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A LIFE LIKE LILY'S



## International Speakers Series

Overview of Tissue Banking in the UK and the Role of the National Blood Service (NHSBT)

Professor John N Kearney

Lead Scientist and Head of Tissue Services

13 January 2010

**CONFIDENTIAL:** Information presented is confidential and not for distribution. For the purposes of the Organ Expert Committee, Tissue Expert Committee and Steering Committee.



**Canadian Blood Services**

*it's in you to give*

# NHS Blood and Transplant

Overview of Tissue Banking in the UK and the Role of the  
National Blood Service (NHSBT)

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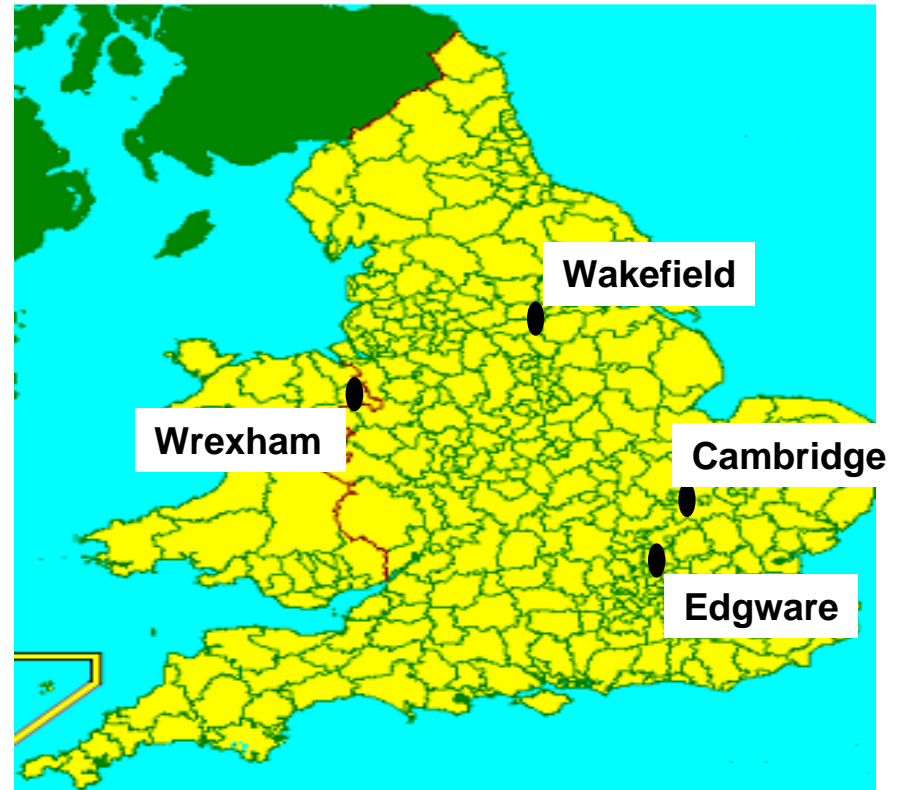
13<sup>th</sup> January 2010

