# Building Good Rehabilitation by Design

## A story of collaboration and co-design




# Who are the clients?

- Adults with a moderate to severe Traumatic Brain Injury
- Inpatient residential rehabilitation
- Specialist neurological
- Acute or community admissions

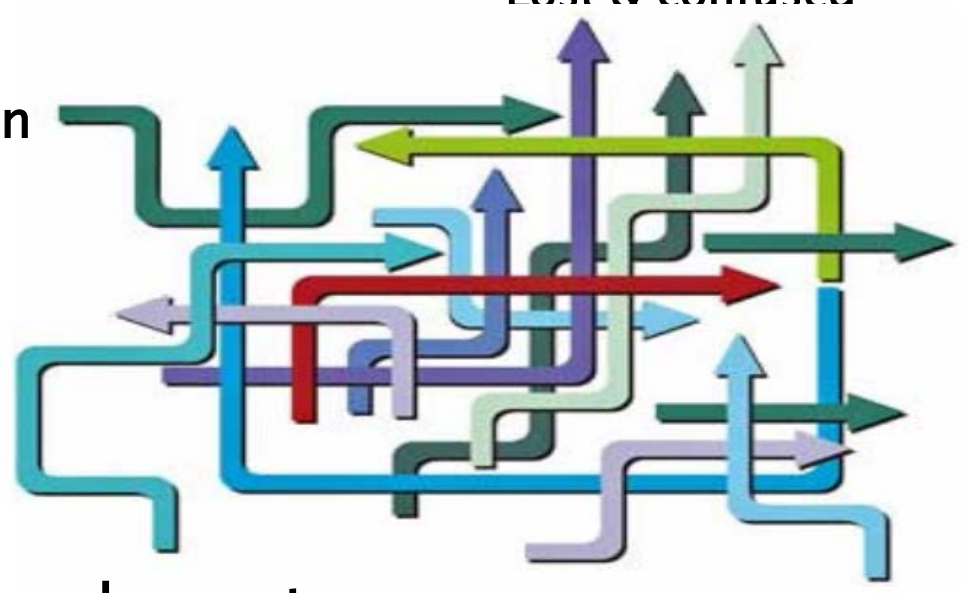
# LEVERAGING INFORMATION TO CREATE A NATION-WIDE PATHWAY FOR TRAUMATIC BRAIN INJURY

Carol Krishnan
Category Advisor
Provider Services Delivery
ACC

# Clients said

Lost & confused

Poor information



Too little too late

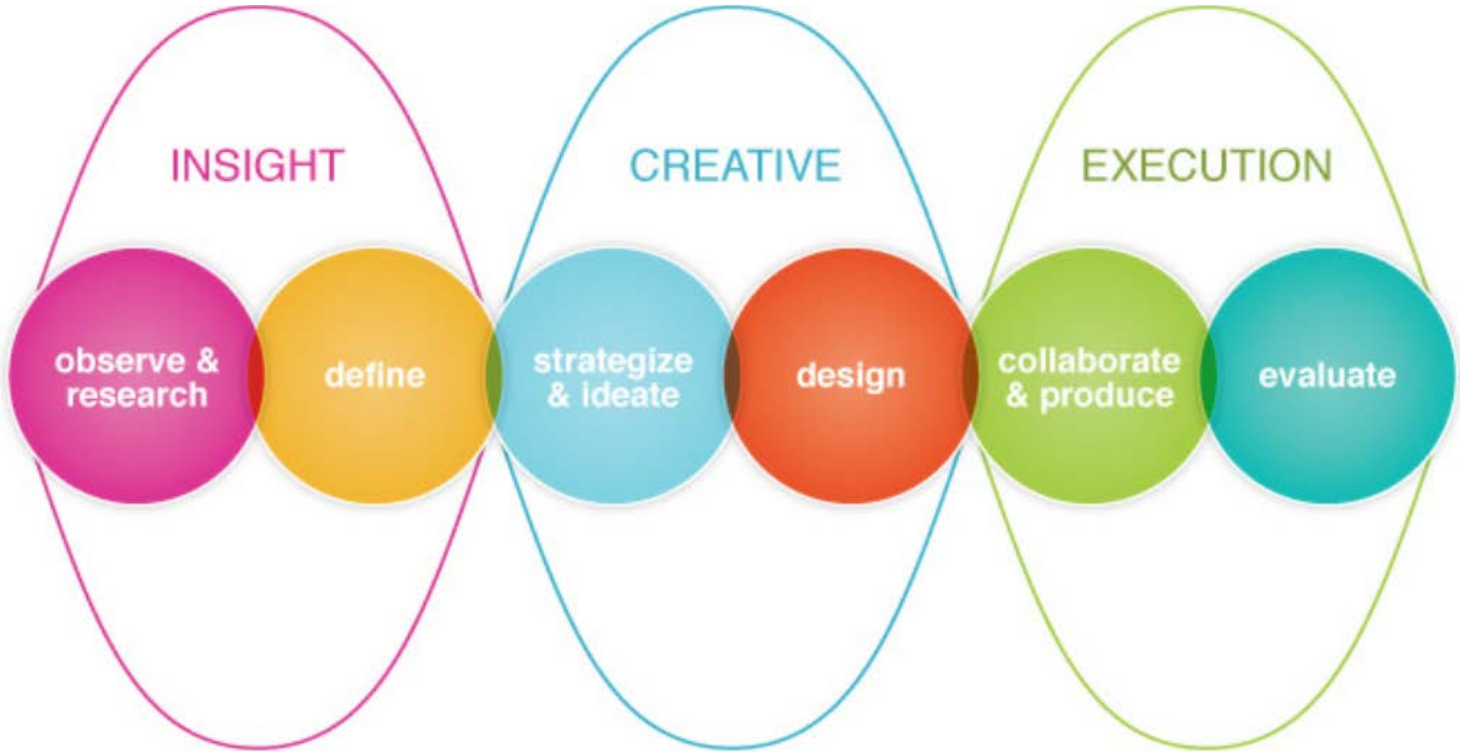
Complex system

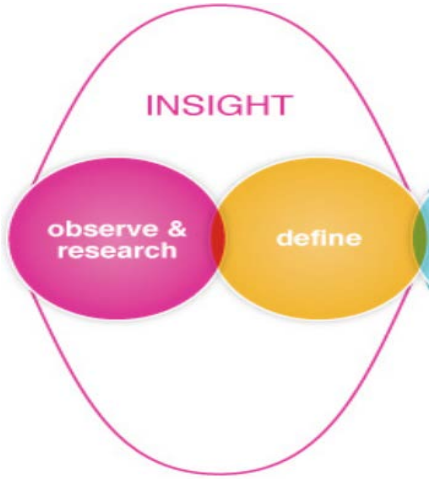
Unsupported

# Collaborative Co-design

- Respect
- Discussion & disagree
- Don’t assume
- Agreed goals and values
- Perspective
- Facts

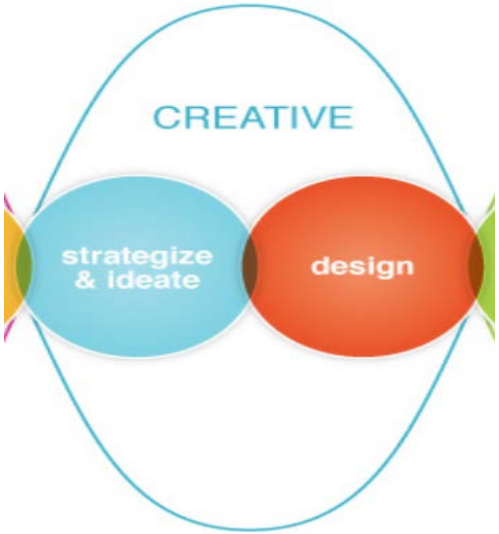
# Service Design Process






# What were the problems?

- Transition
- ACC
- Knowledge, skills and experience
- Focus
- Injured person only
- Information
- Approach
- Quality




