The King's Fund

Ideas that change health care

Avoiding hospital admissions
Lessons from evidence and experience

Seminar Highlights

Editors
Chris Ham
Candace Imison
Mark Jennings

The King's Fund
11-13 Cavendish Square
London W1G 0AN
Tel 020 7307 2400

Registered charity: 1126980
www.kingsfund.org.uk

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Summary

This paper summarises presentations made at a seminar held at The King's Fund in April 2010. The seminar brought together case studies from the NHS in England, Kaiser Permanente in California and the independent sector, as well as research evidence, to explore what has been tried and what has worked in avoiding hospital admissions. The main messages that came out of the seminar are as follows.

- The greatest opportunity to reduce hospital admissions and bed days lies in the proactive management of people with long-term conditions, especially people with multiple conditions.
- Integrated working between health and social care can result in lower than expected emergency admissions and reduced use of beds, as evidenced by the achievements of Torbay.
- Multiple co-ordinated strategies, underpinned by an integrated information system, are needed to reduce demand on A&E and enable low-risk patients who attend A&E to be discharged or observed in an assessment unit, as demonstrated by the results from Kaiser Permanente.
- More proactive strategies to reduce deaths in hospital have been implemented by Kaiser Permanente, including the use of advance directives and a range of alternatives to hospital, such as hospices.
- Preventing re-admission requires active management of transitions, including timely and accurate information, good communication between hospital and primary care physicians, and a single point of co-ordination, as employed by Kaiser Permanente.
- The independent sector can bring specific skills to partnerships with the NHS, enabling innovation, investment and transformation in integrated care services.
- The use of virtual wards holds promise as an admission avoidance strategy, as evidenced by Wandsworth, but more evidence is needed to assess their impact and cost-effectiveness.
- Where practice-based commissioning facilitates closer integration between general practices and other services, it has been shown to contain the growth in A&E attendances and emergency admissions, compared to national trends, as shown by experience in Cumbria.
- A single assessment and co-ordinated care approach for older people identified as being at risk of avoidable hospital admission or admission to residential care has shown a range of positive impacts, including fewer bed days and A&E visits, fewer falls and delayed transfers to nursing care.

Analysis of research evidence has identified that some interventions being used in the NHS, although designed to avoid admissions, do not work. There is evidence to support greater use of self-management of chronic obstructive pulmonary disease (COPD) and asthma, senior clinician review in A&E, hospital at home, assertive case management in mental health, use of observation and assessment wards, and structured discharge planning.

In summary, the presentations at the seminar strongly suggest that the NHS needs to move beyond small-scale projects and adopt comprehensive admission avoidance programmes comprising multiple evidence-based strategies.

1 The NHS Context

Chris Ham, Chief Executive, The King's Fund

In the past decade, the NHS has focused on increasing capacity, introducing choice and stimulating competition between providers. These policies were designed to increase hospital admissions in order to reduce waiting times for planned care. Within the NHS, around two-thirds of acute hospital bed days are accounted for by unplanned admissions, and since 2004 there has been an explicit aim to reduce these. World class commissioning and practice-based commissioning were introduced in support of this aim.

The challenge facing the NHS is that world class commissioning is a work in progress. Practice-based commissioning has engaged only a minority of enthusiasts, and is unlikely to have the system-wide impact on unplanned admissions that is required. Current incentives like Payment by Results (PbR) will suck more resources into acute hospitals unless there is a change of direction, and care closer to home will remain an aspiration.

This creates a problem in relation to NHS funding because providers may bankrupt commissioners if the imbalance of power continues. And with the period of NHS expansion coming to an end, it will simply not be possible to continue funding extra hospital activity. The controls introduced in December 2009's NHS Operating Framework on the tariff for emergency admissions will make some contribution to dealing with this problem, but other options need to be pursued.

A review of the evidence carried out by the Health Services Management Centre (HSMC) shows that a number of initiatives have an effect on emergency admissions.[1] These include:

- case management in some forms
- crisis resolution teams
- intermediate care
- telehealth
- team-based interventions in A&E
- proactive management of long-term conditions.

To achieve reductions in admissions on the scale that is required, the NHS has to move beyond projects and adopt admission avoidance programmes. These programmes should be evidence-based and comprehensive. Collaboration between commissioners and providers is needed to deliver the programmes.

1 Health Services Management Centre (2006). *Reducing Unplanned Hospital Admissions: What does the literature tell us?* Birmingham: HSMC, University of Birmingham. Available at: www.hsmc.bham.ac.uk/publications/pdfs/How_to_reduce.pdf (accessed on 23 August 2010).

A number of integrated systems have successfully implemented admission avoidance schemes. In the United States, the Veterans Health Administration reduced bed day use by over 50 per cent when it was transformed from a hospital-centred system to a series of regional integrated service networks. Kaiser Permanente uses one-third of the bed days the NHS does for comparable conditions for people aged 65 and over. In both cases, the existence of a single budget in an integrated system means that incentives are aligned, and the delivery of care facilitates alternatives to hospital and admission avoidance where appropriate.