# NHS Blood & Transplant

National Blood Service  
Bio Products Laboratory  
UK Transplant

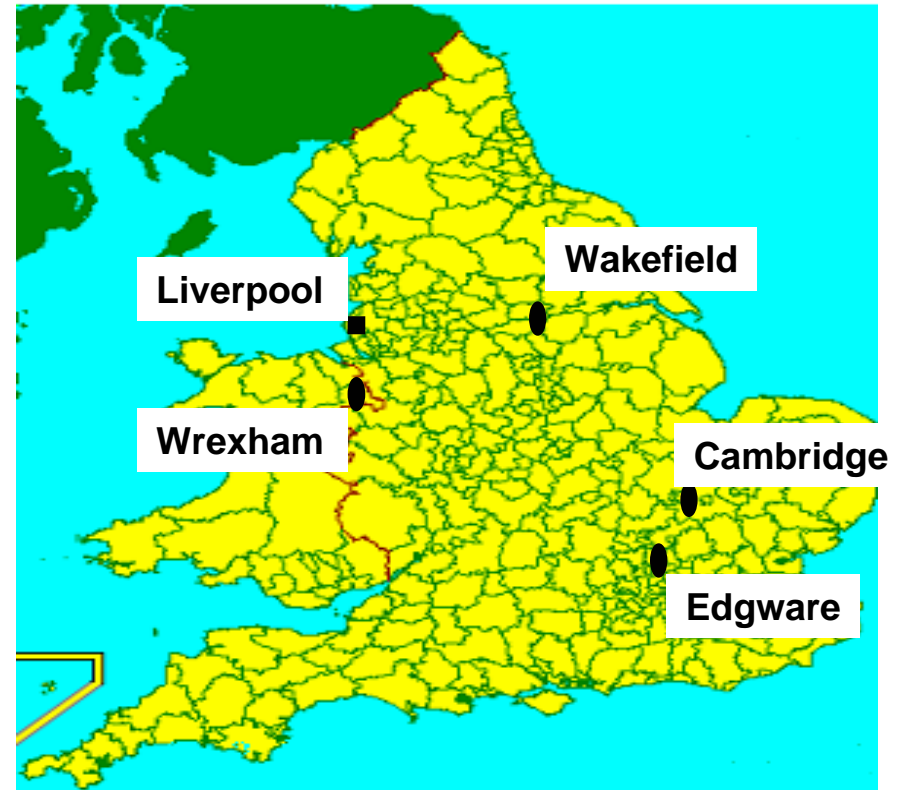
## Historical Perspective

- 1965 A Yorkshire Regional Tissue Bank was established next to the Burn Unit in Wakefield (JK)
- 1992 A tissue bank was established at Wrexham, North Wales
- BLOOD SERVICE ACTIVITY BEGINS
- 1992 A tissue bank was established at the Blood Centre in Cambridge
- 1993 A tissue bank was established close to the Colindale Blood Centre in North London
- 1997 The Wakefield and Wrexham tissue banks joined the Blood Service



## Historical Perspective

- 2001 The Cambridge and London banks merged onto the London site
- 2005 The Wakefield and Wrexham banks merged onto a new Blood Centre site in Liverpool
- 2008 London became consolidated into Liverpool



# Historical Perspective The New Liverpool Centre

- 12 Class B Cleanrooms



- Large Class C support area



- Extensive LN2 storage capacity



# Historical Perspective The New Liverpool Centre

- Extensive -80°C storage capacity



- Tissue Retrieval Suite



- R&D laboratories



## Current Situation re Tissue Supply in the UK

There is no centralised database in the UK indicating the:-

- (1) Number of tissue grafts used.
- (2) Source of tissue grafts.
- (3) Amount of tissue imported/exported.



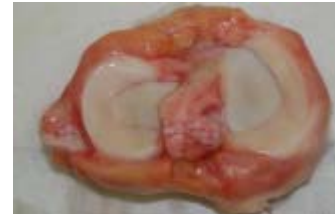
# Current Situation re Tissue Supply in the UK

Our intelligence suggests that NHSBT Tissue Services:-

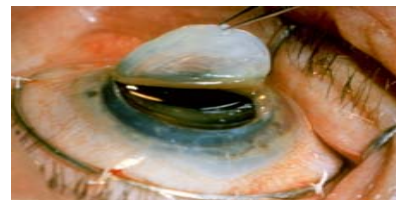
- (1) Is a monopoly supplier of skin for use in burns surgery (plus few imports).



- (2) Is a monopoly supplier of tendons and meniscus grafts (plus few imports).



- (3) Is a monopoly supplier of amnion grafts for eye surgery.



# Current Situation re Tissue Supply in the UK

- (4) Is a monopoly supplier of blood vessel grafts for vascular surgery (plus few imports).



