

# DEMONSTRATING VALUE: APPLYING THE PRINCIPLES OF ECONOMIC ASSESSMENT IN PRACTICE

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HAEMOGLOBINOPATHY SERVICE WHITTINGTON HEALTH

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# STAKEHOLDER MATRIX (HAEMOGLOBINOPATHY SERVICE)

## DIRECT

INTERNAL

EXTERNAL

<ul style="list-style-type: none"> <li>❖ Commissioners</li> <li>❖ Clinical Leads ( key stake holders)</li> <li>❖ Service manager</li> <li>❖ Ward manager</li> <li>❖ Work deputy – Sarah Cullen</li> <li>❖ Named consultant</li> </ul>	<ul style="list-style-type: none"> <li>❖ Families and patients</li> </ul>
<ul style="list-style-type: none"> <li>❖ Blood transfusion</li> <li>❖ Laboratories( haematology, biochemistry and serology dept)</li> <li>❖ Imaging department</li> <li>❖ Pharmacy</li> <li>❖ Pain management team</li> <li>❖ Children ambulatory unit</li> <li>❖ Outpatient department</li> <li>❖ Sickle cell community team/ counsellor</li> <li>❖ Other paediatric consultants</li> <li>❖ Ward team</li> <li>❖ Data manger</li> </ul>	<ul style="list-style-type: none"> <li>❖ Schools</li> <li>❖ Sickle cell society</li> <li>❖ Other charities e.g. Family Fund, Roald Dahl's Marvellous Children's Charity, Make a Wish)</li> <li>❖ Welfare officers ( various boroughs)</li> <li>❖ Housing Departments local councils and Housing Associations</li> <li>❖ General Practitioners</li> </ul>

## INDIRECT



# HAEMOGLOBINOPATHY SERVICE

## Input

### Direct

- ❖ 1 Full time band 7 equivalent ( CNS)
- ❖ 2. 0.5wt developing role
- ❖ 3. Consultant 5PA
- ❖ 4 . Deputy consultant 3PA
- ❖ 5.Funding from the paediatric budget

### Indirect

- ❖ Day-care unit/ staff
- ❖ Blood transfusion staff
- ❖ Laboratory team
- ❖ Ward consultants and ward staff
- ❖ Pharmacy
- ❖ Medical physics to repair equipment

## Activities & outputs

- ❖ Nurse led Clinic( hydroxyurea clinic, once a week.
- ❖ Daily ad hoc clinics for drop in.
- ❖ Transcranial Doppler clinic once a month
- ❖ Telephone clinic ( ad hoc basis)
- ❖ Co ordination of blood transfusion, request of various investigations
- ❖ transfusion, cannulation, prescribing of blood and other medications
- ❖ School visits- education and careplan.
- ❖ Letter writing- housing letters, disability living allowance letters.
- ❖ Workshops- transition workshop and health management
- ❖ Health Promotion for staff and patients

## Groups targeted

### For intervention

- ❖ Sickle cell children between ages 3months to 18years
- ❖ Patients case load of 150 children

### For partnership

- ❖ Sickle cell community centre
- ❖ Hospital at home team
- ❖ GP surgery

### For delivery

- ❖ Ward doctors
- ❖ Ward staff
- ❖ Patients and families

## Outcomes

### Staff outcomes

- ❖ Ward staff are more knowledgeable and feel supported in the care of sickle cell patients
- ❖ Training on inductions for doctors and new staff helps them to get familiar with guidelines and protocol.
- ❖ Staff are more confident and less stressed when managing these groups of patients.

### Patient outcomes

- ❖ Good quality care (Expressed through patient satisfaction score)
- ❖ Time saved by patients.
- ❖ Patients are able to know when to seek medical assistance when unwell

### Organisational outcomes .

- ❖ Avoid waste, increase efficiency and better use of resources.
- ❖ Reduction in DNA rate

### Other outcomes

- ❖ Transcranial Doppler Service identifies those at risk of stroke
- ❖ Meet national standards
- ❖ Efficient transition of young adults care to haematology team.

