Cambridge Judge Business School

Case study

REORGANISING CARE AT CAMBRIDGE UNIVERSITY HOSPITALS

This case was written by Professor Stefan Scholtes. (In addition to many discussions with Keith McNeil I have benefitted from generous feedback by Lawrence Ashelford (CUH) and Nicos Savva (London Business School) on earlier drafts of the case.)

This case was prepared as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation.

Centre for Health Leadership & Enterprise

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Abstract

This teaching case highlights the strategic and operational challenges faced by a dominant teaching hospital in a local health economy. The case has three main themes. First, it illustrates how changing demands and economic conditions force leaders to re-evaluate existing strategies and processes. Second, it illustrates that a substantial strategy change by a dominant firm ought to be embedded in a wider strategy for its economic ecosystem that allows the system as a whole to thrive. Third, the case illustrates how organisational redesign can be used as a lever to change an organisation's strategic positioning. Finally, the case can serve as an introduction to some aspects of hospital management in the NHS (as of 2015).

Cambridge University Hospitals NHS Foundation Trust

When Keith McNeil gave up a successful career as a lung transplant physician to become the leader of a hospital, he was under no illusion that fixing an organisation would be any easier than fixing an ailing body. However, he still hadn't quite anticipated the extent of the challenges he would face when he took the helm at Cambridge University Hospitals NHS Foundation Trust (CUH) two years ago. The post had looked very attractive at the time and was too good to decline. He knew the hospital well from his time as a consultant at nearby Papworth Hospital, the UK's premier cardiovascular centre, and the university town, with its mix of quaint medieval buildings and high-tech entrepreneurial spirit, was appealing. After successful leadership forays in the Australian health system, becoming the CEO of CUH looked like a natural progression.

CUH, better known in clinical circles as Addenbrooke's Hospital, subsumes two formerly independent hospitals. Addenbrooke's itself is a large teaching hospital with 250 years of history and over 1,000 inpatient beds. The hospital was complemented in the 1980s with a maternity clinic – the Rosie Hospital – which, while integrated into the Addenbrooke's site, remained independent until it was merged with Addenbrooke's under the new name Cambridge University Hospitals NHS Foundation Trust (CUH) in 2004. Although CUH is an NHS organisation, it has, like other major teaching hospitals, strong formal and informal ties with the university's School of Clinical Medicine through many joint appointments as well as with the board membership of the Head of the Clinical School as a permanent non-executive director of the hospital.

Keith, an academic physician in his own right, is proud of the research heritage of his hospital and its strong links with Cambridge University. The hospital is the clinical hub of the thriving Cambridge Biomedical Campus, home to several national research centres, such as Cambridge's Laboratory for Molecular Biology, affectionately dubbed the 'Nobel Prize factory', and Cancer Research UK's Cambridge Institute. The campus is currently being expanded to include new, purpose-built facilities for the relocation of the already mentioned Papworth Hospital NHS Foundation Trust, Keith's former stamping ground, and the global R&D centre and corporate headquarters of AstraZeneca.

While the Cambridge brand has many advantages, it also comes with its challenges. One of them is the hospital's dual identity problem. On the one hand, CUH serves as a District General Hospital (DGH) and provides standard hospital services for the population of Cambridgeshire and its neighbouring counties, from fixing hernias and fractured hips to delivering babies and caring for elderly patients with pneumonia. On the other hand, CUH is one of six academic health science centres in the UK and a national centre for specialist treatment, such as for rare cancers and metabolic conditions, transplantation and neuroscience services. These tertiary care services give

CUH its reputation as one of the country's leading hospitals and make it a magnet for highly talented clinicians. However, most of its activity and income are generated by the more mundane, standard secondary care services. In fact, patient choice and CUH's strong brand are increasingly generating demand for even fairly standard DGH services from regions beyond the immediate catchment area.

Keith looks at a fictional picture produced by an architect that shows the campus with the new buildings that will be completed in two years' time. It looks very impressive – but Keith knows that for many of his doctors the reality feels quite different. It's been more than 50 years since CUH moved from the crowded town centre to the outskirts of Cambridge. Over the five decades that followed, new buildings have sprouted on its campus like mushrooms, and the hodgepodge of buildings visible today is not a pretty sight. While the hospital has some newer, shinier edifices, most of its facilities are ageing and not conducive to optimal care delivery. Only this morning, Keith had a chat with a senior paediatrician who expressed his continued frustration with the scattering of paediatric services across the site and the difficulty collaborating effectively across large distances. The collocation of paediatric services had been under discussion long before Keith arrived, and grand plans for a new children's hospital had been drawn up. However, as things stand – considering general economic conditions and an NHS funding squeeze – this new children's hospital is not going to be built any time soon.