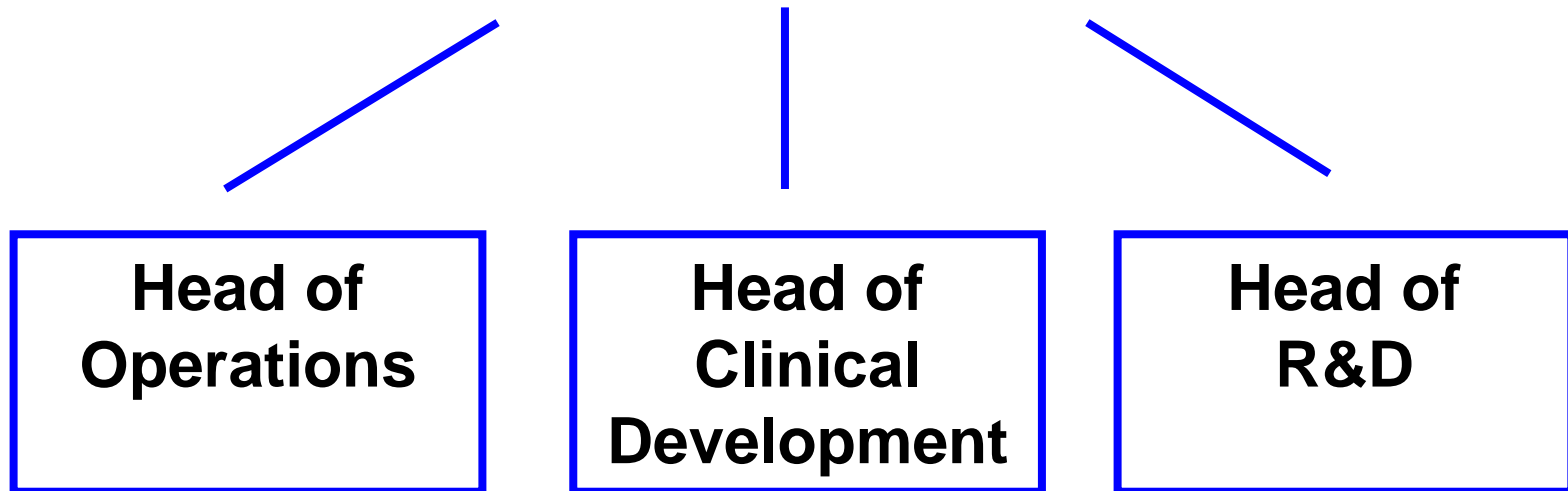
- (5) Supplies more than 50% of bone grafts.



