HEALTHCARE COSTING FOR VALUE INSTITUTE

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A population approach to value-based healthcare

Case study

Camden CCG

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Synopsis

The increasing pressure on health and social care services led Camden CCG to realise that they needed to adopt a new approach to commissioning healthcare, focused on value.

This case study describes how the CCG are developing a population management approach to commissioning, with the aim being to understand how patients with complex and chronic needs might be better supported by a broader range of providers, and by an approach that goes beyond traditional clinical care pathways.

To support this work, the CCG is using data from a range of sources to develop a model which enables segmentation of the Camden population by a range of criteria, including demographics, diagnosis and use of healthcare services.

This model, the Camden Population Management Tool, has enabled the commissioners to segment the population, with the use of healthcare as a proxy for health need. This can provide an indication of where pathway improvements could improve health outcomes or reduce the costs of care for a particular segment of the population.

Segmentation information from the tool has been used to design an integrated diabetes service across acute, community and primary care services in Camden. This is commissioned through a lead provider model and includes jointly agreed metrics across all elements of the pathway.

Introduction

Camden CCG covers a diverse borough with currently 230,000 residents, but this is expected to grow by around 10% by 2029. This growth is forecast to be predominately in people aged over 60, which will inevitably increase the pressure on local health and care services.

To meet this demand on services, the CCG recognised they needed to develop an alternative approach to commissioning healthcare; this proved to be a value-based approach and was inspired by a case study which looked at the lifetime use of statutory services by three generations of one Camden family.

Three generations of a Camden family

The individuals whose stories were used for the case study[1], Muriel (born 1935), her daughter Janine (born 1958), and Janine's son Joshua (born 1977) had complex inter-generational health and social care problems including poverty, depression, alcoholism, drug addiction, unemployment, domestic violence, and occasionally incarceration.

Each family member was born into a chaotic social context, and their medical records showed that throughout their lives they had numerous health events; fractures, hospitalisations (for heart failure, chronic obstructive pulmonary disease, liver disease, kidney disease, seizures, and gastrointestinal bleeding), suicide attempts, and psychiatric admissions. Their patterns of behaviour, which are typically associated with deprivation and mental illness, resulted in them developing a range of chronic conditions affecting their lives.

These behaviour patterns also resulted in a high cost to health and social care; the total cost to the local system for the last year of life for these three individuals was over £1m.

The CCG describes this as the "**cost of chaos**"; multiple interventions which were reactive, and not planned to add value for the individual.

To improve health outcomes for patients like those in the case study, the CCG believes they need to:

- organise care in a way that it achieves value for patients, and do that in a more thoughtful and strategic way
- plan and deliver care across the wider system, and not just focus on traditional clinical care structures
- provide long-term investment in prevention and early intervention to try to break the patterns of problems for people like those in the study.

There are many social and economic factors that influence health, deprivation, and previous work on value has predominantly been focused on clinical conditions and the acute end of the pathway. People with more complex and chronic needs need support from a range of providers beyond traditional clinical care, and their preferred outcomes may not be solely clinical.

The CCG has devised a data-based tool to help them take a population management approach to commissioning. This provides a method of segmenting the local population, with use of healthcare services as a proxy for health need within patient groups. Once a particular segment of the population has been identified, it is then possible to start to develop patient- focused outcomes for that group of the population.

[1] Time after Time — Health Policy Implications of a Three-Generation Case Study
Caroline Sayer, M.B., B.S., and Thomas H. Lee, M.D.
N Engl J Med 2014; 371:1273-1276October 2, 201

Camden's population health management tool

The CCG has developed a tool which incorporates a wide range of information including:

- pseudonymized secondary care admission data, linked to primary care disease registers
- information from NHS Right Care intelligence products
- content from the Improvement and Assessment Framework
- local information sources and benchmarking.

The population health management tool has been inspired by the Bridges to Health Model, and developed using R software and SQL, and presented using Tableau software as an exploratory tool. It allows users to manipulate these data sets, using a series of drop downs options and cutting data according to different criteria.

Initially, the CCG would have preferred to use social parameters such as deprivation to develop the population segmentation, but this data was not available. Instead, the use of secondary care health services, and the severity of patient health were used to segment patient groups. This segmentation process used data on all individual patients who had either accessed secondary care at least once during a three-year period, or who have one or more Long Term Conditions (April 2011 – March 2014). This tool is periodically refreshed to monitor the impact of interventions on the population as a whole.

As the tool covers the whole population, from individuals who are generally healthy to those with more complex conditions, it can be used to focus on specific segments of the population, as well as different combinations of health conditions. This allows the CCG to start to introduce new models of care and patient pathways for distinct segments or cohorts of Camden's population.

