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To: Kent Health and Wellbeing Board

Subject: Integrated Intelligence: how it will support Integrated commissioning?

Classification: Unrestricted

Summary:

Integrated or whole systems intelligence is increasingly seen as the game changer for integrated commissioning and transformation change to meet the future challenges faced in our health and social care economy. In Kent, much work has already been done to move towards an agreed system to develop a framework to understand how use of health and social care services varies across the whole population, how and what services need to be transformed and improved, and more importantly building local evidence for whole system change, moving towards an integrated model of care.

This paper makes a case for whole systems intelligence and a need to have a cultural shift from analysing data at an organisational level to analysing information across the complete patient pathway. This should include health and social care as well as information on socio, economic and environmental factors that contribute to health and wellbeing. In this regard it is about the effective sharing and management of information at a citizen level, scaled up to a population level to effectively understand the holistic nature of integrated care and the many confounding factors that affect health and social care outcomes and a person's resilience to improved wellbeing.

Recommendations:

The Health and Wellbeing Board is asked to:

- (i) Note the importance of this area of work and its links with the wider integration agenda.
- (ii) Endorse the establishment of a task and finish group to support the Integration Pioneer Steering Group to establish the necessary processes and mechanisms to construct the plan and deliver the aims and objectives across Kent.

1. Introduction

- A report by the UK Administrative Data task force in 2012 states that **administrative data** collected and held by government departments or agencies has the potential to provide an evidence base that would contribute a rich new resource for research, policy making and evaluation. Improving access to and linkage between **administrative datasets** for research and statistical purposes would have demonstrable effects on economic growth and help us respond more effectively to challenges related to the health and wellbeing of people. Making better use of these under-utilised resources will provide efficiency gains through the re-use of existing data, reduced reliance on more expensive methods of data collection and will speed the production of policy-relevant research. This sits neatly with the current government agenda on integration.
- In Kent, like the rest of the UK, public sector organisations generate extraordinary quantities of **administrative data** in the course of running services – from housing benefits in the district authorities to hospital admissions in the NHS. The term *big data* has come to refer to these very large datasets, and *big data analytics* to refer to the process of seeking insights by combining and examining them.
- An abundance of data and computing power gives us new ways to organise, learn and innovate. The purpose of this brief is to raise awareness to the Kent HWB around the opportunity for data and analytics to transform public service delivery, the challenges this agenda poses for the public sector, and to make recommendations for how commissioners might begin to realise the former whilst addressing the latter.

2. Why is integrated / whole systems intelligence important and what are the benefits?

2.1 Population changes

Demographic changes in our population over the last 30 years have changed considerably how our public sector services, particularly hospitals, are being utilized and who utilizes them. For example, an ever increasing aging population means an increased number of complex frail elderly with multiple chronic and social problems need to access a number of services across health and social care at the same time.

2.2 Commissioning with limited resources

A national funding gap in the NHS of £30 billion by 2020 means that the current approach to commissioning service by service needs to change radically and be more integrated; using intelligence system across the whole system more innovatively. Commissioners need the relevant resources and technical expertise to develop a **longitudinal system using metrics that are person centered / population based, rather than the activity or performance of individual organisations or services.**

Improving the health and wellbeing of the population requires commissioners to have a **cross sectional** understanding how prevention and preventative services impact differently at different population risk groups, eg. impact of healthy lifestyle interventions on wider population (**primary prevention**) versus the impact of

health checks on people at risk of a long term condition (**secondary prevention**) versus the impact of re-ablement and rehabilitation services (**tertiary prevention**) for patients with complex needs.

2.3 Researching and evaluating factors / wider determinants of health and wellbeing

In the health and social care arena, enhanced use of administrative data and analytics for example, could help ensure patients in care homes receive the right medicines at the right times, or help hospitals further personalise patient care and advice to minimise readmissions after surgery. In the welfare arena, better segmentation and personalisation could help identify the support that unemployed people need and get them into long term work.

Research and evaluation can help to inform the redesign of services, and take a more holistic approach including an understanding of the impact of social, environment and economic indicators on a person's likelihood of poorer outcomes, additional support etc which will help considerably towards JSNA and JHWS development process as illustrated in Box 1.