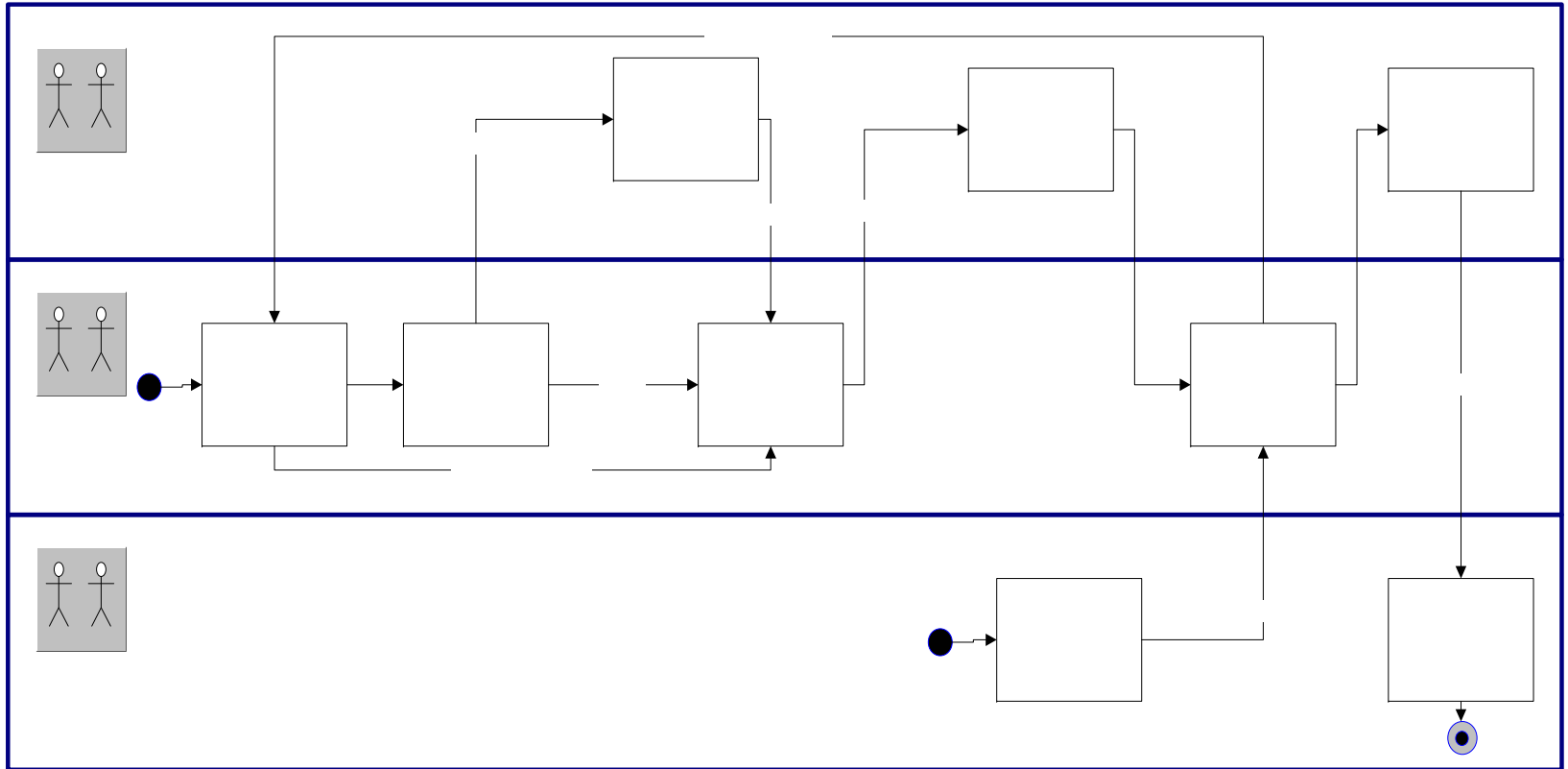
- (6) Supplies circa 10% of heart valve allografts.



