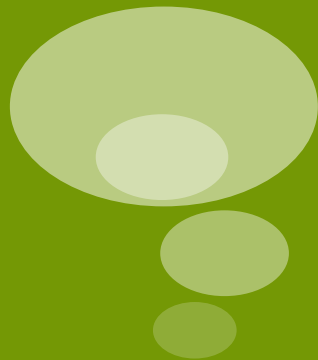
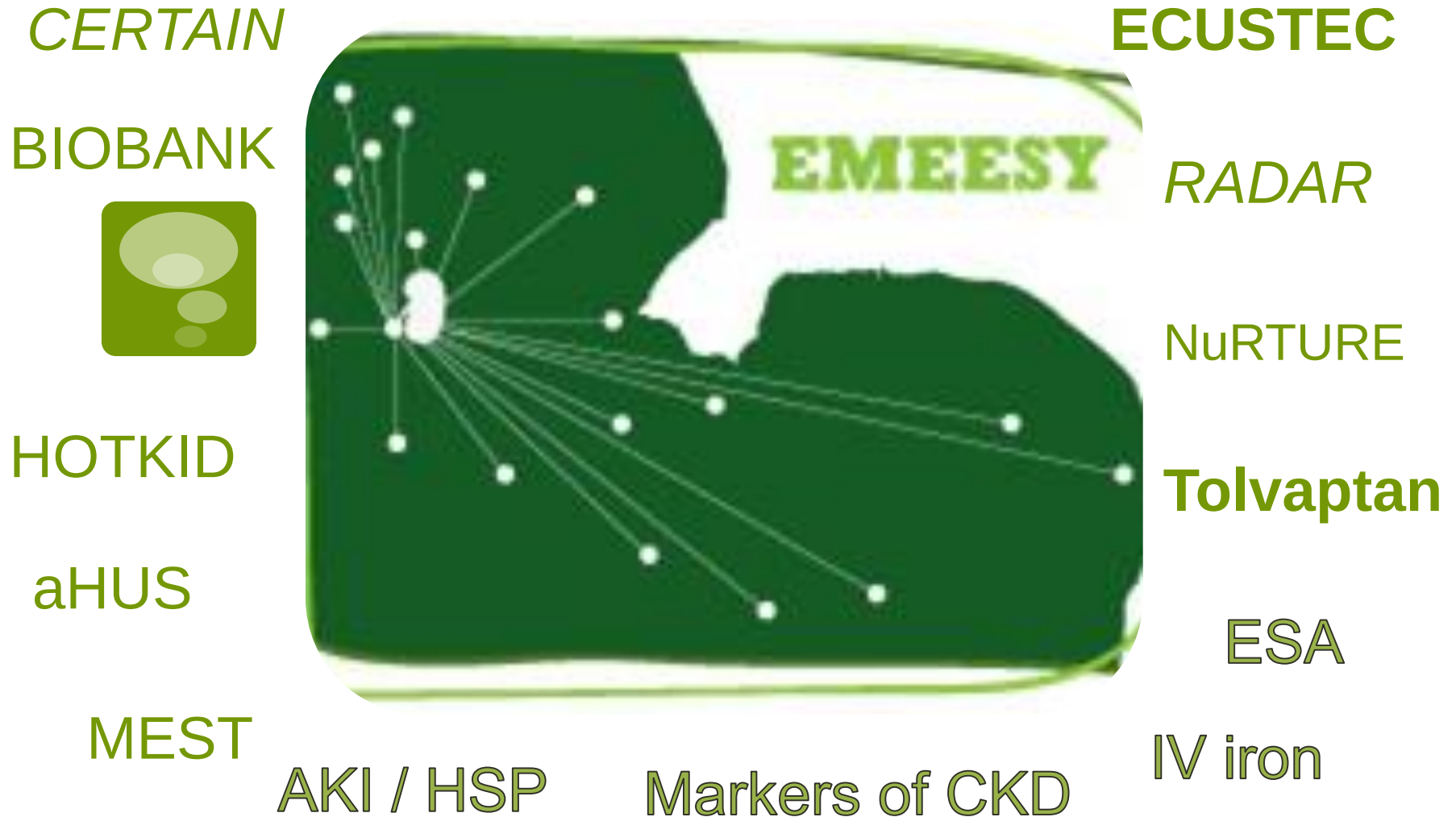




