

# Sollis Commissioning Product Overview

## Johns Hopkins University's Adjusted Clinical Groups

### Background

Sollis Commissioning and the Adjusted Clinical Groups (ACGs) system address the following key themes within the complex business of clinical commissioning:

- Population profiling and health needs assessment
- Resource utilisation and allocation
- Performance assessment (outcomes)
- Service re-design (pathways of care)

With the advent of clinical commissioning, clinicians (GPs, nurses and community matrons) will require as much information as possible about their patients. It is clear that the historic silos of secondary and primary care data feeds will not enable informed decision making. Not knowing how frequently your diabetic patients are presenting at A&E, for example, puts clinicians on the back foot from the outset, especially if such patients are known to the practice for having multiple conditions that may be better treated within a primary care setting.

In England  
an estimated  
**15.4 million**  
people carry at  
least one long-  
term condition.<sup>1</sup>

It is estimated that between 2011 and 2013 there will be a 60% increase in the number of patients carrying two or more long-term conditions (co-morbidities). Indeed the Department of Health estimates a tripling of patients with multiple long-term conditions (LTCs) by 2050.<sup>2</sup>

The Long-Term Conditions QIPP work stream seeks to improve clinical outcomes and experience for patients with LTCs in England, and there are innovative new ways to meet the challenge. Healthcare intelligence based on risk-stratification, predictive modelling, performance management and quality of care metrics can make a real difference and improve outcomes for patients carrying chronic diseases. The long-term condition challenge lies at the very heart of our partnership with The Johns Hopkins University and our implementation of the Adjusted Clinical Groups (ACGs) system.

<sup>1</sup> Long-term Conditions, The King's Fund: April 2011

<sup>2</sup> Sir John Oldham (National Clinical Lead, QIPP, Long Term Conditions and Urgent Care) Department of Health: June 2011

## Intelligent Information for Clinical Commissioning

As recognised experts in reforming healthcare delivery processes, we often encounter the challenges of resource allocation, assessing provider performance and disease/case management issues.

On resource allocation:

- How do we distribute limited healthcare resources, whether financial, human resources or targeted programs, to ensure those resources are directed to the patients/CCGs/practices most equitably?
- How can budgets be adjusted to reflect the needs of patients?
- How can financial risk be transferred in a fair way?

On provider performance:

- How do we ensure that the services commissioned match the needs of the patient?
- How do we ensure that comparisons between service providers or commissioners take into consideration the variance in morbidity burden?
- How do we ensure that interventions are assessed in a fair way given the variance in population morbidity?

On disease/case management:

- How do we identify the patients who could most benefit from targeted programs to maximise health gains?

## Sollis Commissioning

Sollis Commissioning is a fully integrated suite of software that supports clinical commissioners by delivering the intelligence to answer those and other questions. At the heart of the application is a patient based data warehouse that captures the key NHS data sets critical for the delivery of healthcare intelligence. These data sets cover secondary care, primary care, community and mental health. Provision is also made for the capture of social services data.

An intuitive web portal delivers a comprehensive range of analyses and reports that consider activity and finance, including clinical dashboards, contract and performance management reporting and acute invoice validation. Reporting is configured at a number of different levels, including cluster, CCG and practice.

The integration of the Johns Hopkins ACG system means that, for the first time, clinical commissioners have access to a single system with a fully integrated set of commissioning applications that provides a single point of reference for clinical, financial and activity information supporting clinicians and managers alike.

A recent example of ACG integration is the production of a comprehensive list of risk-stratified diabetic patients – including all recent care details – for use by diabetic nurses in multi-disciplinary settings. These reports can make use of the full range of primary and secondary care data, alongside any additional local data sets, including community, mental health or social care. Thus, risk stratification becomes integrated into a wide range of services, reports and care activities.

The Sollis Clinical Dashboard is complementary to ACGs, and uses the same rich data set to help improve the management of patient cohorts with particular long-term conditions. In addition to standard QOF metrics and cross-practice benchmarking, local performance metrics can be included.