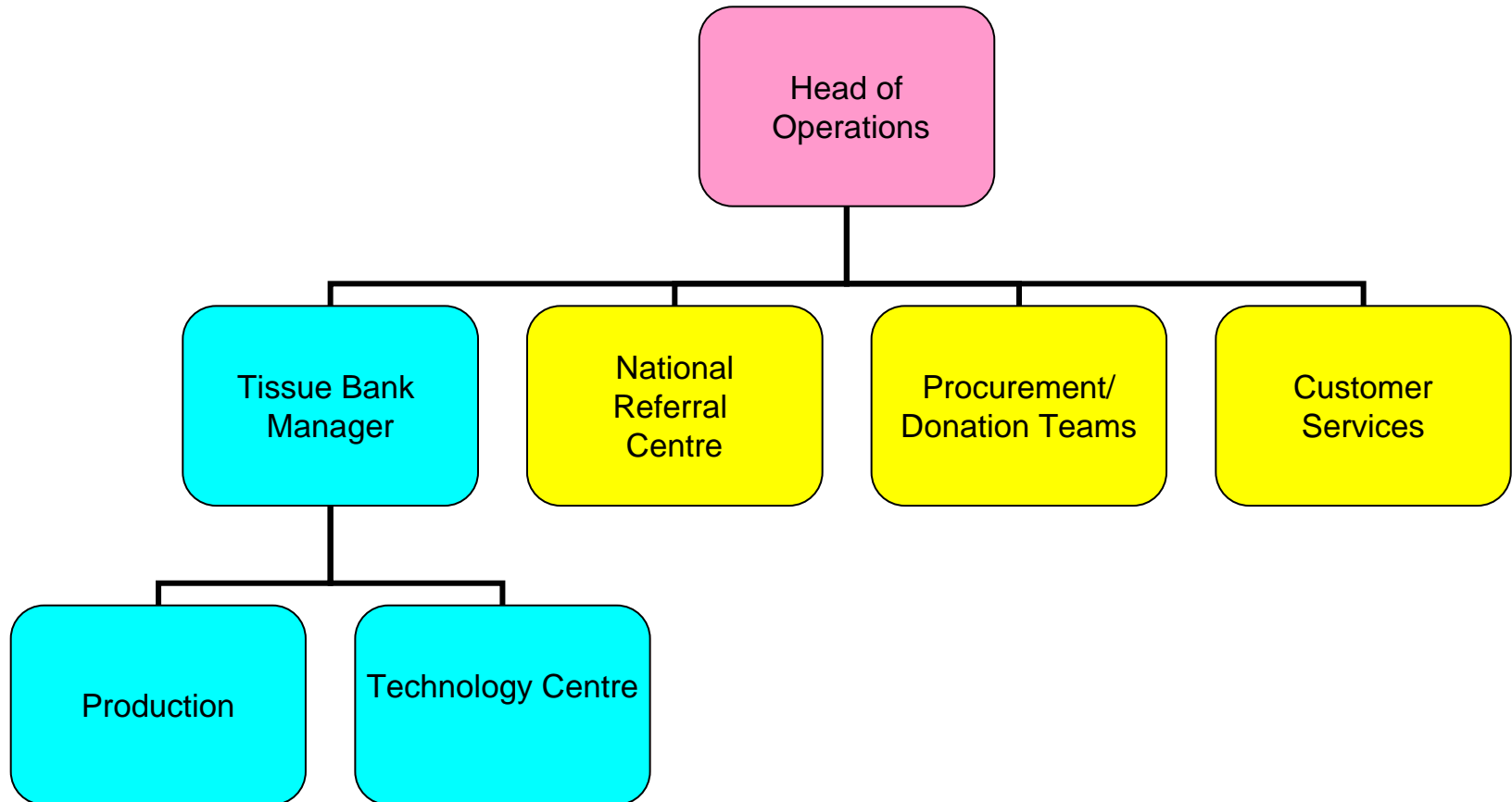
## HEAD TISSUE SERVICES



# OPERATIONS



# Organisation Structure



## National Referral Centre

- 12 senior nurses
- Receive referrals
- Carry out donor selection, consent, medical history
- Carried out by telephone
- Telephone conversation recorded (with consent)

## National Referral Centre

- 24 Hour Service - 365 days – Nurse Practitioners
- Approx 6,000 referrals per year
- Facilitates donation process from referral to tissue release
- Triage System – donor selection, consent,