In England, Torbay is one of the sites that has been adapting lessons learned from Kaiser. Recent research has shown a reduction in the use of acute hospital beds, lower than expected emergency admissions for the population aged 65 and over, and minimal delayed transfers of care. Torbay also performs well on the NHS Institute's Better Care, Better Value indicators.

Torbay has achieved these results through a long-term commitment to integration, and more recently, the setting up of a care trust. Integration is focused on health and social care teams that serve populations of between 25,000 and 40,000. These teams are aligned with GP practices and work within a single budget that enables resources to be pooled and used flexibly.

The financial prospects for the NHS mean that the lessons from integrated systems need to be acted on urgently. Specifically, the needs of people with long-term conditions must be taken seriously, because many emergency admissions result from acute exacerbations of one or more long-term conditions. *Admission avoidance is, therefore, first and foremost about proactive management of people with long-term conditions, especially people with complications that arise from having several conditions*.

The Better Care, Better Value indicators show the degree of variation in the efficiency of care delivery in a range of areas, including unnecessary *ambulatory care sensitive* (ACS) emergency admissions. These conditions are those where timely and effective ambulatory care and good case management can help to prevent the need for hospitalisation. They include:

- chronic conditions, where effective care can prevent flare-ups (eg, asthma, COPD, diabetes, congestive heart disease, etc)
- acute conditions, where early intervention can prevent more serious progression (eg, ear, nose and throat (ENT) infections, cellulitis, pneumonia, etc)
- preventable conditions, where immunisation and other interventions can prevent illness.

The Better Care, Better Value indicators give an estimate for the resources that could be saved by each primary care trust (PCT) if the level of admissions was reduced to that of the higher quartile performers (*see* Table 1). If these are added together, the total productivity opportunity relating to unnecessary emergency admissions amounts to £551 million nationally.

Table 1 Sample Better Care, Better Value indicators for ACS conditions

Emergency admissions for 19 conditions

SHA: North West

National position		Relative level of emergency admissions	Productivity opportunity	Change from last period
52	North Lancashire PCT	81.07	£1,629,000	▲ -12.18
NATIONAL TOP QUARTILE: Trusts above this line performed in the top 25% [82.24]				
66	Trafford PCT	84.79	£905,000	▼ +3.60
81	Central and Eastern Cheshire PCT	89.14	£1,865,000	▲ -10.34
86	Blackpool PCT	89.58	£1,655,000	▲ -3.74
91	Cumbria PCT	90.95	£3,672,000	▲ -9.65
92	Bolton PCT	91.27	£1,983,000	▲ -8.34
95	Western Cheshire PCT	92.61	£1,691,000	▲ -1.33
96	Bury PCT	92.74	£1,149,000	▲ -8.94
103	Tameside and Glossop PCT	94.97	£2,143,000	▲ -9.48
NATIONAL AVERAGE Grey shading indicates poorer than average performance [96.00]				
105	Wirral PCT	96.37	£2,505,000	▲ -11.43
110	Central Lancashire PCT	99.08	£3,456,000	▲ -4.18
115	Oldham PCT	100.79	£2,396,000	▼ +5.26
121	Ashton, Leigh and Wigan PCT	102.88	£4,041,000	▲ -12.49
123	Blackburn with Darwen PCT	104.89	£1,955,000	▼ +0.14
126	East Lancashire Teaching PCT	106.73	£3,247,000	▲ -8.76
132	Sefton PCT	109.17	£3,176,000	▲ -7.17
133	Warrington PCT	109.21	£1,836,000	▲ -6.71
136	Stockport PCT	111.70	£2,573,000	▲ -0.69
137	Salford PCT	113.68	£5,015,000	▲ -10.97
143	Knowsley PCT	116.85	£3,688,000	▲ -13.60
146	Heywood, Middleton and Rochdale PCT	128.46	£2,642,000	▲ -2.92
147	Manchester PCT	130.22	£5,848,000	▲ -5.24
148	Halton and St. Helens PCT	133.07	£4,966,000	▲ -5.63
151	Liverpool PCT	143.77	£7,821,000	▲ -13.07

Many of these issues were recognised in The NHS Improvement Plan in 2004,[2] and yet they have not been acted on systematically. It is time to get serious about self-care support, effective case management, and consistent chronic disease management in primary care. A good start would be to use data on admissions from ACS conditions and to challenge practices with high rates of admission.

Looking to the future, if world class commissioning and practice-based commissioning are not going to deliver in time, then other approaches are needed. Greater integration of care is essential, with clinical leadership, aligned incentives and real-time information. The NHS reform programme must be radically revamped to make it fit for purpose.

2 Department of Health (2004). *The NHS Improvement Plan: Putting people at the heart of public services*. Cm 6268. London: Department of Health. Available at: http://webarchive.nationalarchives.gov.uk/+/www.dh.gov.uk/en/publicationsandstatistics/publications/publicationspolicyandguidance/dh_4084476 (accessed on 23 August 2010).