Box 1– Research value of administrative data

The 2012 report on *The UK Administrative Data Research Network: Improving Access for Research and Policy* highlights the value that could be derived from such a resource relates to the policy relevant research it enables, examples of which include:

- **Addressing social mobility – by linking data on education, training, employment, unemployment, incomes and benefits**
- **Researching causal pathways over the life course – linking data on education, health, employment, incomes and wealth**
- **Comparative analysis of access to, and the provision of, social care support for the elderly.**
- **Informing policies designed to tackle poverty – linking data on housing conditions, health incomes and benefits**
- **Constructing indicators of parental employment, social background, childcare and relating these to the provision of social care for children**
- **Linking data on (re)offending behaviour, incomes, benefits and health – exploring the role of poor mental health**

In addition to linking administrative data together across government departments, value can also be gained from linking administrative data to other studies, including ongoing longitudinal and other surveys. Linkages of this type have considerable potential for reducing the burden on respondents to such surveys and for improving the quality and extent of the information they provide.

2.4 Understand population need and measuring impact on the whole system

The Kent JSNA is formulated from various needs assessments around different programme areas, diseases and at risk groups, and is supported by local health and social care maps that have some of the core data elements plus other local indicators. It also uses information derived from the national core minimum dataset

which is a suggested list of indicators that should be used as a minimum to describe population need across organisational sectors and themes.

While information is reported in these respective areas to reflect population need, there is still a limited understanding of how all these areas can be contextualised in the whole system, particularly in terms of impact on services. Limitations in the way data is currently accessed and stored within organisations also limits the analysis of data, focusing around specific pathways of care which is the traditional commissioning model. For example chapters on each long term conditions (eg. COPD and Diabetes) explain hospital readmission activity and QOF prevalence in detail, but they fail to distinguish how many of them have multiple long term conditions and their differential impact on other services such as social care and community health.

2.5 Supporting Implementation of Integrated Care

The current national agenda promotes the move to a pro-active preventative integrated care model through various incentives and policy drivers (explained in detail later). This means that intelligence systems need to be more inclusive, holistic and extensive for two reasons:

- To understand the baseline as to how our population are utilizing all services across the systems with a view to work out how each service can be redesigned / re-orientated towards an integrated more cost effective model of care, thus channelling the right amount of investment and disinvestment more systematically between hospitals and the community without destabilising the local economy.
- To design a more robust framework in monitoring and examining the benefits and impact of integrated care not just on organisations but on the whole system over time.

Local data will provide in-depth information for establishing priorities for local action through the Health and Wellbeing strategy and for developing integrated models of care.

3. How is data being used in Kent for intelligence / commissioning purposes?

- A multitude of public sector organisations currently collect and utilise data and data systems. An audit carried out by the Kent & Medway PCT Cluster listed up to a hundred different clinical and management information systems utilised by the different commissioners and provider organisations.
- However, specific mapping is still required to describe the current and future picture of information systems that are being used for intelligence and commissioning purposes. One of the more locally developed systems utilised by GPs in the last few years is the Management Information System in DGS CCG which reports primary care and secondary care utilization information onto one dashboard, developed by the Kent & Medway Health Informatics Service. This tool enables GPs to understand the individual patient needs, and is useful at a CCG commissioning level to understand gaps and outliers within the system. Other dashboards are being used by the remaining CCGs.

- The Kent & Medway Public Health Observatory (KMPHO) routinely link data from different sources to examine and describe relationships between different risk factors and common outcomes eg. death rates 30 days after hospital discharge where both death registry data and hospital admission data are linked together for analysis. More recently it completed an extensive exercise describing service utilization across a risk stratified population where up to 10 different datasets were linked at a patient level which has helped to explain how risk stratification approach could be used for integrated commissioning and integrated care.

4. What are the challenges?

4.1 Intelligence based on programme areas versus whole system intelligence

- Business intelligence teams in public sector organisations perform a number of functions particularly activity / contract monitoring and performance management, usually derived from nationally set frameworks and targets, but they are usually orientated around their respective organisational boundaries.
- This means that while we may have good understanding of how many patients / clients are utilizing a specific service because the organisation is collecting data for that purpose, very little understanding is available as to how the same patients / clients are utilizing other services within a defined time period ie. the whole patient / client journey. Several case studies below illustrate the problems within key programme areas.