The National Context

Like other NHS hospitals, CUH has come under significant financial and operational pressure since the financial crisis in 2008. In the decade running up the crisis, UK hospitals had become accustomed to funding growth of over 6% per annum in real terms[1], while the UK was catching up with its peers in Europe in terms of health expenditure as a proportion of GDP. This growth in funding stopped abruptly after the crisis hit, creating significant pressure to make savings in all UK hospitals (see Figure 1). In 2010, NHS CEO Sir David Nicholson set the challenge to find £20 billion in 'efficiency savings' by 2015. This translated into annual savings of 4–6% for each hospital in England over a period of five years. Such sustained efficiency gains would be a challenge for any industry – they are unheard of in health services.

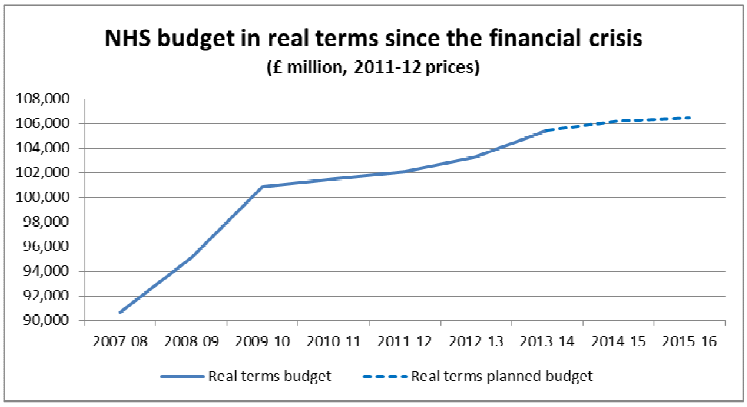

Figure 1[2]

[1] See Crawford, R. and Emmerson, C. (2012) ***NHS and Social Care Funding: The outlook to 2021/22***, Nuffield Trust.

[2] Source HM Treasury, Public Expenditure Reports, Statistical Analysis 2012 and 2014

In response to this challenge from the top, savings were duly made. These were made largely via cuts to staffing, which accounts for over half of a hospital's budget, as well as by postponing capital investments. However, whether these savings were actually 'efficiency savings', i.e. whether service quality was maintained, is debatable and has become a major battleground for the country's politicians – no morning passes without a new tale of NHS woe on the national news.

The significant rise in national health expenditure prior to the financial crisis does not represent a spending splurge – it was simply a necessary response to the immense advances in modern medicine, which are keeping people alive for longer, but not without ailments. Minimally invasive surgery is now routinely performed on elderly patients, who would not have survived in the past. The survival prognoses for conditions which were terminal a decade ago, including many cancers, are now much improved, leading to a plethora of chronic conditions that need sustained clinical management. As a consequence, many hospital patients are now suffering from multiple clinical problems – so-called comorbidities – in addition to the acute problem, such as pneumonia, that requires their hospitalisation. Hospitals are only slowly adjusting to this change in their patient demography.

CUH is no different to other hospitals in its exposure to demand changes and financial pressure. The graphs in the Appendix illustrate some of the operational and financial challenges that the hospital is facing.

The Regional Context

More than 75% of CUH's income (approximately £700 million in 2013/14[3]) is generated from contracts with health-care commissioning organisations that are re-negotiated annually, and a sizeable proportion of these funds comes from its local commissioning organisation, Cambridgeshire and Peterborough Clinical Commissioning Group (C&P CCG). C&P CCG is one of more than 200 local organisations that commission health-care services on behalf of the NHS in England. These CCGs receive their funds from the government through a risk-adjusted capitation formula and use these funds to commission health-care services from service providers, such as CUH. C&P CCG currently serves a population of about 880,000, which translates into an annual budget of about £850 million. This population is forecast to increase by 5.3% each year over the coming five years. More importantly, the population aged over 75 is predicted to increase by 4.4% each year over 2014–2019, meaning that there will be an additional 16,000 elderly people in the local area in five years' time.[4]

Keith sighs as he ponders the inescapable link between the financial position of his hospital and that of its local health economy. The latter is dire: two years ago, the C&P CCG was identified by the NHS as one of only 11 financially challenged health economies in England. Keith has seen a recent 'System Blueprint' for the health economy, in which the consulting firm PwC forecasts that the CCG's deficit will grow to £250 million by 2018/19 if nothing is done.[5] As a consequence, there is now a frenzy of activity to turn the health economy around. Without the success of these efforts, CUH's position as a leading hospital could be at risk.

As the largest provider for C&P CCG, CUH is a prime target for cuts as the commissioners try to achieve the required savings for the local health economy. But CUH is not alone in this situation.