## Adjusted Clinical Groups

Developed for primary care, the Johns Hopkins University ACGs solution is a population based case-mix system for identifying and measuring patients' morbidity burden, based on disease patterns, age and gender. It enables clinical commissioners to find innovative ways of managing multi-morbidity patients, redesigning primary and community services and developing pathways to improve outcomes. The system has been deployed in thirteen countries worldwide across five continents. No other risk stratification/predictive modelling tool has been peer reviewed as extensively as ACGs.



ACGs offer a set of unique characteristics which differentiates it from other risk stratification or predictive modelling tools.

### **Clinical complexity represents more than a simple summation of diagnosis codes**

This is a person-based system which focuses on co-morbidities. It is not a simple disease based system.

### **ACGs support the full spectrum of management applications**

The ACGs system has multiple applications. It is not simply focused on the identification of patients at high risk of emergency admission (though it does this too).

### **It provides more than a simple score**

Patient care profiles deliver a comprehensive set of clinically meaningful information that go beyond simple risk scores. It includes a comprehensive view of costs, built from primary (including prescriptions) and secondary data sets.

### **It maximises the use of available data**

Algorithms exploit a rich body of NHS and Social Care data sets (for example, primary care, secondary care, community care, mental health and prescriptions).

### **Flexible and customisable**

This is not a 'black box' system. The system, including its algorithms, is fully transparent. The back-end database is available for local interrogation and analysis.

**70%** The percentage of total healthcare expenditure in England that is attributed to long-term conditions<sup>3</sup>

## Key Features

The Sollis / Johns Hopkins collaboration seeks to deliver an evidence base of health intelligence upon which clinical commissioners, GPs and other healthcare professionals can improve the delivery of healthcare and, thereby, enhance the health status of populations. The ACG system is an essential tool for all research, academic or commercial organisations that share this mission. Key features of the system are:

- A unique approach to measuring morbidity that improves accuracy and fairness in evaluating primary care performance, identifying patients at high risk and forecasting healthcare utilisation.
- A more accurate representation of the morbidity burden of populations, subgroups or individual patients, as a constellation of morbidities, not as individual diseases.
- A person-focused approach, which captures the multidimensional nature of an individual's health over time.
- The ability to describe and manage healthier populations as well as sicker, more specialised patient populations.
- A product that has been proven worldwide and which combines the international expertise of professionals who constantly modify and improve the system in response to user need.
- Its development by a world-renowned healthcare academic institution and the leading School of Public Health in the world.

<sup>3</sup> Long-term Conditions, Department of Health web site: June 2011

## Financial Analysis

In the past, most payers have calculated budgets and capitation rates based on age and gender and, less frequently, 'community rating'. Currently, with the increasing number of chronically ill individuals, the need for morbidity adjusted resource allocation that considers a wider range of characteristics than simply age, gender and geography is critical.

While age, gender and geography can explain much of the variation in resource consumption in very large, randomly selected population groups, in reality, few, if any, of the patient populations captured are truly random – some form of selection bias is almost always in play. By incorporating patient clinical characteristics – in addition to simply age and gender – into the budget process, the ACG system provides a mechanism to improve the fairness in the resource allocation process by better accounting for individuals' expected medical needs, thus ensuring an equitable distribution of limited healthcare resources.

## Care Management

Quality improvement and outcomes management often involve focusing on one or more specific diseases and comparing a process measure (for example, appropriate use of lab tests, prescription of certain medications) or an outcomes measure (for example, asthma inpatient admissions or emergency room visits) across several providers or health plans. In this context, the ACG system acts as a control for differences in case-mix or severity of illnesses among the populations being compared.

While the use of the ACG system for quality improvement and outcomes management in the aforementioned context is a retrospective activity, the ACG system may also be used prospectively to identify patients who are anticipated to have special needs in the future. Once identified, these patients, who typically suffer from multiple, chronic conditions, can then be case managed in an effort to intervene before the patient becomes a high risk case.

## Performance Assessment

Performance assessment is a technique for comparing the activities of health plans, healthcare providers, or clinics. Typically, performance assessment involves examination of resource utilisation: money spent on overall patient care or discrete services such as laboratory, pharmacy or inpatient care.

In performance assessment, the principal underlying question is, 'How does a provider's performance compare to that of other providers when case-mix is employed?' By taking into account the differences in illness burden among different providers' patient populations, the ACG system allows one to determine whether variations in practice are a result of providers having sicker patient populations or whether these variations are actually attributable to differences in the way providers practice medicine.

