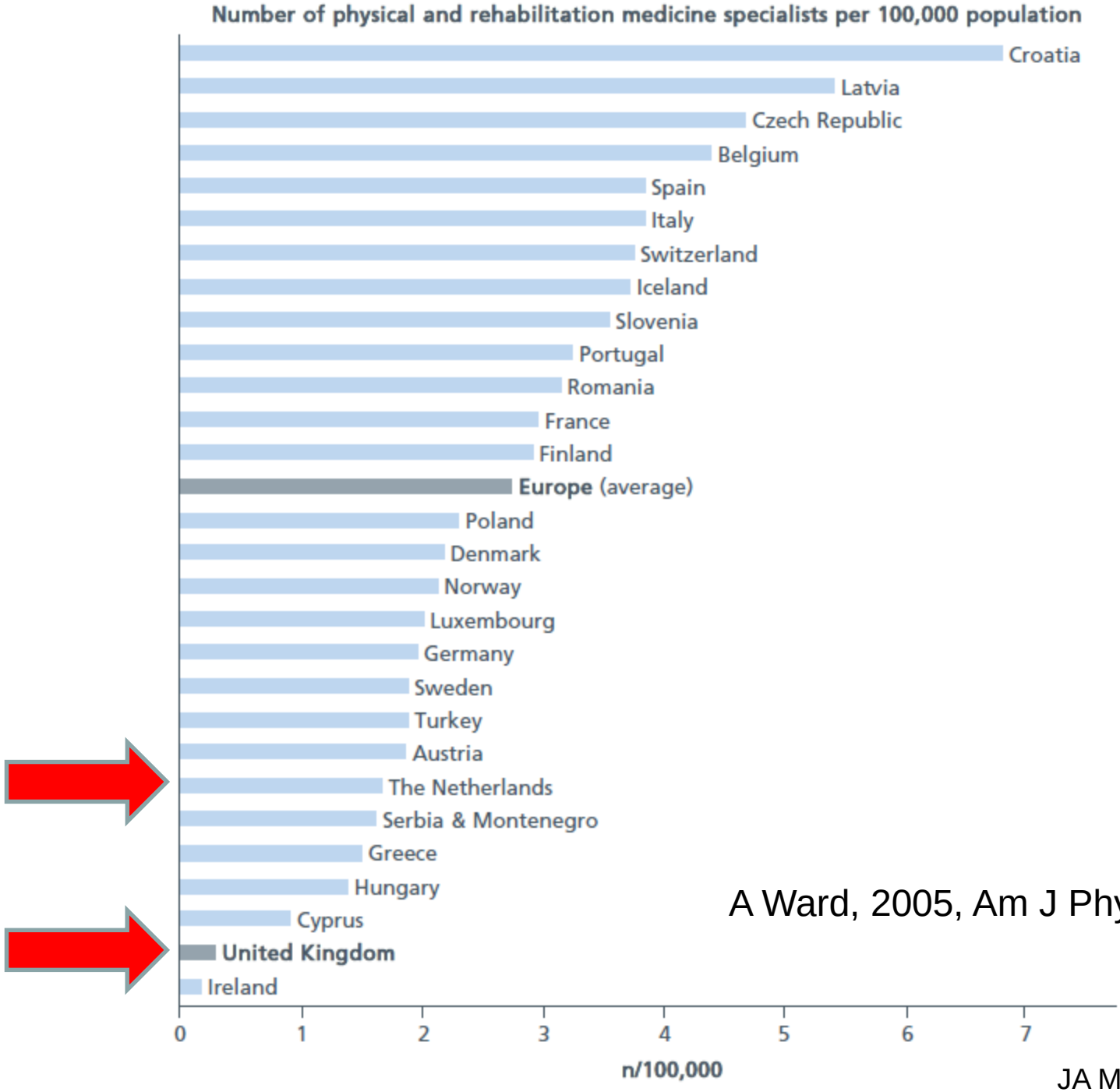
MTN-11 2016

The Role of Rehabilitation Medicine Consultants in Trauma Rehabilitation

On behalf of BSRM TRsIG

Judith Allanson BM BCh MA PhD FRCP
Evelyn Consultant in Neurological Rehabilitation;
Clinical Lead Inpatient Neuro and Trauma Rehabilitation and Community Head Injury Service
Department of Neurosciences, Addenbrookes, Cambridge University Hospitals NHS Trust



A Ward, 2005, Am J Phys Med Rehab

JA MTN11 2016

Rehab Medics in Trauma

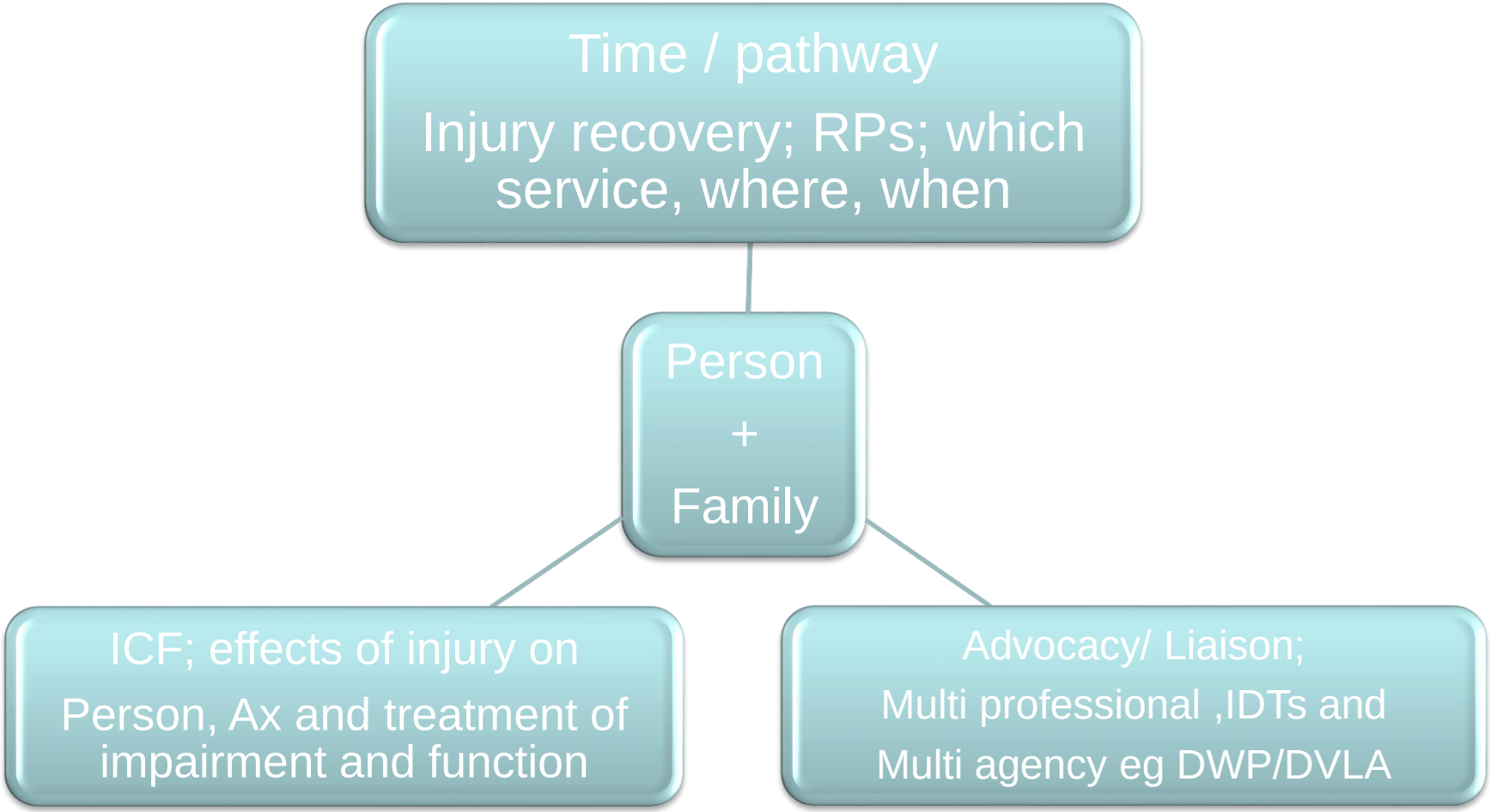
Range of roles

- NCD (Rehab and Recovery in Community)
- Trauma Rehab leads MTC
- Trauma Rehab leadsTU
- Directors of trauma rehab in MTNs
- CRGs, SCNs
- Guideline DGs, RCP,NICE
- Specialist in and out patient rehab service leads
- Vocational Rehab
- Patient advocacy

Early members BSRM /TRIG

- Fahim Anwar
- Bipin Bhakta
- Alex Ball
- Bhaskar Basu
- Ganesh Bavikatte
- Rachel Botell
- Kate McGlashan
- Laura Graham
- Lynne Turner Stokes
- Elizabeth Stoppard
- Jenny Thomas
- Derick Wade
- Krystyna Walton
- Sancho Wong

Rehabilitation Medicine Consultants ; 3D lateral thinking

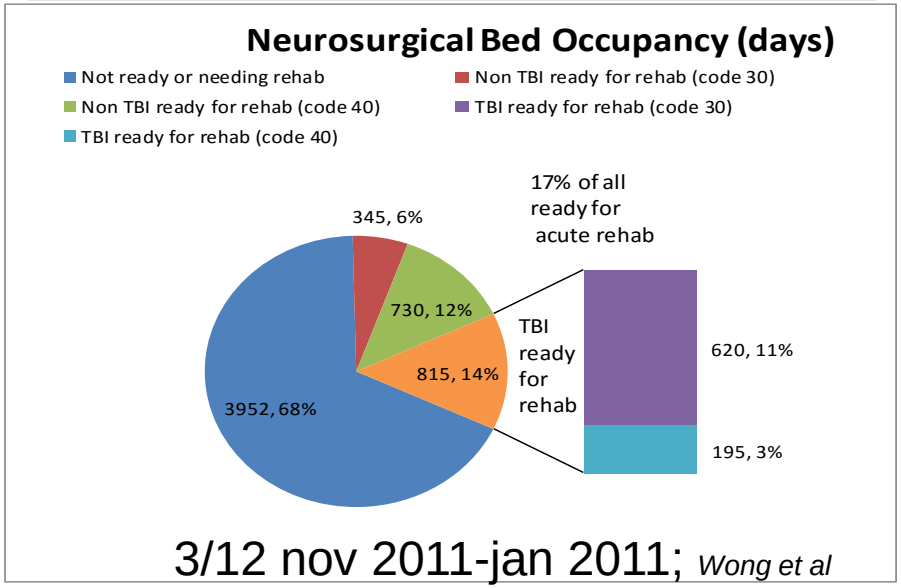


What is Trauma Rehabilitation?