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[3] See CUHs 2013/14 annual report and accounts for more detail (http://www.cuh.org.uk/sites/default/files/CUH%20Annual%20Report%202013%202014.pdf)

[4] See the CUH strategic plan at https://www.gov.uk/government/groups/cambridge-university-hospitals-nhs-foundation-trust

[5] http://www.cambridgeshireandpeterboroughccg.nhs.uk/System_Blueprint_Cambridgeshire%20and%20Peterborough%20MAIN%20TEXT.pdf

There are three other large hospitals in the Cambridgeshire and Peterborough health economy that are also exposed, albeit to different degrees, to the financial struggle of C&P CCG:

- An hour's drive from CUH, Peterborough and Stamford Hospital NHS Foundation Trust runs Stamford & Rutland Hospital and Peterborough City Hospital. A new hospital building in Peterborough, privately funded through a Private Finance Initiative, has led the Trust into acute financial difficulties, with an underlying structural deficit of over £30 million on an annual turnover of £250 million. The Trust is in 'special measures' and is currently supported by a contingency planning team, appointed by the NHS's hospital regulator Monitor, to find a solution for its financial difficulties.
- Hinchingbrooke Health Care NHS Trust is a medium-sized acute care hospital with 300 beds based in Huntingdon, halfway between Cambridge and Peterborough. Hinchingbrooke has gained national fame as the only privately managed NHS Trust in the country. However, its management company Circle has recently withdrawn from its contract, citing unpredictable demand pressures and underfunding. The management of the hospital has fallen back to the NHS, and new management arrangements need to be put in place. An acquisition by one of the neighbouring hospitals would be very risky. Like Peterborough, Hinchingbrooke has a structural financial problem, due to the small size of its natural catchment area between two large hospitals – Peterborough and Cambridge. In addition, the hospital has considerable care quality problems. Following a recent five-day inspection by the Care Quality Commission, an NHS watchdog, Hinchingbrooke became the first NHS hospital to receive the lowest quality rating, 'inadequate', for its overall service quality, with specific concerns about patient safety.
- Papworth Hospital NHS Foundation Trust is the third hospital in the region and is on a sound financial footing. Papworth is not an acute hospital but is the UK's largest specialist cardiothoracic centre. As such, it has national rather than local reach and is therefore less dependent on income from the financially challenged Cambridgeshire and Peterborough health economy. However, Papworth, which is currently situated some 20 miles west of Cambridge, will soon move into new premises on the Cambridge Biomedical Campus in 2017/18 and is expected to integrate in some form with CUH. In the past, CUH had always de-emphasised cardiothoracic services because it had in Papworth an excellent specialist hospital nearby. The clinical rationale for moving Papworth to the Cambridge campus emphasises the research opportunities the move will offer as well as improved care for the increasing number of elderly heart patients with complex comorbidities, who require input from specialists that a cardiothoracic hospital does not normally employ. CUH has these specialists. However, the closer integration of Papworth with CUH has its risks and could make Papworth's current financial position more vulnerable if the hospital gets sucked more deeply into the regional financial crisis.

Hospital Finance

Most of the clinical income of UK hospitals is determined by the so-called Payment by Results (PbR) scheme, which categorises patient hospital stays by the main procedure or treatment received and assigns a code – a Health Resource Group, or HRG[6] – to each patient's stay. These HRGs have national tariffs, which are updated annually and based on reported average costs for these procedures across the NHS hospitals and any savings requirements in response to the

[6] HRGs are similar to Diagnosis Related Groups (DRG) in other countries.

government's budget for the year. Over the past two decades, PbR has been introduced across the world as the preferred method of reimbursing hospitals for their services, replacing annually negotiated block budgets for entire hospitals. PbR links a hospital's reimbursement to its activities and generates an intrinsically appealing efficiency mechanism, dubbed 'yard-stick competition' by economists. Since the tariff is largely based on the average cost of a procedure in the health system, hospitals that operate above the average costs for a procedure make losses in this area and are incentivised to reduce their costs for these procedures. The lowering of procedure costs in hospitals that operate above the average cost also has the side effect of bringing down the total system average for the procedure, thus creating a spiral of cost-efficiency. While this sounds good in theory, the practice is fraught with problems. First, cost reporting at the procedure level is patchy at best, as patient-level cost allocation procedures are underdeveloped. This leads to significant year-on-year tariff changes – both up and down – which make financial planning very challenging. Second, the system only works if all patients are coded correctly. Coding, however, can be difficult, particularly if medical notes are incomplete and there is an incentive to 'over-code'. Third, not all hospitals are equal. Some hospitals, like CUH, are 'points of last resort' in the sense that they treat the most complex patients who other hospitals cannot serve and thus refer to teaching hospitals. Although these patients stay much longer in hospital and are much more costly, the treating hospitals are still paid the national tariff for many of them. The hospital regulator Monitor is well aware of these deficiencies in the system and makes frequent changes to avoid the most perverse effects. However, there is a perception that this tempering at the edges is not going to make the system effective. In reality, PbR is not a system of payment by results but of payment by activity. Perhaps a more outcome-based payment system would be more appropriate. However, while this may work well for some diseases where outcomes can be measured easily, there are plenty of conditions where measuring outcomes – i.e. measuring a hospital's effect on a patient's health – is a real challenge.