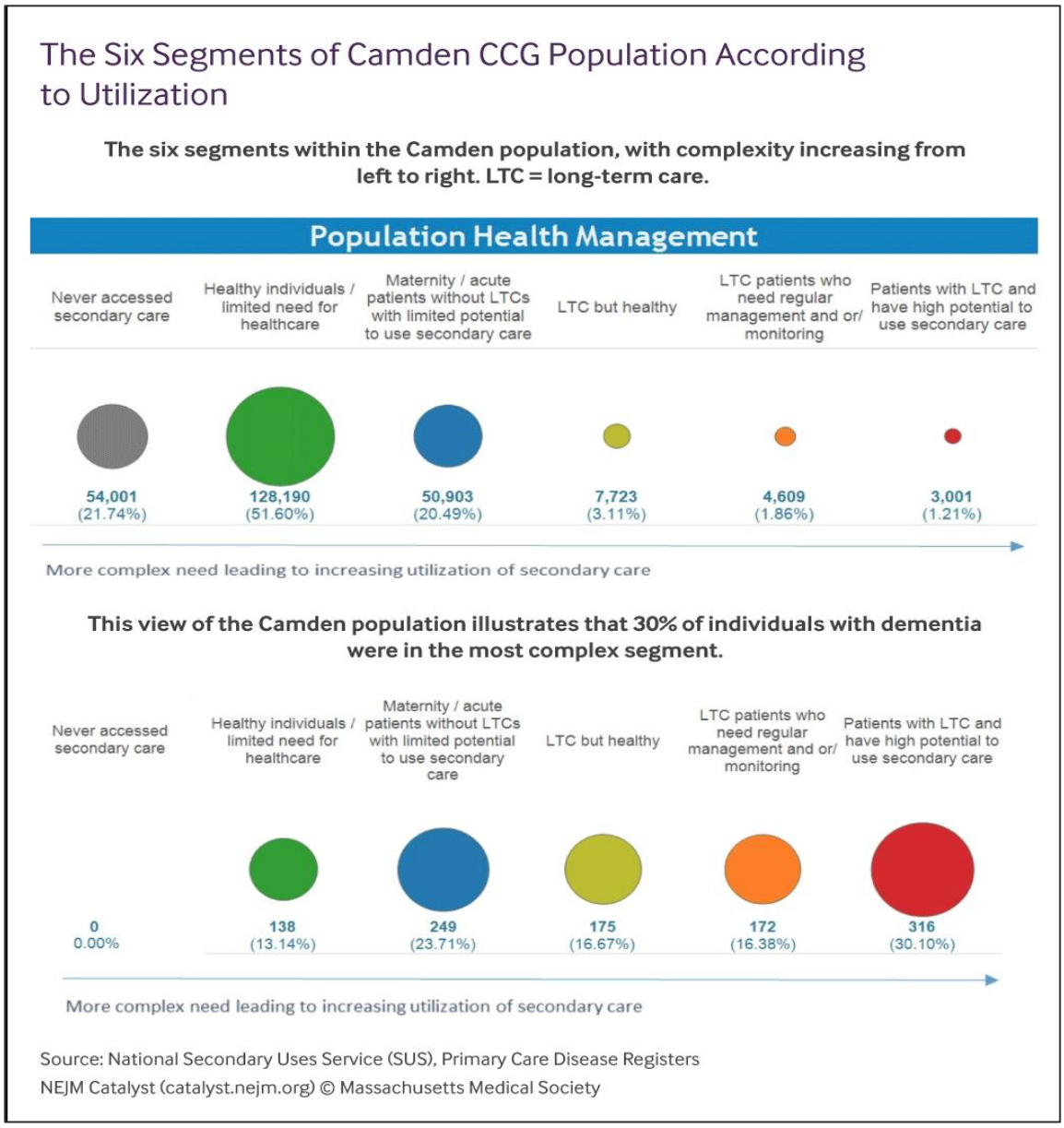
Figure 1, below, shows an extract from the population health management tool, which illustrates segmentation of the Camden population based on utilisation of services:

- The most complex segment of the population, which are those with long term conditions and high potential to use secondary care (shown in red), were only a small proportion of the CCG's total population, at 1.21%, but the healthcare resources that were used on their care represented 13% of overall spending.

- In contrast, nearly 22 % of the population have never accessed secondary care.

Production of this type of information enables the CCG to identify where pathway improvements will have the most impact on health outcomes, on costs, or on both of these.