# TRANSCRANIAL DOPPLER (TCD) OVERVIEW

- Sickle cell disease is a recessive blood disorder caused by mutation in B- globin gene
- Standard management through use of penicillin and folic acid
- Modifying disease therapy ( blood transfusion and treatment with hydroxycarbamide
- Curative treatment through use bone marrow transplant
- Stroke is major complication of sickle cell disease
- Risk of stroke is estimated at 250 times higher than general population
- TCD Scanning is part of the national guideline in the identification of the risk of stroke in children between ages 2 years to 16 years old
- This Age group has to be scanned yearly
- Scanning can be through Imaging and Non- imaging
- EZ-Dop is a mobile non-imaging scanning device
- EZ- Dop scanning measures velocity
- Velocity  $>200$  cm/sec is abnormal / high risk;  $170 - 200$  cm/sec is conditional;  $<170$  cm/sec is standard risk

# TRANSCRANIAL DOPPLER SERVICE

## Purpose of economic assessment

- To demonstrate the value of the service
- To identify efficiency savings in a Nurse-led transcranial doppler service

## Audience for the economic assessment

- Consultants
- Paediatric Lead
- Modern Matron
- Service Commissioners

## Key Costs

- Ongoing nurse salaries
- Use of non imaging Ez-doppler scan
- Ongoing use of Admin Staff
- Ongoing use of medical Physics
- Staff to service equipment

# JOURNEY THROUGH THE SERVICE

## Expert clinical Assessment

- SCANNING OF CHILDREN, 2YRS-16YRS OLD WITH HBSS
- INTERPRETING RESULTS OF THE SCAN
- REFERRALS TO OTHER SERVICES FOR FURTHER INVESTIGATIONS WHERE REQUIRED.

## Medication Management

- BLOOD TRANSFUSION
- HYDROXYCARBAMIDE (DISEASE MODIFICATION)

## Patient / Carer / Professional Education

- STAFF TRAINING ON SCANNING / INTERPRETATION AND BI-YEARLY UPDATES
- INFORMATION LEAFLETS FOR PATIENTS AND CARERS
- FACE TO FACE PATIENT EDUCATION

# JOURNEY THROUGH THE SERVICE

## Rapid Response Contact

- DEDICATED PHONE LINE FOR ACCESS TO SERVICE
- DROP IN CLINICS

## Care Planning

- SCHOOL CARE PLANNING
- PAIN MANAGEMENT
- BLOOD TRANSFUSION SCHEDULE

## Multi- Disciplinary Liaison and Team Approach to Care Delivery

- HAEMATOLOGISTS; PSYCHOLOGISTS; NEURO-SICKLE TEAM; PLAY SPECIALISTS

# JOURNEY THROUGH THE SERVICE

## Referral Routes

- FROM LOCAL HOSPITALS INTO THE SERVICE
- OUTWARD REFERRALS FOR FURTHER INVESTIGATION (E.G. MRI / MRA)

## Activity / Delivery

- 70 PATIENTS PER YEAR
- APPROXIMATELY 10 NEW REFERRALS P.A.



# SETUP COST COMPONENTS

## SET UP

- CLINIC ROOM
- EZ-DOP( MOBILE SCANNING MACHINE)
- COST OF A LOG BOOK/ STATIONERIES
- COMPUTER TO BOOK IN PATIENTS
- ADMINISTRATIVE STAFF ( RECEPTIONIST)
- MEDICAL PHYSICS STAFF
- PSYCHOLOGIST ( FOR NEUROCOGNITIVE ASSESSMENT)
- NEURO SICKLE CLINIC / SLEEP STUDY AT GOSH

- SET UP COSTS COMPONENTS ARE THE SAME FOR BOTH NURSE AND CONSULTANT LED SERVICES
- THE SCAN READINGS ARE EITHER NORMAL, CONDITIONAL OR ABNORMAL IRRESPECTIVE OF THE PERSON CARRYING OUT THE SCANNING.

# MONETISING SET UP COST

IDENTIFY	QUANTIFY	MONETISE
INITIAL TRAINING	2DAYS	£675.00
EZ-DOP( MOBILE SCANNING MACHINE)	1	£11,886.86 (PURCHASED FROM CHARITABLE FUND INITIAL COST OF £10,000, 7 YEARS AGO ADJUSTED 2.5% PER ANNUM OVER 7 YEARS)
COST OF A LOG BOOK/ STATIONERIES	1	£3.00
CLINIC ROOM	1	PROVIDED BY THE TRUST ( INDIRECT COST)
COMPUTER TO BOOK IN PATIENTS	1	PROVIDED BY THE TRUST ( INDIRECT COST)