- **Rehabilitation**
  - "goal directed, **iterative process** whereby a person, who has persisting *difficulties resulting from complex major trauma*, **works with specialists / teams /**others to minimise injured persons impairments, and increase activity so that they maximise their **participation in chosen personal and family roles**"
  - Involves, assessment, therapeutic interventions, information, support, and review

- **Rehabilitation Medicine after Trauma includes..**
  - Neuropsychological rehabilitation
  - (Condition) and symptom management
  - Tone, Posture, and mobility management
  - Equipment assessment and advice
  - Advocacy
  - Team leadership
  - Service development

Early Rehabilitation after Trauma



3/12 nov 2011-jan 2011; *Wong et al*

Injury (primary/ secondary)

Impairment ⟷ Activity ⟷ Participation

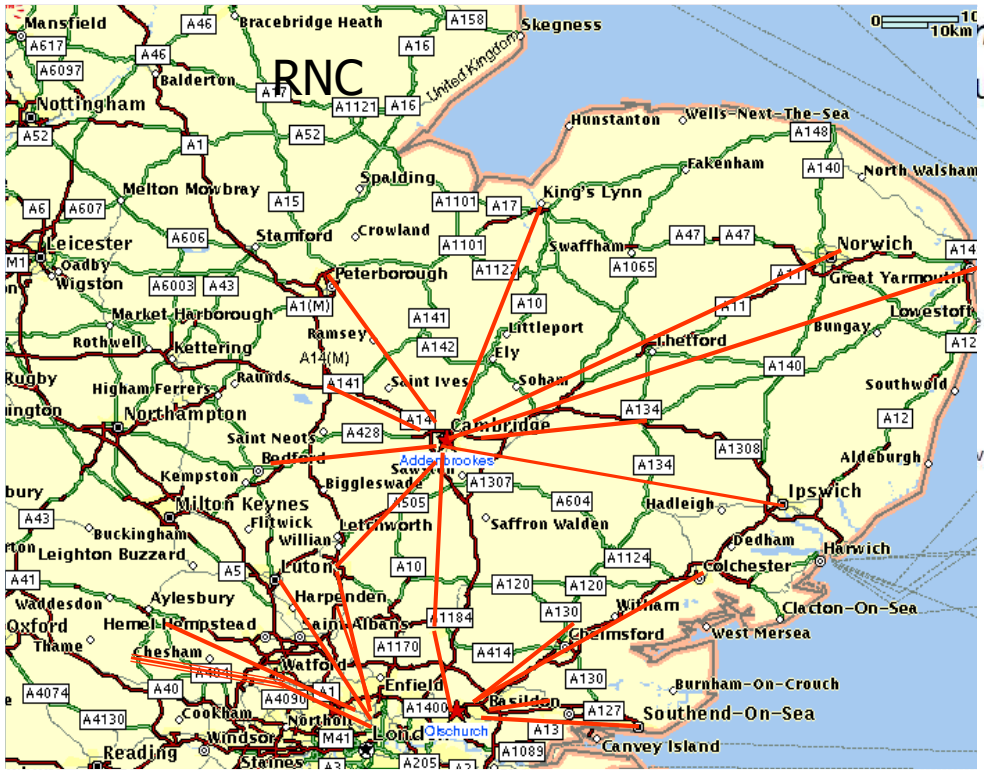
Contextual Factors

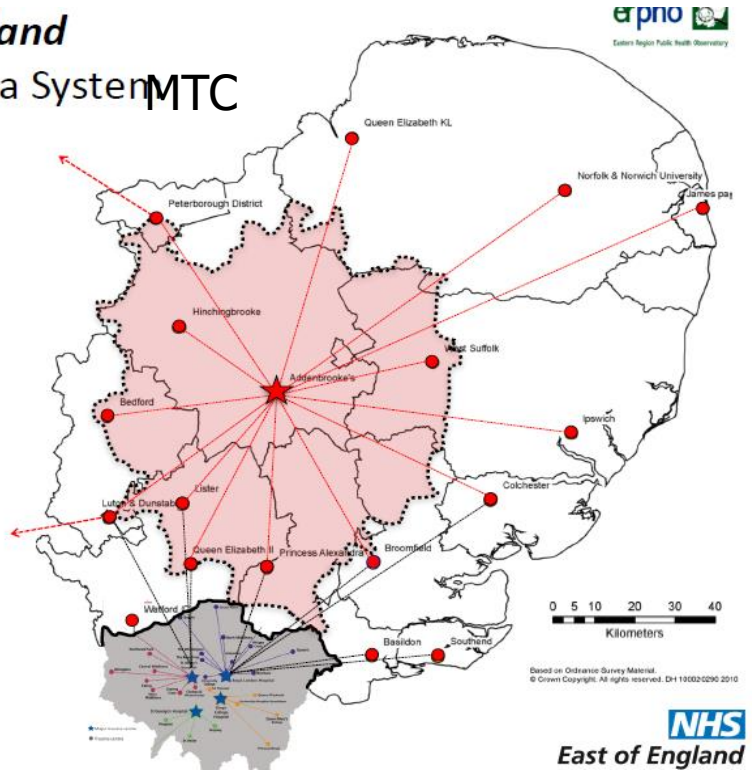
Environment

Personal

Adapted From
D Wade, 2013

Catchment areas for RNC & MTC





SHA Review Neurorehab Specialist Services 2010
Chair Carolyn Young

Neurorehabilitation Pathway for Patients in the Greater Manchester Neurosciences Centre

Accident & Emergency (A&E)

Intensive Care Unit (ICU)

Neuro High Dependency Unit (NHDU)

Head, Neck Unit (A3) / Spinal Unit

Neurosurgical Wards (B7/B8)

Acute Neurology Unit (ANU)

YOU ARE HERE
Acute Neuro Rehabilitation Unit
Ward C2

Intermediate Rehabilitation Unit (IRU)

District General Hospital

Discharge home

Nursing / Residential Home

With Community Neuro Follow up

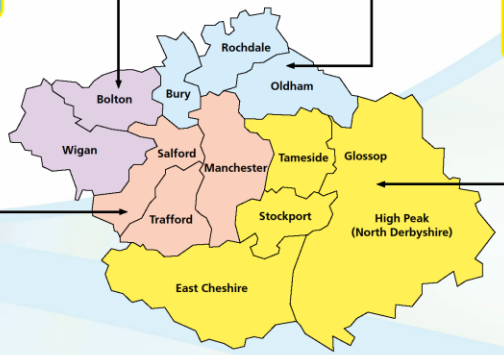
Without Community Neuro Follow up

For residents of Manchester / Trafford / Salford
Ward 1 at Trafford General Hospital

For residents of Bolton / Wigan
Taylor Unit in Leigh

For residents of Rochdale / Bury / Oldham
Floyd Unit in Rochdale

For residents of Stockport / Tameside / High Peak (North Derbyshire) / Glossop / East Cheshire
Devonshire Unit in Stockport

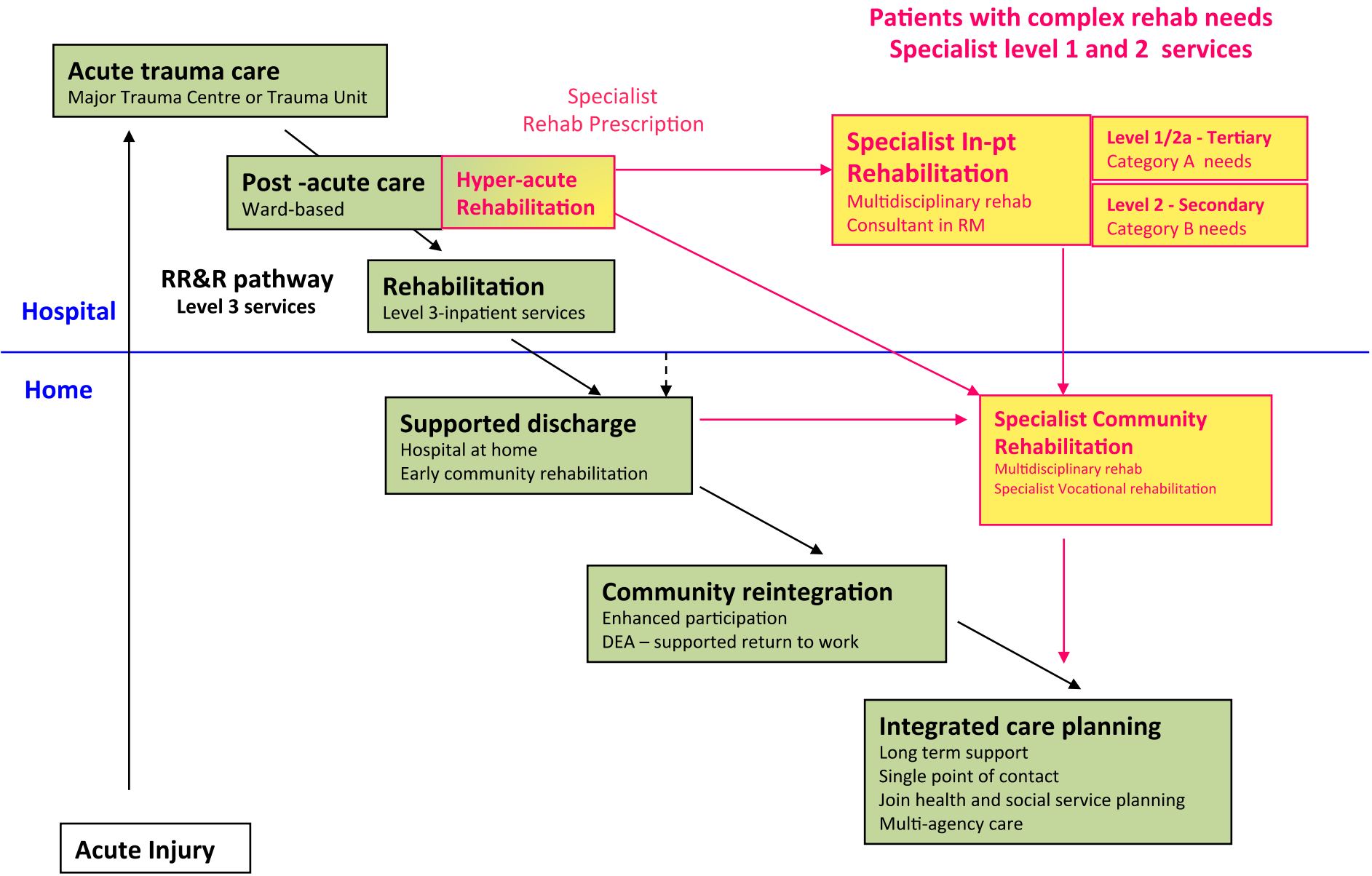


The portrayed Neurorehabilitation Pathway is the usual transfer route through Neurosciences. There may be times when patients will move between Wards / District General Hospitals / Intermediate Rehabilitation Units out of the order shown, with some patients being transferred from a Neuroscience ward (including C2) to a District General Hospital while waiting for bed availability at their designated Intermediate Rehabilitation Unit.