Figure 1: Segmentation of the Camden CCG population – by service utilisation

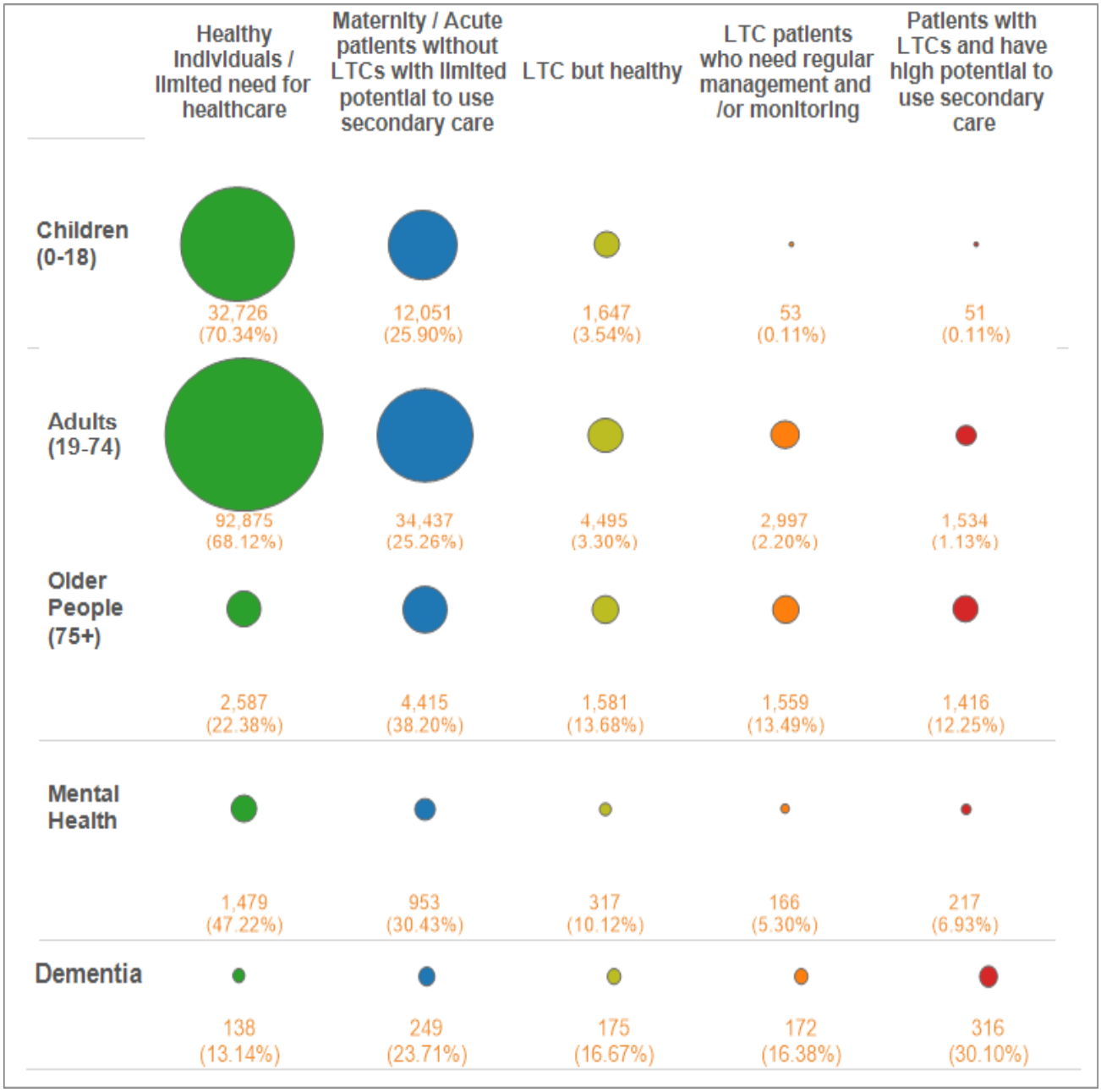


The population can be broken down by age segment as shown in the next screen shot from the CCG's tool.

Here in Figure 2, the relative size of the circles represents the proportion of the population in each age and service use segment:

- A very small proportion of children, 0.11% live with long-term conditions, and are likely to use secondary care.
- In contrast, over 12% of people aged over 75, and 30% of people with dementia are potential high users of secondary care.

Figure 2: Segmentation of the Camden CCG population – by age and service use



Further layers of the tool then enable investigation into how people within each segment access healthcare, and provide additional profile – in Figure 3 this is shown by age, cost distribution, and ethnicity. Clearly the quality of the information depends on the accuracy of data capture which varies by provider.

