your organisation have a process to help other peer organisations and partners adopt your own successful practice?

Question 21 asked if organisations supported other organisations in adopting intelligence practice that has been successful in their organisations.



Seven responses said no, but four organisations commented with a range of options they currently use. These included:

- Joint working with local trusts (secondary care trust)
- Engagement via the STP (secondary care trust)
- Shared with partners and peers through specialist networks and groups(mental health trust)
- Regional BI leads meeting (CCG)

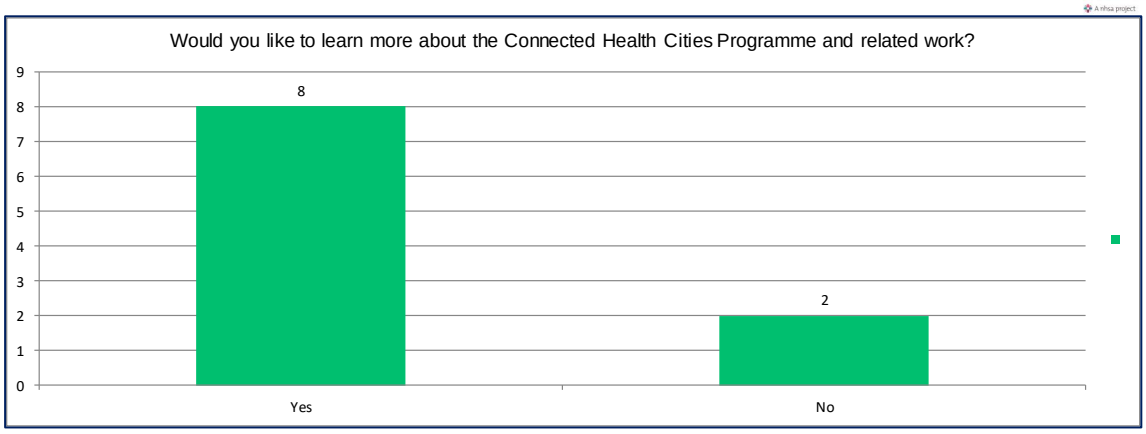
These responses, taken alongside the previous responses, clearly indicate that there remains work to be done to ensure that there are formal platforms and processes in place to encourage and enable greater sharing of intelligence best practice across organisations.

Your Information

The final set of questions related to how prepared organisations were to engage with the CHC programme and provided an opportunity to capture contact details for individual leads who would like to engage more with the programme.

Question 22 - Would you like to learn more about the Connected Health Cities Programme and related work?

10 responses were received for Question 22 with eight expressing an interest in learning more about the Connected Health Cities (CHC) programme.



This level of positive response is encouraging, but also highlights that many information leads do not feel they understand the aims and goals of the programme and what it is trying to achieve across the North. CHC may need to develop targeted information to be shared across the Informatics community as this has not been a group that has received CHC focus previously and this group will have a key role to play in embedding CHC outputs in the future.

Question 23 - Would you like to receive a report with the outcomes of this survey?

Eight responders to the survey requested access to this report and it will be circulated to the members of that group once signed off for publication.

Several responders indicated their desire to receive this report, but did not leave any contact details, so it may be worth considering circulating the final report back to all who originally received the invitation to participate in this survey.

Question 24 - Would you like to work with us to take forward any positive outcomes resulting from this survey?

In line with the previous question, eight responders have indicated a willingness to work with the CHC programme to address the results of this survey but not all left contact details. The CHC team will work with local intelligence networks to ensure that those who would wish to engage further are extended that opportunity through the networks.

Question 25 - Please provide your contact details

Seven responders provided their contact details and they will be receiving a copy of this report as requested and the CHC team will work directly with them to develop their understanding of CHC and to design a CHC intelligence output dissemination strategy that ensures they can reap the benefits of the CHC algorithm developments without creating inappropriate burdens on their internal processes.

KEY FINDINGS

There are a series of key headline messages for the CHC team that can be drawn from the responses to this survey.

The responses have clarified that business intelligence teams, regardless of their organisation type, are navigating complex data environments and are doing so with less than ideal resources.

- Over 90% of responders are dealing with 11 or more internal data source systems
- Over two-thirds of responding Intelligence Teams contain 11 or more staff, with only one team reporting less than five WTEs
- All intelligence teams reported having a wide base of intelligence consumers, each with specific needs and requirements
- Only one organisation supported the information delivery needs completely using internal resources, while over 75% of responding organisations require a combination of internal and external data infrastructure resources
- All organisations are required to deliver a vast array of local, regional and national indicators
- A shortage of staff and particularly staff with highly specialist skills is seen as a common issue
- The sharing of best practice in intelligence service delivery is informal and lacks formal platforms and processes to support it
- Collaboration with private providers of business intelligence is limited, but most organisations do work with public sector partners in some capacity
- Timeliness of access to data, the complexity of Information governance and a lack of standardisation around reporting specifications are key common issues shared by the majority of information teams
- All responders would like to see investment in their services to enable them to deliver improved outcomes

From a CHC perspective, the survey responses clarify the need for the programme team to consider very carefully how the intelligence outputs and algorithms being developed by the programme can be delivered to health and social care organisations. There is a clear preference from the survey for any indicator or algorithm to be delivered into organisations using their own internal business intelligence platforms and approaches. Creating an additional external business intelligence portal to deliver the CHC outputs was not an option supported by the responses.

There is, however, a clear sense that information specialists are keen to engage with projects like the CHC, and with academic and other partners to improve

intelligence delivery and dissemination in the future. The CHC team will need to work with these intelligence leads to consider the best mechanisms to ensure that successful dissemination of new and innovative intelligence reports has a clear pathway for implementation regardless of internal approach or specific information infrastructures.

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