Research and Quality Improvement

Andrew Lunn
Consultant Paediatric Nephrologist

PREDNOS and PREDNOS 2





PREDNOS

- Study completed
- No difference in primary outcome
- Possible improved Health Economics in patients on longer course of steroids



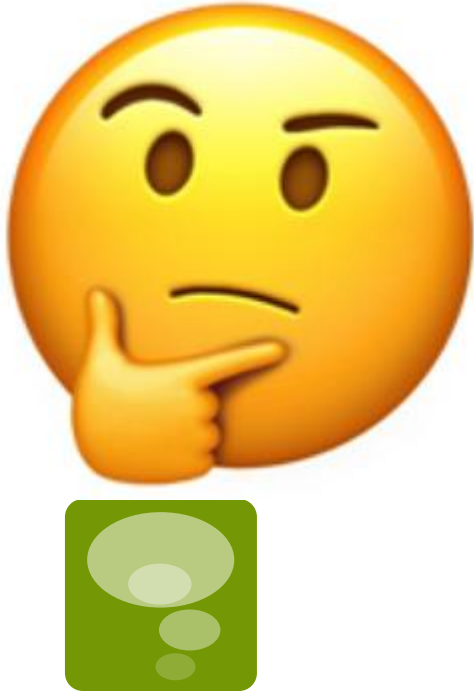
PREDNOS 2

- Study ongoing
- Great engagement
- 1 patient per centre is needed
 - 2 relapses in 12 months
 - Placebo controlled
 - 5 days of daily steroid at time of URTI



ECUSTEC

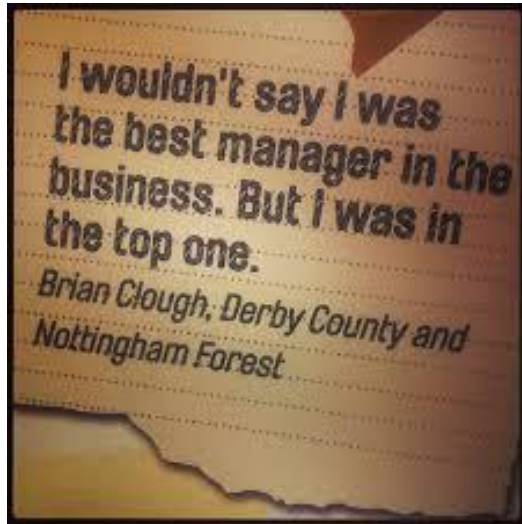
- Study ongoing
- Multiple PIC centres
- STEC-HUS
 - Bloody diarrhoea or confirmed E Coli
 - Signs of HUS
 - Eculizumab vs Placebo
- Please continue to refer early



RaDaR

- Rare disease registry
- Open in adults
- Relevant to children

 RaDaR

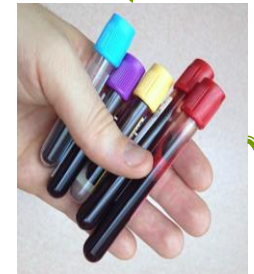


Brian Clough Award

- CERTAIN registry
 - European registry of transplant patients
- Biobank
 - Collecting and storing samples on transplant patients



