NHSBT
Integrated Transfusion Service (ITS)

April 2012
Summary

Explain the overall context for ITS

Describe our analysis and assumptions

Outline the ITS Proposition
  Transfusion innovation
  Stock management

Next Steps
Context

- NHS pathology budget constraints
- QIPP (quality, innovation, productivity and prevention)
- Impact of Carter report
- Emerging pathology networks
- Existing examples of centralised transfusion
- Increasing use of Lean methodology
- New technology and IT solutions
- AFC Terms and conditions for “on-call”
- EU working time directive
- Reprofiling of workforce

Must maintain GMP, CPA and BSQR compliance

Patient safety remains of paramount importance
Retaining the status quo is not an option
There are significant drivers for change

New entrants & networks
- Private sector providers
- Potential new entrants for blood supply
- Consolidation of hospital laboratories

NHSBT
- Current provisioning model is 50 yrs old
- Customer expectations
- Implications for capability and capacity if no change

Hospitals
- Financial pressures
- Scrutiny from Commissioners
- DH pushing for change
- Transfusion a “blocker”
- Transfusion skill set

Opportunity for innovation in blood transfusion
- Increasing automation
- Microarray technology
- Genotyping

Integrated Transfusion Service
Analysis

“an assessment, description, or explanation of something, usually based on careful consideration or investigation”
We have analysed opportunities, challenges, costs and benefits

- **Data collection (~15)**
  - Real hospital data
  - Analyse data already in the public domain

- **Deep dives (3)**
  - Detailed data collection, test hypotheses
  - mini-business case

- **Customer workshops (3)**
  - Define requirements, challenges, validate proposition

- Assess NHSBT supply chain (internal efficiency), capacity and capabilities
- Define stock management proposition, customer and product segmentation, stock holding and enabling technology
- Define lab archetypes and configurations (hubs, spokes, satellites), current cost of transfusion
- Define RCI response to changing customer requirements / transfusion environment
- Identify high level costs and benefits for both NHSBT and the NHS

Patient need and expert led analysis with customers driving requirements

**Integrated Transfusion Service**
### ITS analysis findings

<table>
<thead>
<tr>
<th>Category</th>
<th>Findings</th>
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</table>
| NHSBT blood supply chain  | ➤ Opportunities for further productivity improvements in manufacturing and blood collection  
➤ Targets for existing optimisation programmes could be increased |
| NHSBT capabilities        | ➤ NHSBT must develop crucial capabilities to enable future delivery  
➤ Developments needed in Sales & Operational Planning; Technical Hospital expertise; Customer relationship management; Project and Change management. |
| Testing                   | ➤ Short – medium terms hospital transfusion labs likely to consolidate into hub, spoke and satellite configurations  
➤ NHSBT should develop its RCI and other functions to meet future needs and ensure delivery of required value-added services |
| Stock management          | ➤ Stock management integration could reduce wastage and transport costs  
➤ Integration would allow better planning and visibility of usage  
➤ NHSBT does not need to retain stock ownership for benefits to be delivered |
## Hospital Laboratory Archetypes

**Satellite Provision**
- Remote “intelligent” fridge only
- No on site testing capability
- Requirements based on clinical need, primarily elective
- No further than 45 mins from supporting laboratory (spoke or hub)

**Spoke Laboratory**
- Provides all standard testing, but will focus on urgent needs
- Cold work referred to hub laboratory
- Moderate to high demand for urgent/ hot testing
- Supporting more specialist clinical services
- No further than 75 mins from a hub laboratory

**Hub Laboratory**
- Provides all standard testing including ‘cold’ work for satellites and spokes at optimum cost
- Moderately complex testing
- Moderate to high demand for urgent/hot testing
- Supporting more specialist clinical services
- No further than 75 mins from any spoke
- Located to maximise ratio of Spokes to Hub and provide economies of scale
- An infrastructure to support large laboratory
The definition of potential hospital laboratory archetypes allows the modelling of a reconfiguration of hospital transfusion laboratories.
Integrated Transfusion Service (ITS) Proposition
Vision for Regional Transfusion Innovation Centres