Case Study 1 – Child Health

Child health data is collated in numerous places and feeds into several repositories, for example, the Child Health Record (red book), National Child Measurement Programme, services such as CAMHS, sexual health clinics, KDAAT etc. As such it can be hard to get an oversight of the population perspective for child health in Kent especially when trying to identify those cohorts with the greatest needs, for example looked after children, unaccompanied asylum seekers, children with disabilities etc. Linking health data with that held by other agencies such as schools and social care is also a current difficulty as highlighted by the problem public health have encountered in identifying health needs of those educated at home, health assessments conducted for looked after children and rates of teenage pregnancy in children in need / at risk. KIASS have been undertaking parallel streams of work such as triangulation of data sources from various agencies to create heat maps and are exploring the development of a single platform to inform case management. However, this is different from data linkage (at citizen level) for the whole population because the latter would give far greater understanding of the needs of specific cohorts and how commissioning could therefore be integrated to reduce duplication of services and ensure needs are being met holistically.

Case Study 2 – Mental Health

Mental health data is stored in numerous places and at many differing levels and as such it makes it hard to get an overall picture of the mental health need in the population. The epidemiology of mental health is problematic as it is often applying national survey data to local populations. The use of the MINI 2K is also used to predict mental health need (this is an index of current severe mental health demand and is not based on need in the population). Data is collected in primary care on both common mental illness (QoF depression), and on Severe (QoF CPA) and there is also another QoF measure for long term conditions with severe mental illness. However, much of this data is not linked up together or with Mental Health Trust in patient data. On top of this there is wealth of data and information in the IAPT psychological counselling service, which again is fragmented and rarely triangulated with QoF or patient records. Linking this data at a citizen level, particularly with other long term conditions and with other issues such as sickness records and social care data may well enable us to improve patient outcomes, streamline services and provide an integrated and wraparound care in a more timely fashion.

4.2 Information Governance

- Until recently, national and international legislation on data protection, patient confidentiality and information governance have not clearly distinguished between the use of shared information and data for effective public sector service commissioning for the benefit of community or population, and the use of sharing information for the benefit of the patient / citizen. **The key to integrated intelligence is the safe transfer of data at a pseudonymised level to understand the various factors, barriers and gaps to improved integrated services, providing holistic support to a patient / client but aggregated at a whole population level. This differs from the sharing of individual patient records for care coordination which is about individual patient / client care. Commissioners need to be clear at what level we will be using and accessing the data so that information governance arrangements can enable, not block access.**
- The Caldicott2 Review and HSCIC report issued in the last two months have given suggestions and guidance as to how local areas can carry out their own data linkage, analysis and reporting of data complementing a similar role to be carried out nationally by the HSCIC.

4.3 Linking datasets and improving data quality at a local level

- Most administrative datasets used by public sector organisations are not designed for research purposes and thus not subject to statistical standards or quality controls. As the systems that generate them change, so might the data. They may be difficult to access, and linkage may be prohibited or may not be feasible.

- There is still a local need to explore issues around data quality and completeness, particularly primary care data from GP practices. As data is used and fed back this drives up data quality – especially as those responsible for the data collection begin to see the value to their own areas of business. In this regard discussion is required how this may be taken forward.
- Apart from information governance and data quality there is still the question as to how data sets from different organisations can be linked **at a patient / citizen level**, using a common identifier. While all NHS provider organisations utilise the NHS number for the routine recording of data, non-NHS organisations like district authorities and third / voluntary sector organisations do not and thus resource is required to assign and upload NHS numbers onto existing datasets and databases.
- District authorities hold important data such as housing service provision and council tax (the Nuffield Trust have acknowledged in past reports the importance towards effective integrated commissioning) but may not fall under the remit of HSCIC for data linkage at a national level, which would therefore require local action.