Salford Royal NHS
NHS Foundation Trust
University Teaching Hospital

safe • clean • personal

Pathway for patients with trauma



Specialist Rehabilitation in the Trauma pathway: BSRM core standards LTS et al 2013

Evolution of the Rehabilitation Prescription

2010

- Feb; National Audit Office; Major trauma care England
- Sept; CAG response; Rehab key
- Nov; Conference at RCP on Rehabilitation after Trauma
- First RP proformas compiled– Yorks and Humber Used as by DoH

2011

- Interested BSRM members informal meeting during an SRR at Ely
- Large England wide meeting hosted by KW; Salford, Manchester
- Many MTCs developing business cases to include RP completion
- BSRM working group on trauma rehabilitation

2012

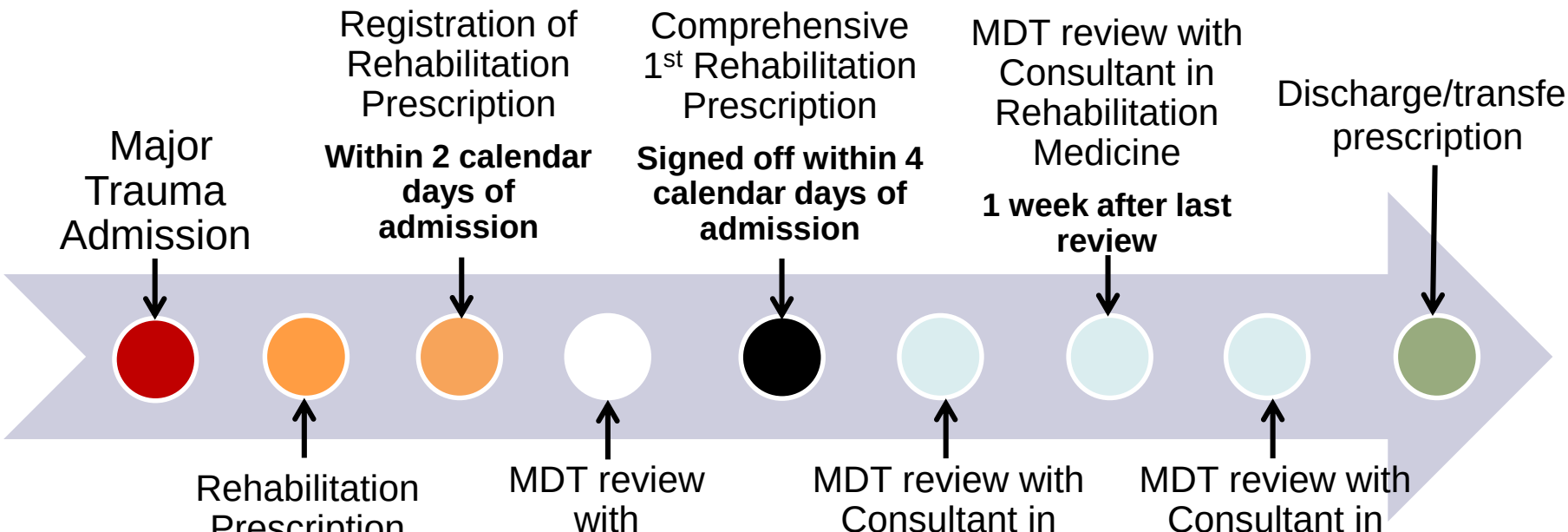
- April Tarn office published Best practice tariff arrangements for RP
- Sept DoH convened multidisciplinary Workshop on RP
- Dec RP MDT Working party rep from each health region chair; Derick Wade

2013

- **BSRM core standards for trauma rehab and suggestions for specialist rehab prescription completed**
- CAG advised that DoH working party recommendations will be used to inform BPT arrangements
- DoH working party ;

Manchester;Timeline for Major Trauma Rehabilitation Assessment at SRFT

Krystyna Walton



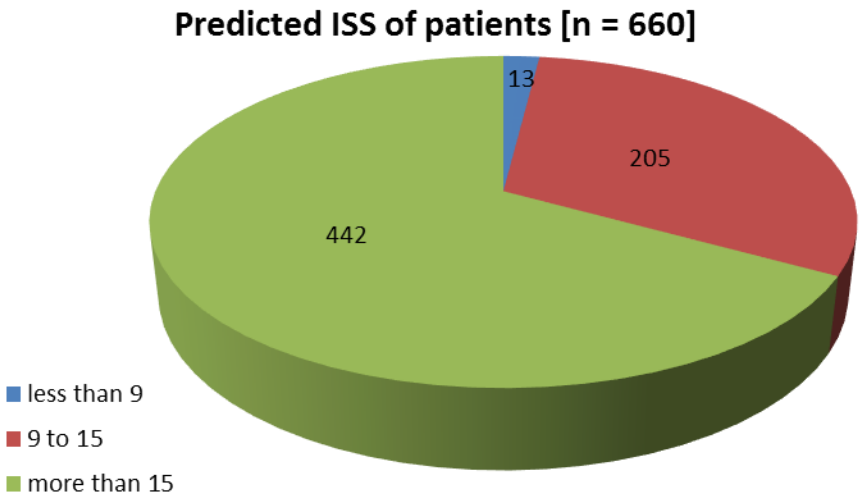
MDT rehabilitation re-assessment with Consultant in RM + new Rehabilitation Prescription weekly while in acute care

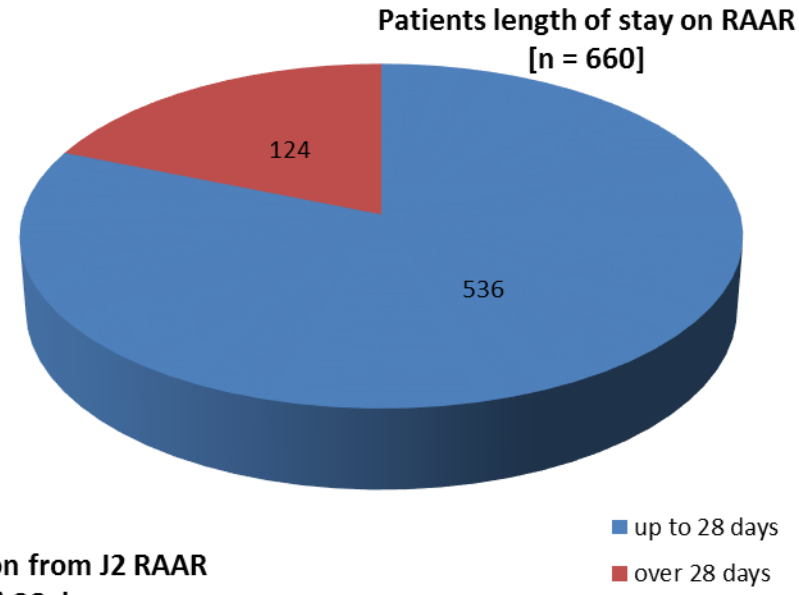
See new MTN service directory

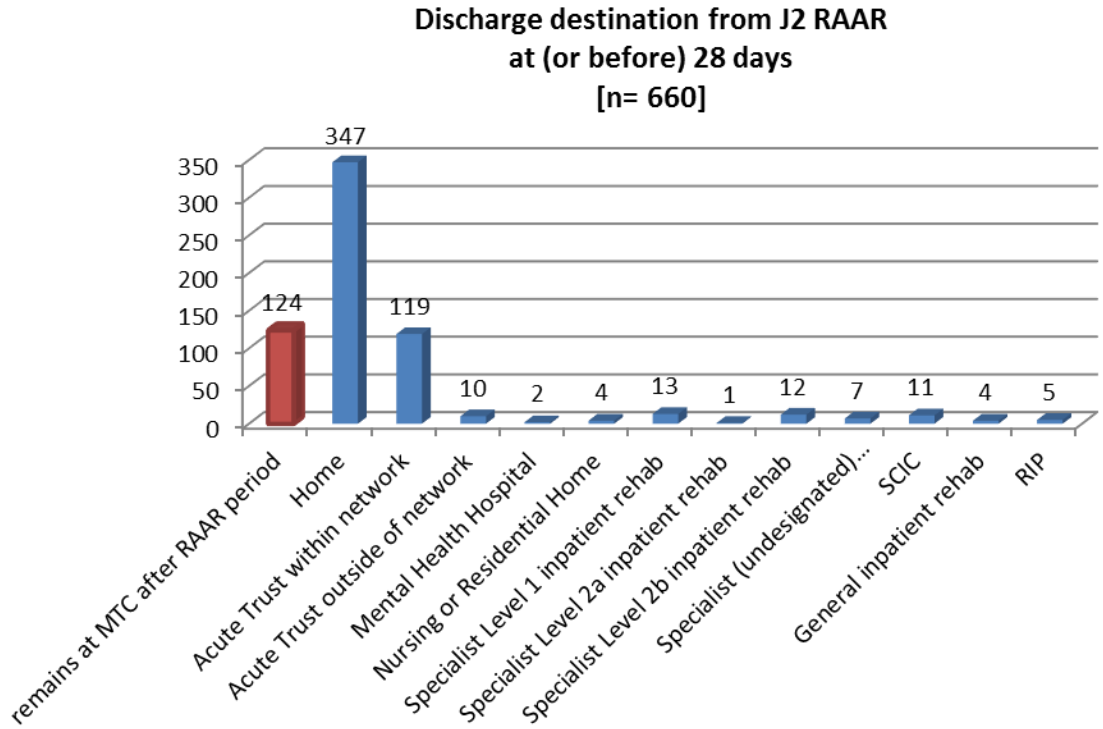
MAP 6: EARLY INPATIENT REHAB. FOR HI PTS.