Quality Improvement



Paediatric Glomerular Filtration Rate

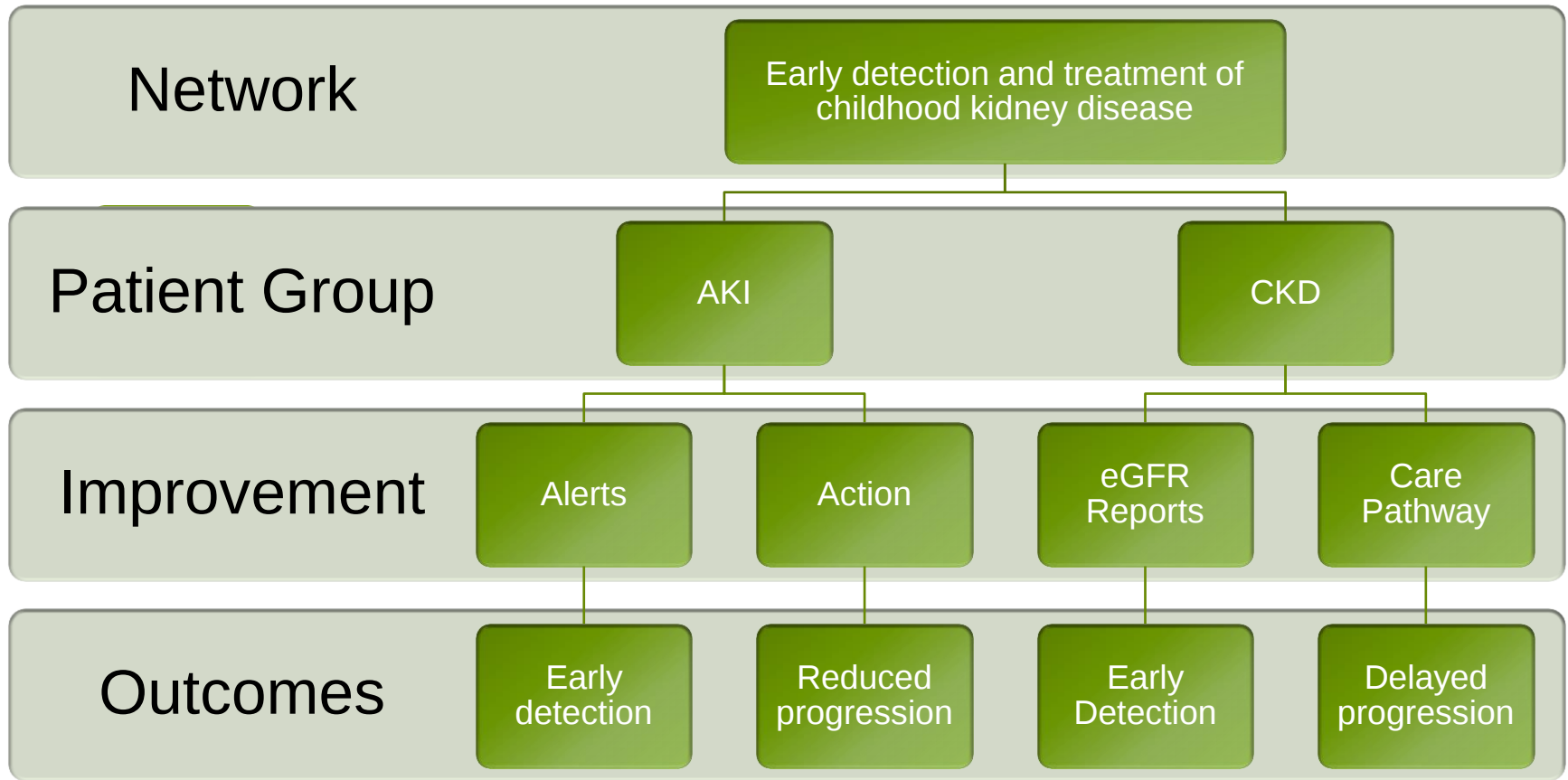
Laboratory No: 0017P040503

44 ml/min/1.73m²

Insert a Function		Close
Function	Category	
ABS	Math	
ACOS	Math	
ACOSH	Math	
ASIN	Math	
ASINH	Math	
ATAN	Math	
ATAN2	Math	
ATANH	Math	
CEILING	Math	
COMBIN	Math	
COS	Math	
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DEGREES	Math	
EVEN	Math	
EXP	Math	