2 Reducing hospital admissions in Kaiser Permanente

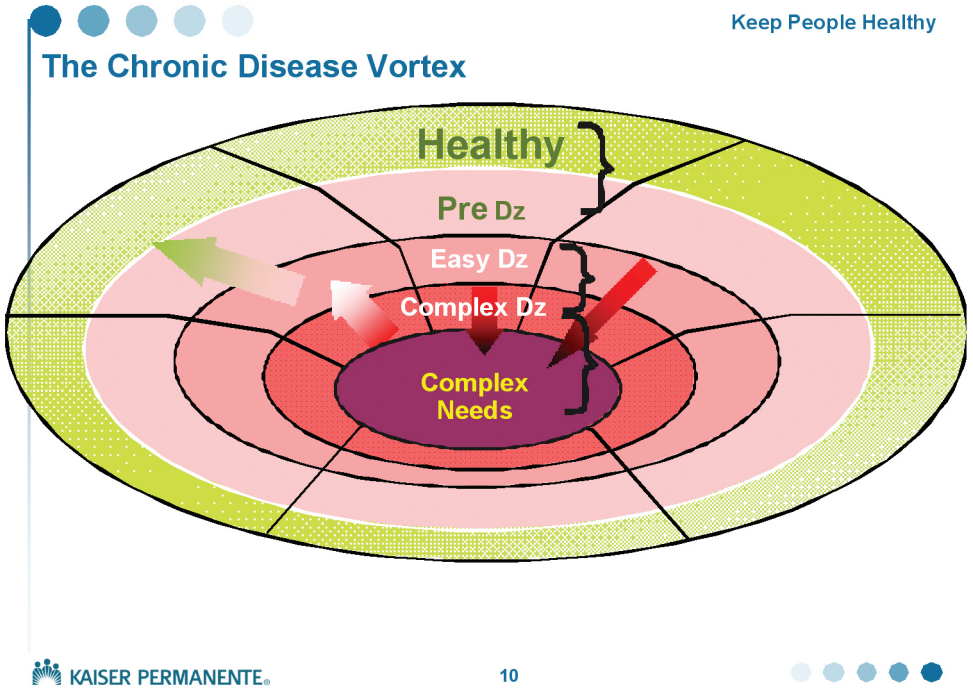
Phil Madvig, Associate Executive Director,
The Permanente Medical Group

Kaiser's approach to reducing inappropriate admissions is based on the following elements:

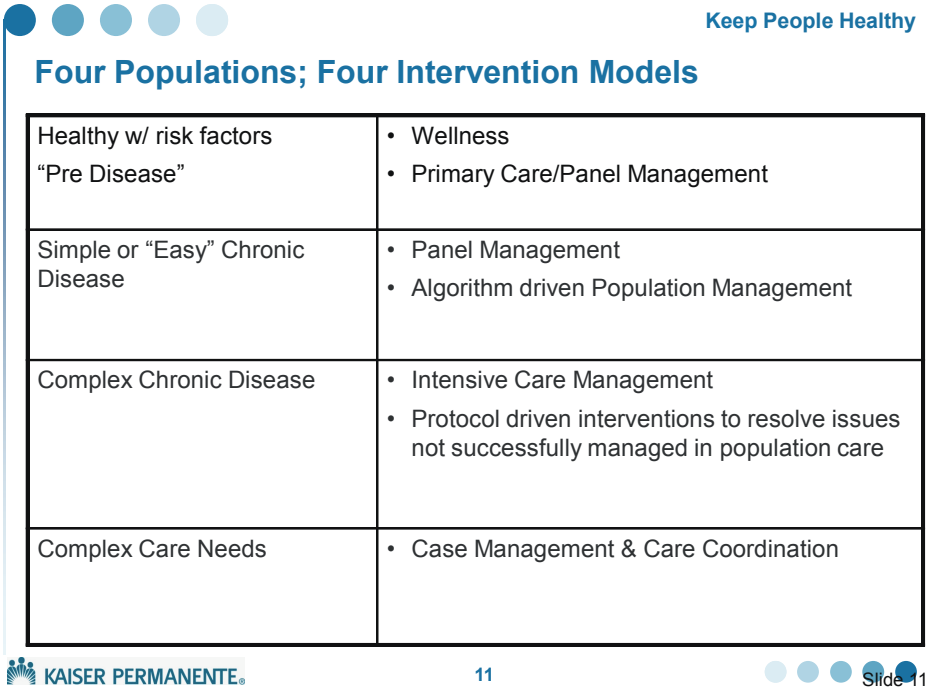
- keep people healthy
- keep people out of A&E
- better manage acute care in A&E
- support desired end of life care
- manage risk of readmission.

The chronic disease vortex (*see* Figure 1) illustrates the approach taken to understanding the needs of the population.

Figure 1 The chronic disease vortex



The needs of different groups are analysed in the following way.



Kaiser's prevention programmes have demonstrated increasing success and have contributed to admission avoidance, eg, for cardiovascular events.

Reductions in demand on A&E have been achieved through same-day access to primary care, easy access to specialists, the use of information technology (IT) that enables booking of appointments and access to test results, and the management of high-risk patients. Kaiser makes use of case managers with these patients and also provides home care support and care in skilled nursing facilities.