Seeley at al, EHIG survey 2006

Trauma Patients admitted to RAAR in Addenbrookes 2013-2015

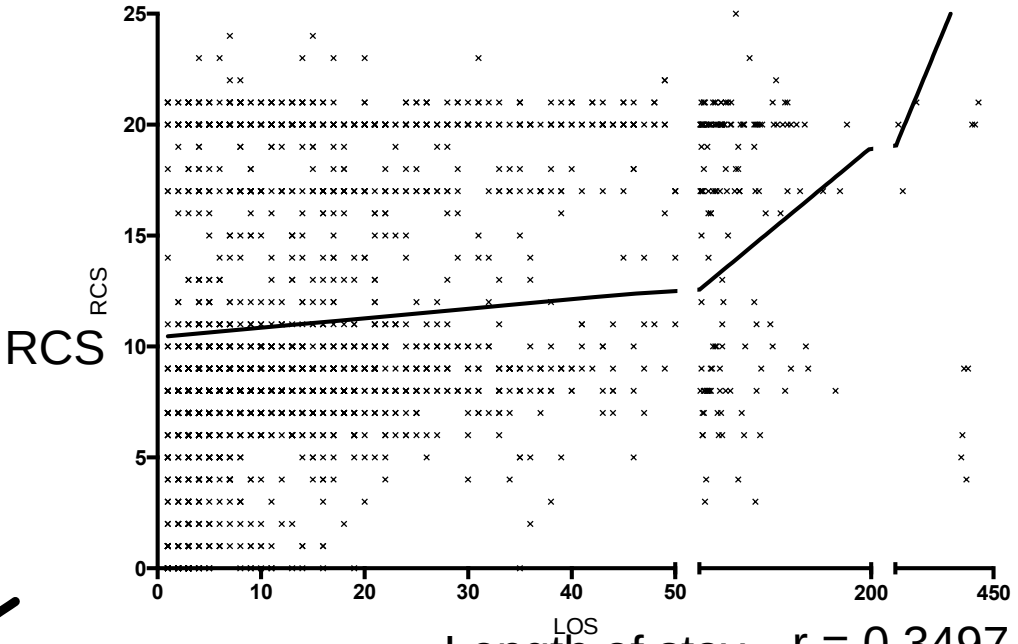






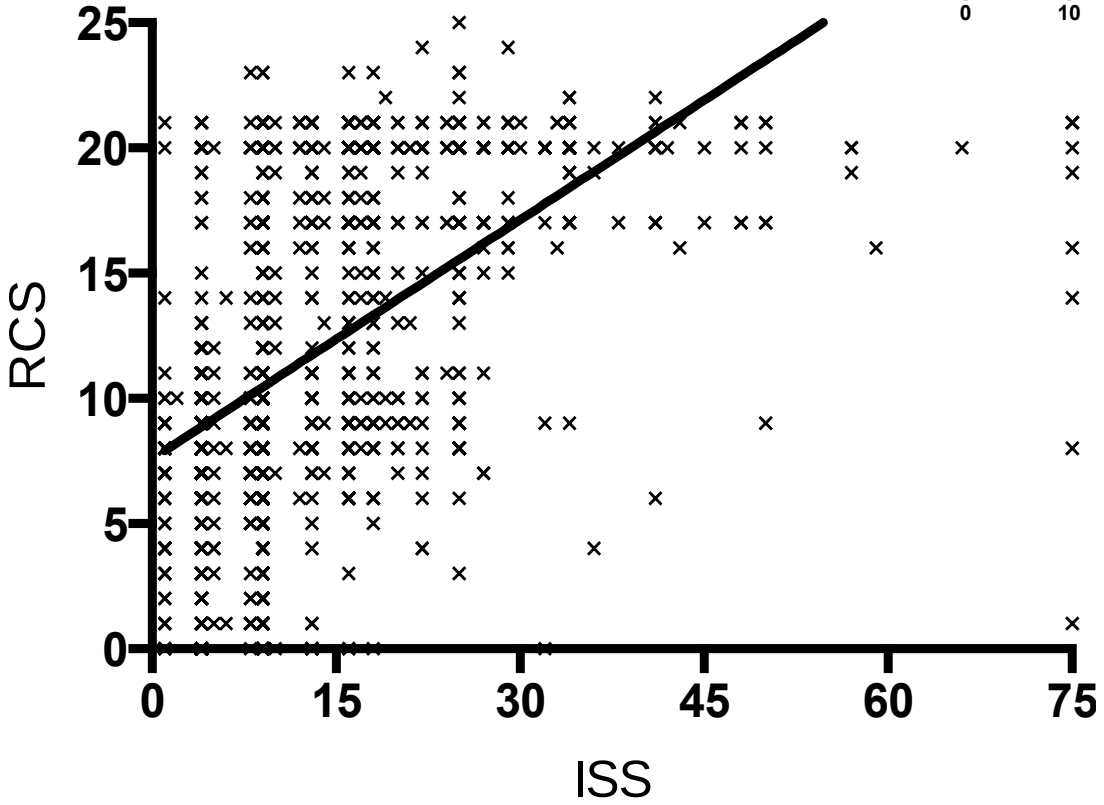
H Young et al

Rehab Complexity scores (RCS)
On Rehab Prescriptions
18 months CUH
n= 2534
35% complex trauma
35% have TBI
AJoaniddes et al



Length of stay

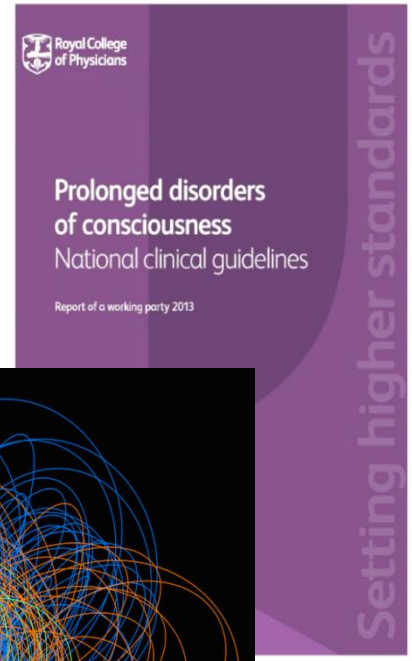
r = 0.3497
p < 0.0001

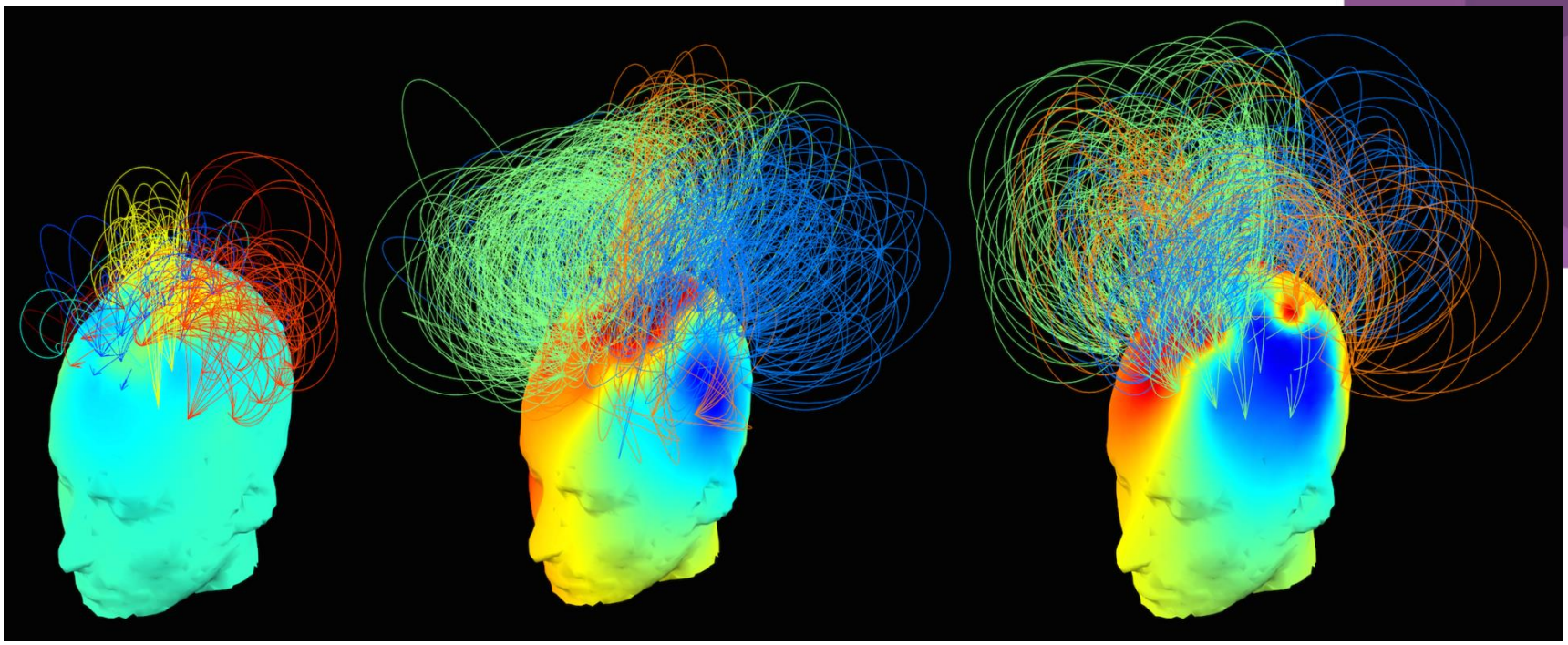


r = 0.5447
p < 0.0001

J Allanson MTN 11 2016

Rehab Medics in research
PDOC study – CRIC group





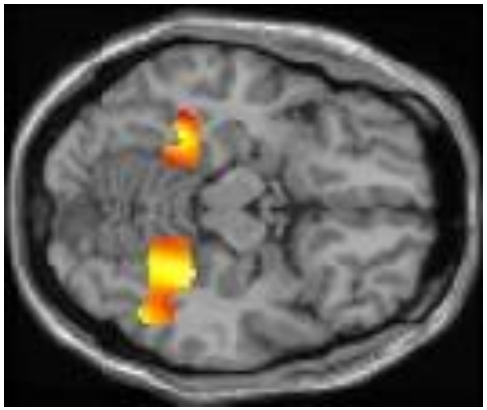
Resting state Brain networks from EEG
In two patients in the vegetative state (VS; left and middle), and a healthy adult (right).
Both VS patients were behaviourally identical on clinical examination,
but the patient in the middle panel showed specific brain activity in appropriate brain regions
when asked to imagine playing tennis during an fMRI study,
while the patient on the left showed no such response[10]

