

## **Proposal for the Development of Major Trauma Units for Kent and Medway**

### **1. Purpose of this document**

This document provides an overview of the Outline Business Case in support of the development of Major Trauma services across Kent and Medway; specifically the development of local Trauma Units to provide enhanced services for patients following major trauma, and links with pathways for rehabilitation for all patients following treatment for major trauma.

The development of Trauma Networks and process per region is a national requirement set out within the revised NHS National Operating Framework for 2010/11 and 2011/12. Within this framework, each region is expected to have Regional and local Major Trauma Networks, and a strategy for delivery in place during 2010/11 with Trauma Units being operationalised by 2012.

It is proposed that three Trauma Units are developed for Kent and Medway based on a full review of data and assessment of Acute Trusts against nationally validated criteria. The three trauma units proposed, therefore, are:

- Maidstone and Tunbridge Wells NHS Trust (Pembury Hospital Site)
- East Kent Hospitals NHS Foundation Trust (William Harvey Hospital Site)
- Medway NHS Foundation Trust

All three Acute Trust CEO (or their designated representatives) and internal clinical leads support the application to become a Trauma Unit.

Emergency Departments not designated a Trauma Unit will continue to receive and treat trauma patients appropriate to the services currently provided within that facility.

The development of these three Trauma Units is based on the reconfiguration of existing services. It is likely that there will be a national tariff structure, but it is unclear at this stage whether this tariff arrangement will be nationally mandated or serves as a guide for local commissioning discussion. It is, therefore, anticipated that for year 1 of the implementation process activity will be paid under the existing Payment by Results (PbR) arrangements.

### **2. Executive Summary**

In order to identify and define the requirements for treating major trauma cases across Kent and Medway, the Critical Care and Trauma Network agreed a set of key principles for local trauma services which supports the development of a hub and spoke model:

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- Kent and Medway do not require a local Major Trauma Centre due to an insufficient number of trauma incidences per year (estimated at 202). National recommendations are that major trauma centres treat 400-650 cases per year, in order to maintain clinical expertise
- Trauma Units are required to enable appropriate stabilisation of patients, prior to referral to specialist services, which have been shown to reduce mortality from major trauma by 40% by reducing the time to diagnosis and onward referral.
- Trauma Units will require support from the clinical lead(s) (or Clinical Director on call) at the Major Trauma Centre(s) ensuring effective and appropriate clinical accountability and transfer of patients.
- Self assessment of each emergency department across Kent and Medway has been undertaken, combined with geographical considerations and review of data, to inform the location of the Trauma Units.
- Submission of Trauma Audit and Research Network (TARN) data by all Trusts in Kent and Medway has been agreed to enable accurate data collation and review of services going forward
- Agreement to a focussed review of current rehabilitation pathways, which is key to enabling the effective and efficient use of specialist resources by the appropriate transfer of patients from tertiary centres to clinically appropriate rehabilitation services. In addition this may help to:
  - reduce the length of stay
  - minimise hospital readmissions
  - reduce the use of NHS resources following the initial period of hospitalisation.

These principles were developed following review and discussion of the key national guidance and requirements relating to and referencing Major Trauma. These principles, supported by self assessment of emergency departments, have been the basis for the proposal to develop three trauma units across Kent and Medway.

### **3. Background**

Major trauma is described as serious and often multiple injuries where there is a strong possibility of death or disability; and is identified as the leading cause of death in people under 40. However, in order to identify and address care for all patients suffering trauma injuries the classifications as described by the injury severity score (ISS) have been used within this paper.

Over recent years there have been a number of national drivers promoting the review and strengthening of arrangements for the treatment of major trauma cases in order to reduce death and disability. The 2010 review of Major Trauma Care in England undertaken by the National Audit Office (NAO), highlighted that there had been little progress nationally against recommendations from reviews and audits since 1988. Both

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the recommendations from the NAO report, and the assertion within Lord Darzi's 2008 NHS Next Stage Review that there were 'compelling arguments for saving lives by creating specialised centres for major trauma' have been supported by the Department of Health through its Regional Trauma Networks Programme and the appointment of the first National Clinical Director for Trauma Care to lead the development of clinical policy. In addition, the continuation of these developments has been reiterated within the National Operating Framework for 2011/12.