Managing A&E is based on separating patients with acute needs from others. Patients are also stratified by risk. Examples include patients with chest pain and those with pneumonia. By using clinical algorithms, decisions can be taken on admission, discharge or observation in an assessment unit.

Within the hospital, extensive use is made of hospitalists. These are medical specialists, usually general physicians or geriatricians, who work only in the inpatient setting; their job is to ensure the flow of patients through the hospital and to facilitate discharge. Hospitalists partner with patient care co-ordinators who are specially trained nurses. Discharge planning begins on admission to hospital, and hospitalists liaise closely with other specialists.

Kaiser has focused particularly on end-of-life care and has made use of alternatives to hospital. Palliative care is offered in both inpatient and outpatient settings and in the home. Hospices are also used and advance directives are encouraged, making use of the electronic medical record. The results can be seen in a reduction in deaths in hospital and an increase in those occurring in hospices.

Finally, re-admission reduction strategies focus on timely and accurate transfer of information and clear roles and accountability. This includes concise communication from hospitalist to primary care physician, and single point of care co-ordination across transitions of care. Analysis shows that patients aged 65 and over who do not receive a physician visit within 30

days of discharge are three times more likely to be re-admitted than those who do receive a visit. This has clear implications for the NHS in England in relation to recent changes to the tariff, which will mean providers will be liable for the cost of re-admissions within 30 days.

3 Working with the independent sector

Mike Sadler, Chief Operating Officer, Serco

Partnership allows the NHS to do things that may not otherwise be possible, including drawing on extra capacity and specialist skills, or sharing the risks for investment in health promotion or improvement initiatives. Serco has made a number of contributions to partnership. These include:

- innovation from worldwide experience
- organisational change and development
- process redesign and integration
- exploitation of information and information systems
- new sourcing strategies and better supplier management
- direct clinical and facilities management and back-office service provision.

Often, the public sector is not ambitious in working with partners, and tends to focus on outsourcing one or two services rather than full partnership working. Greater joint benefits tend to result from partnerships where both parties share risks but also the potential for additional gain, and are incentivised to deliver increasing benefits together. There are many mechanisms through which this may be achieved, including joint equity models.

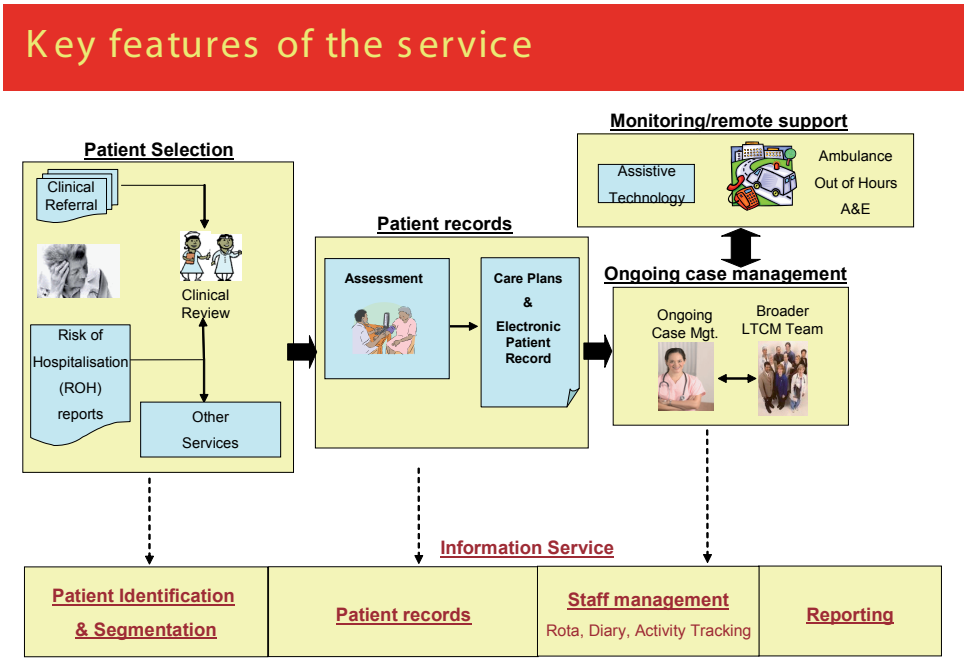
Examples from outside health care include Serco's work with the Atomic Weapons Establishment and the National Physical Laboratory. In the case of the former, an output-based contract was agreed, with flexibility on how the outputs would be delivered. Serco earns a risk-based performance fee under the contract. Such experience from other sectors, with 'eyes on, hands off' governance, demonstrates the value of commissioning from single accountable providers, based on specified costs and outcomes.

The same lessons should be applied to health. Trust is important. The NHS should set outcomes and outputs for private sector partners to achieve. It then needs to stand back from the process a little, and enable partners to concentrate on achieving the goals rather than micro-managing their approach. Robust monitoring and communication remains important.