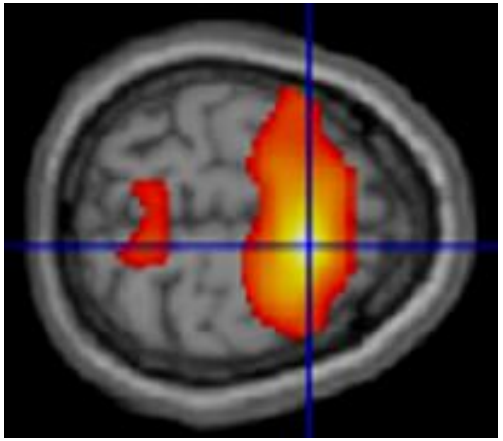
from CRIC, Chennu et al , 2015

University of Cambridge

fMRI BOLD response

Volition task: "?A measure of awareness"





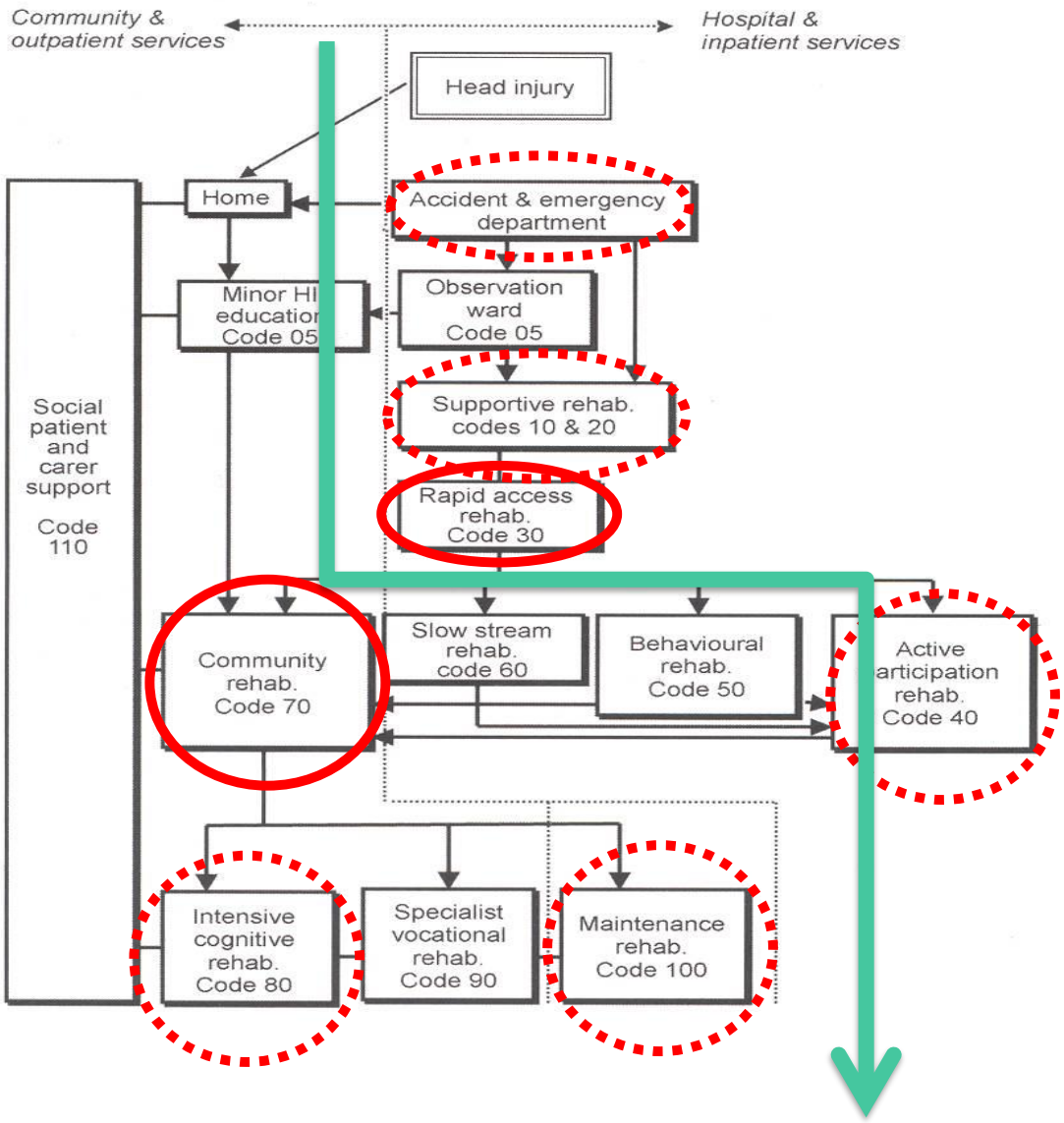
UKROC data;

Turner-Stokes et al, Brain Injury 2014 (see Lynne's presentation for more up to date nos)

In patient rehab; Costs and savings

Dependency on admission/ NPDS	LOS / days	Episode Cost	Mean reduction in care cost / week	Time to offset cost/ months	Lifetime saving
HIGH	106	£48500	£607	20	£662853
MEDIUM	72	£32922	£399	21	£580928
LOW	53	£23546	£95	62	£163931

Rehabilitation pathways after Trauma



Key triage points;