The Departments of Health's overall national imperative for trauma care is for the development of care models and pathways based on:

- patients' needs;
- local expertise and facilities, and
- geography and transport options,

with ongoing monitoring of performance against professional standards. The Kent and Medway Critical Care and Trauma Network have used these criteria to support decision making for the review of local services.

#### **4. Local context:**

Within Kent and Medway, there are four NHS Hospital Trusts, consisting of eight acute hospitals, with seven type 1 Emergency Departments.

Pre-hospital triage is currently undertaken by the Ambulance Trust supported by HEMS where an air ambulance is deemed necessary. Following triage, patients may be transferred directly to a major trauma centre or to a local emergency department dependent on clinical need.

Patients are transferred from the scene of an incident to a local emergency department for stabilisation and assessment; following which a decision is made regarding the location of further treatment. This may be undertaken locally, regionally or within a tertiary (major trauma) centre, and appropriate arrangements for transfer are made.

Patients requiring specialist major trauma intervention may be treated at a number of Major Trauma Centres, including:

- Kings College Hospital NHS Foundation Trust
- Queens Hospital, within Barking, Havering and Redbridge University Hospitals NHS Trust
- The Royal London Hospital, within Barts and The London NHS Trust

The process for transfer from specialist trauma services into rehabilitative services is currently based on local protocols.

Key issues for consideration within Kent and Medway:

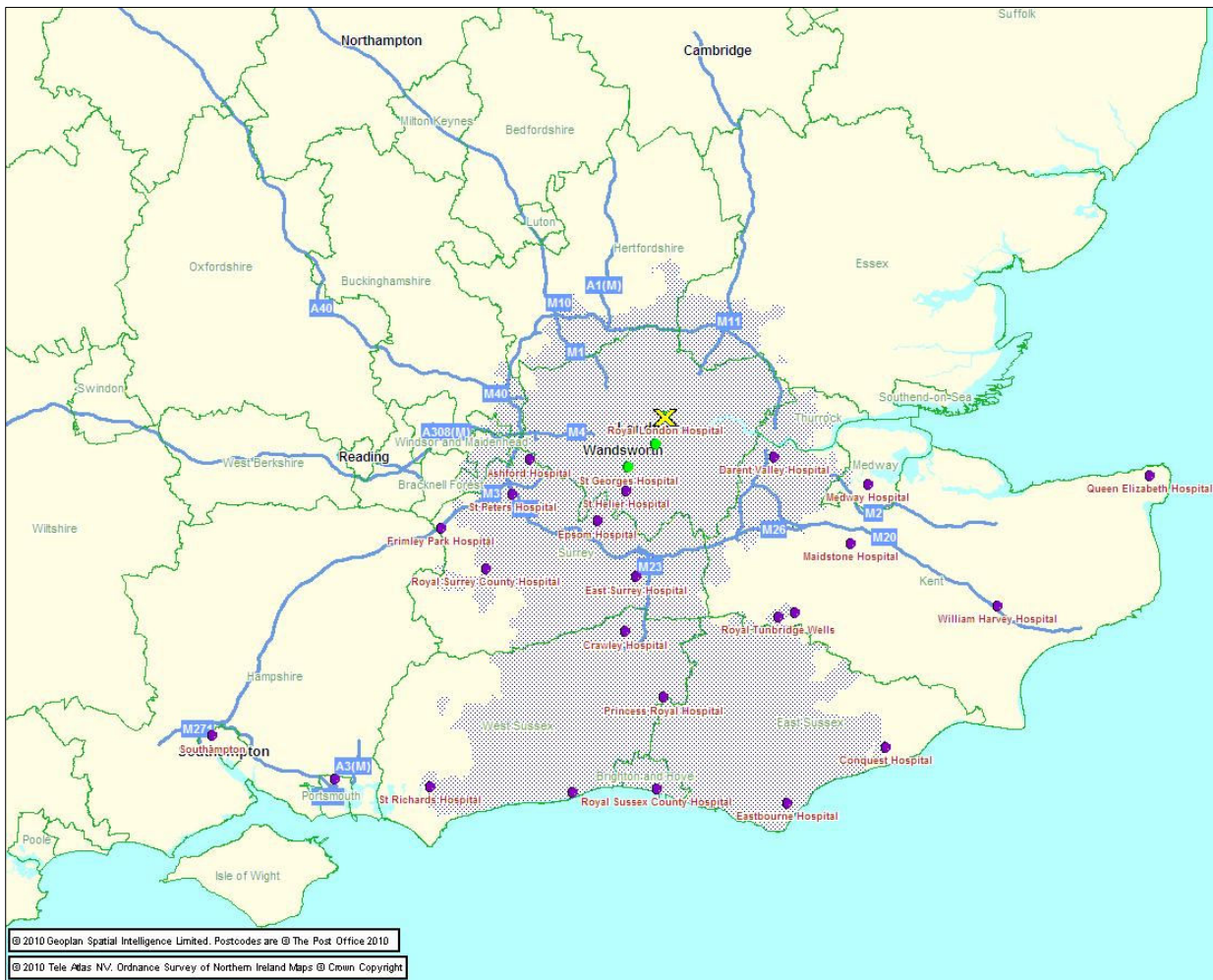
- The NHS Clinical Advisory Groups Report into Regional Networks for Major Trauma (September 2010) reiterated the imperative for patients involved in major trauma to be transferred to a Major Trauma Centre within 45 minutes. However, the Clinical Advisory Group also acknowledges that for many areas transfer within this 45 minute