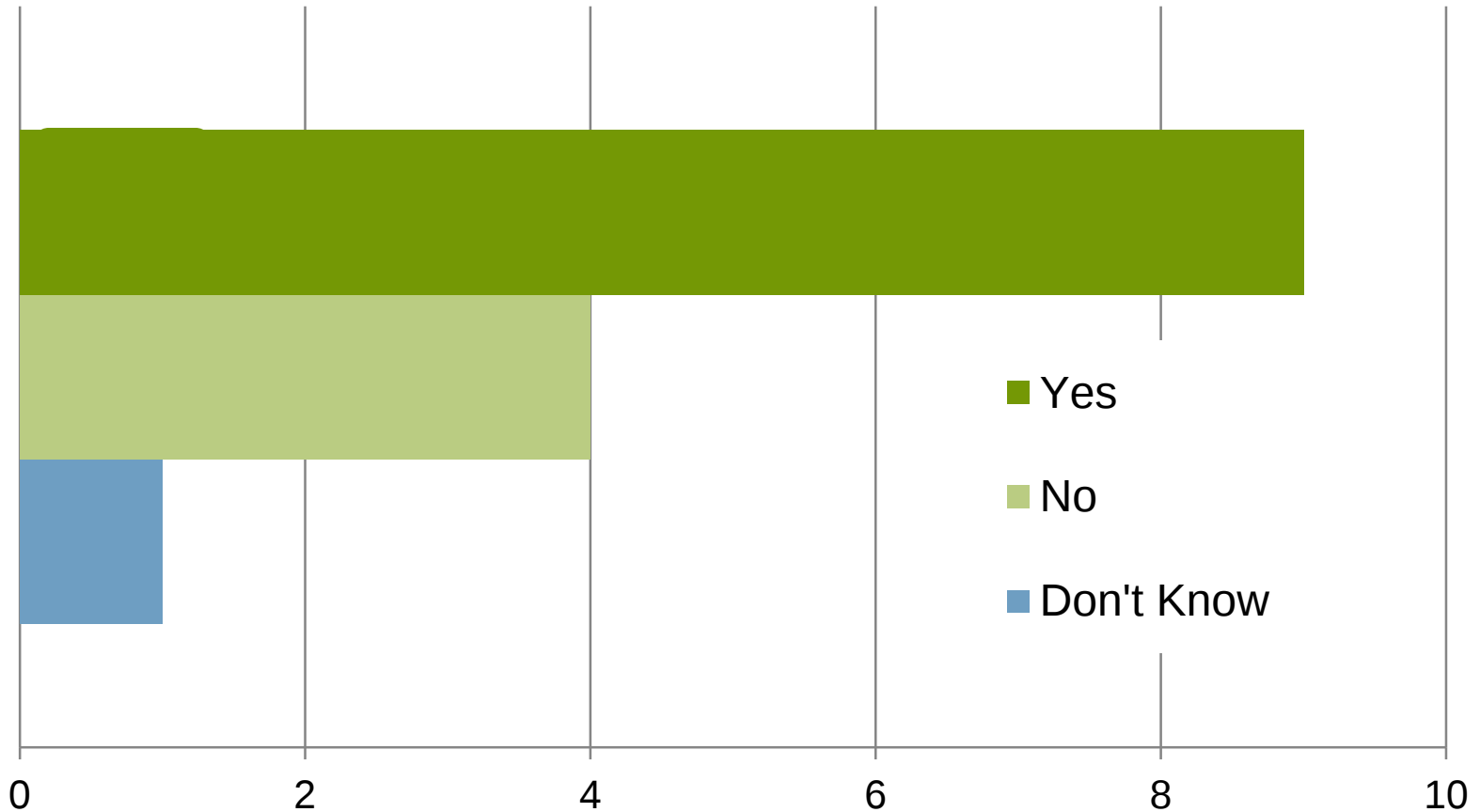


Quality Improvement



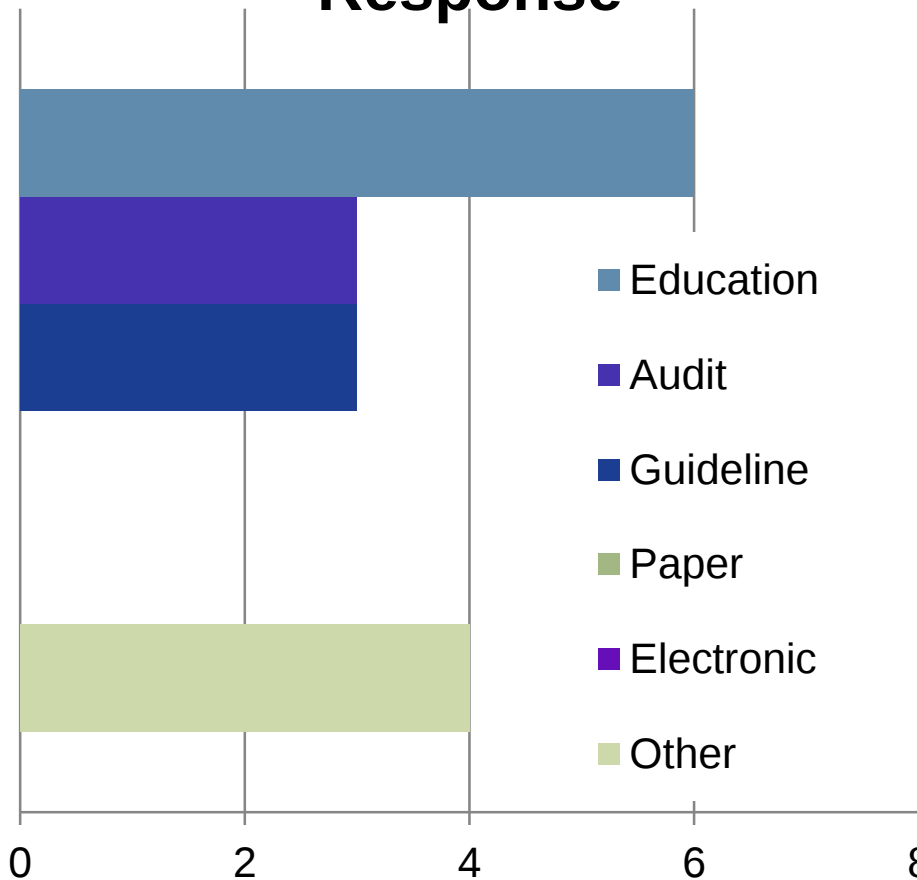
Quality Improvement

AKI alerts in children

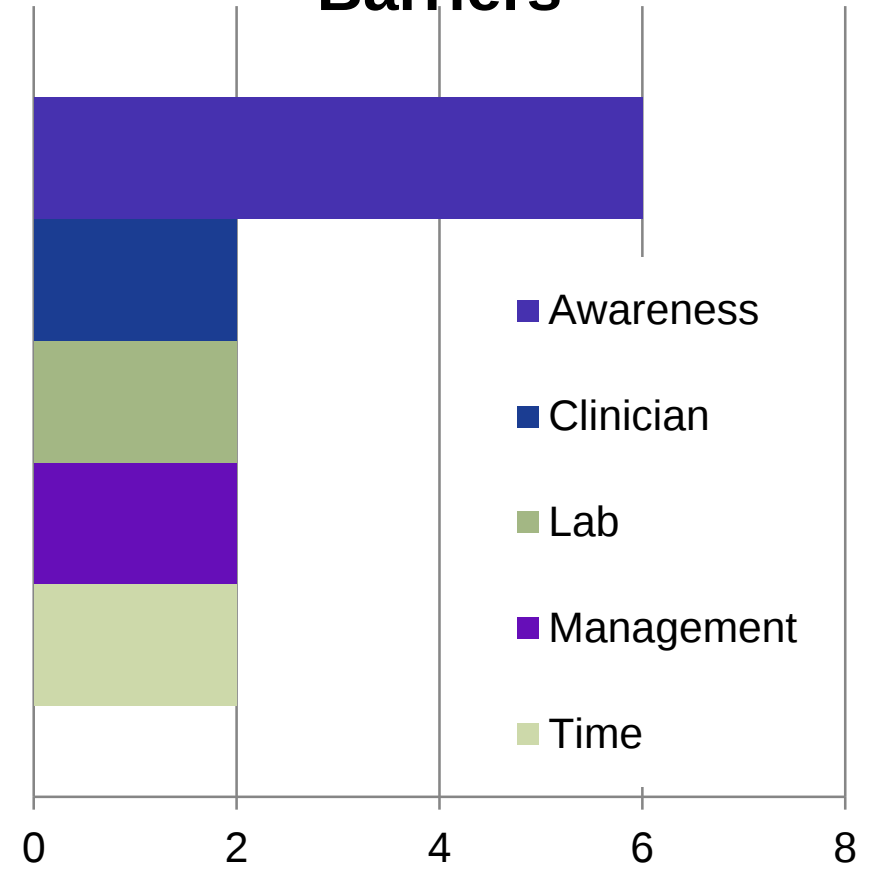


Quality Improvement

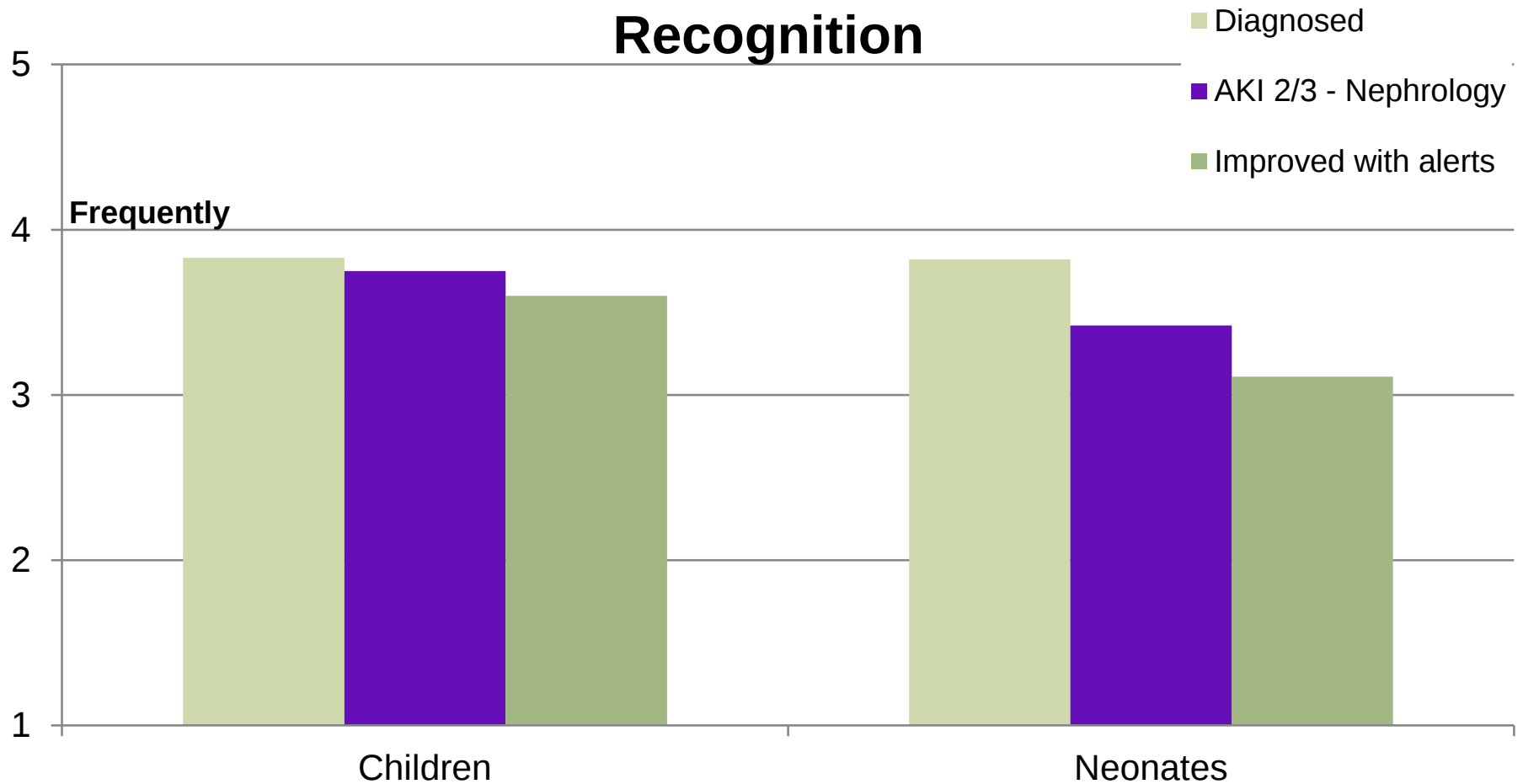
Response



Barriers

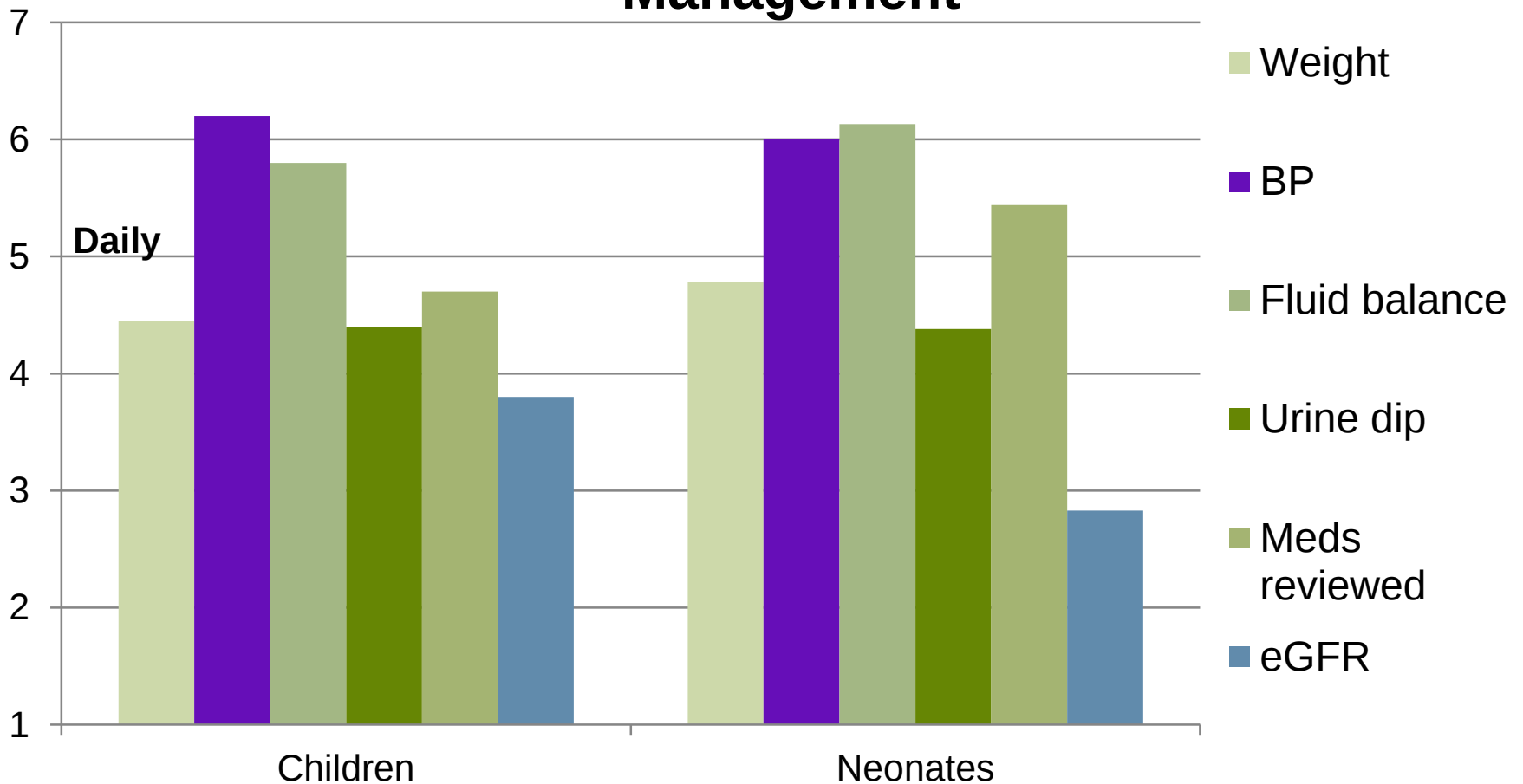


Quality Improvement



Quality Improvement

Management



Quality Improvement



■ CKD	eGFR
Standard Schwartz formula	$= 40 \times \text{height (cm)} / \text{SCr } (\mu\text{mol/l})$