**\* THE ABOVE ARE THE SAME FOR BOTH NURSE LED AND CONSULTANT LED SERVICES**

# MONETISING NURSE LED RUNNING COST

IDENTIFY	QUANTIFY	MONETISE
<p>ADMINISTRATIVE STAFF ( RECEPTIONIST) BAND 2 (£18,157) AGENDA FOR CHANGE PAY SCALE</p>	<p>5 HOURS A MONTH</p>	<p><b>£682.80</b> (£9.29 x 5 x 12 + 22.5%) ( PAID BY THE TRUST)</p>
<p>MEDICAL PHYSICS STAFF</p>	<p>ONCE A YEAR SERVICING OF SCANNING MACHINE</p>	<p>AGREED SERVICING OF THE SCANNER WITH THE MANUFACTURER.</p>
<p>PSYCHOLOGIST ( FOR NEUROCOGNITIVE ASSESSMENT</p>		<p>UNKNOWN (PART OF SICKLE CLINIC). INDIRECT</p>
<p>NEURO SICKLE CLINIC / SLEEP STUDY AT GOSH</p>		<p>AGREED SERVICE LEVEL AGREEMENT BY THE TRUST) INDIRECT</p>
<p>CNS BAND 7 (£41,787) AGENDA FOR CHANGE PAY SCALE SCANNING NURSE LED SERVICE/ ASSIST IN MEDICALLY LED SERVICE</p>	<p>5 HOURS A MONTH</p>	<p><b>£1574.37 P.A.</b> £21.42 /HR x 5 x 12 + 22.5% (ADJUSTMENT COST) ( PAID BY THE TRUST)</p>
<p>CNS BAND 6 (£33,895) AGENDA FOR CHANGE PAY SCALE (TO ASSIST IN SCANNING NURSE LED SERVICE)</p>	<p>5 HOURS A MONTH</p>	<p><b>£1285.20</b> £17.38/HR x 5 x 12 + 22.5% (ADJUSTMENT COST) ( PAID BY THE TRUST)</p>



# MONETISING CONSULTANT LED RUNNING COST

IDENTIFY	QUANTIFY	MONETISE
<p>ADMINISTRATIVE STAFF ( RECEPTIONIST) BAND 2 (£18,157) AGENDA FOR CHANGE PAY SCALE</p>	<p>5 HOURS A MONTH</p>	<p><b>£682.80</b> (£9.29 x 5 x 12 + 22.5%) ( PAID BY THE TRUST)</p>
<p>MEDICAL PHYSICS STAFF</p>	<p>ONCE A YEAR SERVICING OF SCANNING MACHINE</p>	<p>AGREED SERVICING OF THE SCANNER WITH THE MANUFACTURER.</p>
<p>PSYCHOLOGIST ( FOR NEUROCOGNITIVE ASSESSMENT</p>		<p>UNKNOWN (PART OF SICKLE CLINIC). INDIRECT</p>
<p>NEURO SICKLE CLINIC / SLEEP STUDY AT GOSH</p>		<p>AGREED SERVICE LEVEL AGREEMENT BY THE TRUST INDIRECT</p>
<p>CNS BAND 7 (£41,787) AGENDA FOR CHANGE PAY SCALE SCANNING NURSE LED SERVICE/ ASSIST IN MEDICALLY LED SERVICE</p>	<p>5 HOURS A MONTH</p>	<p><b>£1574.37 P.A.</b> £21.42 /HR x 5 x 12 + 22.5% (ADJUSTMENT COST) ( PAID BY THE TRUST)</p>
<p>HAEMATOLOGY CONSULTANT (SCANNING FOR MEDICALLY LED SERVICE) PAY SCALE £91, 166</p>	<p>5 HOURS A MONTH</p>	<p><b>£3436.13</b> £46.75/HR x 5 x 12+22.5% (ADJUSTMENT COST) PAID BY THE TRUST TO LOCUM CONSULTANT</p>



# MONETISING NURSE VS. CONSULTANT LED RUNNING COST

**NURSE LED**

IDENTIFY	QUANTIFY	MONETISE
CNS BAND 7 (£41,787) AGENDA FOR CHANGE PAY SCALE	5 HOURS EVERY MONTH	<b>£1574.37 P.A.</b> £21.42 /HR X 5 X 12 + 22.5% (ADJUSTMENT COST) ( PAID BY THE TRUST) 1285.20
TRAINING / REFRESHER	2 DAYS	<b>£675.00</b>
TRAVEL TO AND FROM TRAINING	STANDARD TRAVEL COST	<b>£16</b>
CNS BAND 6 (£33,895) AGENDA FOR CHANGE PAY SCALE (TO ASSIST IN SCANNING)	5 HOURS EVERY MONTH	<b>£1277.43 P.A.</b> £17.38/HR X 5 X 12 + 22.5% (ADJUSTMENT COST) ( PAID BY THE TRUST)
		<b>SUB TOTAL = £3,542.80</b>