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isochrone is not possible, and local trauma units will therefore be required to provide stabilisation prior to onward transfer to a Major Trauma Centre. Due to the geography of Kent and Medway, the majority of emergency departments fall outside the 45 minute isochrones for Major Trauma Centres (see Figure 1).

**Figure 1: Major Trauma Centres (London and Brighton) – Area of Kent and Medway Not Covered by Major Trauma Facilities\***

(\* Shaded area represents approximate 45-minute road travel times by Ambulance to/from King’s College Hospital, London and Royal Sussex County Hospital, Brighton)



The proposed trauma unit locations were based on the ability for all areas of Kent and Medway to be within 45 minutes of either a Major Trauma Centre (as is the case for the Dartford and Gravesham areas proximity to King’s College Hospital) or a trauma unit. Figure 2 demonstrates the coverage of services within 45 minutes for Kent and Medway following implementation of the proposed Trauma Unit sites:

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**Figure 2: Major Trauma – 45-Minute Ambulance Road-Travel Isochrone around SEC Major Trauma Centres and Kent and Medway (potential) Trauma Units\***

(\* Shaded area represents approximate 45-minute road travel times by Ambulance to/from KCH, London; RSCH, Brighton; WHH, Ashford; MMH, Gillingham; Pembury, Tunbridge Wells)



- Whilst there is a high potential for major incidents within the Kent and Medway area – due to the high volume of international traffic using the multiple motorways within the region, air corridors and the channel tunnel – this is not borne out by data modelling
- Multiple transfers increase morbidity rates and therefore clear pathways for the transfer of patients from incident to suitable locations for diagnosis and treatment are vital

**5. Trauma Units**

Nationally a Trauma Unit is defined as a unit that ‘provides care for most injured patients’ (NHS Clinical Advisory Group recommendations to the Department of Health) and:

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- 'is optimised for the definitive care of injured patients. In particular, it has an active, effective trauma Quality Improvement programme. It also provides a managed transition to rehabilitation and the community.
- has systems in place to rapidly move the most severely injured to hospitals that can manage their injuries.
- may provide some specialist services for patients who do not have multiple injuries (e.g. open tibial fractures). The Trauma Unit then takes responsibility for making these services available to patients in the Network who need them. Other Trauma Units may have only limited facilities, being able to stabilise and transfer serious cases but only to admit and manage less severe injuries.'

Due to the geographical constraints within Kent and Medway and the proximity of the nearest Major Trauma Centre, as described above, the Critical Care and Trauma Network have deemed it necessary to develop local trauma units. This is to ensure adequate and appropriate services locally which meet the needs of seriously injured patients, both in terms of treatment for some patients where the required clinical expertise is available locally and for stabilisation of patients prior to transfer to a Major Trauma Centre for specialist treatment.

Emergency Departments not designated a Trauma Unit locally will continue to receive and treat trauma patients appropriate to the services currently provided within that facility. Network wide protocols will define the clinical criteria for each unit, and be developed to support full implementation of trauma services across Kent and Medway.