Develop in partnership with hospitals and transfusion community

Regional Transfusion Innovation Centre

RCI incorporated alongside Hospital Transfusion Laboratory

&

RCI testing service to other networks

Integrated Transfusion Service
Vision for
Regional Transfusion Innovation Centres

• Integrate the RCI laboratory
• Combine expertise
• Utilise high throughput technology
• Hold buffer stock
• Lead Innovation through;
  Scientific and medical training
  Quality and regulatory compliance
  IT and technology innovation
  Better blood transfusion
  Procurement and logistics
Qualitative benefits

Patient safety, service and quality

Economy of scale / Efficiency

Expert capabilities and innovation
Stock Management Proposition

To transform the relationship between NHSBT and hospitals by implementing a new operating model and vendor management inventory (VMI) service for the provision of blood products.

Based on a collaborative approach towards the setting of stock levels and the adoption of fully integrated working practices between NHSBT and hospitals.
Stock management proposition

A new operating model:

- SLAs to define performance targets (inventory, waste, service) based on segments
- Hospital stock replenishment process managed by NHSBT
- Optimised, less frequent routine deliveries and reduced need for ad-hoc deliveries
- Operational management and ownership of fridges continues with hospitals as well as ownership of blood

Enabled by:

- Simulation tools for setting of stock levels
- Segmentation / differentiated approach:
  - Product: Based on shelf life and volume/demand patterns
  - Hospital: Based on clinical and logistics requirements
- IT controlled, systematic method of managing blood stocks across the entire distribution network with complete transparency and visibility of stock across the supply chain

Integrated Transfusion Service
There are significant opportunities for improvements in wastage, inventory and transport costs
There are significant opportunities for improvements in wastage, inventory and transport costs

<table>
<thead>
<tr>
<th>Category</th>
<th>Reduction</th>
<th>Further additional opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital wastage</td>
<td>40%</td>
<td>-£1.6 m</td>
</tr>
<tr>
<td>NHSBT waste</td>
<td>50%</td>
<td>-£1.1 m</td>
</tr>
<tr>
<td>Age of blood at issue</td>
<td>20%</td>
<td>- 3 days</td>
</tr>
<tr>
<td>Hospital routines</td>
<td>30%</td>
<td>- £1.2 m</td>
</tr>
<tr>
<td>Hospital Ad-hocs</td>
<td>30%</td>
<td>-£0.2 m</td>
</tr>
<tr>
<td>NHSBT Intercenter transport</td>
<td>30%</td>
<td>- £1.1 m</td>
</tr>
</tbody>
</table>

- Move stock between hospitals
- Platelets - reduce waste and transport costs
- Continue to optimise routine deliveries
- Better utilising remaining ad hoc’s
- Further reduction in inter-centre transport costs
Benefits of the new stock management service

... for NHSBT

- Visibility of hospital blood stocks resulting in better system-wide availability
- Access to additional data to help improve use of blood
- Reduction in inter-centre transport activity & costs
- Reduction in NHSBT inventory levels
- Reduction in age of stock at issue

... for hospitals

- Waste reduction
- Reduction in transport costs:
  - Less frequent routine transports
  - Reduction of ad hoc deliveries
- Optimise hospital inventory levels - this is expected to result in lower overall inventory levels
- Improved product availability
## Next steps

### Hospital stock management
- Provide new stock management service
- Pilot with up to three hospitals, roll out subject to successful pilots
- Implement stock management system

### Transfusion Innovation
- Improve RCI internal productivity (lean) and services
- Respond to customer demand - Offer wider variety of services
- Respond to customer demand - Support modernisation of transfusion through closer working of RCI with hospitals
- Work towards end vision of 10 Regional Transfusion and Innovation Centres

### Internal Supply chain optimization
- Further improve internal supply chain efficiency and effectiveness (collection and manufacturing)
ITS is a dynamic programme of developments across the organisation, introduced by NHSBT in response to the new environment and the changing needs of our hospital customers.

NHSBT will continue to communicate widely and openly with all hospitals, Trusts and networks to describe and explain all the elements of the ITS initiative including the outcomes of the pilot programme.