Figure 3: Linking segments to age, costs and ethnicity

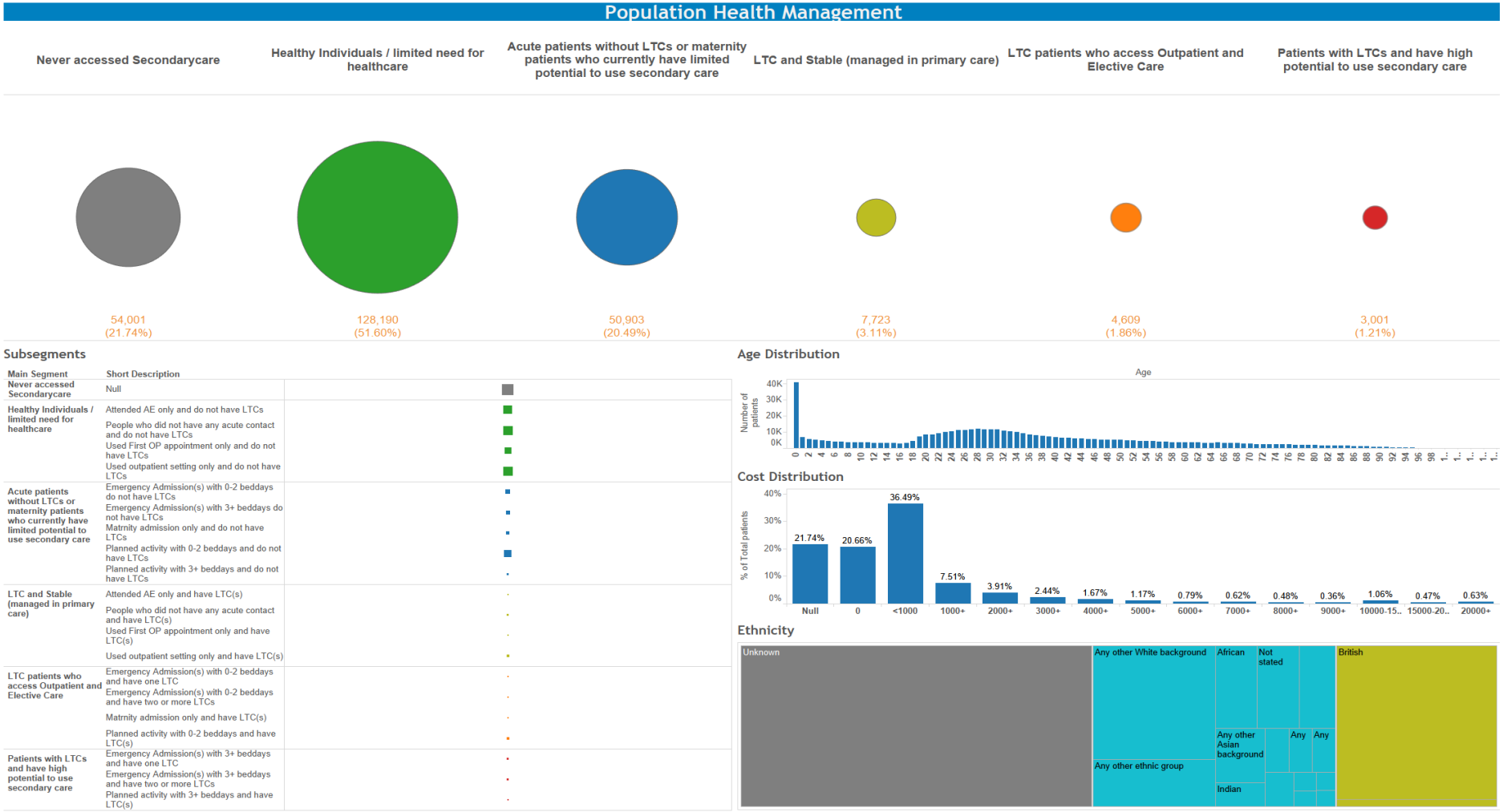
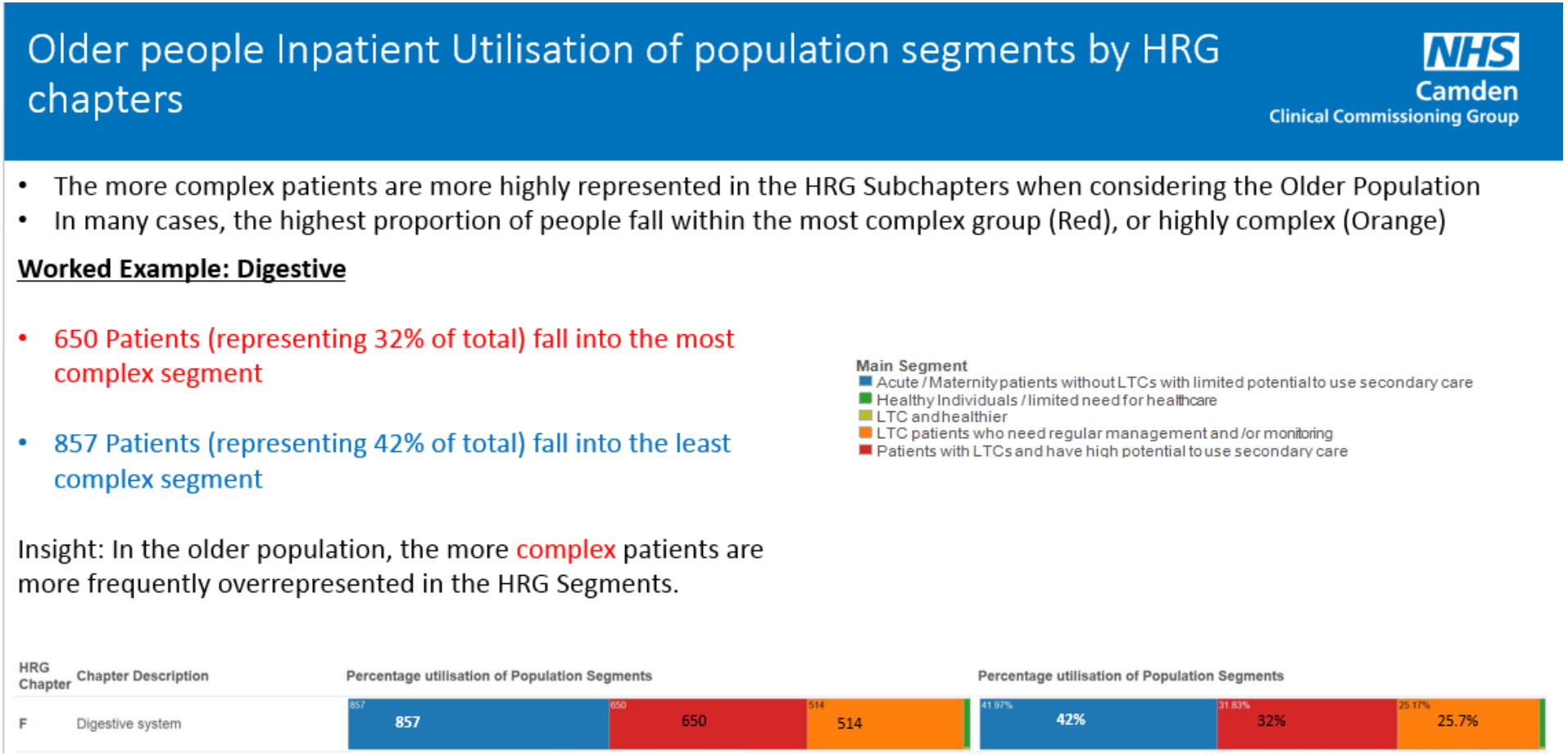


