Mid and South Essex
Sustainability and Transformation Partnership (STP)

Your care in the best place
At home, in your community and in our hospitals

Supplementary information for discussion and feedback during public consultation from 30 November 2017 to 9 March 2018

Summary of clinical evidence

Purpose of this document

This paper accompanies the proposed changes to hospital services, outlined in the consultation document and summary. More detail is provided here on references used over the past months, taken from published literature on these approaches. This aims to illustrate an evidence base for four aspects of the proposals and how this has helped inform local decision-making and the generation of local plans. Whilst not fully exhaustive, these documents indicate where similar care models have been assessed in practice.

Introduction

Health and care services in mid and south Essex have formed a partnership to make changes over the next five years. As part of planning together for the future, we need to change and improve the way our three main hospitals work. Sometimes our hospitals become blocked. Sometimes people wait for hours in A&E, wait to be admitted and wait to be discharged. Some of the proposals in this consultation will help in tackling these problems.

Working together as one hospital group, we have the potential to build on each hospital’s strengths and create, for the 1.2 million people who live in mid and south Essex, some of the leading hospital services in the country.

Thinking about our acute hospitals (those where people come in an emergency or for hospital care that means staying overnight) there are four main ways in which we propose improving services:

1. **Developments in A&E and a wider range of urgent care at each hospital**
The majority of hospital care will remain local and each hospital will continue to have a 24 hour A&E department that receives ambulances, through the development of an “emergency hub” at each hospital with a wider range of urgent care services
2. **Improvements by bringing specialist services together in one place**

Certain more specialist services which need a hospital stay should be concentrated in one place, where this would improve your care and chances of a good recovery for the once or twice in a lifetime when you may need the care of a dedicated specialist team intend to look at doing this in:

- Gynaecological surgery (women’s services) and gynaecological cancer surgery
- Respiratory services for very serious lung problems
- Renal services for people with serious kidney disease
- Complex vascular services for the treatment of diseased arteries and veins
- Cardiology for complex heart problems
- Gastroenterology services for people with complex gut and liver disease
- Complex general surgery (e.g. for abdominal problems)

3. **Rapid access (even with a transfer between hospitals) to the right specialist team for your needs.**

Access to specialist emergency care should be via your local (or nearest) A&E, for stabilisation, treatment and, if needed, onward transfer to a specialist team, which may be in a different hospital. The teams in all three A&Es would be equipped and able to diagnose and stabilise patients and initiate treatment. An example is care for people with stroke.

4. **Improvements by separating planned operations from emergency care**

Planned operations should, where possible, be separate from patients who are coming into hospital in an emergency. By separating planned operations from emergency admissions, we can shorten waiting times, avoid cancellations, reduce infections and improve your recovery. The majority of routine operations would continue at your local hospital, but we are proposing to relocate some services that need a hospital stay of three to four days. Examples are orthopaedic surgery and urological surgery.
Clinical Evidence Base — the following references supporting literature examined as part of the development of these clinical models.

1. Developments in A&E and a wider range of urgent care at each hospital

Evidence shows that improved flow at the “front door” can have a profound impact on patient outcomes this includes:

- Reduced emergency department crowding decreases 10 day mortality by 30% ¹⁴
- Early senior review decreases 10 day mortality by 30% and reduces length of stay by 2-3 days ⁶,⁸
- Placing patients into the right ward first time decreases readmissions by 46-63%, mortality by 50% and reduces length of stay by 2-4 days ²
- Ambulatory care decreases in-patient mortality by 1.6% and reduces length of stay by 1.5 -2.5 days ¹⁸

References

2. Improvements by bringing specialist services together in one place

Overall, clinical evidence supports a positive volume and quality correlation in 70-80% of studies. Simply put, this means that the more a clinical team perform a particular treatment or procedure, the better the outcomes for their patients.