**VS**

**CONSULTANT LED**

IDENTIFY	QUANTIFY	MONETISE
HAEMATOLOGY CONSULTANT PAY SCALE £91, 166	5 HOURS EVERY MONTH	<b>£3436.13</b> £46.75/HR X 5 X 12+22.5% (ADJUSTMENT COST)
TRAINING / REFRESHER	2 DAYS	<b>£675.00</b>
TRAVEL TO AND FROM TRAINING	STANDARD TRAVEL COST	<b>£16</b>
CNS BAND 7 (£41,787) AGENDA FOR CHANGE PAY SCALE	5 HOURS EVERY MONTH	<b>£1574.37 P.A.</b> £21.37 /HR X 5 X 12 + 22.5% (ADJUSTMENT COST) ( PAID BY THE TRUST)

\* THERE ARE DIFFERENCES IN THE RUNNING COST FOR BOTH NURSE LED AND CONSULTANT LED SERVICES, THIS IS ACCOUNTED FOR BY THE DIFFERENCES IN EMPLOYMENT COSTS FOR THE NURSES AND THE HAEMATOLOGIST ( PERSONNEL UNDERTAKING THE SCANNING)

**SUB TOTAL = £5,701.50**



# SUMMARY OF BENEFITS

## Patients and Families

- IDENTIFICATION / PREVENTION OF STROKE
- REMAIN WELL AND IN GOOD HEALTH
- BETTER ATTAINMENT FOR CHILD AND FAMILY
- SPECIFIC TCD CLINICS SAVES PATIENTS TIME
- REDUCING STRESS AND ANXIETY FOR PATIENTS AND FAMILIES
- YEARLY TCD CHECKS GIVE PATIENTS ASSURANCE
- IMPROVE SELF ESTEEM
- SAVES TIME FOR PARENTS TAKING ON CARE ROLES

# SUMMARY OF BENEFITS

## Health Care System

- REDUCTION OF HOSPITAL ADMISSION AND BED DAYS
- REDUCE WAITING TIMES AT GP SURGERIES
- LESS USE OF GENERAL HEALTH RESOURCES AND INFRASTRUCTURE INCLUDING SOCIAL SERVICES
- SPECIFIC CLINICS MAKE HOSPITAL MORE EFFICIENT AND BETTER CO-ORDINATED
- FREE TIME FOR CONSULTANTS TO RUN CLINICS AND REDUCE WAITING TIMES
- EFFICIENCY SAVINGS OF \*£2,158.70 P.A. MADE WITH THE NURSE LED SERVICE IN COMPARISON TO THE MEDICALLY LED SERVICE. THE RESULTS OF THE SCAN IS EITHER NORMAL, CONDITIONAL OR ABNORMAL READING IRRESPECTIVE OF THE SCANNER) AS THE MEDICALLY LED SERVICE.

**\*(£5,701.50 CONSULTANT LED ) – (£3,542.80 NURSE LED )**

# References

**1.** Agenda for change NHS payscale , 2017:

<https://www.guysandstthomas.nhs.uk/resources/careers/payscales.pdf>

**2.** Consultants in England payscale 2017:

<https://www.bma.org.uk/advice/employment/pay/consultants-pay-england>

**3.** Chih Hoong Sin 2015; A Guide to economic assessment in nursing

**4.** RCN demonstrating Value, Applying the principles of economic assessment in practice. Course guide

**5.** [www.rcn.org.uk/leadership](http://www.rcn.org.uk/leadership)

**6.** Sarkar et al 2014 ;Transcranial Doppler in Sickle Cell Disease, Journal of Paediatric Haematology/Oncology Vol 36



This case study was completed by Edith Aimiwu, Roald Dahl Paediatric Haemoglobinopathy Clinical Nurse Specialist, Whittington Health NHS Trust in 2017. Edith successfully completed an RCN leadership development programme commissioned by Roald Dahl's Marvellous Children's Charity.

The programme was designed to empower Roald Dahl specialist nurses to understand the principles of economic assessment and apply them in their practice in order to demonstrate the value of and continuously transform their services.

The programme is endorsed by the Institute of Leadership and Management.

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