### **6. Proposal for Kent and Medway Trauma Units**

The Critical Care and Trauma Network have proposed the development of three Trauma Units across Kent and Medway, as fully described within the Outline Business Case. This decision was based on:

1. review of trauma incident data and Trust data available
2. review of the geographical constraints within Kent and Medway, and the ability for patients to be transferred from the scene of an incident to trauma services within the recommended 45 minute time window. For the majority of patients within Kent and Medway it is not possible for patients to be transferred to a London Major Trauma Centre within this time frame. Trauma Units, providing services to stabilise and, where possible, treat patients prior to transfer to specialist services are therefore deemed necessary.
3. review of Trusts self assessment against Trauma Unit Designation Criteria.

The Network has therefore identified the following hospitals for development as trauma units:

- Maidstone and Tunbridge Wells NHS Trust (Pembury Hospital Site)
- East Kent Hospitals NHS Foundation Trust (William Harvey Hospital Site)
- Medway NHS Foundation Trust

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Dartford and Gravesham NHS Trust was deemed not to require a trauma unit due to its proximity to Kings College Hospital, and the ability of patients to be transferred to the Major Trauma Centre within the recommended 45 minute timeframe. This proposal is fully supported by clinical leads and Acute Trusts.

As patients meeting specific pre-hospital triage criteria will continue to be directly transferred to a major trauma centre, it is proposed that major trauma centre services will continue to be commissioned from a range of providers. This will include both London providers (as outlined above), and with the Major Trauma Centre in Brighton when this service 'goes live' in 2014. This will enable the needs of the Kent and Medway population to be met both in terms of geographical location, and therefore time to transfer for specialist services, and specialist services available at each provider. This will require the development of clearly defined service level agreements, service specifications and clinical processes for the transfer (to and from specialist services) and rehabilitation.

## 7. Benefits

The key benefits to the development of local Trauma Units are:

- Local health economy:
  - Reduction in death and disability for patients suffering major trauma due to the reduction in time to diagnosis and treatment or transfer to specialist services.
  - Ensuring clinical quality for trauma patients
  - Enables care to be provided local to the patients where this is clinically appropriate
  - Efficient and effective use of NHS resources, both in terms of use of Major Trauma Centre specialist services and local services.
- Trusts:
  - Designation results in a higher profile
  - Training and education opportunities
  - Deanery recognition for training
  - Tariff attached for major trauma patients
  - Benefits for all Trusts with the transfer of patients to local services for rehabilitation when specialist services are no longer required

## 8. Payment Structure for Multiple Trauma

The development of Trauma Units will be based on the reconfiguration of existing local services.

A revised payment structure for multiple trauma patients, which uses two scores based on diagnosis and treatment, has been released by the Department of Health for 2011/12. However, it is unclear whether this will be mandated and therefore on which local tariffs will be based.

Trusts will need to consider that there are no additional monies available for the development of Trauma Units. Costs attributable to becoming a Trauma Unit will only be

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apparent following a detailed review against the Trauma Unit Designation criteria and these will therefore differ by the requirements at each site.

However, based on the experience within the London Trauma System, the main changes required to meet these criteria relate to governance arrangements, staffing rotas, and development and implementation of protocols. This work will be supported by the Network.

Working to agreed Trauma Network protocols, designated Trauma Units are likely to see an increase in activity owing to treating/stabilising a number of trauma cases that would otherwise have been treated initially at another DGH. It is not anticipated that these numbers will be high particularly for the first year of implementation, as there is not expected to be an increase in the case load, which is currently being managed within existing services. However, this will be monitored through TARN and reviewed by the Network. Payment for patients will be made under the PbR mechanism route.

For Trusts not identified as a Trauma Unit, there is a potential for patients to bypass the emergency department. Based on national data, estimates of local Acute Trust attendances of all significant trauma cases have been reviewed. This review has identified that, potentially, up to approximately 80 trauma cases per annum of ISS 9 or above (major trauma cases are considered to be ISS 15 or above) currently treated at Darent Valley Hospital could, under Trauma Network protocols, be treated at a Major Trauma Centre either directly or via a Trauma Unit. However, this data is based an approximation and, on review by clinical leads, is considered to be an over estimate.