The problems with PbR are exacerbated by the nature of annual contracts with CCGs. These contracts essentially stipulate annual activity levels for procedures. Once the hospital exceeds its agreed activity level, it will receive less than the national tariff, and how much less depends on the contract negotiations. While this enables financial planning at the level of the regional system, it passes the risk of demand volatility on to the hospital.

A particular concern for CUH is the so-called 'marginal rate rule' for emergency admissions, which cost the hospital £5 million last year alone. The NHS introduced the rule three years ago in an attempt to control the increasing number of short-stay emergency admissions, i.e. those lasting less than 48 hours. Under this rule, providers receive only 30% of the national tariff for any emergency admissions above a specified level of emergency admissions activity in a financial year. The remaining 70% of the tariff is retained by the commissioning organisation and spent on initiatives to better manage demand for emergency care. These initiatives, however, are largely outside the control of the hospital, which bears the risk of steeper than expected growth in demand for emergency services.

Hospital Operations

In the background, Keith hears the siren of a passing ambulance. He sometimes envies his CEO colleague at Papworth because that hospital doesn't have an accident and emergency (A&E) department and only treats elective patients whose hospital stays are planned in advance. This makes a hospital a lot more manageable – A&E activity cannot be planned and can, at times, cause havoc for hospital management.

Of course CUH also has a large number of planned patients, who are referred to the hospital by a primary care doctor or by another hospital. They are usually less acutely ill than emergency patients and will often need a specific surgical, medical or diagnostic procedure. There are three types of planned patients. First, elective inpatients, who stay overnight or for a few days, such as after a hip replacement. Second, day patients, who can go home on the day of their procedure, such as after laparoscopic gallbladder removal. Third, outpatients, who come to the hospital for short specialist consultations with a hospital doctor 'in clinic' to perform simple diagnostic procedures, discuss treatment options or follow up after an inpatient episode. Planned patient processes are reorganised regularly, with elective inpatient procedures, such as prostate biopsies, becoming day-patient procedures and day-patient procedures becoming part of outpatient appointments. The income that the hospital receives for these procedures falls when they are re-classified from electives to day cases or from day cases to outpatient procedures; however, it is also important to consider the benefits to the system in terms of efficiency gains.

As well as needing immediate attention, emergency patients often have a much wider range of ailments than planned patients. Some are quickly diagnosed, while others need more attention to understand the root cause of their symptoms. Some emergency patients, such as patients with stroke symptoms, are acutely ill and need a fast response to ensure survival and optimise recovery results. When emergency patients compete for scarce resources with less acutely ill elective patients, the former will almost always take precedence. A surge in emergency patients, such as during the annual influenza season, can result in a substantial number of cancellations for elective surgeries such as hip replacements because beds are needed by more severely ill emergency patients. This can lead to a dramatic shift in the economic position of the hospital for several reasons. First, the reimbursement of emergency patients often doesn't cover the additional cost caused by the emergency response. Second, costly specialists, such as orthopaedic surgeons, are not used effectively at times when their patients' beds are filled instead with emergency patients from another specialty. Third, some of the cancelled elective patients, and particularly those that will not benefit from the superior expertise available at CUH, may go to another hospital for their elective surgery, leading to further loss in profitable elective care activity.

Emergency patients arrive at the hospital through a single front door – the A&E department. This is where the doctors who love firefighting work. The key performance criterion for such departments in England is the four-hour wait target, which requires that 95% of all patients attending an A&E department in an NHS hospital must be seen, treated and discharged – either home or to a hospital ward – within four hours of arrival. For several reasons, the 2014/15 winter was the worst winter on record for A&E attendances in England, and CUH was among the worst performing hospitals in the country when it came to the four-hour target. At the January 2015 board meeting, Keith had to report that of the 2,061 A&E attendances in the week ending 14 December 2014, the Trust had only managed to discharge 67% within four hours. Keith can think of at least three reasons that combined to drive the hospital's poor performance against this particular target.

First, as in many hospitals in England, the number of attendances was up significantly, and by 15% in December, against the same period in the previous year. This was caused, inter alia, by the ineffectiveness of the 2014/15 flu vaccine against a mutated flu virus strain – something that no one had predicted.