- In Medicine, strong national and international evidence of improved outcomes when increasing volumes of Stroke and Cardiology, both in terms of mortality and length of stay.
- In Surgery, evidence of improved outcomes including long term quality of life and length of stay in areas such as Trauma and Orthopaedics.
- In Cancer care, strong evidence of improvement in mortality and outcomes, particularly for low volume, complex surgeries.
- Specialist trusts have stronger 'friends and families' scores compared to non-specialist acute trusts in UK.

1. Individual research papers might be double-counted when providing correlation points for more than one specialty and on physician and hospital level
2. Duplications between studies likely
3. Both meta-studies report that "no study identified significant association between high hospital volume and poorer outcomes"

Source: Include meta-studies: Chowdhury et al. (2007); Halm et al. (2002)
Evidence of improved outcomes from consolidation in Stroke
Morris et al. (2014) estimated 95 patients were saved annually due to change *

Consolidation of London’s stroke centres

In 2010 London hospitals changed stroke treatment model
- Previously, 30 hospitals had acute treatment of stroke
- Consolidated to 8 hyperacute centres in 2010
  - Catchment area of ~1m people per centre
  - Maximal travel time 30 min

Centres offered specialist stroke care
- 24/7 multidisciplinary teams
- Direct CT
- Thrombolysis within 3 hours
- Standard psychological care

Clinical and financial benefits

Reduced costs across London as average LoS has decreased:

- 30-day mortality
- Mean Length of Stay

- Increase in thrombolysis use, with rate higher than major centres worldwide
- Lower mortality rates across capital
- Shorter hospitalization, 50% nursing home admission reduction

*Probably corresponds with 7-day mortality of around 4%

Note: CVA: Cardiovascular accident: stroke. Small volume >50 CVAs /year; Medium: 51-100; Large 101-150; Very large > 150. study among 26,676 patients in Canada in 606 hospitals. CVA includes both bleeding and non-bleeding CVAs

Evidence of volume/quality in Cardiology

Research shows positive effect on quality by increasing volume up until ~500 treatments per year
- Larger volume results in lower mortality
- However, mortality reduction diminishes when volume increases and is no longer statistically significant beyond 500 treatments

Source: Ross et al. NEJM 2010.

Odds ratio is \( \frac{P_x}{1-P_x} / \frac{P_y}{1-P_y} \); 1. Odds ratios between 300 and 600 are interpolated, from 600 the odds ratio is 1.

Research shows positive effect on quality by increasing volume up till 600 treatments
- Larger volume results in lower mortality
- However, mortality decline diminishes when volume increases and is no longer statistically significant beyond 600 treatments

Evidence that higher volumes can improve patient outcomes in Trauma & Orthopaedic surgery

Length of stay with knee and hip surgeries

1. BARMER GEK policyholders 2011Source: Budäus et al.; Deutsches Ärzteblatt; BARMER GEK hospital report; Performance data set
Evidence of volume / quality correlation: cancer; correlation volume/quality at high-complex low-volume oncological surgery

Study among Medicare population in US (2.5 million patients)
1. Mortality within 30 days after surgery Note: The number of treatments per hospital per year. Categories from very low to high: Gastric: <5; 5-8; 9-13; 14-21; >21. Esophageal: <2; 2-4; 5-8; 8-19; >19. Pancreatic: 1; 1-2; 3-5; 6-16; >16. Kidney<7; 7-12; 13-19; 20-31; >31. Bladder: <2; 2-3; 4; 5-6; 11; >11. Lung: <9; 9-17; 18-27; 28-46; >46


Specialist trusts outperform acute trusts on Friends & Family test

Note: Acute Specialist Trusts were identified as in NHS Staff Survey 2015

Source: NHS Friends and Family Test (November 2016)33, Acute Specialist Trust and Acute Trust calculated as average of each category
<table>
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<th>References</th>
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<tbody>
<tr>
<td>23. Budäus et al.; Deutsches Ärzteblatt; BARMER GEK hospital report; Performation data set</td>
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<tr>
<td>33. NHS Friends and Family Test (November 2016).</td>
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<tr>
<td>34. Normering Chirurgische Behandelingen, Nederlandse Vereniging voor Heelkunde, January 2011; Data Hosp. A&amp;B</td>
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</table>
3. Rapid access (even with a transfer between hospitals) to the right specialist team for your needs and technological facilities for specialist scans and treatment.