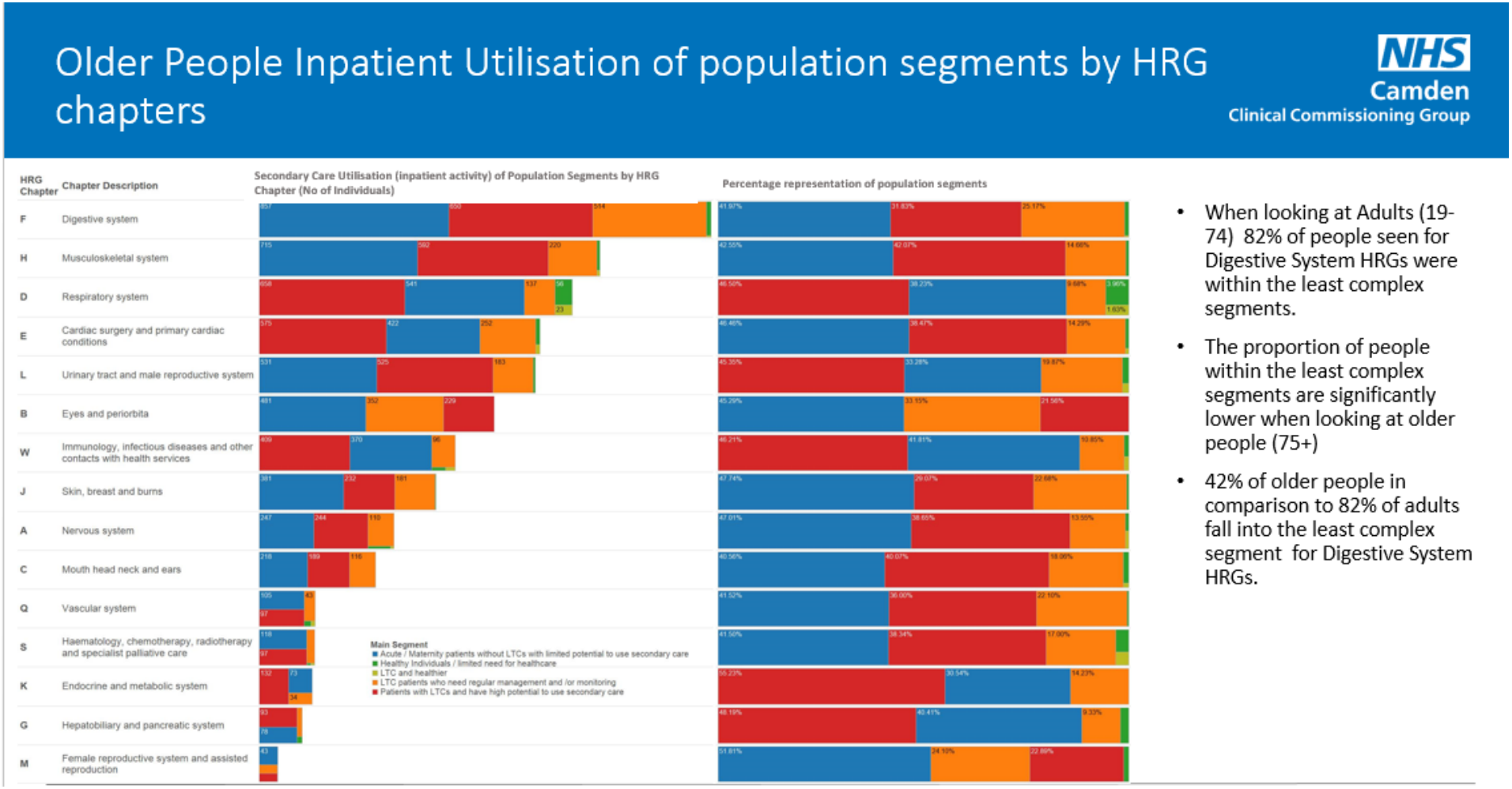
Figure 4i and 4ii provide examples of the use of health care by a specific group, in this case older people who have received inpatient care for conditions which are coded to the digestive HRG chapter.

Figure 4i: Segmentation – older people, inpatient, digestive HRG



For patients who have received care, the segmentation can be done by HRG chapter. Figure 4ii shows how the older segment of the population access healthcare by HRG segment, compared to adults aged 19 to 74.

Figure 4ii: Segmentation – older people, inpatient, digestive HRG



Camden's population health management tool enables the commissioners to bridge the gap between the information known by local clinicians about the needs of individuals, and what is happening at the whole population level.

It is clearly not practical to design tailored services for individuals, but prior to the tool being developed, the various data sets previously used in isolation did not allow the CCG to group together people who had common health need characteristics.

Where specific segment of the population can be identified, better planned services that are designed to meet their needs should result in improved value for both the patient and the system.

The population management tool can be easily updated to reflect changes in the population needs, which, in some cases, can be rapid; the CCG's most recent cut of the data from the tool has shown that the segment of the population with the most complex needs has recently increased from 1.21% to 1.4%.

Given the disproportionate use of health care by that group, any change in the population numbers will have a much more significant impact on demand for services.