Second, the number of delayed transfers of care was at unprecedented levels this year. These are bed-occupying patients who are ready to be discharged but are waiting for non-acute NHS care, residential or nursing home placements, or community care packages that need to be in place

before they can be safely discharged. There were 89 delayed transfers of care in the hospital on 2 January 2015 and up to 117 delayed transfers of care during the Christmas period. This blocked 10% of the hospital's bed capacity and led to a backlog in A&E, where patients needed to be admitted to wards that didn't have vacant beds. Delayed transfers of care is a 'supply chain' problem for the hospital. It occurs because other NHS or social care organisations are not doing their job of receiving patients who are ready for hospital discharge.

The third reason for that winter's dismal A&E performance is unique to CUH. In October 2014, the hospital had introduced a new and long-awaited e-Hospital system – the first of its kind in the UK. While Keith is sure that the hospital will benefit tremendously from the better data in the long run, the initial effect on the hospital's operations was largely negative, both in terms of immediate patient care and informing the hospital's operational and strategic management. Imported from the US, the system had unavoidable teething problems and had a negative short-term effect on clinical productivity, as clinicians had to become accustomed to the new system, resulting in longer service times in A&E, in clinics and on the wards. Although the hospital had planned for this by reducing its elective services to provide a buffer for clinicians to get used to the system, the learning curve was slower than anticipated and productivity was still below the old levels in many areas. The new IT system certainly didn't help when the hospital was faced with the unusual and unanticipated winter demand pressures.

From Operations to Strategy

The co-existence of elective and emergency services is a challenge for the efficient running of an acute care hospital. If the hospital has a low number of emergencies, it loses out because it could have scheduled more of the typically more profitable elective patients. If the number of emergency cases rises, elective patient services need to be cancelled, leading to under-used elective capacity, such as orthopaedic surgeons, with a consequent loss of income and a bad reputational effect. Cancellation is also bad for patients, who may need to wait for another four weeks in severe pain before their hip is replaced. Some hospitals, such as Guy's and St Thomas' Hospital in London, have confined A&E to just one of their sites, meaning that the other sites are not disrupted and can focus on optimising planned care. Would it make sense to put more of a firewall between elective and emergency patient at CUH, so that emergency surges do not lead to the disruption of elective services? This model, however, interferes with the principle that the most severely ill patients should get preferential treatment when resources are scarce.

Keith wonders whether 'emergency versus planned' was even the right way of segmenting patients from an operational perspective. Another way of understanding the difference between care processes is to recognise that some patients are akin to a 'project' while others are more like a 'product' on a conveyer belt production line. The goal in both cases is to improve the health of the patient. However, for a 'project' patient it is not clear, a priori, how this is best to be done, and successive decisions need to be made as more information becomes available. It is also unclear at the start of the 'project' patient episode what the outcome will be. Adequate care for these patients requires effective coordination across specialisations and a team that can explore a sufficient range of options and respond quickly and flexibly when new information becomes available. By contrast, for 'conveyer belt' patients it is clear what needs to be done and what can be expected in terms of measurable outcomes. Here, a process can be put in place that can be optimised, by minimising waste and variation, to produce optimal results in a most efficient manner. High patient volume enables rapid learning by doing and will help make these 'conveyer belt' processes more efficient and effective. A stark example is cataract surgery, which is being

perfected in India's Aravind Eye Clinics. Here, the surgeon goes from operating table to operating table and spends only a few minutes on each patient as part of a carefully planned 'production process'. One crucial difference between 'project' and 'conveyer belt' patients is that the latter have clear metrics for measuring progress and outcomes in a satisfactory manner – which is a prerequisite for the application of standard process optimisation tools, such as six sigma. The 'conveyer belt' paradigm is more likely to apply to patients who require 'repair' services – where an aspect of good health is being restored. 'Project' patients require 'maintenance' services – where unavoidable health deterioration is slowed down. The most severely ill emergency patients tend to be 'project' patients, but some emergency patients could well be put on a conveyer belt. While many elective patients can be treated in a production line, this is not true for all of them. The boundaries become blurred when elective patients have comorbidities – a hip replacement patient with diabetes and rheumatoid arthritis cannot be put on the 'ordinary' hip replacement conveyer belt, and an appropriate service for this patient requires collaboration between an endocrinologist, an immunologist and an orthopaedic surgeon.