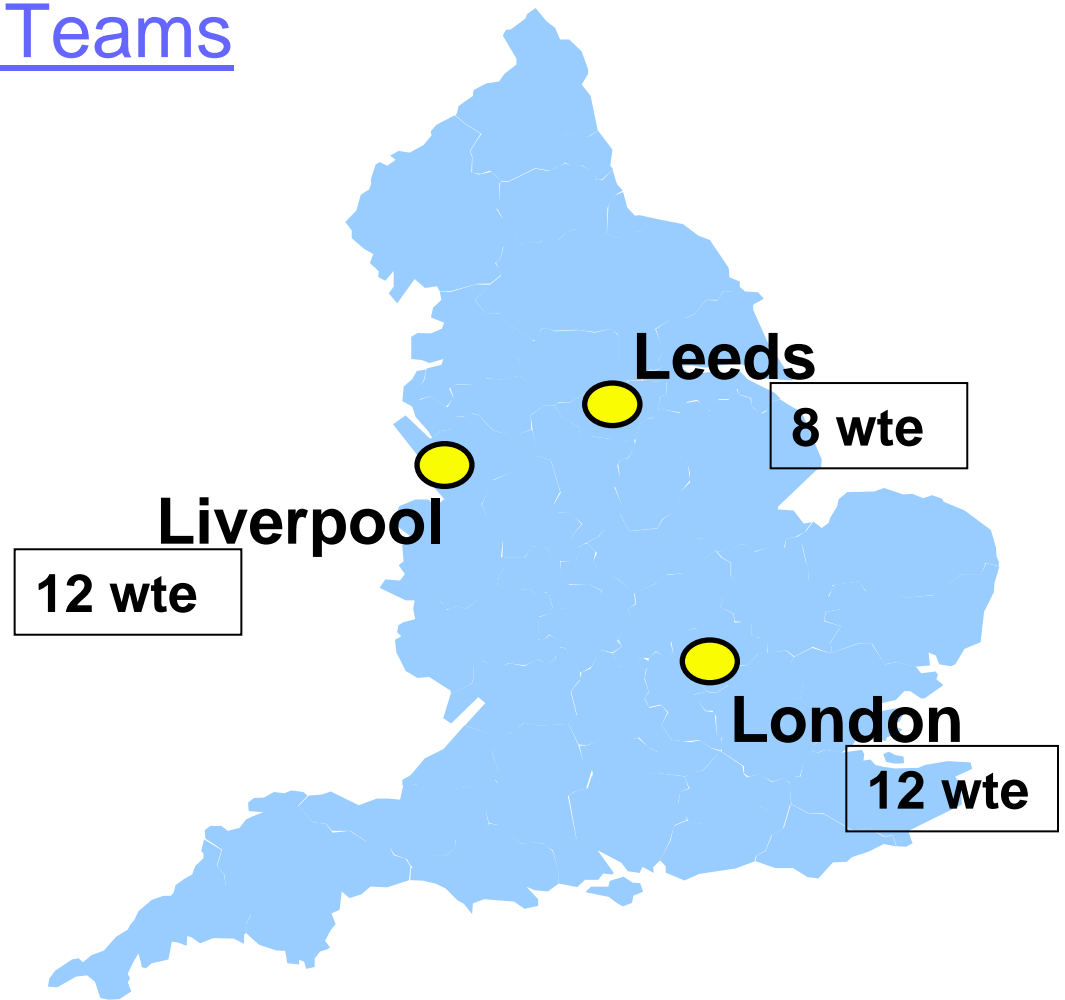


## Referral Systems

- Traditional Passive Approach – Hospital Staff, Bereavement Office, Family, Transplant Coordinators
- Alliance Site Model - Routine notification of death and Specialist Family Approach (Porter /Fax system)
- New Initiatives – Coroners, APT



# Tissue Collection Teams



## Tissue Procurement



- Performed in a mortuary or in Liverpool donation suite
- Aseptic procedures (gowns / drapes)
- Decontamination of donor
- Tissue packaged and labelled