There is clinical evidence that treat and transfer in some emergency situations improves outcomes for patients and is safe. A UK study provided evidence that patients diagnosed with intracerebral haemorrhage had greater positive outcomes if transferred to a specialist centre.

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<th>Results</th>
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<tr>
<td><strong>Objectives</strong>: To identify factors associated with the decision to transfer and/or operate on patients with intracerebral haemorrhage (ICH) at a UK regional neurosurgical centre and test whether these decisions were associated with patient survival.</td>
<td>Factors predicting risk of death in 1-year follow-up period</td>
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<td>Obtained clinical data from 1384 consecutive spontaneous patients with ICH and 1175 cases were included in the final analysis. 140 (12%) patients were transferred and 75 (6%) had surgery.</td>
<td><strong>The transferred patients had a lower risk of death relative to those remaining at the referring centre whether they had surgery (HR 0.46, 95% CI 0.32 to 0.67) or not (HR 0.41, 95% CI 0.22 to 0.73)</strong></td>
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A study conducted in the USA suggested an increased survival rate for Trauma patients initially presented to non-tertiary centres subsequently transferred to tertiary trauma centres compared to patients who remained at initial centre. There was a clear association between transfer to a specialist centre and survival.
References


4. Improvements by separating planned operations from emergency care

The national NHS Keogh report identifies that best practice is to segregate elective surgery from emergency care entirely through the use of dedicated beds, theatres and staff. This greatly reduces cancellations and improves outcomes and flow.

The Royal College of Surgeons report that separating elective and non-elective work can reduce patient disruption and cancellations, and reduce rates of hospital acquired infections.

The Keogh Urgent and Emergency Care Review 42, 43 - In order to better manage UEC, elective and emergency should be separate

Royal College of Surgeons recommends separation of emergency and elective care as best practice: The Royal College of surgeons of England (Sept 2007)44
"Separation within a single facility can work well if clear protocols are in place to ensure one stream does not encroach upon the other. Such separation can happen through separate staff rostering, ring-fenced theatres, ring-fenced theatre time, or ring-fenced elective beds."

"Hospital-acquired infections can be reduced by the provision of protected elective wards and avoiding admissions from the emergency department and transfers from within/outside the hospital."

"Separating emergency and elective services can prevent the admission of emergency patients (both medical and surgical) from disrupting planned activity and vice versa, thus minimising patient inconvenience and maximising productivity for the Trust."

References


Speciality-specific Clinical Evidence - the following identifies supporting literature examined as part of the development of specific clinical pathways

<table>
<thead>
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<th>Speciality</th>
<th>Key changes and supporting clinical evidence</th>
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<td>Stroke</td>
<td><strong>Key changes:</strong> patients are thrombolysed locally and transferred to a central HASU. <strong>Consolidating Services</strong> (See above) <strong>Treat and Transfer</strong> (See above) <strong>Pathway Redesign</strong></td>
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<td></td>
<td>56. UCLPartners report (2017) Evidence Review on Pathways of Hyperacute Stroke Care commissioned for this service review (see Appendix).</td>
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### Respiratory

**Key changes:** Establishment of a Respiratory Ward at BTUH will enable more complex patients to receive specialist care, through a treat and transfer model. Patients who may attend this centre include patients who required non-invasive ventilation and with severe pneumonia.