# Design Solutions

- ✓ Early Cover
- ✓ Supported Transitions
- ✓ New services
- ✓ Focus on quality – AROC
- ✓ Improved data
- ✓ Improved coordination & administration


# Implement & Refine

- Tender
- Refinement
- Implementation
- Stakeholder satisfaction
- Post implementation review
- Continuous improvement


# Is anyone better off?

- Satisfaction surveys
  - Client and family experience
  - DHB acute suppliers
  - ACC case owners
  - Community suppliers
- Shorter transitions
- Length of Stay
- FIM gain 28 (AROC average)

# In conclusion

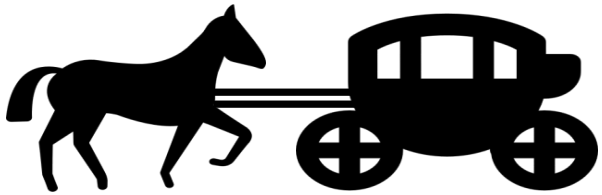
- Moderate to severe traumatic brain injury
- Extensive research
- Collaborative service design
- Trusting relationships
- Open tender
- Data, data, data
- On going refinement

# DEVELOPING A NEEDS-BASED SYSTEM OF FUNDING TRAUMATIC BRAIN INJURY REHABILITATION

Tony Young
National Director of Rehabilitation
ABI Rehabilitation

# Importance of getting it Right

# Contract lead



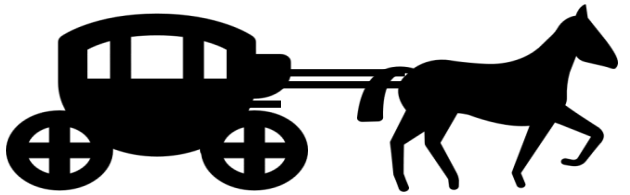
Large portion of decision making with case owner

Approvals requiring to go through decision making process

Prescriptive Input

Little to no flexibility

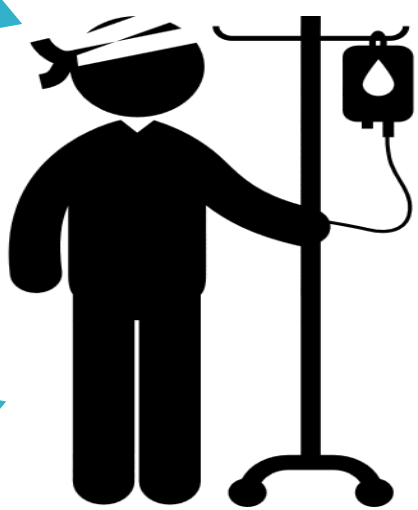
# Client focussed



Clear pathway

Inputs based on best practice & need

Family Engagement



Options available

Clinicians making clinical decision re pathway

Prior approval

ACC lead workshop with providers & DHB members


Prof Lynne Turner-Stokes
Prof Richard Siegert
Dr Allison Foster
Lindsey Lawton

# Development Process

# Funding Model– Key Components

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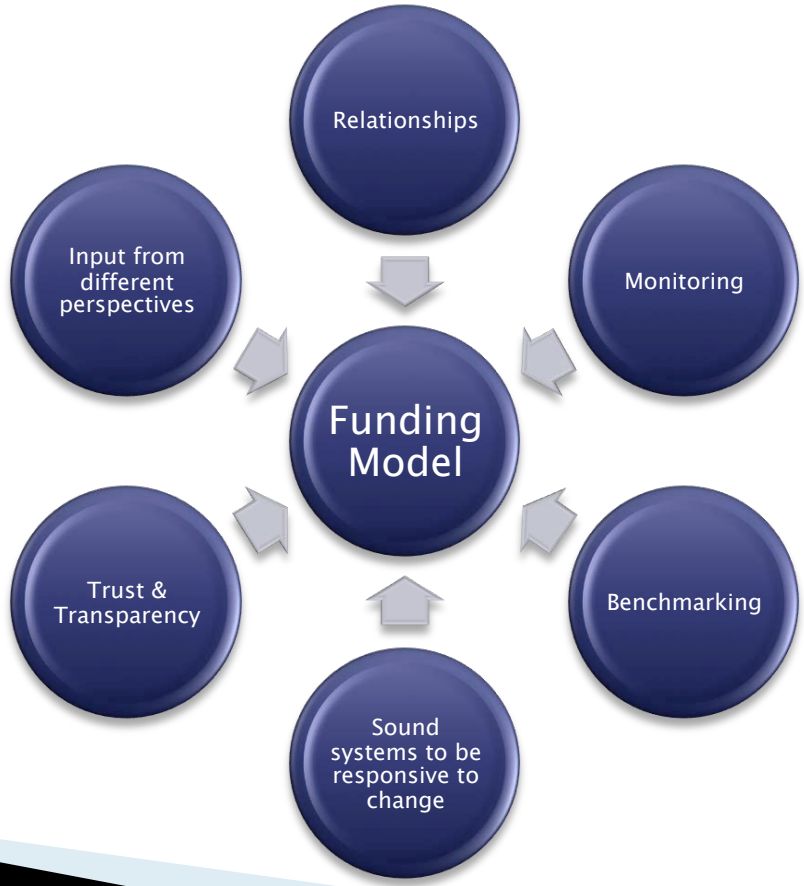

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Working party formed

Prof Lynne Turner-Stokes
Prof Richard Siegert
Dr Allison Foster
Lindsey Lawton

Proposal written

# Development Process

# Option 1: Bulk funding

- Agreed staffing levels and profit
  - Retrospective reconciliation at agreed intervals
- Improved forecasting and budget setting
- Reduced providers/case manager queries
- No weekly cost measures

→Greater safety net for providers

# Option 2: Service Needs Profiling

- Associated cost linked closer to client
- Enables a clearer representation of inputs
  - What funders are paying for

Needed to be

- Validated tool
- Internationally accepted
- Road tested
- Comparable to the NZ environment

# Option 2: Rehabilitation Complexity Scale (RCS)

- Developed at Kings College & Northwick Park Rehabilitation Unit
- Extensively tested at 49 UK rehab units
- Validated assessment tool; concise and convenient
- Used in daily practice to set the pricing-points for a number of UK rehab contracts
- 4 years of NZ RCS data was available


Turner-Stokes, L. (2007). Payment by Results: developing case-mix classification for rehabilitation; A UK update. *Conference presentation.*

Turner-Stokes, L. (2008). Evidence for the effectiveness of multi-disciplinary rehabilitation following acquired brain injury: a synthesis of two systematic approaches. *J Rehabil Med, 40*, 691-701.

Turner-Stokes, L., Disler, R., & Williams, H. (2007). The RCS: a simple, practical tool to identify 'complex specialised' services in neurological rehabilitation. *Clin Med, 7*, 593-9.

Turner-Stokes, L., Scott, H., Williams, H., & Siegert, R. (2012). The Rehabilitation Complexity Scale - extended version: detection of patients with highly complex needs. *Disabil Rehabil, 34*(9), 715-720.

Turner-Stokes, L., Sutch, S., & Dredge, R. (2011). Healthcare tariffs for specialist inpatient neurorehabilitation services: rationale and development of a UK casemix and costing methodology. *Clin Rehabil, 26*(3), 264-279.