One example in the NHS is Guy's and St Thomas' pathology services work in partnership with Serco. The pathology service is a joint venture model with a 50/50 equity share. Serco brings business expertise, and the foundation trust can focus on providing the highest-quality clinical services. By doing what we do well (investment, innovation, integration and transformation), Serco enables public services to do what they do better.

In the case of integrated care, Serco's vision is of health and social care convergence, the development of single IT systems, an increased role for assistive technology, and single accountable providers with capitation-based funding. Key features of the service are illustrated in Figure 3.

Figure 3 Key features of the integrated care service



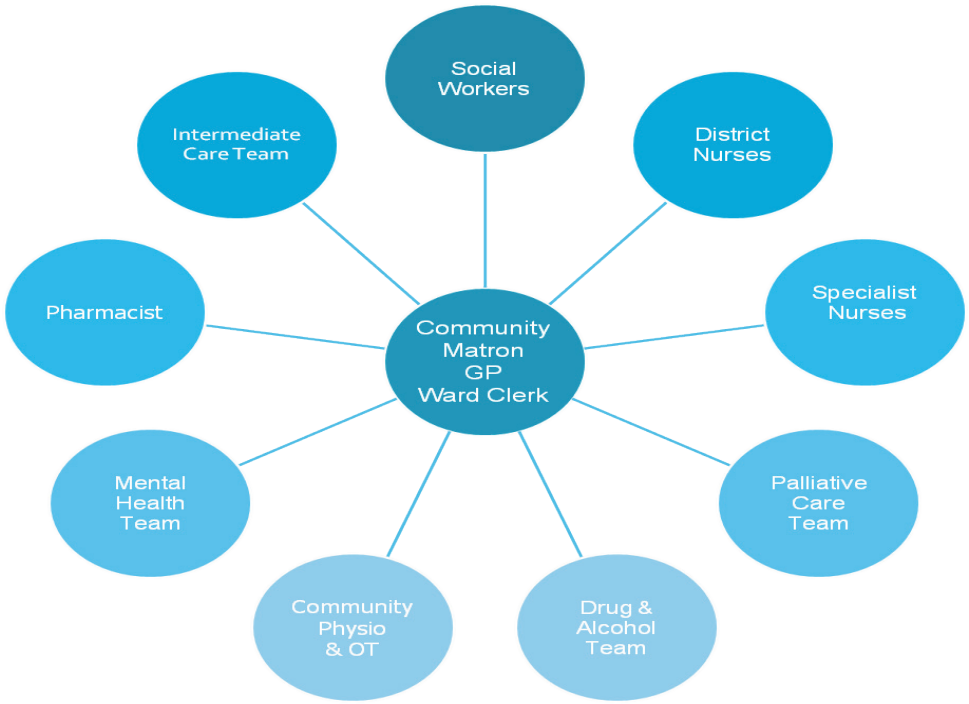
Developing such systems effectively and rapidly requires the best of public and private sector skills and experience.

4 Wandsworth community virtual wards: helping patients to be happy and healthy at home

Dr Seth Rankin, GP and Clinical Project Lead

Wandsworth community virtual wards aim to reduce emergency hospital admissions by supporting patients in the community. The virtual wards are designed to replicate the multidisciplinary approach of a hospital ward in the community. The focus is on proactively managing patients, particularly those with chronic conditions, identified as being at risk of admission. The model for the virtual ward was based on the award-winning initiative originally created by Dr Geraint Lewis at Croydon PCT.

Figure 4 Wandsworth community virtual ward team



The main drivers for the virtual ward initiative in Wandsworth were:

- community services that were poorly integrated, unproductive and non-responsive
- a belief that patients would (almost invariably) rather be at home
- a desire to reduce hospital admissions, as these can be dangerous and expensive
- a trend of GPs being less inclined to do home visits
- creating a 'pull' to get patients out of hospitals rather than expect secondary care to 'push'.

Patients are selected for the virtual ward service using clear criteria: age (over 18), being vulnerable to re-admission (including those with drug and alcohol problems, or mental health problems), and consent from

both the patient and their GP. As well as taking direct referrals from GPs, secondary care and community-based services, the virtual ward teams use the Patients at Risk of Re-hospitalisation (PARR++) risk-modelling tool developed by The King's Fund to identify patients at high risk of admission.

Following initial assessment, all patients have a care plan involving regular ongoing follow-up at home, but they are also encouraged to contact the virtual ward if they are unwell or simply need advice. To facilitate this, patients are given a direct access telephone number for their virtual ward on a 'credit card'. The service is integrated with the hospital A&E, ambulance service and GP out-of-hours service, who are all encouraged to seek advice from the virtual ward team if virtual ward patients present in their settings.

A virtual ward patient: case study

A 40-year-old male asthmatic smoker, living at home, was non-compliant with his inhaler prescription. He was socially isolated and depressed and was not accessing GP services. He had at least five hospital admissions between January and July 2009. He was identified using the PARR admissions predictive tool and admitted to a virtual ward in July 2009.

The virtual ward team provide regular home monitoring of his asthma and medication compliance. He was referred for, and is receiving, psychological therapy for depression and is attending a smoking cessation clinic. He has had no further admissions since July 2009.