## In-house Donation Suite





## Customer Services National Order Line

- ~8500 units pa
- ~350 customers
- 24 hour ordering

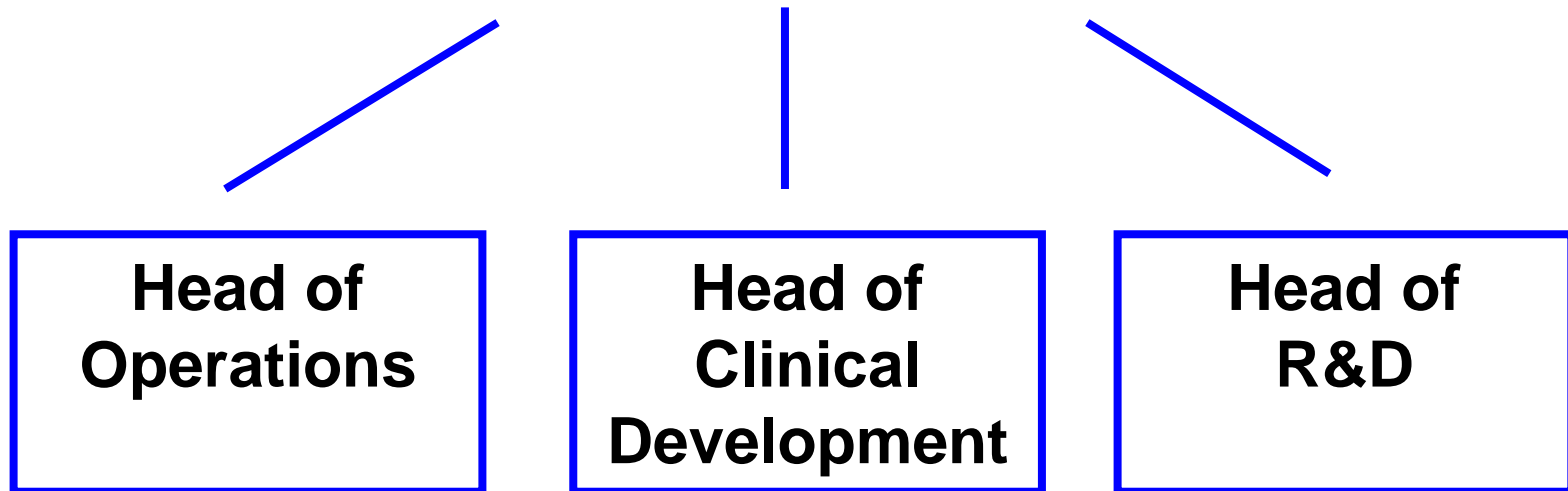


## Tissue Issue



- National Order Line
- All products are bar coded
- Pulse computer system traces tissue from donor to hospital
- Issued via Blood Issues (North / South)

## HEAD TISSUE SERVICES



# CLINICAL DEVELOPMENT

## Head of Clinical Development

- Co-ordinates New Product Development programme
- Commissions market research
- Commissions in-house development work
- Organises clinical evaluations/trials
- Co-ordinates with production for scale up
- Liaises with Sales & Marketing.

# R&D

## Tissue Development Laboratory

- Validation
- Development
- Research

## Comparison of Hospital Supply Versus NHSBT Supply

	<u>Hospital Tissue Bank (YRTB)</u>	<u>NHSBT Tissue Services</u>
Quality	No access to specialist quality experts or quality systems.	Dedicated quality department providing oversight and internal audits.
Medical Input	No expertise on donor selection, inclusion/exclusion criteria.	Medical expertise in blood donor selection, applicable to tissues.
Donor Co-ordination	No access to donor co-ordination expertise. Reliance on 3 <sup>rd</sup> parties.	Team of senior nurses expert in obtaining valid legal consent and medical history.
Donor Testing	Reliance on clinical diagnostic or 3 <sup>rd</sup> party laboratories for sample testing.	In house specialist facilities for serology (virology) screening. In house specialist facilities for bacteriology testing.

## Comparison of Hospital Supply Versus NHSBT Supply

### Hospital Tissue Bank (YRTB)

### NHSBT Tissue Services

Good  
Manufacturing  
Practice (GMP)

No internal GMP culture.

GMP central to blood processing.  
Experience of regulatory inspection  
and audit.

Transport/  
Logistics

No transport infrastructure.  
Use of couriers.

Transport infrastructure, supported by  
use of couriers.

Hospital Network

Inward looking. No presence  
in other hospitals.

Hospital liaison function to support  
activity across the hospital network.

Infrastructure

Capital largely invested in  
services directly relevant to  
that hospital.

All capital is invested in facilities to  
support services to hospitals across  
the country.

## Comparison of Hospital Supply Versus NHSBT Supply

### Summary

Consolidating (the majority of) tissue supply to a single national organisation resulted in:-

- (1) Greatly improved safety and quality.
- (2) Greatly improved clinical support services (medical and clinical co-ordination input).
- (3) Greatly improved testing facilities.
- (4) Ability to use blood service infrastructure components.
- (5) Access to capital.

### Costs

These improvements do result in increased costs. However subsequent consolidation down to a single site has produced:-

- (1) Economies of scale.
- (2) Greatly improved efficiency.

Hence tissue prices are comparable with small stand alone tissue banks.

Services Currently being  
Developed/Strengthened within NHSBT

BUSINESS DEVELOPMENT

BUSINESS MODELLING  
MARKET RESEARCH  
SALES  
MARKETING

# RELATIONSHIP WITH ORGAN DONATION

## Current Synergies

Very Few!

- Referral of organ donors as Tissue Donors (25%-50% of total donors)
- Occasional referral of hearts not suitable for transplantation for heart valves