Turner-Stokes, L., Sutch, S., Dredge, R., & Eagar, K. (2011). Inernational casemix and funding models: lessons for rehabilitation. *Clin Rehabil, 26*(3), 195-208.

Turner-Stokes, L., Williams, H., & Siegert, R. J. (2010). The RCS version 2: a clinimetric evaluation in patients with severe complex neurodisability. *J Neurol Neurosurg Psychiatry, 81*, 146-153.

ACC lead workshop with providers & DHB members

Working party formed

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Proposal written

Option chosen

# Development Process

# RCS Scoring

| Area of Complexity | Scoring |
|---|---|
| Care Needs | 0–3 |
| Nursing Needs | 0–3 |
| Number of Disciplines | 0–3 |
| Intensity of Therapy | 0–3 |
| Medical Needs | 0–3 |

| Converting RCS to a funding band | | | | |
|---|---|---|---|---|
| 0–3 | 4–6 | 7–9 | 10–12 | 13–15 |
| Very Low | Low | Moderate | High | Very High |

# Example of Cost Make-up

| | Funding Band | Variable Portion | Banding Factor | Non-Variable Portion | Banded Cost |
|---|---|---|---|---|---|
| Bed Rate $400 | Very Heavy | 75% Therefore in this example $300 | 1.9 | 25% | $670 |
| | Heavy | | 1.5 | | $550 |
| | Medium | | 1.0 | | $400 |
| | Light | | 0.75 | | $325 |
| | Very Light | | 0.5 | | $250 |

(Modified from Turner-Stokes, Sutch, & Dredge, 2011)

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- Dr Allison Foster
- Lindsey Lawton

Proposal written

Option chosen

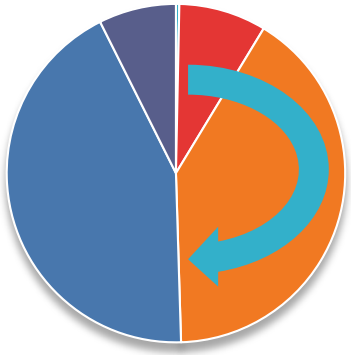
ABI's RCS data was analysed

# Development Process

# Using the RCS in practice

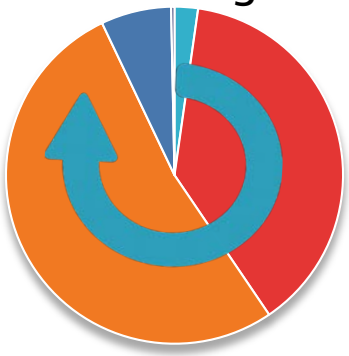
- Sensitive to change
  - Average Admission: 9.5 (Heavy)
  - Average Discharge: 6.9 (Low)

Admission



At admission, 50% of clients are medium or lower.

Discharge

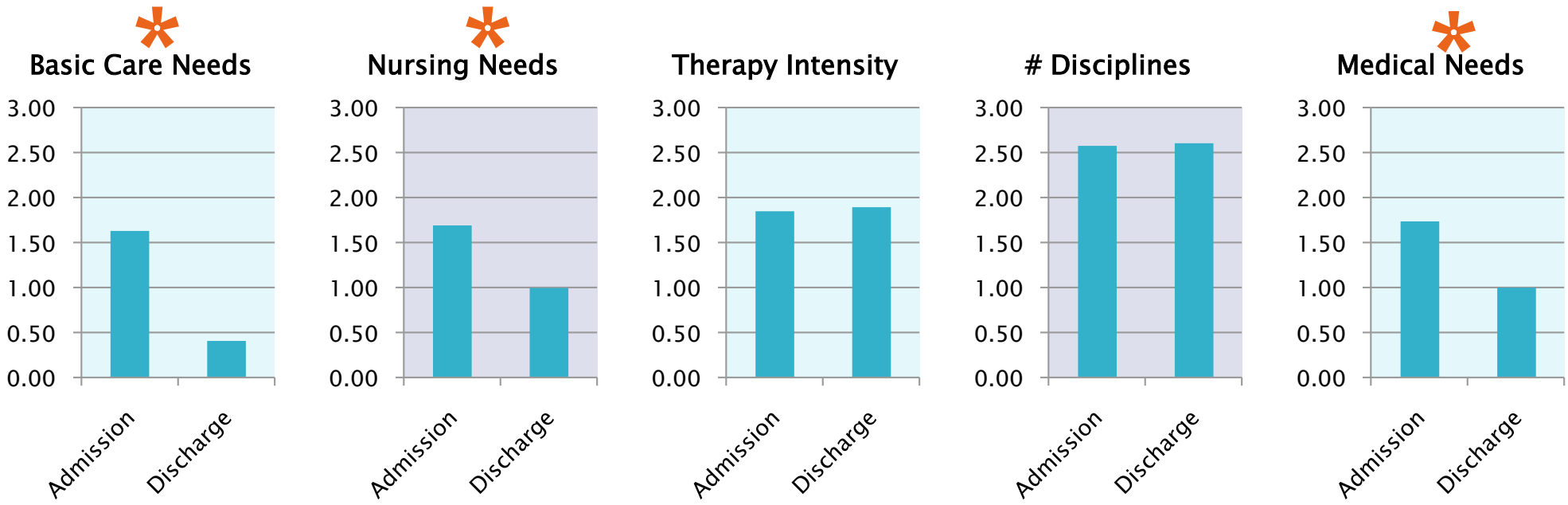




At discharge, 93% of clients are medium or lower.

N=311 with both Admission and Discharge RCS data. Data collected between 2008-2012 by ABI Rehabilitation.