Moving from developing a tool to embedding a population healthcare management approach

The CCG commissioners, along with provider and patient partners, have used the tool to both identify the best health care outcomes for each segment, and to put in place a strategy to reduce the costs of care, particularly inpatient care in hospital.

Information from the tool has also informed the development of the Camden Local Care Strategy, in partnership with all key health and care organisations, which will:

1. agree a single model of care for the delivery of health and care services in the future
2. develop plans to deliver a sustainable system that provides high quality care
3. have a shared programme of work with over 30 different workstreams
4. develop health and care solutions that will improve outcomes of different populations within Camden.

It is this fourth element which will be informed by population segmentation:

- Those population groups who are mainly healthy will benefit from a holistic yet effective intervention at population level; for example, access to rapid assessment and treatment, after which they can return to their normal health and function.

- People with long-term conditions or chronic illness will need supportive self-management and health services, delivered in the community, as well as help to manage their condition, maintain health, and prevent complications.

- The most complex segments will need a range of patient centric interventions with a multidisciplinary approach, and integrated health and social care support.

The next section of this case study provides an illustration of how the population-based healthcare approach has been used to improve Camden's diabetes services.

The Camden diabetes integrated practice unit

Information from the population analysis was used by Camden CCG to develop an integrated service for people with diabetes. The population approach provided information on the demographics and service usage of this group, who are a relatively well-defined cohort of the CCG's population. The population tool provided information on the demographics and service usage of this group, who are a relatively well-defined cohort of the CCG's population.

The commissioners brought together clinicians, providers (including the voluntary sector), patients and carers to define those outcomes which are important to people with diabetes. This facilitated redesign of the diabetes services, based on best practice pathways, with the objective of increasing the value of interventions and delivering those patient defined outcomes.

The three key strands of the diabetes programme are:

- prevention and early identification
- delivery of high quality services
- integration of all parts of the system to manage care.

The main objective for the diabetes programme is to achieve value by providing a proactive and preventative service that will result in improved outcomes for patients, and a reduction in hospital admissions.

The existing diabetes programme in Camden was relatively well established, and this formed the basis for the development of the Diabetes Integrated Practice Unit (IPU), which brought together primary, community and acute providers together into a proactive multi-organisation partnership. A single value-based contract was put in place, led by a prime provider, Royal Free London NHS Foundation Trust, on behalf of four other partner organisations: Central and North West London NHS Foundation Trust, University College London Hospitals NHS Foundation Trust, Haverstock Healthcare and Whittington Health.

The newly formed multi-disciplinary IPU team, based at the Royal Free Hospital, now includes a diabetes specialist nurse, podiatrist, dietitian, psychologist and consultants. The new contract is outcome focused, which allows the IPU team the freedom to deliver care in an innovative way.

The CCG's contract with the Royal Free contract has three key components:

- improving the management of diabetes within the population
- avoiding complications for people who are diagnosed with diabetes
- collecting and improving patient-reported outcome measures.

The IPU is not directly involved with the identification and testing of pre-diabetes; this is the role of primary care. The CCG has in place a planned care Local Enhanced Service (LES) which aims to accurately reflect the prevalence of people with long term conditions, including diabetes. GPs are financially rewarded for diagnosing people with these conditions, and success is measured against stretch targets that reflect the expected prevalence of disease in their practice.

However, the IPU provides a supportive role for primary care, with clinical leads working with diabetes specialists to help practices identify more people with diabetes. Specialists also provide training and education to GPs and practice nurses, which creates stronger relationships and greater confidence in their respective roles and capabilities.

Contract payments are linked to the delivery of high-quality care and are awarded in stages to keep the focus on improving patient outcomes over time. These include:

- an increase in the numbers of people with controlled diabetes
- an increase in the numbers of people with controlled diabetes and controlled blood pressure / cholesterol
- a reduction in the number of unplanned admissions
- a reduction in amputation rates and episodes of myocardial infarction.

Each of these outcomes has an annual set of performance thresholds associated with a funding allocation, to encourage sustained improvement.

From the inception of the IPU, Camden insights team were engaged with the development of suitable outcome framework and developed the technological solution to linking the primary and secondary care data sets. Leading on from this work, the team developed a centralised dashboard which facilitates the ongoing monitoring of the contract.

Figure 5 on page 17 shows the CCG's diabetes outcome framework, with figure 6 on page 18 providing an example of a Diabetes IPU quarterly dashboard report of performance against the outcome measures.