5. How will data integration support local strategic policy drivers?

- Kent's application to be an **Integration Pioneer** acknowledges the importance of whole system intelligence as a key driver for whole system change, moving towards an integrated model of care and building the local evidence base for innovation around service integration.
- The £3.8bn **Integration Transformation Fund (ITF)** announced by the Government expects our area to move toward a fully integrated health and care system by 2018. Outline plans must be agreed by the Kent Health and Wellbeing Board by April 2014 as how this will be achieved, roles and responsibilities of partner organisations, especially acute trusts, and contingency plans if targets are missed. A whole system intelligence solution will not only help inform plans for transformation change but also underpin a robust evaluation and monitoring framework for the progress of that change.
- Kent's recent entry **as an early implementer site into the national Year of Care programme** also uses a whole system intelligence approach to design a new tariff system that will incentivise provider organisations across health and social care to integrate care services around the patients with multiple long term conditions. A key part of the national team requirements is using a **longitudinal person / population centred metric system over time** to test the validity of the new currencies and tariffs.
- A whole systems intelligence approach can also have a positive impact on KCC's own transformational work '**Facing the Challenge**' and the move towards integration.

Appendix 1 highlights the changes between current and proposed system.

6. What needs to happen next?

A cross organisation task and finish group comprising representation from various intelligence teams and information governance, which should report to the Kent Pioneer stakeholder group. The purpose of the group would be:

- Articulate the strategic vision of integrated intelligence in Kent and how it fits with national and Kent Pioneer vision for integration.

- Explore what local and national programmes / projects are currently undertaking similar work.
- Design and support the proposed mapping of integrated intelligence systems identifying where data linkage is required and the resources to do it.
- Identify where data quality is an issue of concern from the various data sets of different organisations, wherever feasible and ensure commissioners are aware of these concerns.
- Discussion around the ability to link datasets to be shared across organisations and utilized by CCGs using appropriate front end / dashboard solutions. The DGS MIS system is a good example. While not all data from all organisations is included it gives an example of what can be done. In this regard Kent Public Health is currently exploring an in house equivalent solution for the purpose of research and evaluation, as explained earlier. Discussion is also underway to explore the possibility of the KMPHO to become an interim safe haven, moving towards an accredited safe haven status which will enable much of the vision outline above to be a reality in the near future.

Recommendations:

The Health and Wellbeing Board is asked to:

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- (ii) Endorse the establishment of a task and finish group to support the Integration Pioneer Steering Group to establish the necessary processes and mechanisms to construct the plan and deliver aims and objectives across Kent

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Appendix 1

	Current System	Proposed System
Location	Intelligence systems are disparate, organisational based, NHS or non NHS, commissioner or provider	A trusted third party (ie. Public Health) will be able to access link de-identified datasets from different intelligence systems of different organisations No new data needs to be collected
Purpose	Mainly for activity and performance monitoring of organisations, services and programmes aligned with national outcomes frameworks and performance measures. Limited use for commissioning integrated care	Mainly for researching causal pathways of wider determinants of health and wellbeing, evaluation of services to improve quality and access, target at risk groups. Ideal for commissioning integrated care
Improving Data Quality and completeness	Process maybe patchy depending on each individual organisation and their obligation to do so. Minimum standards / requirements are limited as they are activity focused rather than patient / citizen focused	Process can be systematised because approach to intelligence will be person / population centric and contribute towards rolling improvement in payment / tariff contract arrangements. Organisations will be obliged to meet enhanced standards as per contract obligations
Information Governance	Most systems are organisational based so IG arrangements for data sharing using a common person identifier across organisations are limited	Data sharing across various organisations NHS, non NHS will be the norm not exception. Current IG requirements are that a trusted third party with an accredited safe haven status can be allowed to access and link de-identified datasets using a common pseudonymised identifier
Longitudinal functionality	Organisations are able to track their activity and performance over time but cannot fully explain causation	Trusted third party will be able to 'track and trace' population sub groups over time and how and why they are utilizing services more robustly
Data linkage	Limited or no data linkage across organisations. Most datasets limited to activity while will have costing data as well	Data linkage will enable in depth analysis across a range of information from demographics, case mix, service utilization activity and costs
Outputs	Most intelligence systems will have bespoke 'front end' solutions or dashboards which report on key indicators derived from national guidelines. However their usefulness in understanding population need will be limited	Datasets linked at a patient / citizen level will enable much more localised precise understanding of how population need impacts on service utilization and spend which can contribute more substantively to products such as the JSNA, JHWS, CCG and district health profiles