# RCS changes are due to basic care, skilled nursing and medical needs

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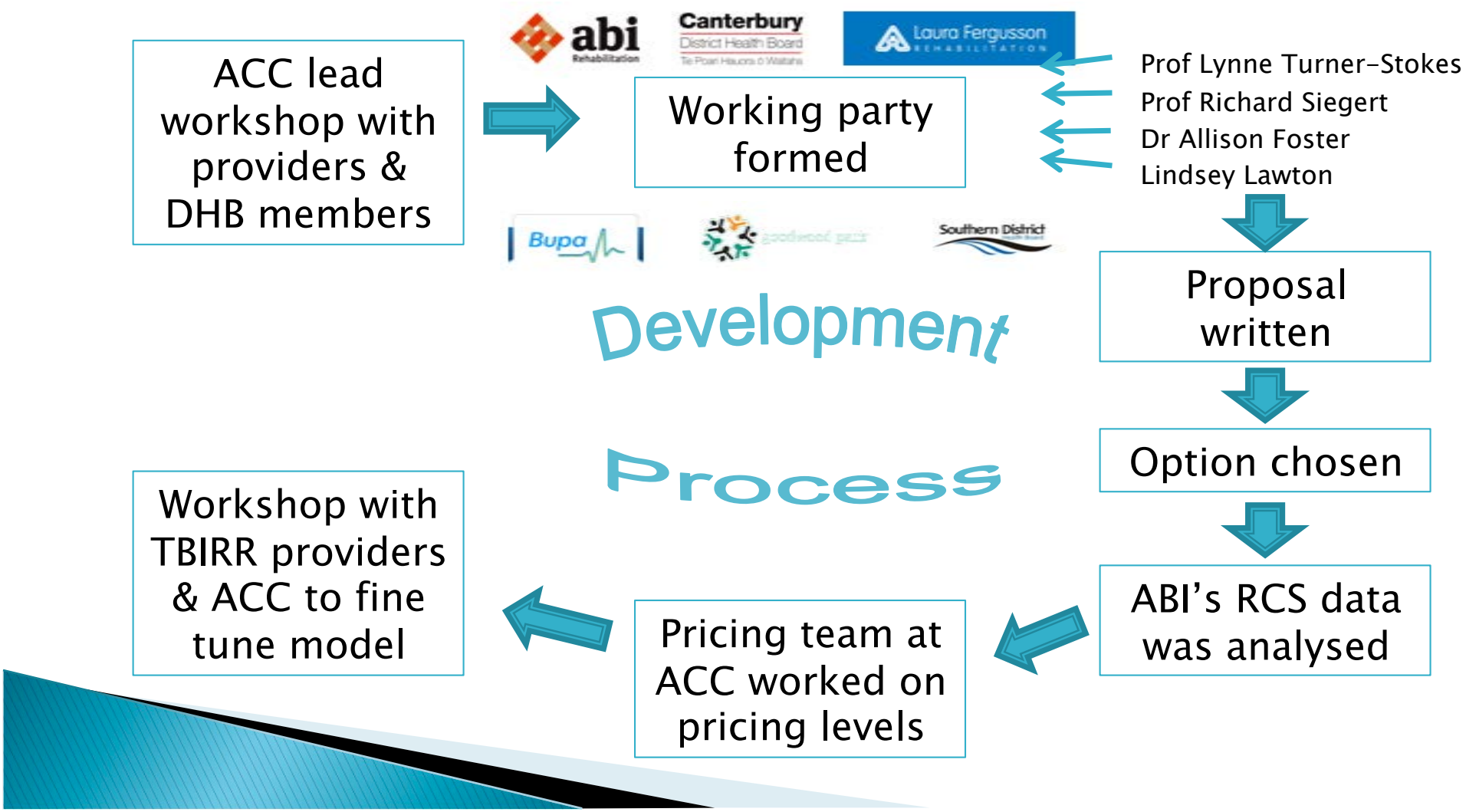
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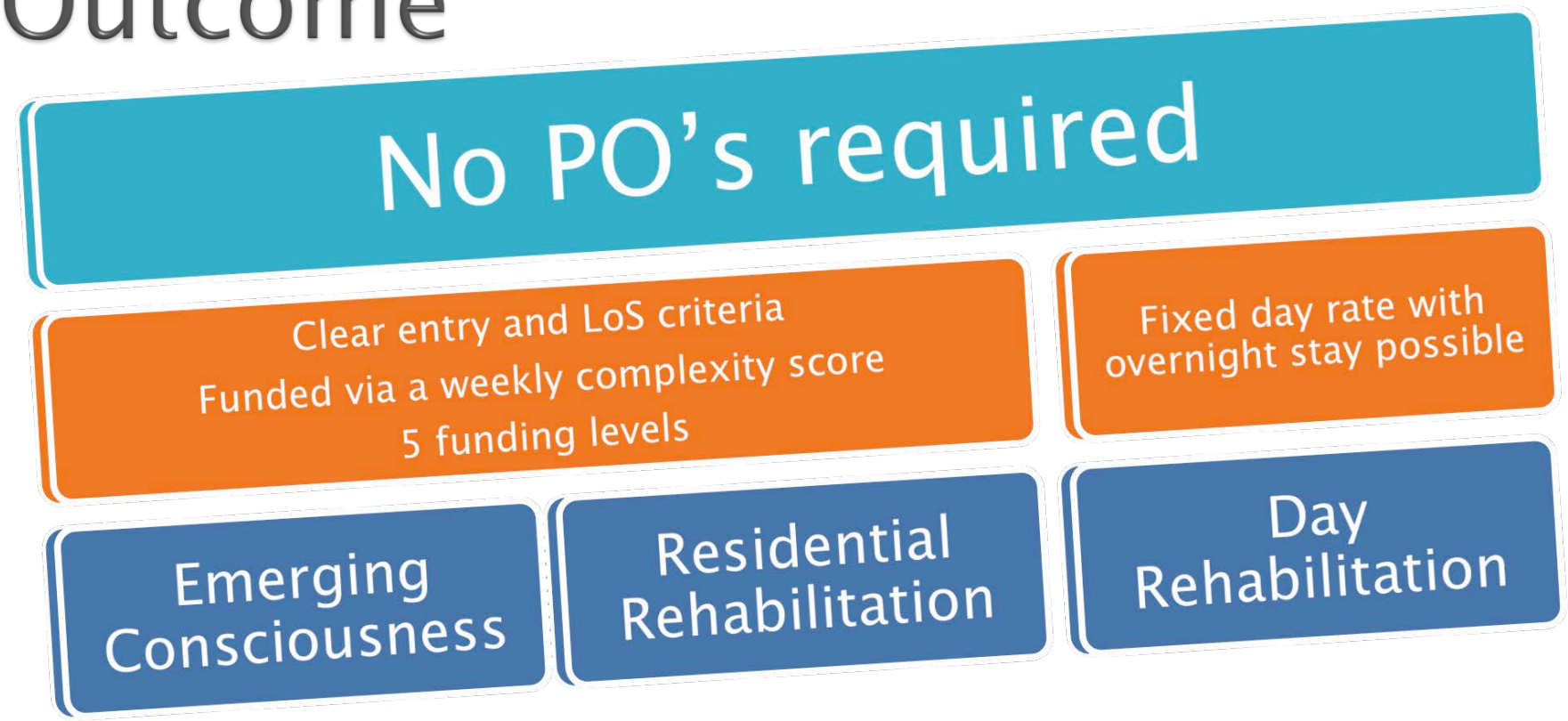
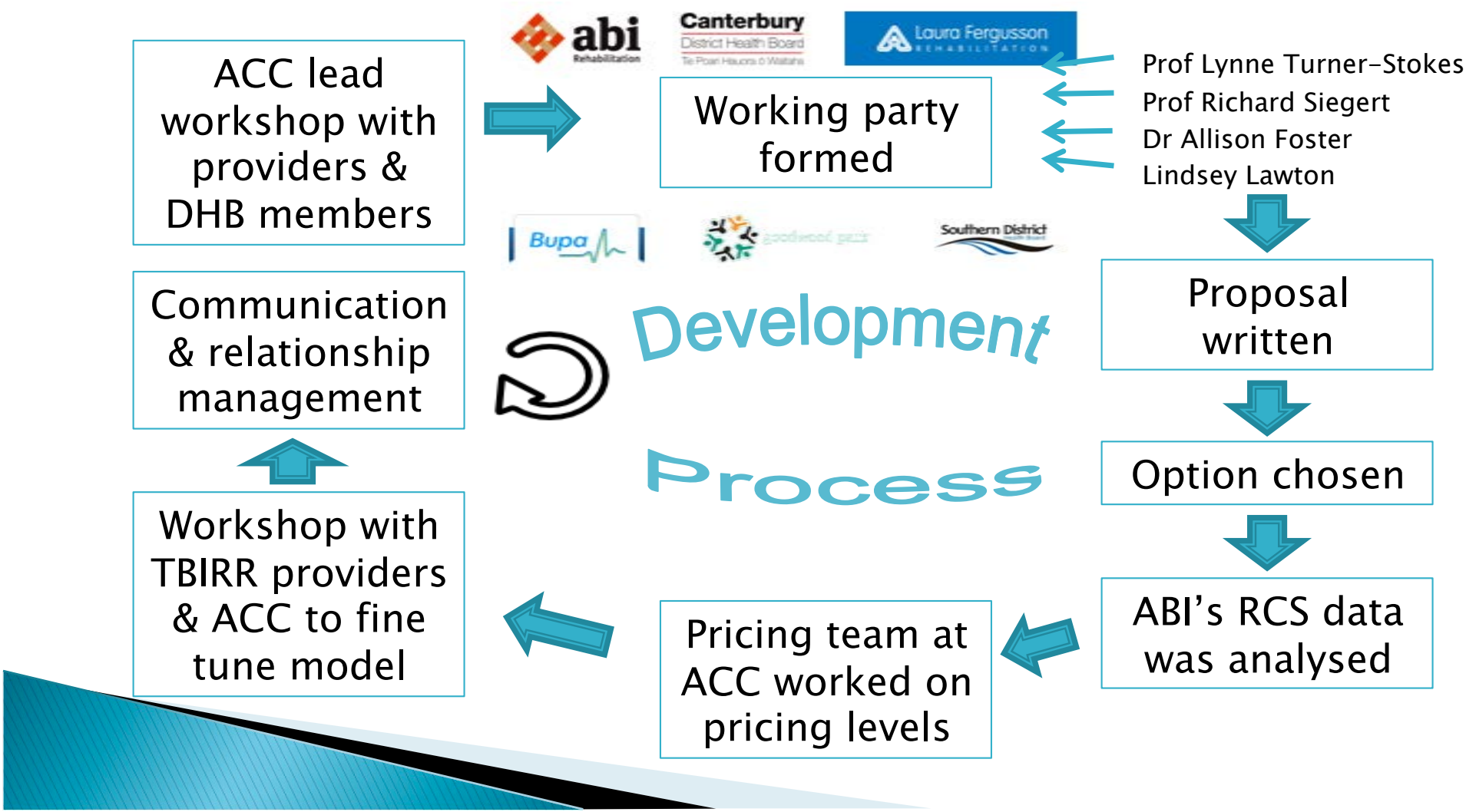
Option chosen
Process
ABI's RCS data was analysed
Pricing team at ACC worked on pricing levels
Workshop with TBIRR providers & ACC to fine tune model