There are four virtual wards, each with approximately 30 patients, serving a total catchment population of about 254,000. Each ward has an estimated maximum capacity of 100 patients, and in the first 10 months of operation, the wards have admitted 173 patients. Potential problems include the GP in the virtual ward team playing more of a managerial than a clinical role, and the possibility that the system may be paying practice-based GPs and virtual ward GPs to do the same job. Long-term capacity may also be an issue, as to date, the wards have been admitting more patients than they have been discharging.

It was anticipated that savings from reduced hospital admissions would cover the costs of the virtual ward. Initial evaluation shows that the wards have the potential to be cost-effective, but there needs to be a more robust analysis, including the impact on wider system costs over a longer period of operation, to confirm this.

5 Managing demand through practice-based commissioning

Dr Hugh Reeve, GP, NHS Cumbria

NHS Cumbria faces some distinctive challenges as a commissioner. The PCT is responsible for a resident population of 500,000 spread across 2,500 square miles of difficult terrain, with long travel times. Despite the beauty of the landscape, there are pockets of considerable poverty and deprivation. The area has traditionally been served by a range of fragmented community services and a number of small acute hospitals that have struggled to sustain viable acute services.

The PCT response to these challenges has been to drive a more integrated and clinically led approach to both commissioning and provision of services, pursuing a strategy of downsizing acute care and building up primary and community care. The PCT devolved its budgets to six localities. Each operates as an integrated care organisation that takes responsibility for commissioning and many aspects of service provision for their population.

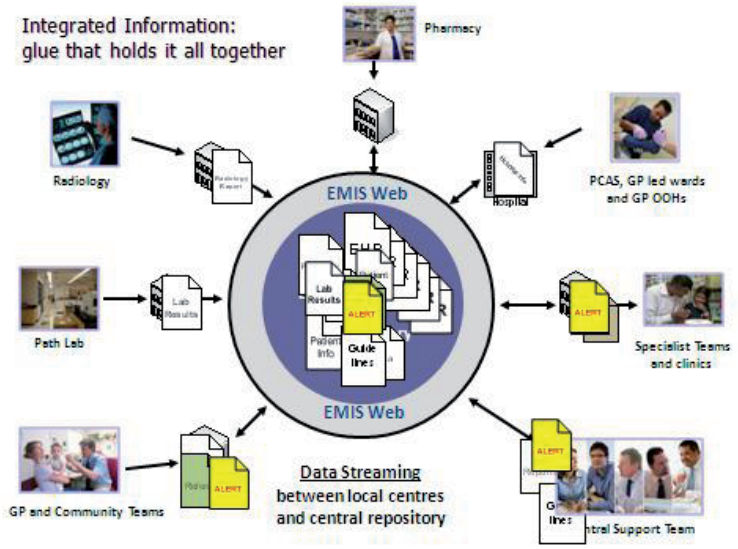
Westmorland Primary Care Collaborative (WPCC), one of the six localities, provides an example of how this is working in practice. WPCC has a budget of £80 million and is responsible for 'make or buy' decisions for its local population of 110,000. WPCC is formed of 21 practices (list size 600–16,000) and is also responsible for all the PCT community health services in the locality. From June 2010, the locality will have a new legal structure that provides voting shares not only for the GPs but also for the community staff. The new structure will not employ clinical staff but will provide a range of support services, including education, back-office functions, clinical governance and informatics.

Informatics plays a critical role in WPCC's vision for the future. Use of EMIS Web (*see* Figure 5 below) will allow primary, secondary and community health care professionals to view and contribute to a patient's health care record. The collaborative, led by local clinicians, has redesigned urgent care services and turned a small, acute medical facility with four wards and a coronary care unit (CCU) into a GP-led, step-up/ step-down facility with 50 beds.

WPCC has developed a range of alternatives to hospital admission:

- STINT (short-term intervention service) – seven days a week (nursing, therapy and social care)
- urgent home care – available to STINT team immediately (pooled funding from NHS and social services)
- primary care assessment (PCAS) rather than always immediate admission to an acute bed
- paramedics – access to PCAS in addition to standard ambulance transfer to district general hospital (DGH)
- admission to a community bed for the less seriously ill.

Figure 5 Data streaming using EMIS web



As well as new approaches to avoiding admissions, WPCC is developing an innovative approach to support discharge. The team has created a 'virtual' community hospital, with a staff team working flexibly to support patients either in the GP-led facility or in the community. This flexibility enables the service to respond to fluctuations in demand in a way that meets patients' needs but is also cost-effective. These new ways of working have also succeeded in curtailing growth in emergency admissions, against the national trend. Average monthly admissions in 2009/10 were 782, a reduction from 800 per month in 2008/9.

Despite facilitating a mass of innovation and new ways of working, WPCC also recognises that it will be some time before it has truly transformed the way patients are cared for. Many of the traditional ways of working are entrenched and require significant cultural change, but the team believes that their new integrated approach will facilitate that change.

They perceive the next challenge to be getting a better grip of utilisation management in the hospital sector. Future development possibilities include:

- urgent care/discharge co-ordinators
- in-reach 'hospitalists' – the model seen in Kaiser
- a fully integrated urgent care system (including payments).