Evidence from the London Trauma System suggests that concerns on the part of those hospitals that do not become Trauma Units (i.e. in respect of the potential financial impact of losing major trauma cases) is largely unfounded, as major trauma cases represent a very small proportion of their caseload. It is estimated that c.90% of emergency departments see less than one major trauma case (ISS 15 or above) per week and c.75% have less than one per fortnight. Any financial losses associated with this reduction can be recouped via participation in rehabilitation pathways, and ensuring that patients occupying Major Trauma Centre critical care beds unnecessarily can be appropriately repatriated within local services.

### **9. Major Trauma Networks**

The NHS Clinical Advisory Group recommended that Major Trauma Networks, consisting of all providers of trauma care, should be in place within each region, centred around a Major Trauma Centre. In order to implement this recommendation, the Kent and Medway Critical Care and Trauma Network have agreed to further develop links with South East Coast Trauma Network with a view to becoming part of this Network.

Further work on this arrangement is required including:

1. commitment from the Major Trauma Centre and local Trusts regarding the appropriate and swift transfer of patients to the most appropriate service
2. arrangements for the provision of 24/7 advice and guidance on the management of local major trauma patients by a Major Trauma Consultant
3. review and development of operational policies from South East London Network



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for implementation across Kent and Medway

In order to address local issues, it is expected that the current Kent and Medway Critical Care and Trauma Network Board will continue as a subgroup of the South East London Network. In addition, a forum for commissioning discussion and decision making will be identified – dependent on the confirmation of national commissioning arrangements for major trauma.

## **10. Rehabilitation**

It is acknowledged that not only is rehabilitation essential to 'address the physical and psychosocial needs' of patients following major trauma, there are generally limited facilities for providing this service (NHS Clinical Advisory Group 2010). Patients who do not receive rehabilitation are unlikely to return to their maximum levels of function; with implications for individuals, carers and society as a whole.

In order to enable provision of appropriate rehabilitation for individuals, and efficient use of specialist resources, arrangements for the transfer of patients from tertiary trauma centres to local, or specialist, rehabilitation services will be reviewed. This work will be undertaken as part of the closer links with South East London Trauma Network, and by the Kent and Medway Critical Care and Trauma Network.

## **11. Conclusion**

The development of local Trauma Units within Kent and Medway is required in order to ensure:

- That death and disability is reduced for Kent and Medway patients suffering major trauma
- Swift diagnosis, treatment and transfer of patients to specialist centres is enabled, as clinically required
- High quality clinical care is provided
- Effective and efficient use of NHS resources

The Kent and Medway Critical Care and Trauma Network has reviewed the options in relation to the development of such units and deemed that, at this stage, three hospitals be developed as Trauma Units. The location of these units were based on the ability of patients to be transferred to a Major Trauma Centre within the 45 minute target time, review of incident data and Trust self assessment against Trauma Unit designation criteria.

In addition to the development of Trauma Units, the Network will continue to actively link with Major Trauma Centres to ensure that protocols, policies and procedures to facilitate the diagnosis, treatment, transfer and rehabilitation of major trauma patients are implemented across Kent and Medway.

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## **12. References / Guidance Documents:**

- Major Trauma Care in England; National Audit Office, February 2010.
- Revision to the Operating Framework for 2010/11; published 21st June 2010
- NHS Operating Framework 2011/12; published December 2010.
- The Operating Framework for the NHS in England 2010/11 (DH, 2009)
- The Operating Framework for the NHS in England 2011/12 (DH, 2010)
- Healthier People, Excellent Care (South East Coast SHA, 2008)
- Regional Networks for Major Trauma (NHS Clinical Advisory Groups Report, September 2010)
- Major Trauma Care in England (National Audit Office, February 2010)
- Implementing trauma Systems: Key Issues for the NHS. (Ambulance Service Network and the NSH Confederation. August 2010)
- Modeling Trauma Workload – A Project for the Department of Health from the Trauma Audit and Research Network (TARN) – South East Coast Trauma Activity.
- London Trauma Office – Designation Criteria for Trauma Units v 3.4. (June 2010.)
- Regional trauma systems, interim guidance for commissioners. (The Intercollegiate Group on Trauma Standards. December 2009.)