# Outcome


No PO's required
Clear entry and LoS criteria
Funded via a weekly complexity score
5 funding levels
Fixed day rate with overnight stay possible
Emerging Consciousness
Residential Rehabilitation
Day Rehabilitation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Workshop with TBIRR providers & ACC to fine tune model
Communication & relationship management
Development Process

# Pros and Cons of this method

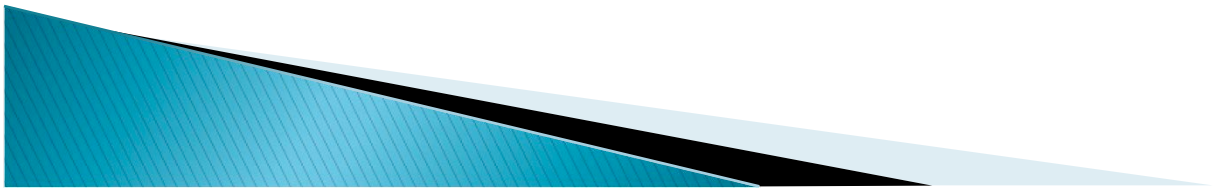
| PROS | CONS |
| --- | --- |
| Reduced access barriers | Weekly re-assessment |
| Incentivises high intensity | Need for continued monitoring/ audits |
| Compensates for high complexity | Does not address occupancy issues |
| Cost/reimbursement correlation | Unable to adjust fixed costs when required |
| Builds trust via increased transparency | Budgeting challenges |
| Improved documentation | May not address high costs if low scoring in other areas |

# OUTCOMES OF A NATIONALLY-CONSISTENT SYSTEM FOR TRAUMATIC BRAIN INJURY REHABILITATION

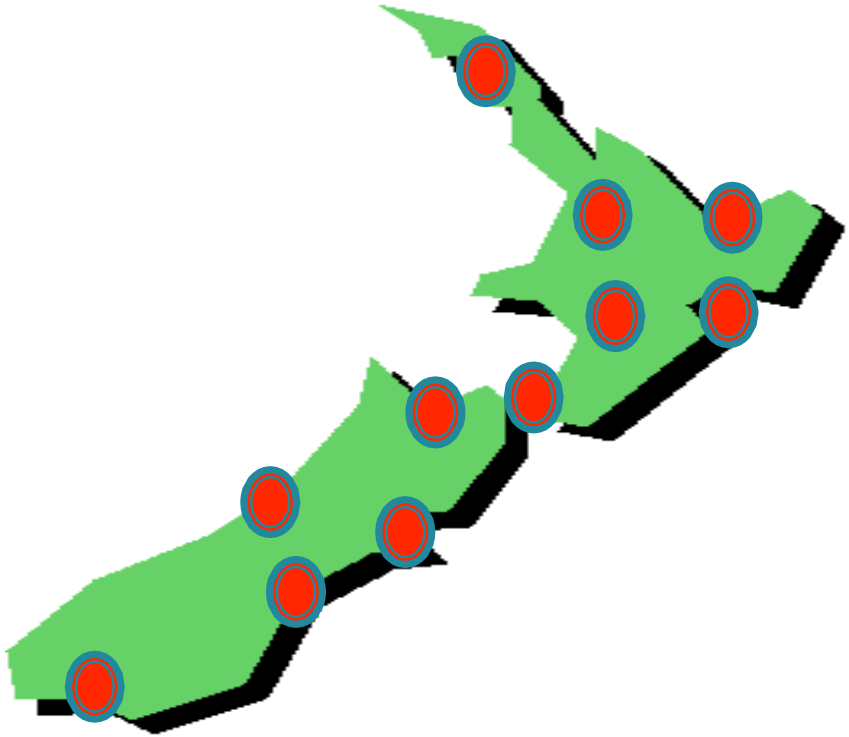
Katie Hodge
Director of Rehabilitation
Laura Fergusson Trust Canterbury
Toni Auchinvole
Rehabilitation Consultant
Southern DHB ISIS Unit

# Background and Aim

- Multiple providers
- Data collection inconsistent
- Comparing a challenge
- Nationally consistent system



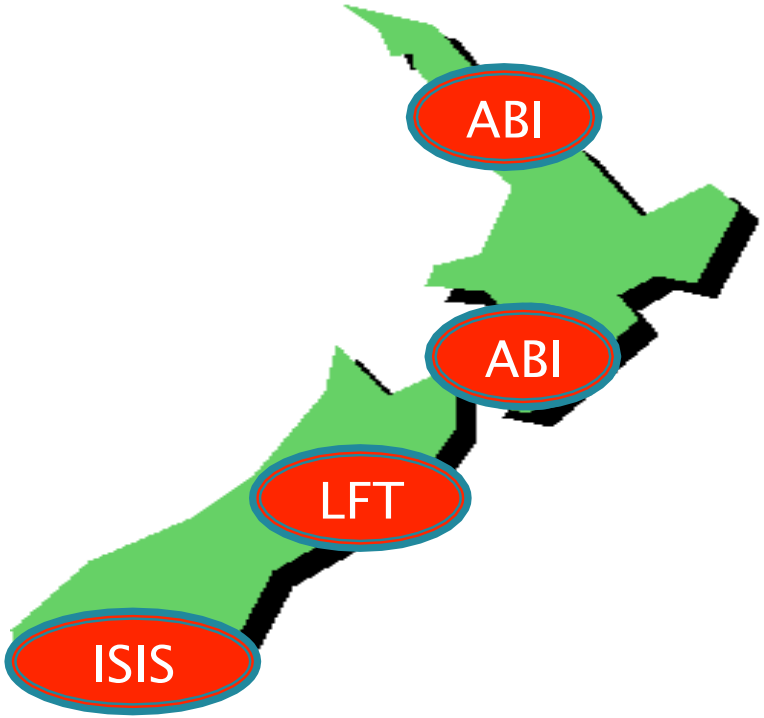
# In the past



# How this has changed

- New contract in April 2014
- Traumatic Brain Injury Residential Rehabilitation Service (TBIRR)
- Robust tender process
- 3 Suppliers awarded the contract