In contrast to conveyer belts, where volume helps, there may well be an optimum unit size for treating 'project' patients. If the unit becomes too large, collaboration may be impeded. Keith remembers a talk by a biotech CEO, who compared her current experience as head of a mid-sized biotech with her previous experience as R&D director of a major pharmaceutical company. She concluded that scientists become less productive when there are more than about a hundred of them in a lab and that the management processes and bureaucracy required to run larger labs interfere with personal interactions between scientists. This reminded Keith of Dunbar's number, the idea that people can only maintain stable social relationships with about 150 people. He wonders whether this has implications for the effective organisation of a hospital and in particular for effective health services for 'project' patients. Could the fact that the neighbouring Papworth Cardiovascular Hospital has 70 consultants, all focused on patients with a specific type of disease, while his hospital has over 600 consultants, looking after a vast range of diseases, have something to do with the different management challenges that the two hospitals face?

One obvious change in CUH's demand is that the hospital's patients are becoming older and have more and more comorbidities (see Appendix). In other words, more of them are becoming 'project' patients, requiring customised solutions rather than standardised care. This raises the question whether CUH should focus its strategy more clearly on 'project' patients and move 'conveyer belt' services off-site. Could CUH collaborate with its neighbouring hospitals to set up services at scale that will focus and excel at treating the region's 'conveyer belt' patients? Might this be an angle to explore, and could this solve the health system's financial troubles as well? This strategy could have an interesting dynamic aspect, too. As particular types of 'project' patients become more frequent, it may be possible to standardise their care and turn them, over time and with the help of suitable technology, into a new breed of 'conveyer belt' patient. These patients could then be handed over to local partner organisations that specialise in the efficient delivery of 'conveyer belt' care. This would free up resources at CUH and allow the hospital to take on the next challenge of ever more complex 'projects'. This strategy would align well with the research ethos of the hospital and could create a sustained innovation process for the region and even the nation. Should large teaching hospitals focus on 'project' patients, with the goal of turning them into 'conveyer belt' patients, whose care can then be passed on to other hospitals to optimise and scale up, both regionally and nationally?

Executing Strategy: Reorganising Care

If collaboration between clinicians becomes more important in the future, what can the hospital do to facilitate the development of more effective formal and informal collaborative processes? Keith has always found it intriguing that hospitals around the world have been organised in very similar ways for more than a century. Is this organisation structure conducive to multi-disciplinary collaboration, to problem-solving for 'project' patients? Hospitals are organised around clinicians' specialisations and not around the needs of the patients. At the highest level, there is a divide between surgeons, the doctors who operate and are organised in the UK in the Royal College of Surgeons, and physicians, the doctors who diagnose complex conditions, treat them with medicines and are organised in the Royal College of Physicians. This translates into the two main departments of most hospitals – general medicine and general surgery. Within these two groups, a plethora of specialties and sub-specialties has emerged over the past 50 years. Some of these specialties remain subsumed within the general medicine or general surgery departments. Others, if the volume of work is high enough, have created their own departments. For example, almost all general hospitals will have a separate department for obstetrics and gynaecology – after all, giving birth is the most frequent reason for a patient to visit a hospital.

Cardiology and cardiothoracic surgery is a good example of the misalignment of the prevalent organisational principle and the needs of patients. Both cardiologists and cardiac surgeons treat cardiovascular disease, which is the primary cause of death in modern society. However, they apply quite different methods – medication or surgery. For some patients it is very clear which of the two treatment options is more appropriate – but for others, and particularly for patients with multiple comorbidities, it is not. If a patient falls into this grey zone, effective communication and collaboration between cardiologists and cardiac surgeons can make a big difference in providing the most appropriate treatment. Such collaboration is less likely when the two doctors work in their own organisational silos, one in surgery and the other in medicine.

When Keith arrived at CUH two years ago, the hospital structure was no different to that in most other hospitals, with the possible exception of an integrated neurosciences division, which reflected the hospital's specialism in this field. The hospital had the following seven divisions:

- General medicine, including gastroenterology, rheumatology, nephrology, respiratory medicine, cardiology, geriatric medicine, dermatology and several other medical specialties
- General surgery, including urology, trauma and orthopaedics, ear, nose and throat (ENT), ophthalmology, plastic surgery and several other surgical specialties
- Cancer, including medical oncology, clinical haematology, blood and marrow transplantation, radiotherapy and other oncological specialties
- Neuroscience, including neurosurgery and neurology
- Critical care, including accident and emergency, pain management and anaesthetics
- Investigative sciences, including endocrinology, haematology, diagnostic imaging, clinical immunology and other pathology specialties
- Women and children, including obstetrics, gynaecology, paediatrics and its subspecialties.

One year into his new job, Keith started a discussion with his senior management and clinical teams to see whether they could see any value in reorganising the hospital to facilitate collaboration for the benefit of patients, and specifically those with complex clinical needs. After

initial scepticism ('if it ain't broke, don't fix it'), the senior leaders embraced the opportunity and produced a proposal for a fairly radical hospital reorganisation. Most intriguingly, one of the bedrocks of the organisation of hospitals around the world – the general surgery department – had disappeared in their proposal, and many medical and surgical specialties were integrated in the new service delivery units.