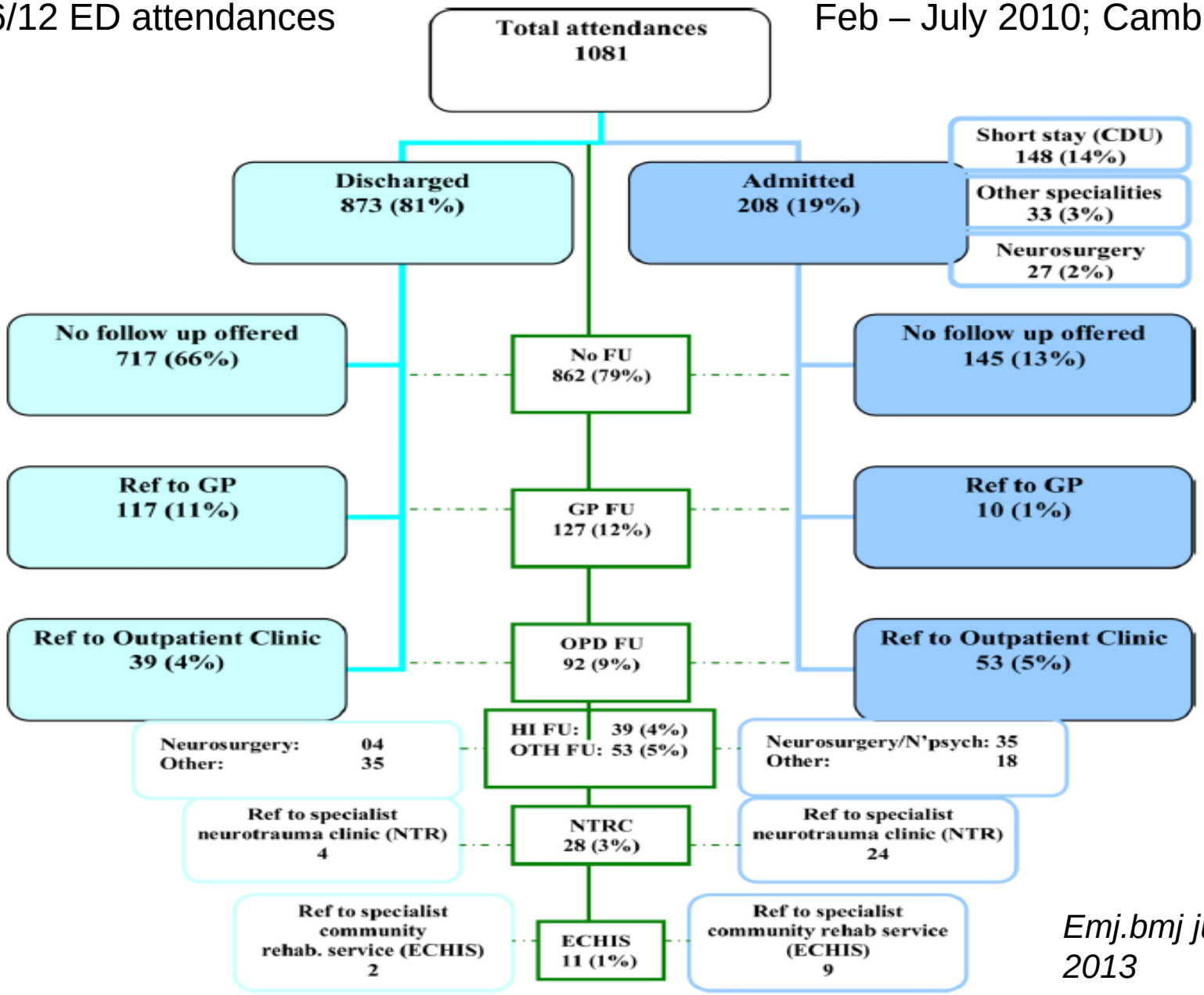
In hospital –
code 30
RAAR

After Discharge –
code 70
Community HIS

Pickard JD et al. J Roy Soc Med 2004; 97 : 384 – 389

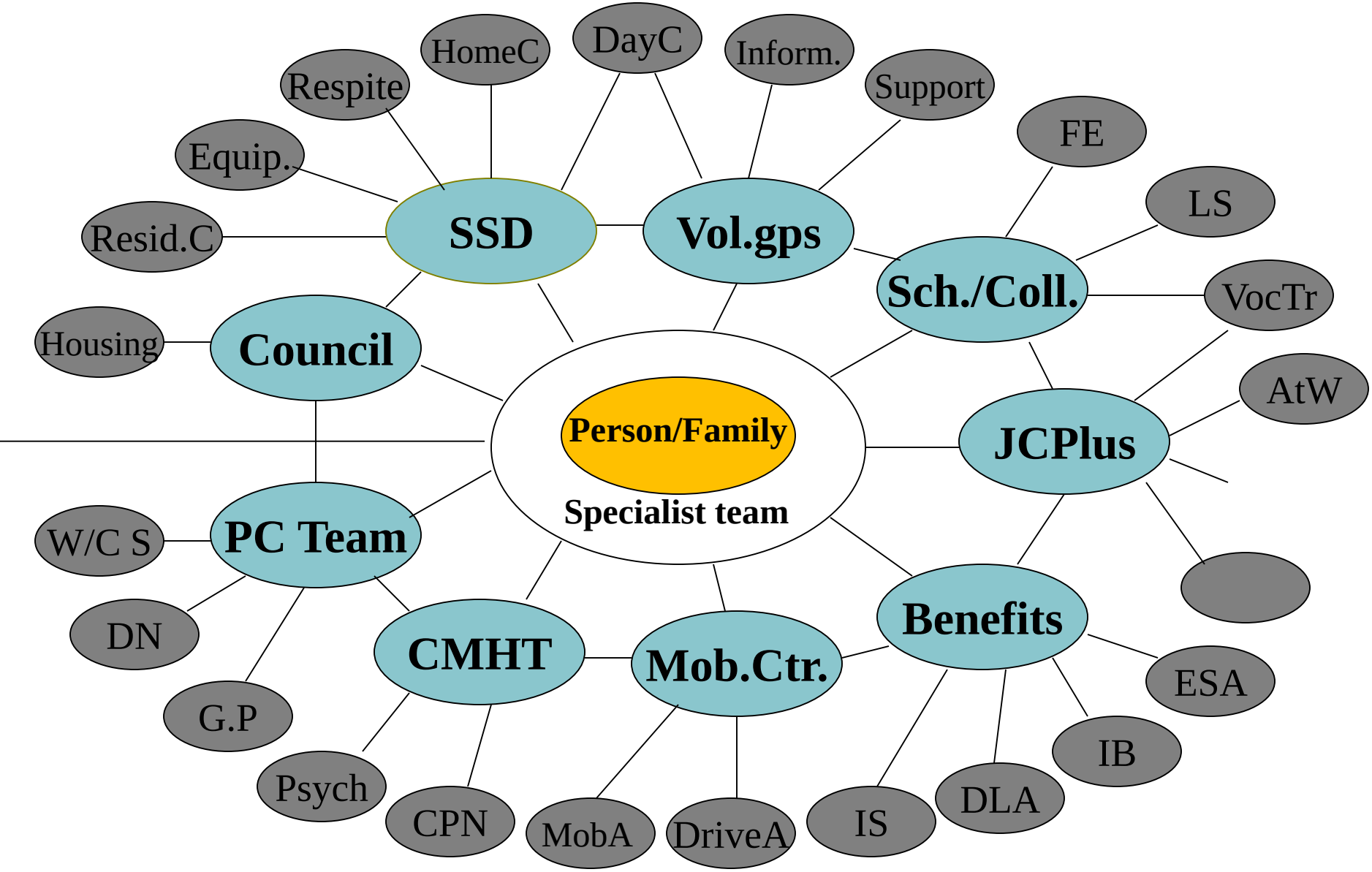
6/12 ED attendances

Feb – July 2010; Camb adults



Emj.bmj june 2013

ABI : Community rehabilitation / support



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The Evelyn Community Head Injury Service (ECHIS):

Establishing a specialist TBI team in a community network; The Shifting Sands

Judith Allanson, Kate Psaila, Andrew Bateman, Donna Malley, Fergus Gracey, Clare Keohane, Helen Palmer, Sarah Moss, Anneli Cassel, Ania Piasecka, Helen Howe, Andrew Gardner, Helen Seeley, Stephen Kirker, Peter Hutchinson, John Pickard.

Adult with TBI from Cambridgeshire?

Major Trauma centre | GP | ?Hospitals

Neurotrauma Cliniic ? MDT clinic

Neurotrauma Surgeon
Evelyn Consultant
Psychology
Headway
CNP

KEY LINKS ;

Cam Community Services
Neuro leads in locality teams

Headway *hub and community*

Social Services PD team
PCT Commissioning

Oliver Zangwill Centre

Evelyn. The Evelyn Community Head Injury Service

INTERDISCIPLINARY WORKING

INITIAL Holistic ASSESSMENT/Advice
Formulation / Goal planning
Rehab plan at weekly team meeting

INDIVIDUAL | GROUPS | OTHER SERVICES egOZC, CMHT

REVIEW
Complex Case Discussion
Case Conferences
Family sessions

OUTCOMES:
Goal attainment
Back to work / study
Increased social participation
Improved coping, Sustainable Community living
Referral to linked services

AIMS TO

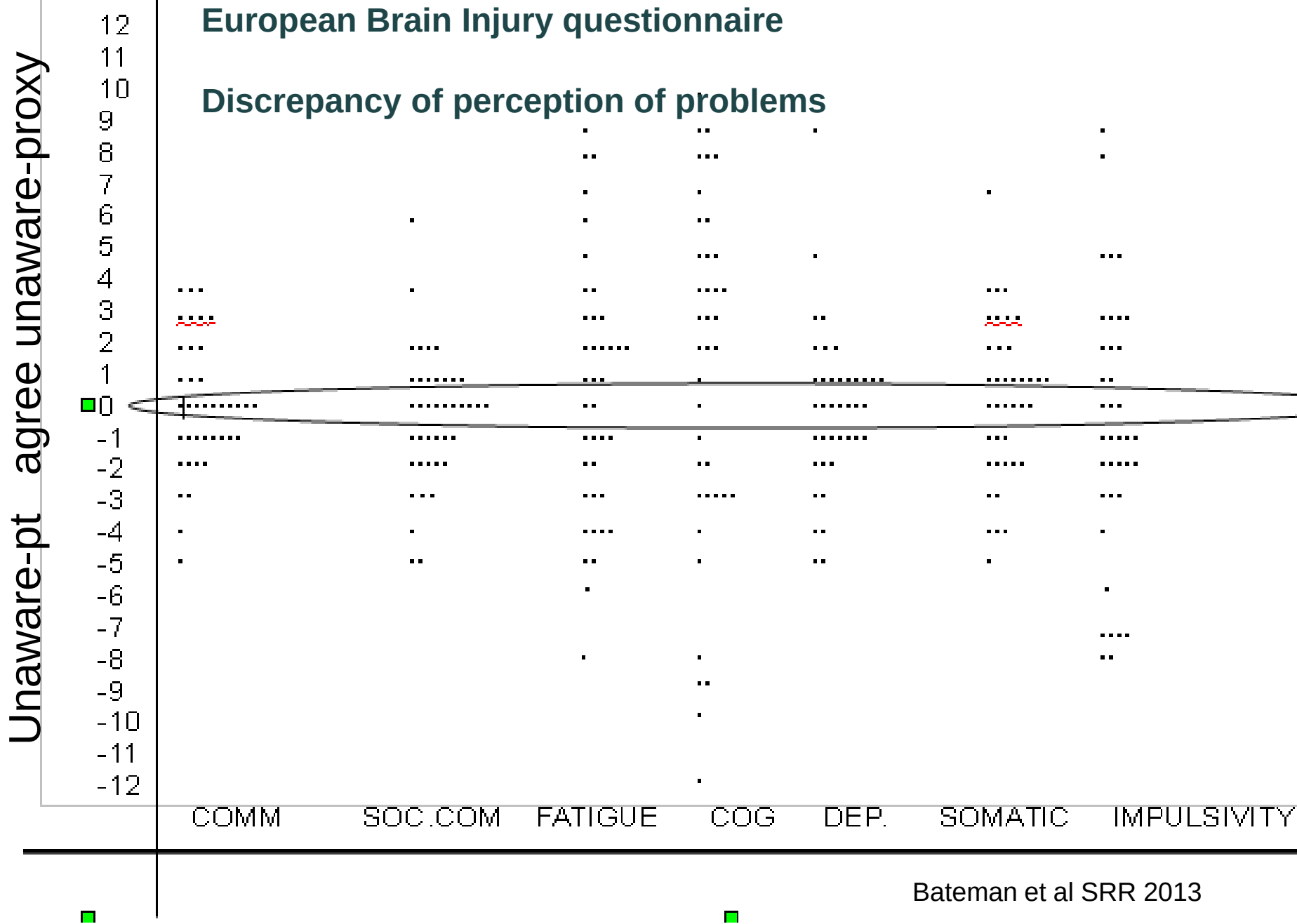
- Provide timely, specialised, assessment
- Offer individualised holistic rehabilitation and advice
- Nurture the county liaison / advice network –
- develop links with Mental Health
- Establish body of research to inform future rehab.
- Collect data for UKROC – for future tariff development

The Evelyn Community Head Injury Service is generously supported by a grant from the Evelyn Trust. **This is an NHS service and is a partnership between:** Cambridge University Hospitals NHS Foundation Trust; University of Cambridge; Headway Cambridgeshire; NHS Cambridgeshire; The Oliver Zangwill Centre – part of Cambridgeshire Community Services NHS Trust.