# Now we have



# Who we are

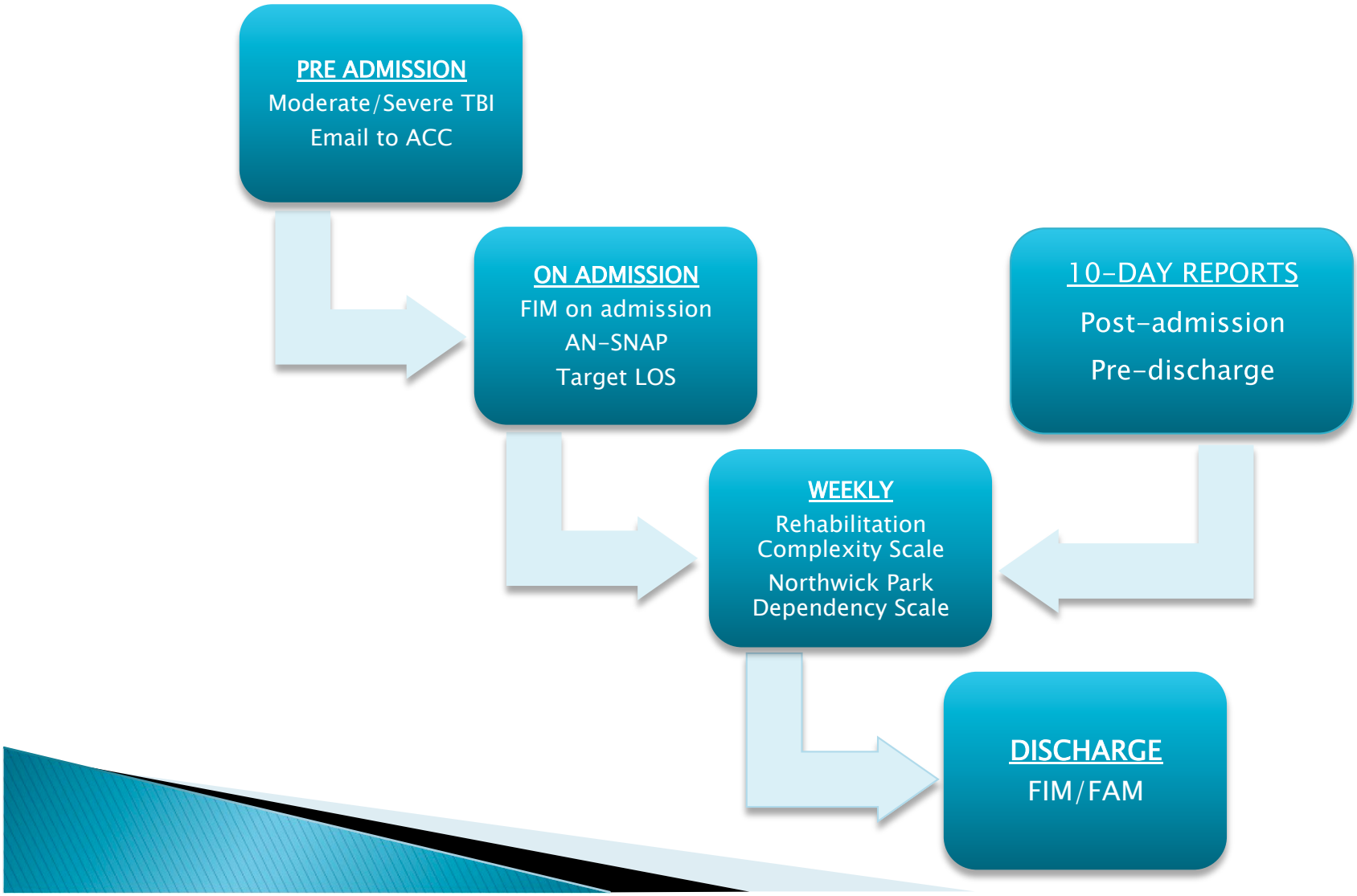
| District Health Boards | Trauma Centres | Supplier |
|---|---|---|
| Northland DHB<br>Waitemata DHB | Auckland DHB<br>(Auckland Hosp) – Neurology<br><br>Counties Manukau DHB<br>(Middlemore Hospital) – Orthopaedic & plastic (burns) | **ABI Rehabilitation**<br>- **Auckland**<br>- **Wellington** |
| Bay of Plenty<br>Lakes DHB<br>Tairawhiti DHB<br>Hawkes Bay DHB | Waikato DHB | |
| Taranaki DHB<br>Whanganui DHB<br>Midcentral DHB<br>Wairarapa DHB<br>Hutt DHB<br>Nelson Marlborough DHB | Capital and Coast DHB (Wellington Hospital) | |
| West Coast DHB<br>South Canterbury DHB | Canterbury DHB | **Laura Fergusson Trust - Christchurch** |
| Southern DHB | Southern DHB | **Southern DHB - ISIS Unit** |

# What makes us different?


ABI ISIS LFT

# How to capture the work!

- Providers agreed on nationally consistent expectations for:
  - Assessments
  - Outcome Measures
  - Timeline