Schwartz formula QMC	$= k \times \text{height (cm)} / \text{SCr } (\mu\text{mol/l})$ Where $k = 36$ in males 13 years of age or older and $k = 30$ in all other cases
Schwartz formula SCH	$= k \times \text{height (cm)} / \text{SCr } (\mu\text{mol/l})$ Where $k = 27$
BCCH2	$= \text{Inverse ln of: } 8.067 + (1.034 \times \ln[1/\text{SCr } (\mu\text{mol/L})]) + (0.305 \times \ln[\text{age (years)}]) + 0.064 \text{ if male}$
NCH- BCCH2	$= \text{Inverse ln of: } 6.064 + (0.554 \times \ln[1/\text{SCr } (\mu\text{mol/L})]) + (0.254 \times \ln[\text{age (years)}]) + 0.025 \text{ if male}$

Quality Improvement

	Mean difference	St Dev	R (Correlation)	% Diff < 20%	% Diff < 30%
Standard Schwartz	39.6	53.3	0.652	32%	45%
Schwartz QMC	20.1	39.7	0.666	58%	78%
SCH Schwartz	20.4	36.3	0.652	56%	76%
BCCH2	45.7	59.7	0.648	26%	39%
NCH – BCCH2	14.6	20.0	0.711	71%	83%
EPI-CKD					83%
MDRD					81%

Quality Improvement

- On World Kidney Day 2016 we started reporting eGFR
 - hospitalised children at NCH
 - aged 2 to 16 years of age



Referrals before