NHS

Responses of patient and relative to EBIQ
European Brain Injury questionnaire

Discrepancy of perception of problems

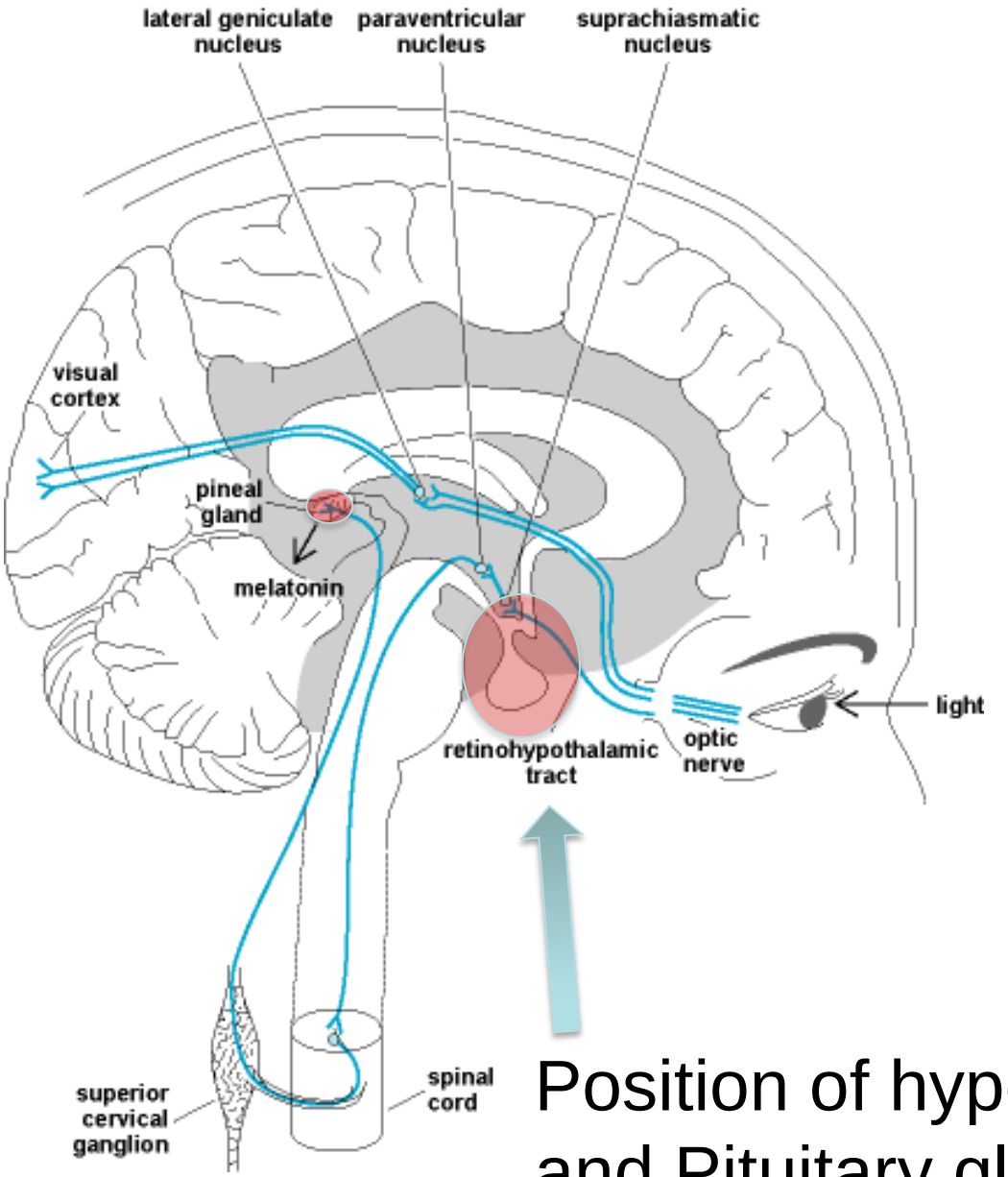


Bateman et al SRR 2013

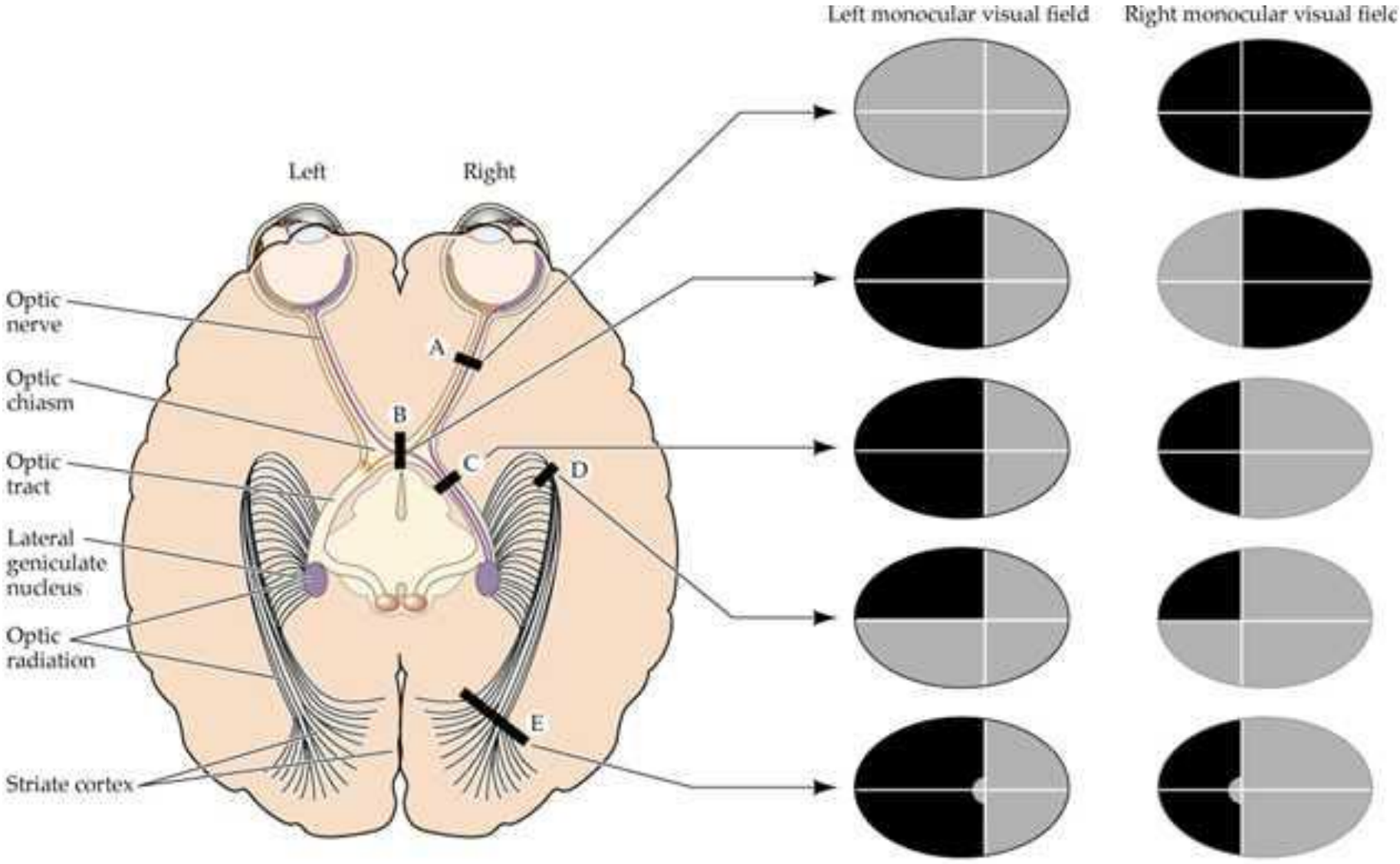
Statement of Fitness for Work

A guide for hospital doctors

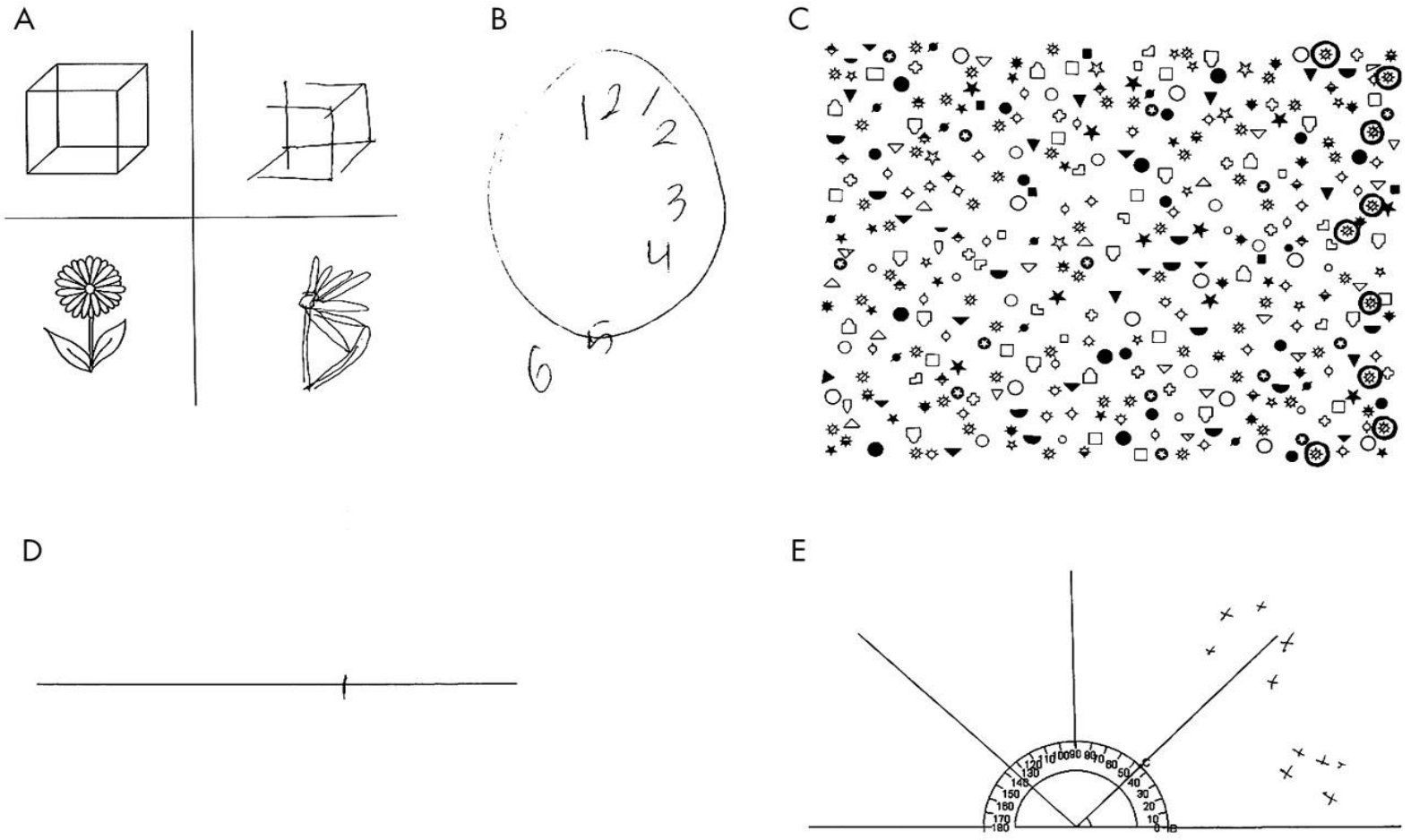
DWP Department for Work and Pensions



Position of hypothalamus and Pituitary gland

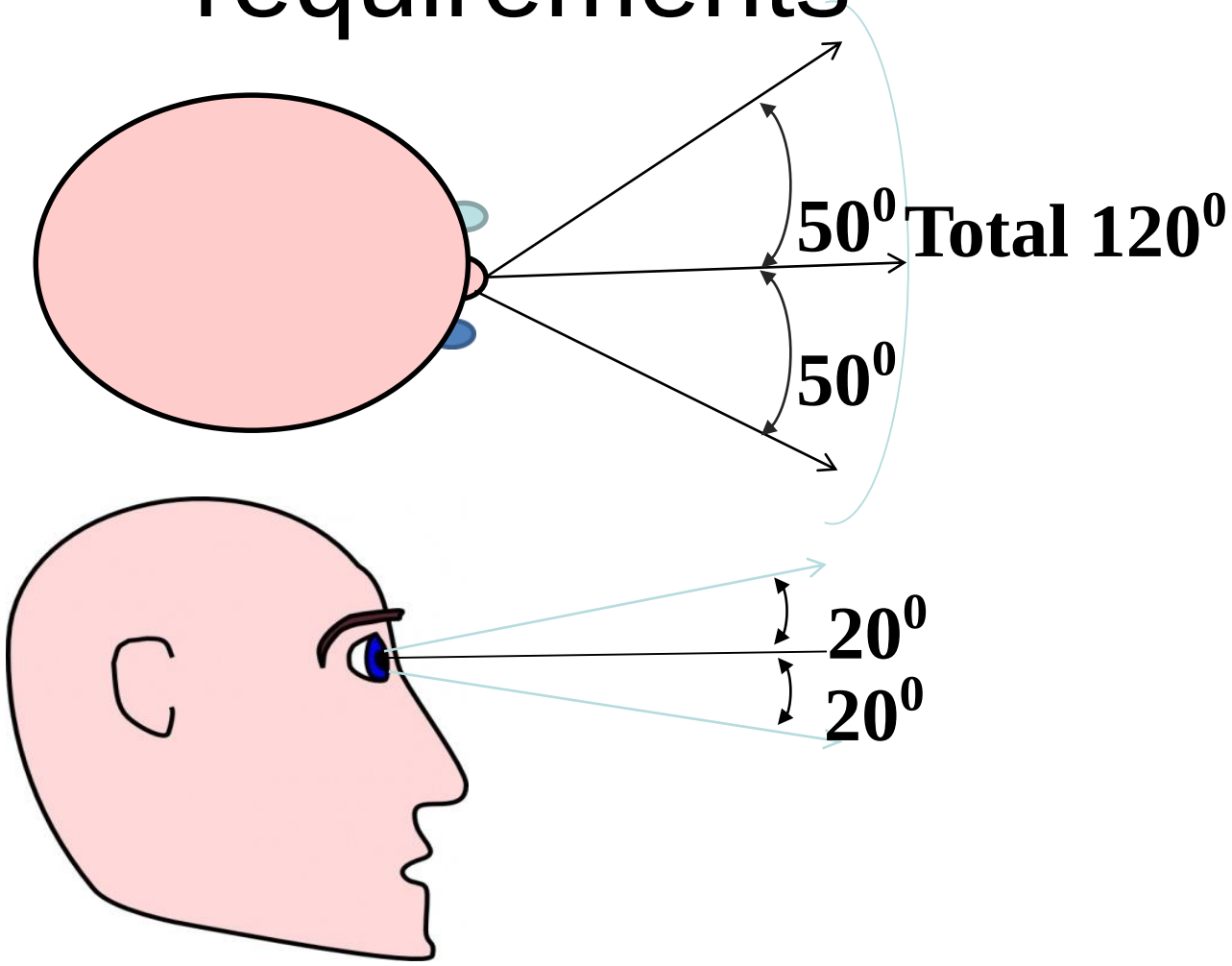

Left monocular visual field
Right monocular visual field
Left
Right
Optic nerve
Optic chiasm
Optic tract
Lateral geniculate nucleus
Optic radiation
Striate cortex
A
B
C
D
E

Typically, right hemisphere patients with left neglect omit elements to their left when copying simple objects (A), drawing a clock face (B), and cancelling targets among distractors (C).



Parton A et al. J Neurol Neurosurg Psychiatry 2004;75:13-21

DVLA Visual field requirements



Existing Guidelines and Evidence to support set up of rehabilitation Services in the eoe.

NICE

British Society for Rehabilitation Medicine

NSF-Quality Requirements 1- 5, 6

Cochrane Review

Voc Rehab for LT(Neurological)C

EHIG review

NSF LTC; Quality requirement 1: A person centered service

AIM

To support people with long-term neurological conditions in managing their condition, maintaining independence and achieving the best possible quality of life through an integrated process of education, information sharing, assessment, care planning and service delivery.

QUALITY REQUIREMENT

.People with longterm neurological conditions are offered integrated assessment and planning of their health and social care needs. They are to have the information they need to make informed decisions about their care and treatment and, where appropriate, to support them to manage their condition

COCHRANE review; Multi-disciplinary rehabilitation for acquired brain injury in adults of working age (Review)

Turner-Stokes L, Nair A, Sedki I, Disler PB, Wade DT

- 16 RCT up to 2008 found – 11 good quality
- Mild ABI; 'strong evidence' a good recovery with provision of appropriate information, without additional specific intervention.
- **Mod - Sev, there was 'strong evidence' of benefit from formal intervention.**
- **Strong evidence that more intensive programmes are associated with earlier functional gains, and**
- **Moderate evidence that continued outpatient therapy could help to sustain gains made in early post acute phase**

limited evidence' suggests that …specialist multi-disciplinary community rehabilitation may provide additional functional gains,