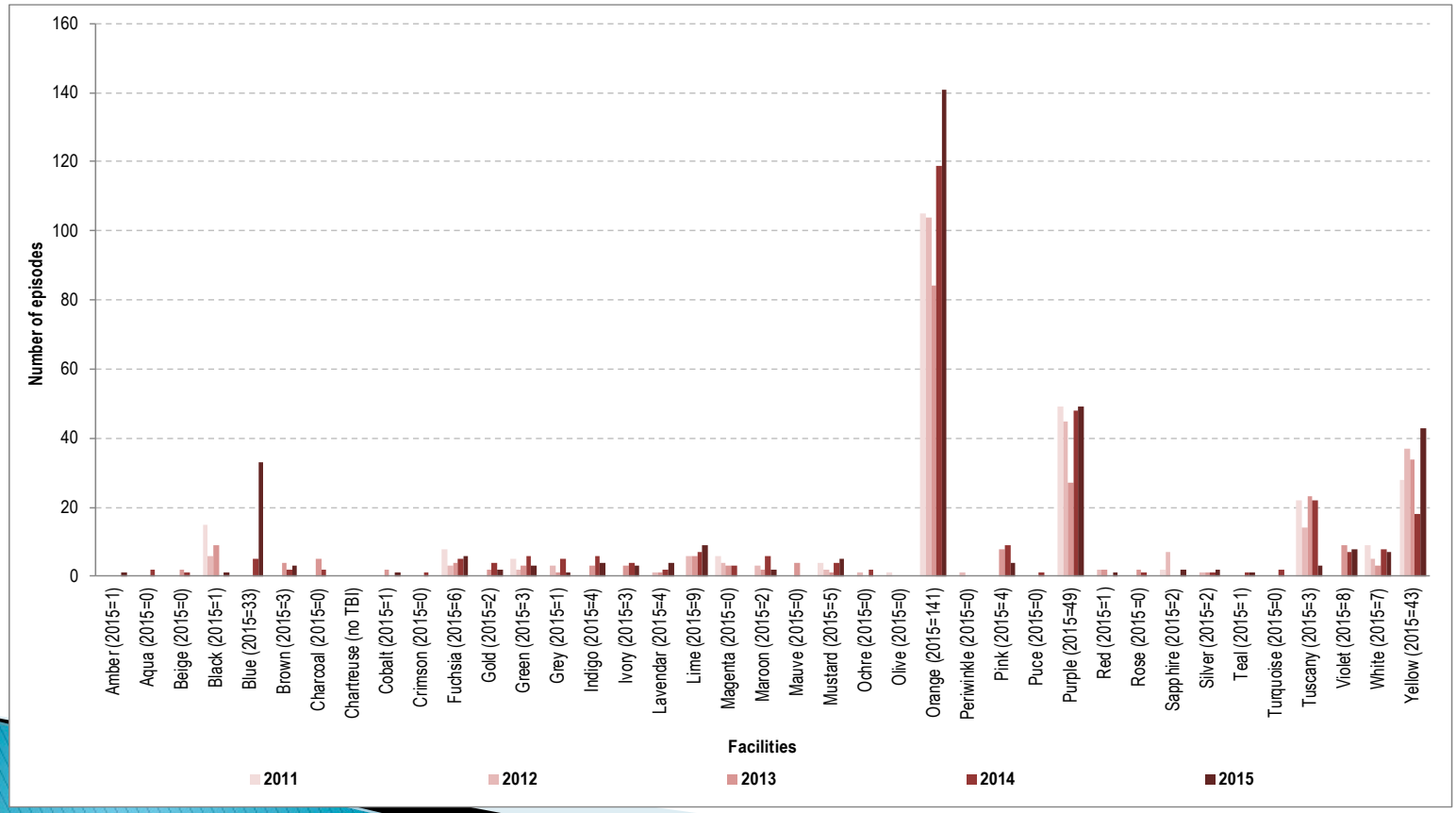

PRE ADMISSION
Moderate/Severe TBI
Email to ACC
ON ADMISSION
FIM on admission
AN-SNAP
Target LOS
10-DAY REPORTS
Post-admission
Pre-discharge
WEEKLY
Rehabilitation Complexity Scale
Northwick Park Dependency Scale
DISCHARGE
FIM/FAM

# Was it worth it ????

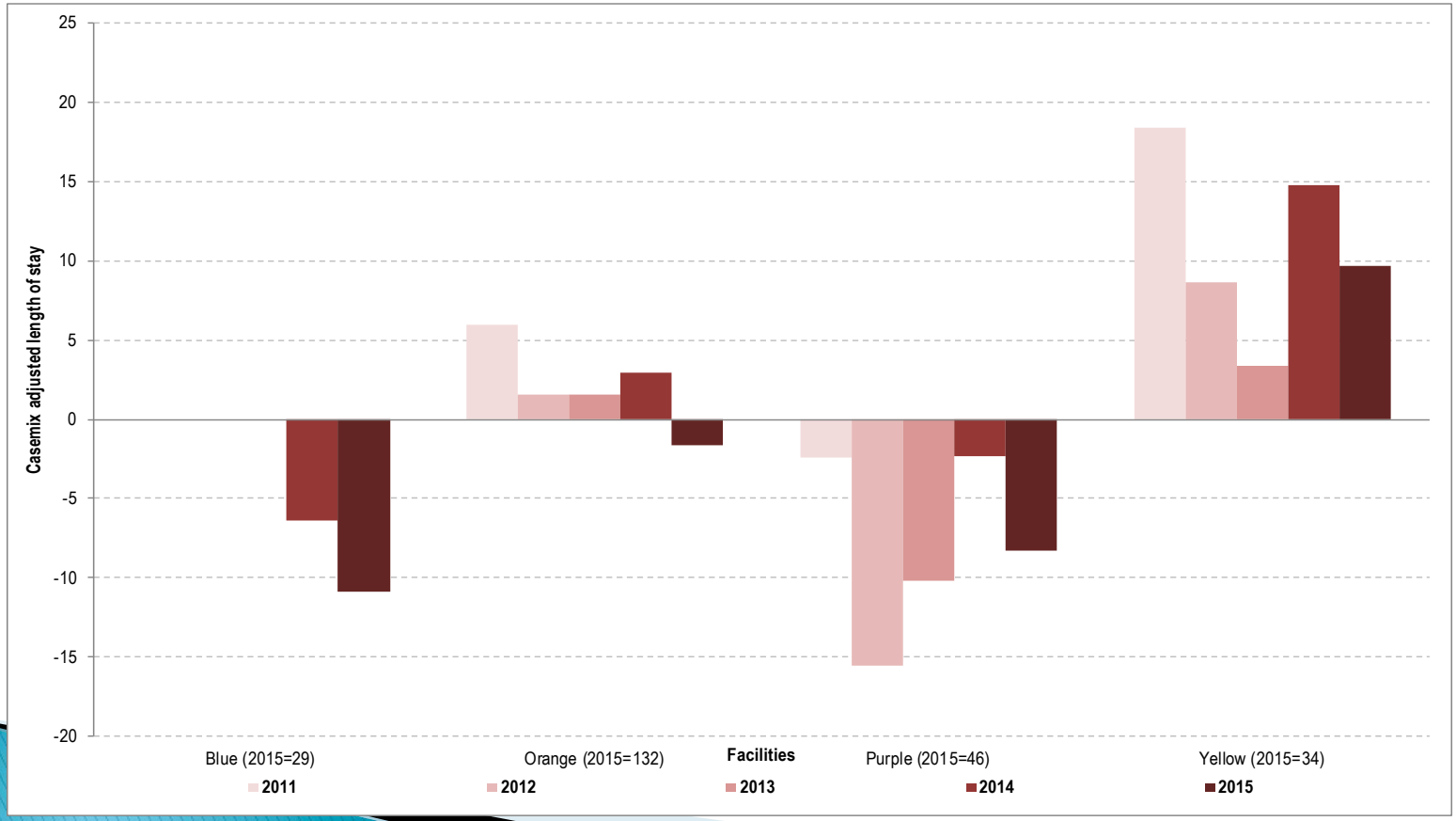
- All providers submit data to the Australasian Rehabilitation Outcomes Centre (AROC)

- Progressive utilization of Data
  - Optimal data collection
  - Focus rehabilitation plan
  - Estimated LOS from admission
  - Review of service provision