The starting point for the discussion was the shared acknowledgement of the changing environment for acute hospitals. As described earlier, patients are changing, with more patients requiring multi-disciplinary collaboration in order to provide the most appropriate treatment. Continuity and integration of care are becoming more important as the handover of responsibility for complex patients is likely to lead to the loss of important information that is difficult to code in patient records.

While the existing organisational structure worked, it was creating challenges in terms of responding to changing demand. Decision-making and accountability were found to be concentrated at the 'top end' of the management pyramid, which caused a lack of engagement at the middle and lower levels and impeded the effective management and running of the hospital. It was important for the hospital to extend and develop its leadership capabilities by devolving accountability for the overall management of the hospital and enabling clinical leaders to influence strategic decisions. The existing divisional structure had led, unintentionally, to organisational silos that restricted effective collaboration and cross-team effectiveness.

The New Structure

Keith gave his senior team just a single constraint when designing the new organisational structure: he wanted to avoid the fragmentation of the organisation and therefore required that the team should not produce more than five main divisions, the clinical heads of which would constitute his senior clinical team.

However, the doctors realised that size mattered. The five divisions – whatever they would be – were likely to become too large, thereby reinforcing the feeling of 'top-end' management responsibility that was decoupled from the day-to-day jobs of the doctors. In order to enable a trickling-down of leadership responsibility, a further organisational layer was necessary. The team dubbed these units 'clinical directorates'. They thought that between 12 and 16 clinical directorates with devolved budgetary responsibility would make sense. Three to four of these directorates could then be integrated into a division, which would have strategic oversight, while changes in patient-facing operational processes were led by the directorates.

But how should these directorates be determined? The core focus would be on demonstrating added value for patients, so the starting point had to be patient needs. The doctors wanted the directorates to cross conventional divisional and professional boundaries where clinically appropriate. They also felt that it was important that the directorates were seen as the primary patient delivery unit, where the expertise, decision-making and accountability for patients lie. The directorates were therefore fully accountable for the overall service outcomes of a clearly specified segment of patients and not just for the quality of the execution of certain specialist procedures.

But what should these patient segments be? Some directorates were built around the location of diseases, such as the musculoskeletal diseases (MSK) directorate, which includes trauma and orthopaedics from the former general surgery division but also rheumatology from the former general medicine condition, or the digestive diseases directorate, which combines the gastroenterologists from the former general medicine department with the gastro-intestinal

surgeons from the former general surgery department. Other directorates by grouped by biological causes of disease, such as the infection and inflammation directorate or the cancer directorate. Other directorates were essentially copied from the old structure, if this was seen as being fit for purpose. The existing neuroscience department, for example, was already focused on a specific system of the body and had already integrated neuro-surgeons and neuro-physicians (neurologists).

In the end, the new structure was composed of 17 directorates, grouped into five divisions:

- Division A, with three directorates – musculoskeletal diseases, digestive diseases and intensive and perioperative care
- Division B, with four directorates – cancer, labs, imaging and clinical support
- Division C, with three directorates – acute medicine, inflammation and infection and transplantation
- Division D, with three directorates – neuroscience, head and neck and cardiovascular and metabolic diseases
- Division E, with four divisions – paediatric medicine, paediatric critical care, paediatric surgery and obstetrics and gynaecology

Keith looks at a table that maps the hospital's patients over the past five years, spanning the old and new divisional structures. The general surgery specialties are now dispersed across all divisions. And general medicine is also largely dispersed, although it maintains a concentration in the acute medicine directorate of Division C. One useful side effect has been that the new divisions are much more balanced in terms of their relative patient volumes than the old divisions.

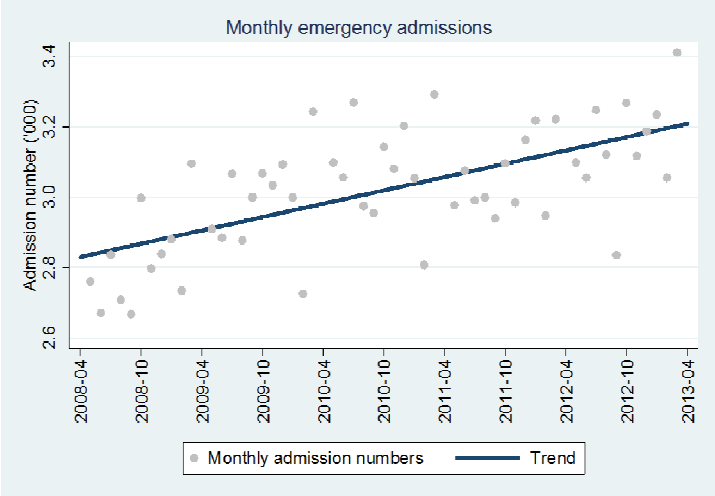
		New Divisions						
	Percentage of the old division's patients in the new division	A	B	C	D	E	Total	Total percentage of hospital patients
Old divisions	Cancer	0%	100%	0%	0%	0%	100%	13%
	Critical Care	26%	0%	74%	0%	0%	100%	4%
	Investigative Sciences	0%	33%	29%	38%	0%	100%	1%
	General Medicine	25%	0%	64%	11%	0%	100%	24%
	Neuroscience	0%	0%	0%	100%	0%	100%	5%
	Surgery	37%	17%	4%	38%	4%	100%	33%
	Women & Children	0%	2%	0%	0%	98%	100%	19%
	Total percentage of hospital patients	20%	20%	20%	20%	20%		100%