- *"but the studies serve to highlight the particular practical and ethical restraints on randomisation of severely affected individuals for whom there are no realistic alternatives to specialist intervention."*

Findings

- 13 studies between 1990 and 2008, severe ABI
- 2 RCT
- 5 controlled comparative
- 6 uncontrolled longitudinal
- Led to
  - Reduced psychological problems
  - Increased community integration
  - Increase in employment
- Lasting effects

Does rehab work?

Reduces problems
Reduces care need
Increases participation
Improves mood
Cost effective

‘The more I learn, the more I understand. The more I understand the better I can cope and deal with what is happening inside my head.’
- ‘How physical manifestations are governed by what the brain does - not at all clear to me prior.’
- ‘understanding brain injury’
- ‘how different brain injuries are affecting other people’

The most helpful thing learnt was –
‘The informal but structured approach of each session.’
‘Knowing that I'm not alone - I was beginning to feel isolated.’
‘how important the brain is - never realised how much it had to do’
‘meeting the other people’

Overall feeling about the group -
- ‘Exceptionally worthwhile and exceeded my expectations.’

Clients feedback after 9 sessions of Brain injury Information group in ECHIS

MRC Cognition and Brain Sciences Unit

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Cambridge University Hospitals NHS Foundation Trust

Evelyn Trust; EHIG ; Welcome Trust; NIHR;

–Professor John Pickard
–Srivas Chenu
–Guy Williams
–Paola Finoa
–Evelyn Kamau
–Victoria Lupson (Wolfson Brain Imaging Centre)
–Professor David Menon (NCCU)
–Stuart Fuller – CRF and team ; Clinical Research facility

UK
–MRC Cognition and Brain Sciences Unit, Cambridge,
–Dr. Tristan A. Bekinschtein

–*James McDonnell Foundation funded collaboration;*

–Coma Science Group, GIGA Institute, University of Liege, Belgium
–Dr. Steven Laureys and team
–Weill/Cornell Medical College, New York
–Prof. Nicholas Schiff and team
–Spaulding Rehab Unit, Harvard, Boston
–Prof. Jo Giacino and team
–Brain and Mind Institute, University of Western Ontario, Canada
–Prof. Adrian M. Owen/ Damian Cruse

Evelyn Trust – R Ross Russell, B Pike

EHIG/CUH – J Pickard, P Hutchinson, H Seeley,

OZC – A Bateman,D Malley, F Gracey,C Keohane,

Headway – A Gardner, M Goode, J Tasker, A Everett

CUH – S Kirker, K Haynes, L Ashelford, C Harkin, C Maimaris, F Anwar

Colman - K McGlashan and L Sherman

CHIS – A Tyerman, N King,

BSRM – L Turner-Stokes, B Chandler

SHA – C Young, S Knighton

CCC – C Bruin, G Sherlock, B Cassey, L Mynott, C Dix

Users and families

ECHIS -K Psaila, S Moss, C Moffe

CCG – H Brown, C Humphris, S Jestice, S Sh