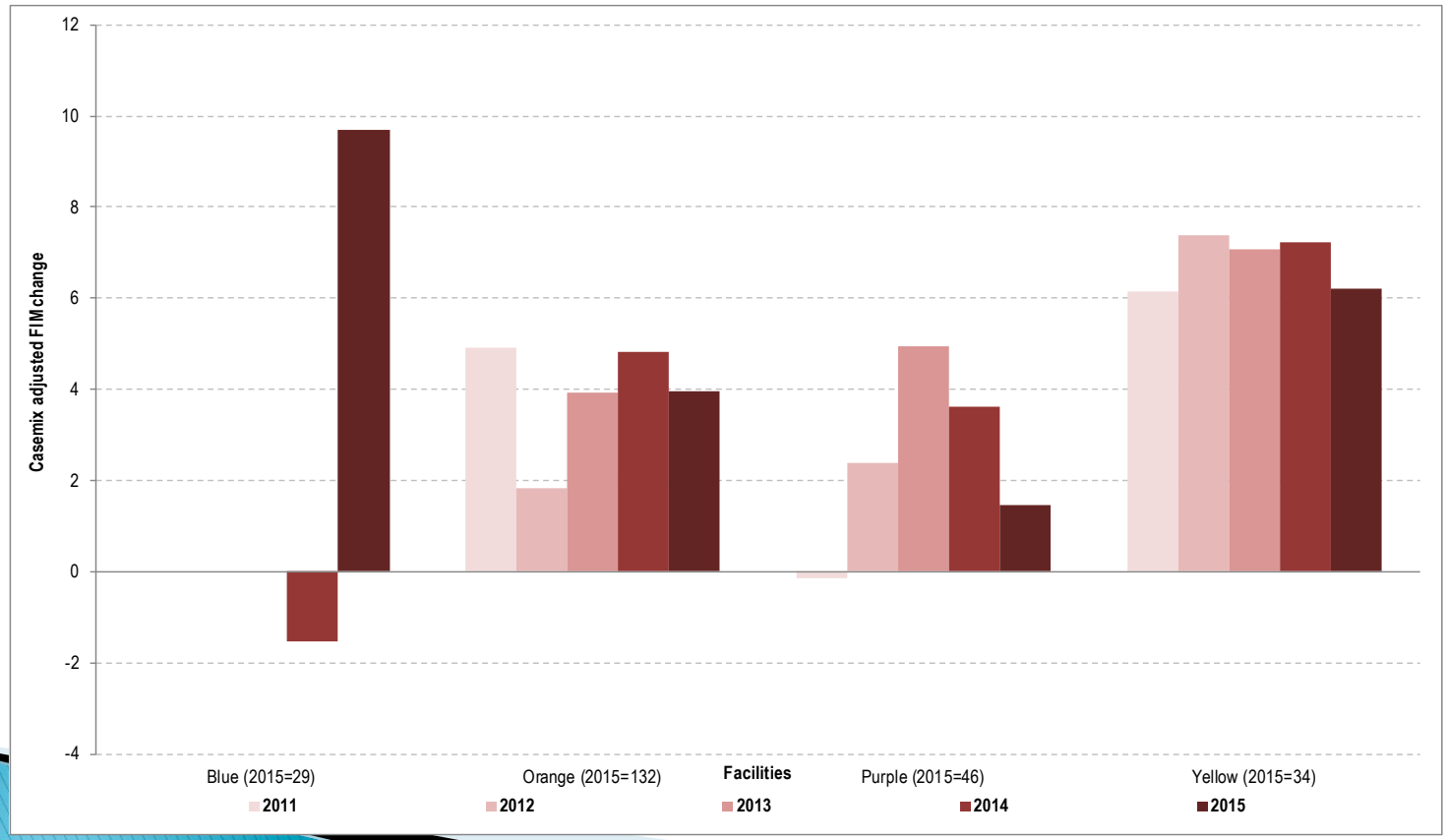
# Traumatic Brain Injury episodes by facility 2011 - 2015



# Casemix adjusted LOS, completed TBI episodes by facility 2011 - 2015



# Casemix adjusted FIM change, completed TBI episodes by facility 2011 - 2015



# How we measure the quality of the service

Family

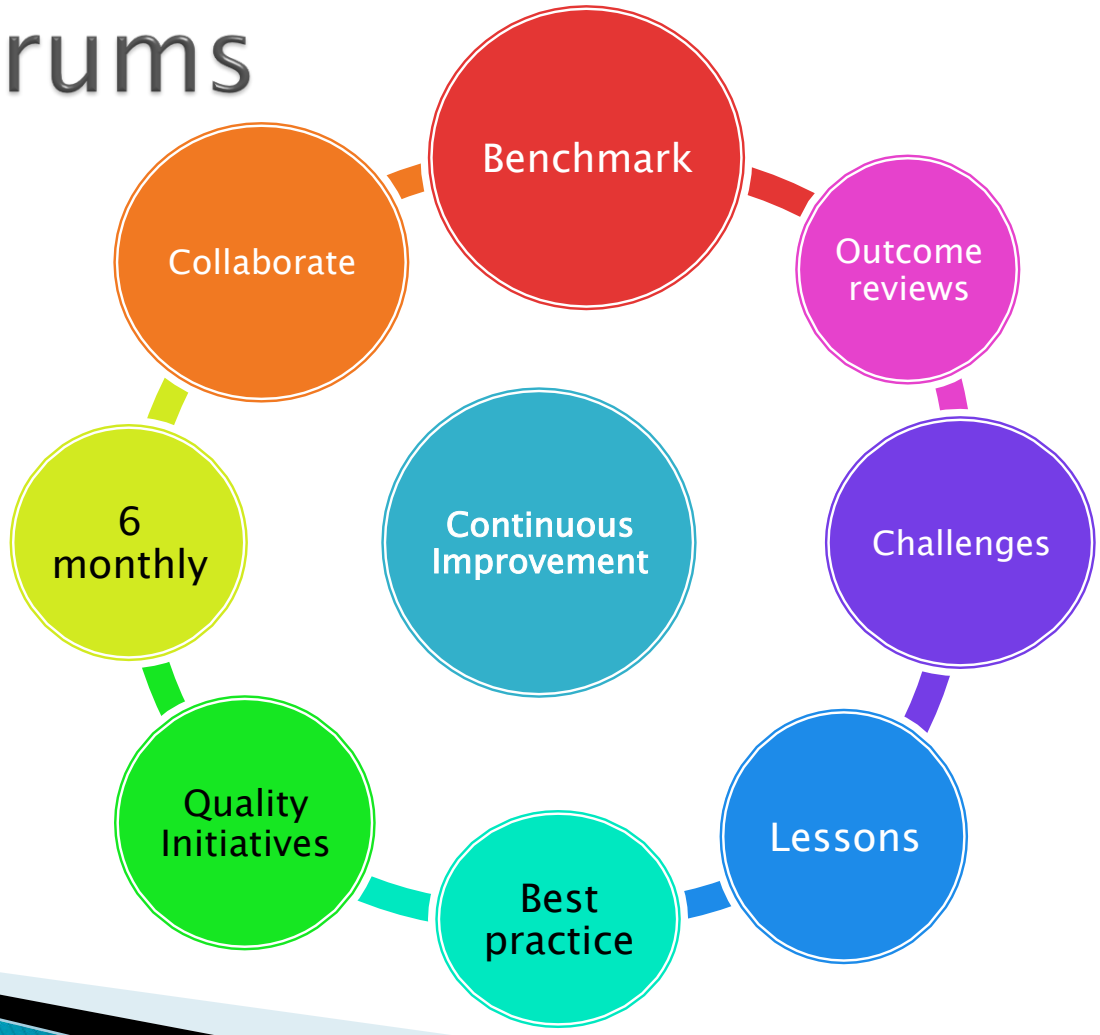
Client

Funder

Community Team

Home and Community Support Services

# Quality Forums

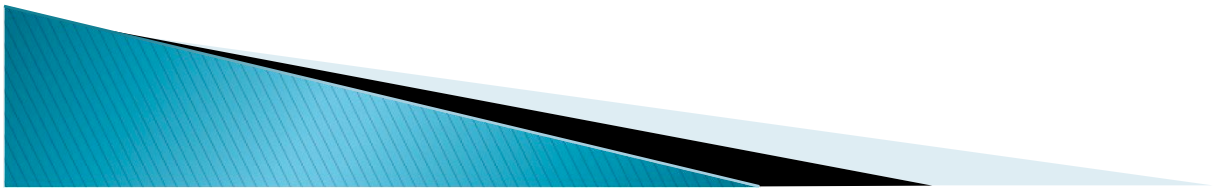


# Presentations to date

# Summing Up

Key points:

- Less providers
- Specialist services
- Consistent ways of measuring outcomes
- Benchmarking
- Quality improvements



# references


- Clin Med.2007 Dec;7(6):593-9. The Rehabilitation Complexity Scale: a simple, practical tool to identify 'complex specialised' services in neurological rehabilitation. Turner-Stokes et al
- J Neurol Neurosurg Psychiatry 2010 Feb;81(2):146-53. doi:10.1136/jnnp.2009.173716. Epub 2009 Jul 8. The Rehabilitation Complexity Scale version 2: a clinimetric evaluation in patients with severe complex neurodisability. Turner-Stokes et al