Figure 5: Diabetes outcome framework

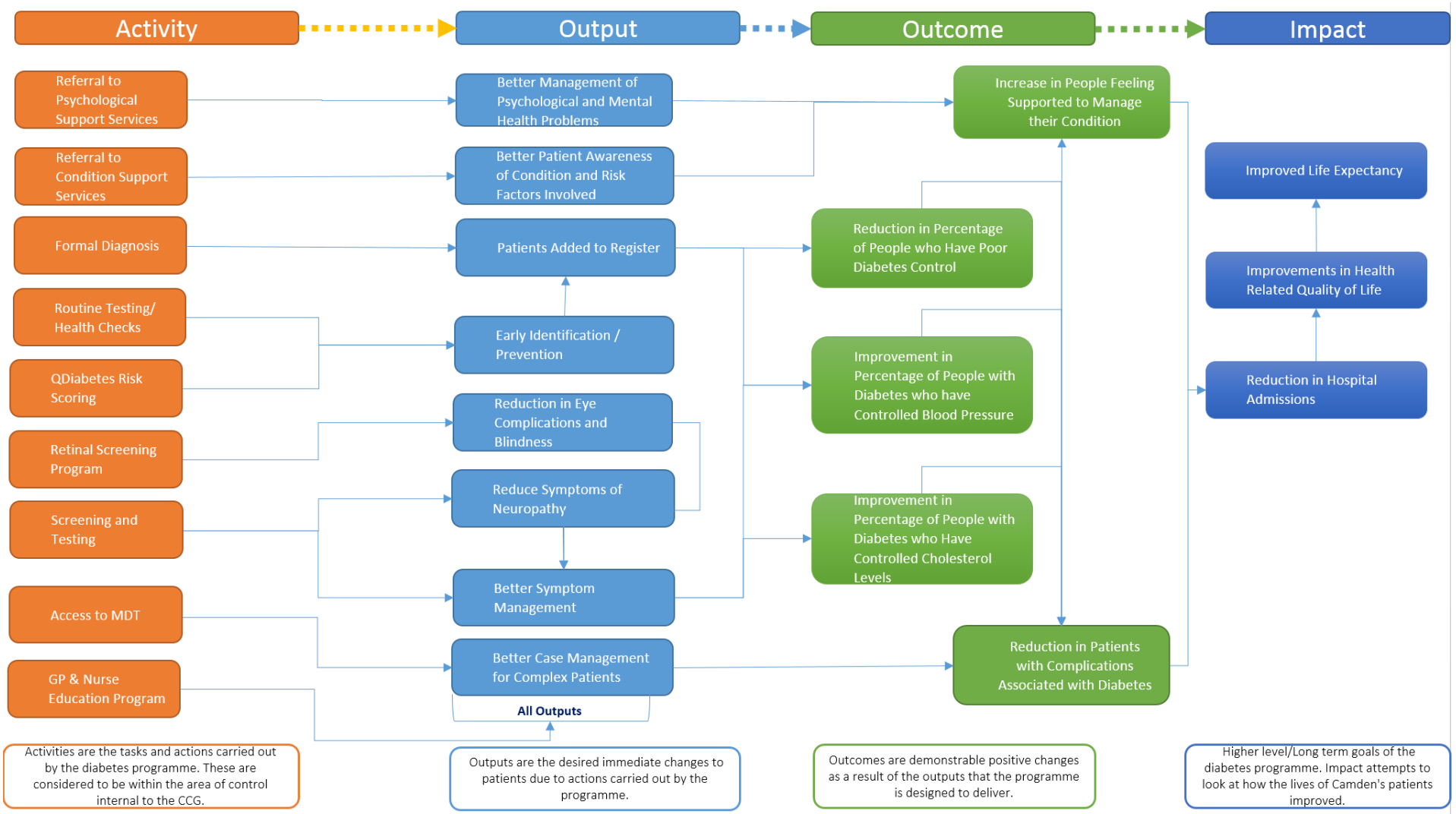
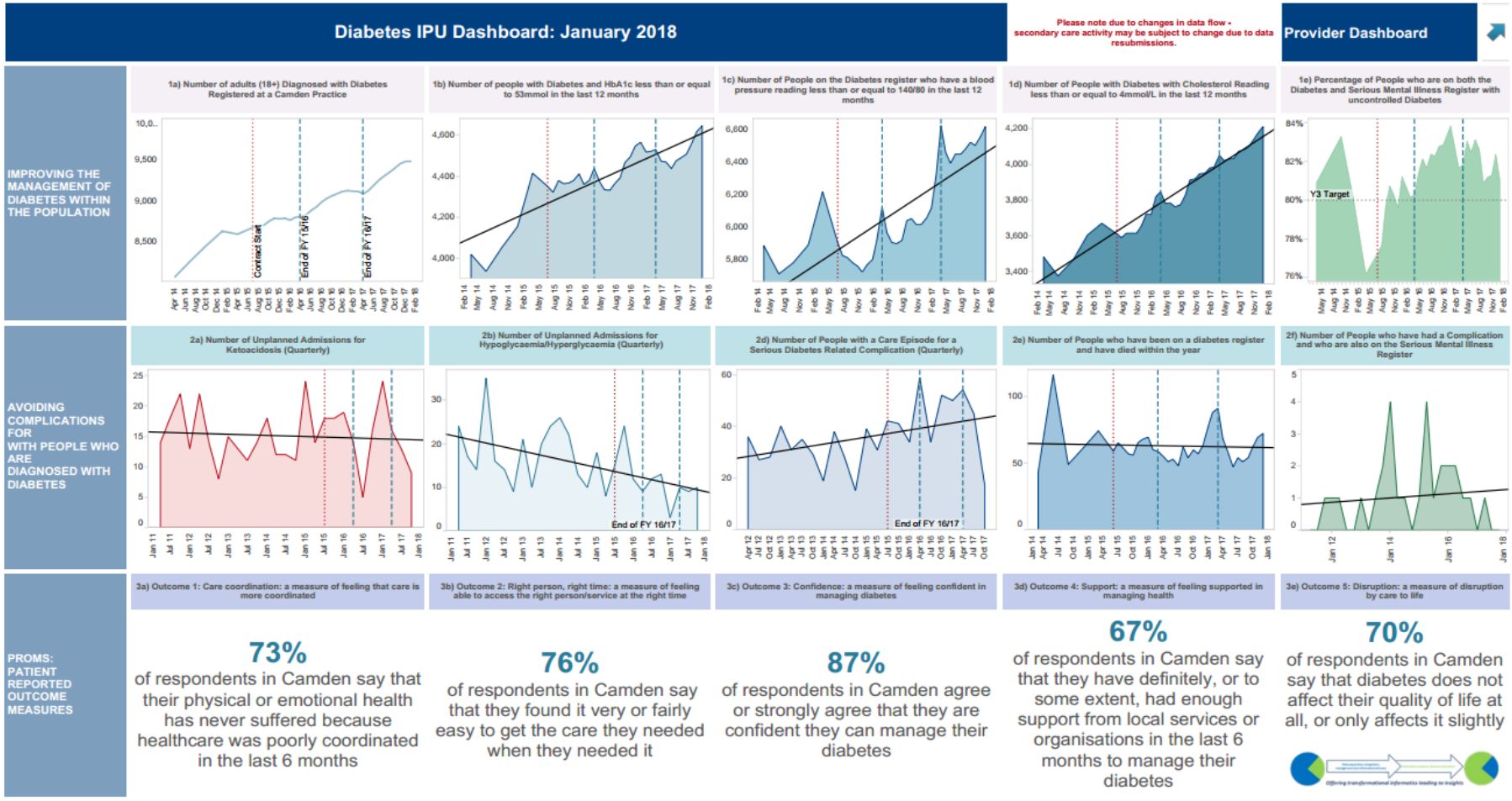