No of patients

0



Referrals after

eGFR (ml/min/1.73m ²)	≥80	<80
No of patients	4	5
Proteinuria	0	1
Hypertension	0	0
Ultrasound	Normal	3 patients; renal hypoplasia

Quality Improvement

Care pathways

Care bundles

ePROMPTS

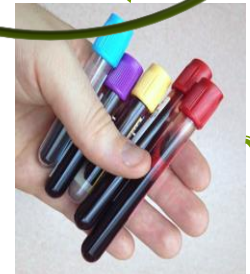
Diet

Fluids

Pharmacy

Education

Guidelines



Paediatric Glomerular Filtration Rate

Laboratory No: 0017/P040503

44 ml/min/1.73m²

Insert a Function		Close
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COSH	Math	
COUNT	Math	
COUNTA	Math	
COUNTBLANK	Math	
COUNTIF	Math	
DEGREES	Math	
EVEN	Math	
EXP	Math	



Validation

Collaboration

Quality Improvement



- Proposal

- Network QI project to improve detection and treatment of kidney disease in children

- Workstreams

- Education and Guidelines
- Laboratory and ICT
- Care packages

- Options

- Geographical focus
- Targeted vs Parallel working
- AKI vs CKD vs Both

Quality Improvement





Quality Improvement



Statistician



Holiday Inn®

Pure
Mathematician

Applied
Mathematician