Keith wonders whether this new organisational structure will make a real difference to how the hospital operates. But then his mind wanders back to the bigger picture of the financial challenges facing the local health economy. What can he and his colleagues at CUH do to leverage the new structure in the interest of the local health economy as a whole, to create a dynamic that moves the whole local system in the right direction?

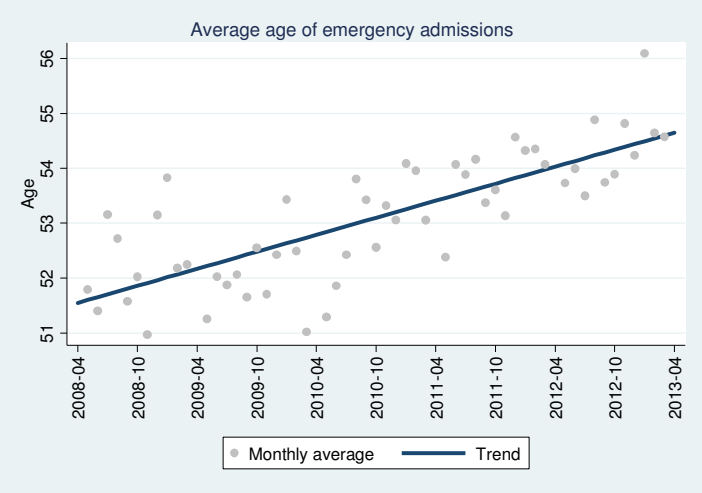
Appendix

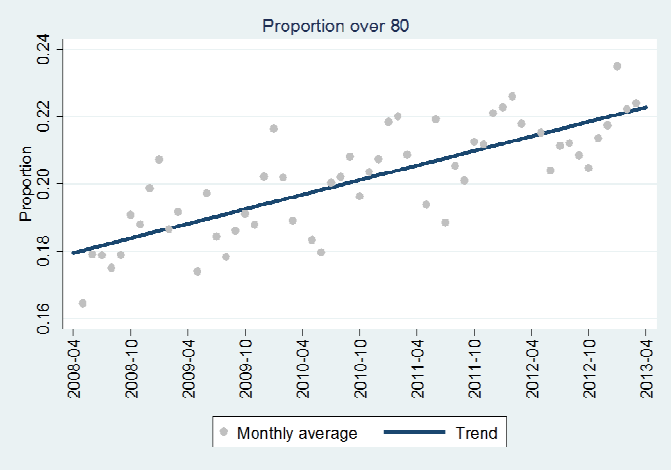
1. Changes in demand for emergency services at CUH over five years

Patient volume

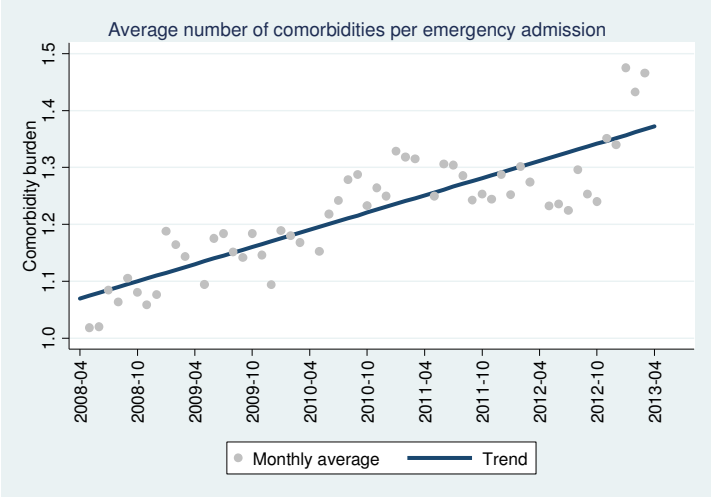


Age distribution





Patient complexity



2. Reimbursement gap for emergency patients by age group