6 The Brent Integrated Care Co-ordination Service

Lesley Braithwaite, Independent Facilitator/Consultant

Brent is a suburb of north-west London with a population of 289,000, of whom 30,000 are aged 65 and over. There is considerable ethnic and economic diversity, with pockets of significant deprivation. The Brent Integrated Care Coordination Service (ICCS) is one of a number of pilot projects funded through the Department of Health's Partnership for Older People Projects (POPP).

The aim of the POPP programme was to test and evaluate innovative approaches that include the prevention of admissions to hospital as one of their main outcomes. The Brent POPP, the ICCS, had three main aims:

- to improve the ability of the whole health and care system to promote independence and prevent unnecessary hospital admissions
- to improve outcomes for socially excluded older people from hard-to-reach black and minority ethnic groups
- to use a new 'preventative' pooled budget to create a virtuous cycle of reinvestment.

The ICCS provides a service to people aged 65 and over who may be at risk of avoidable hospital admissions or premature admission to residential care, or are perceived to be at risk due to mental, physical, emotional or social problems. Cases can be referred to ICCS by GPs, social services, other statutory services, relatives or the individuals themselves. GPs use a simple tool (EARLI – Emergency Admission Risk Likelihood Index) to identify older people likely to be at risk of avoidable hospital admission, who would benefit from the ICCS. EARLI has six questions that can be answered easily by the older person being referred. EARLI has been shown to identify, relatively accurately, those at risk of an admission and therefore those most likely to benefit. ICCS believes this has been key to achieving savings.

People referred to the ICCS receive a holistic assessment of their needs and are then referred on to the appropriate services. This may include health and social care providers, private sector providers such as opticians and dentists, the voluntary sector (providing handyman services, for example) or the pensions service. The ICCS may also purchase equipment.

The ICCS generally works with someone for about three months. This ensures they develop relationships with people who may be reluctant to engage and ensures that services are effectively embedded. The ICCS uses the adult social care IT system, and this has meant a much better understanding across the system of who is doing what; it has also helped to develop relationships between health and social care professionals. During the pilot phase, 1,000 older people were assessed and their care co-ordinated. The majority (75 per cent) were aged 80 or over, and 60 per cent were women. Most had at least one chronic condition and experienced difficulties with daily living.

A case example is Mr A, an 82-year-old diabetic man with poor mobility, loss of balance and confusion. He had missed a number of hospital appointments because of memory loss and fear of falling. He was losing weight, putting him at significant risk, especially because of his diabetes. There were no working light bulbs in his kitchen, increasing the risk of

him falling. Following assessment of his needs by ICCS, the care co-ordinator contacted the handyman service, which replaced the light bulbs, mended his bed and re-hung curtains. The care co-ordinator also arranged transport to hospital for Mr A's re-arranged appointments, and made a referral resulting in attendance at the memory clinic. Discussion with his GP and the community pharmacist resulted in doset boxes being supplied and arrangements with the pharmacy to collect and deliver prescriptions. Meals on wheels and three care visits a day provided support with Mr A's diet, and support for daily living was provided by adult social care, using the ICCS assessment.

The ICCS has been subject to two evaluations, both of which found positive impacts. The ICCS intervention:

- saved between 14 and 29 bed days in hospital per year per client, and between 3 and 8 A&E attendances
- resulted in fewer falls
- delayed transfers to nursing care
- generated savings to adult social care through reduced assessment and referral activity, and reduced overall pathway costs
- produced a small improvement in self-reported quality of life.

The 2008 evaluation by Cass Business School[3] estimated that the service, if operating at full speed, could achieve savings of up to £2.4 million.

However, the experience from the pilot is that achieving these gains is not easy. Joint working is difficult and requires a shared vision. ICCS found that basing the care co-ordination staff within district nursing teams transformed their capacity for joint working. The presence of a robust evaluation and a strong evidence base has also enabled the service to be mainstreamed, despite severe resource constraints. The ICCS is now likely to become part of a transformed front-end service, linked to intermediate care developments.

3 Cass Business School (2008). *The Economic, Health and Social Benefits of Care Co-ordination for Older People: The Integrated Care Coordination service*. Available at: www.dh.gov.uk/en/SocialCare/Deliveringadultsocialcare/Olderpeople/PartnershipsforOlderPeopleProjects/index.htm (accessed on 23 August 2010).

7 Avoiding hospital admissions: what does the research evidence say?

Dr Sarah Purdy, GP and Consultant Lecturer, University of Bristol

An analysis of the peer-reviewed literature that provides evidence about what works in avoiding hospital admissions sheds light on the following questions:

- Who is at risk and how do we identify them?
- Which admissions are potentially avoidable?
- Which interventions work?

Who is at risk and how do we identify them?

There are clear associations between risk of admission and the following factors:

- deprivation: the most deprived people have 60–70 per cent higher rates of admission for asthma and COPD compared with the least deprived
- living in urban areas: there is a 16 per cent higher rate of admission for people with asthma than in rural areas
- living close to A&E departments: there is a 12 per cent higher rate of admission for people with asthma who live close to A&E departments than those who do not
- age is important, but only those aged 5 to 14 have low risk.