## Population Profiling

Population profiling is a technique for comparing the morbidity patterns of one or more groups, clinics or regions. By taking into account the differences in illness burden among different patient populations, the ACG system allows one to determine variations in disease prevalence as well as resource use.

Typically, population profiling is the first step to better understanding the healthcare needs of a population. For example, for subpopulations that differ in age, gender, geographical region, ethnicity or other characteristics, population profiling can assess the differences in health status and identify the healthcare needs of special groups.

Population profiling can also help explain variabilities in referral rates and differences in primary care services costs by linking these changes to changes in morbidity of the populations compared. Having a solid knowledge of the morbidity pattern of different populations also allows for the accurate evaluation of the efficiency of different healthcare practices, as well as the equitable setting of capitation payments.

## Integration and Co-operation

The integration of Sollis Commissioning with Johns Hopkins ACGs supports better integration between primary care organisations and facilitates co-operation between GPs, case managers and community nurses. Where this has worked well is when GPs and community nurses review patients together to identify those that could benefit from early intervention, facilitating the prevention of more expensive acute interventions. This process ensures that the nursing team have reviewed patients before making any physical visits, maximising the value of their time with each patient, increasing productivity and improving healthcare outcomes.

Sollis Commissioning enables GPs and clinical commissioners to consider the needs of a whole population when commissioning services, whilst at the same time ensuring that the individual is cared for appropriately through effective case management.

## Scalability

Sollis Commissioning has been implemented within single PCT, multi-PCT and clusters deployed within a data centre environment. Its proven scalability ensures that it can be tailored to fit the emerging NHS organisations, including macro shared service environments and micro practice / consortium organisations.

## The Sollis Partnership

Sollis has been at the very forefront of NHS commissioning software since its foundation in 1994. Our commissioning software has been used to analyse data on behalf of nearly half the population of England. Sollis commissioning technical solutions deliver business critical applications in support of contract and performance management and monitoring, acute invoice validation, quality and outcomes measurement, and health analytics.

Led by directors with decades of NHS experience between them, the company has hundreds of man years of experience in both health and the development of 'best of class' healthcare software.

This knowledge and understanding is available as a key resource during the implementation and support of ACGs. Such resource might be deployed to assist with the development of new care services, pathway adjustment and the commissioning of new services.

## Johns Hopkins University

The Johns Hopkins ACG system has the distinction of being developed, tested and supported by a world-renowned academic and medical research institution, The Johns Hopkins University.

The Johns Hopkins ACG case-mix system grew out of clinical observations made by Dr Barbara Starfield, MD, MPH. The system was born out of a primary care setting and as such has huge relevance to the current challenges faced by clinical commissioners at the forefront of which are GPs and other healthcare professionals.

The academic home of the ACG system allows for an unparalleled openness to the methods. Each component of the system is exposed to the user which allows the system to be easily adapted to unique local circumstances and applications. The ACG methodology is subject to continuous critical review and testing by a team of distinguished health services researchers led by Dr. Jonathan Weiner.

The ACG development team has been performing risk measurement and categorization research for over 30 years. The Johns Hopkins University's Bloomberg School of Public Health has an unwavering commitment to the on-going development of the ACG system and its dissemination to both private sector and government users. The goal of the ACG system is to promote equitable, effective, and efficient healthcare around the globe; the Johns Hopkins ACG system is part of that strategy.

## International Pedigree

The ACG system is currently licensed and used in 16 countries worldwide, demonstrating that the ACG system is not just a US solution.

Outside the US, ACGs have been successfully implemented in Canada, Spain, Sweden, Germany Malaysia and Israel.

The ACG system's reach is truly international.

## United Kingdom

During 2009, many contract bids were successfully awarded which utilised the ACG system. With the current coverage of over 10% of the English population, the ACG system is well on its way to becoming the preferred risk adjustment tool in the NHS.

Numerous UK Universities have utilized the ACG system in their research over the last two decades. Their prominent work has continued utilising the latest Read code mappings. Recent projects have shown the importance of primary care data related to social as well as clinical dimensions demonstrating the need for the integration of social care indicators.

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