Figure 5: Diabetes IPU performance dashboard



Benefits to date

The CCG has collected evidence to show that the establishment of the IPU has resulted in significant changes in diabetes care in Camden.

One key change has been improvements to the pathways of care for the high numbers of patients with diabetes and serious mental illness. In addition, there has been a focus on tackling geographic variation in care and devising an approach to monitor the quality of inpatient diabetes care.

Specific measurable improvements have included:

- an improvement in the proportion of people with good diabetes control (target 48% / actual 50%)
- improved blood pressure control for people with diabetes (target 68% / actual 69%)
- development of an acute care alert system which flags inpatients with poor diabetes control to the IPU.

Key learning

- Commissioners need tools that help them understand the needs of their population, and thus support the commissioning of integrated models of care which achieve greater value for patients and the NHS.

- Having the ability to group patients with similar health needs helps commissioners to understand and plan for those needs to improve patient outcomes and reduce costs.

- Safe and secure access to data across health and social care systems is required. This requires information governance requirements to be addressed across organisations, as well as cultural challenges in sharing data with system partners. CIDR is an enabler to this, working across different organizations to produce a secure share patient results and records.

- Collaboration between the provider and the commissioner has generated a strong working relationship, with a good understanding of each other's roles in the management of this particular long-term condition.

- The contractual development began with a data driven approach, overlaid with the commissioner-provider partnership approach, ensuring that there was extensive clinical input to improve the approach to diabetes care.

This approach has now been replicated by Camden CCG for other services including:

- a musculoskeletal service providing assessment, diagnosis, treatment, advice, education and care planning

- physical and mental health and social care for service users living with psychosis

- extended hours access provided at GP hubs to reduce unplanned A&E attendances.

The Healthcare Costing for Value Institute programme 2018/19 is built around four themes:

Confident costing

Supporting improvements in costing

Costing is high on the NHS agenda with NHS Improvement's mandation of new costing standards. The Institute provides a support network where members have the opportunity to discuss costing challenges with their peers, as well as share learning. Our wide range of Confident costing events and publications ensure we support both those new to costing as well as more experienced costing staff.

Translating data

Making the most of patient-level cost data

Providers of NHS services have increasingly large amounts of data about their patients, with the roll-out of patient-level costing (PLICS) across the NHS. The challenge is how to make the most of patient-level cost data to support improvements in patient care and deliver efficiencies. The Institute has a series of toolkits to support members turn the data generated by PLICS into powerful intelligence. The Institute's support network allows members to share examples of how they have embedded PLICS within their organisation and encouraged clinicians to use PLICS data to support service redesign.

Driving value

Improving patient outcomes at lowest possible cost

The concept of 'value' in healthcare – maximising the outcomes which matter to people at the lowest possible cost – is increasingly seen as a key lever for supporting the delivery of high quality sustainable healthcare. The challenge is how to do this in practice. What is clear is that clinicians and finance staff need to work more closely together to support improvements in value. The Institute has a growing reputation for bringing together senior finance and clinicians to explore what value means for the NHS. Institute members have the opportunity to hear from those at the cutting edge – both nationally and internationally – and take back practical ideas for their own organisations. Our value challenge projects work with members to put the theory of value into practice.

Innovation

Pushing costing and value boundaries

The Institute continues to push forward and promote costing and value-based healthcare. This is supported by Institute-led projects which aim to challenge current practices and the existing culture. The Institute works with its Members, Partners and Associates to learn from and share good practice in the UK and internationally. We are always looking for new ideas and opportunities to ensure that we are at the cutting edge of costing and value.

To view the 2018/19 Institute programme **click here**

Further information

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