A range of risk prediction models have been developed in recent years, for example, PARR++ (The King's Fund). These use patient-based data to predict future likelihood of admission. They can be valuable to GPs and community services in identifying at-risk patients. Another useful tool is the EARLI questionnaire (also referred to in the Brent ICCS example). This provides a means to identify those aged 75 years or over who are at risk of admission. This tool has been shown to have a goodness of fit of 0.69 – that is, it can identify at-risk patients with nearly 70 per cent accuracy.[4]

Which admissions are potentially avoidable?

Ambulatory care sensitive (ACS) conditions are those for which hospital admission could be prevented by interventions in primary care. For example, hypertension (high blood pressure) is a condition that can be treated outside hospital. With proper medication and management of care, most people should not need to be hospitalised for hypertension.

4 Lyon D, Lancaster GA, Taylor S, Dowrick C, Chellaswamy H (2007). 'Predicting the likelihood of emergency admission to hospital of older people: development and validation of the Emergency Admission Risk Likelihood Index (EARLI)'. *Family Practice*, vol 24, no 2, pp 158–67.

A significant proportion of current hospital admissions are for ACS conditions, though there are varying definitions of what constitutes an ACS condition. The NHS Institute for Innovation and Improvement work on emergency and out-of-hospital care provides a wide range of strategies to help avoid admissions for ACS conditions.[5]

Which interventions work?

There is good evidence to support the following interventions.

- **Self-management of COPD and asthma**
  Patients who received self-management training to help them manage their COPD saw their risk of being admitted to hospital drop significantly. Self-management training was also associated with a small but significant reduction in shortness of breath, and improved quality of life. Educating adult patients with asthma can also halve their risk of admission, but this may not apply to those with the most severe and difficult asthma.
- **Senior clinician review in A&E**
  A recent study showed that, where patients in A&E are reviewed by a senior clinician, this can reduce inpatient admissions by over 10 per cent and admissions to the acute medical assessment unit by over 20 per cent.
- **Continuity of care with a family doctor**
  Patients who have high continuity of care with their family doctor are less likely to be admitted for one of the ACS conditions.
- **Hospital at home**
  Special services have been developed to provide people with hospital care in their homes. Typically, a team of health care professionals, such as doctors, nurses and physiotherapists, provide treatment at the patient's home. The evidence shows that these schemes can deliver similar outcomes to admission at equivalent or lower cost.
- **Assertive case management for people with mental health problems**
  Assertive and intensive case management by multidisciplinary teams for people with mental health problems can reduce the likelihood of their admission to hospital.
- **Use of observation/assessment wards**
  All types of assessment/observation wards seem to be effective in reducing the number of general ward admissions, but the benefits to patients are not clear.
- **Structured discharge planning**
  A recent systematic review showed that a structured discharge plan, tailored to the individual patient, can bring about a reduction in length of stay and re-admission rates, and an increase in patient satisfaction.

5 See: www.institute.nhs.uk

The evidence also shows that many interventions that might be expected to avoid admissions do not. These include:

- specialist clinics in primary care
- intermediate care and rehabilitation programmes
- case management of frail elderly people (as may identify additional at-risk individuals)
- telephone follow-up after discharge
- home-based medication reviews.

8 Conclusion

This paper has drawn on experience from the NHS in England and Kaiser Permanente in California, and reviews of the research evidence, to summarise what we know about admission avoidance. Since The King's Fund seminar on which this paper is based was held, the coalition government that came to power in May 2010 has published a White Paper on its plans for reforming the NHS.[6] At the heart of these plans is the proposal that consortia of general practices should control most of the NHS budget and should be responsible for driving further improvements in performance.

The rationale behind GP commissioning is that there should be a closer alignment between clinical decision-making and accountability for the use of resources. This includes GPs taking more responsibility for managing demand for hospital care and developing alternatives to hospital admission. The work summarised in this paper contains a number of implications for GP commissioners in rising to this challenge, including:

- analysing the population being served and identifying people most at risk using risk prediction models
- assessing which admissions are potentially avoidable and targeting people with conditions that can be treated more effectively in the community
- agreeing on the interventions and services that offer the biggest return on investment.

As well as actions by GP commissioners, it is clear that managers and clinicians in acute hospitals can play a key role, both in avoiding admissions when patients present at A&E, and avoiding re-admissions.

One of the main messages of this paper is that the NHS needs to move beyond projects and adopt comprehensive admission avoidance programmes. These programmes need to involve the full spectrum of care providers and should look across the whole system of care. The challenge will be to ensure that the coalition government's emphasis on choice and competition does not 'crowd out' collaboration, integration and whole system working in the next stage of reform.

6 Department of Health (2010). *Equity and Excellence: Liberating the NHS*. London: Department of Health. Available at: www.dh.gov.uk/en/Healthcare/LiberatingtheNHS/index.htm (accessed on 23 August 2010).