**Consolidating Services** (See above)

**Treat and Transfer** (See above)

**Pathway Redesign:**


### Trauma and Orthopaedics

**Key changes:** Elective surgery would be consolidated on two sites: MEHT and Southend. Clinical pathways will be developed to further consolidate specific procedures at each site. Basildon would treat all complex emergency Trauma cases through a treat and transfer model for patients received *out of hours* and requiring immediate surgery. These patients would be repatriated to their local hospital once stabilised.

**Consolidating Services** (See above)

**Treat and Transfer** (See above)

**Separating Emergency and Elective Care** (See above)

**Pathway Redesign**


### Vascular

**Key changes:** Under the proposed model, all patients would be reviewed at their A&E through the enhanced emergency hub. All patients that require emergency surgery would be transferred to the 24/7 Emergency Vascular Hub at BTUH.

Patients treated at the Emergency Hub would be repatriated to local hospitals for their ongoing care once stable.
Complex elective surgery would also be delivered at this hub site, including Aorta-thoracic / abdominal surgery. However, day and short stay surgery would be delivered locally, including lower limb, carotid and venous surgery.

**Consolidating Services** (See above)
**Treat and Transfer** (See above)

**Pathway Redesign**


**Cardiology**

**Key changes:**
Given the expertise available at the CTC, we are proposing increasing the range of conditions that are seen through this service via a Treat and Transfer model. This will include, for example, Non ST elevation Myocardial Infarctions, and Life Threatening Arrhythmias that will likely need a pacemaker.

**Consolidating Services** (See above)
**Treat and Transfer** (See above)

**Pathway Redesign**


**Urology**

**Key changes:** For some specific complex surgical procedures, patients would be assessed, treated and then transferred to the Emergency Urology Hub in MEHT e.g. patients with Emergency Stones. Post surgery, patients at the Emergency Urology Hub would be discharged, with follow up care at their local hospital.

Patients too sick for transfer would be admitted to local ITU/CCU and may require Urologists/ IR support.

The majority of routine elective work would continue to be delivered at the local site via day case.

However, some low volume, complex work would be consolidated onto a single site, including Nephrectomy and Pyeloplasty at
| **MEHT, and Complex Cancer work at SUHFT (e.g. Radical Prostatectomy)** |
| **Consolidating Services** (See above) |
| **Treat and Transfer** (See above) |
| **Pathway Redesign** |
| 60. Department of Health (2016) Getting It Right First Time- Urology Surgery Review Mid Essex Hospital Services NHS Trust |
| 61. Department of Health (2016) Getting It Right First Time- Urology Surgery Review Southend University Hospital NHS Foundation Trust |

| **General Surgery** |
| **Key changes:** Complex general surgery admissions, possibly requiring laparotomy will be treated and transferred to MEHT to be operated on by a team of consultants. Lower GI elective work will be co-located at MEHT with a dedicated 24/7 rota supporting the three hospitals. Clinical pathways are to be developed to further consolidate specific procedures at each site |
| **Consolidating Services** (See above) |
| **Treat and Transfer** (See above) |
| **Pathway Redesign** |

| **Gynaecology** |
| **Key changes:** Some complex work would be consolidated into a specialist service at SUHFT. This would include any treat and transfer for emergency procedures where it is expected that patients would need to stay in hospital for more than 48 hours. In addition, this would include specialist elective cases, including all Oncology (extended to include Broomfield as well as Basildon patients), Urogynaecology, Minimal Access surgery, Intermediate and Major Gynaecology |
Consolidating Services (See above)
Treat and Transfer (See above)
Pathway Redesign


### Gastroenterology

**Key changes:** It is proposed that the establishment of an Acute Gastroenterology Ward at (hospital site TBC) will enable more complex patients to receive specialist care, through a Treat and Transfer model. Patients who may attend this centre include acute liver failure, severe pancreatitis, intestinal failure.

Consolidating Services (See above)
Treat and Transfer (See above)

**Appendix 1** - Evidence Review on Pathways of Hyperacute Stroke Care, supervised by Dr. Charlie Davie, October 2017.