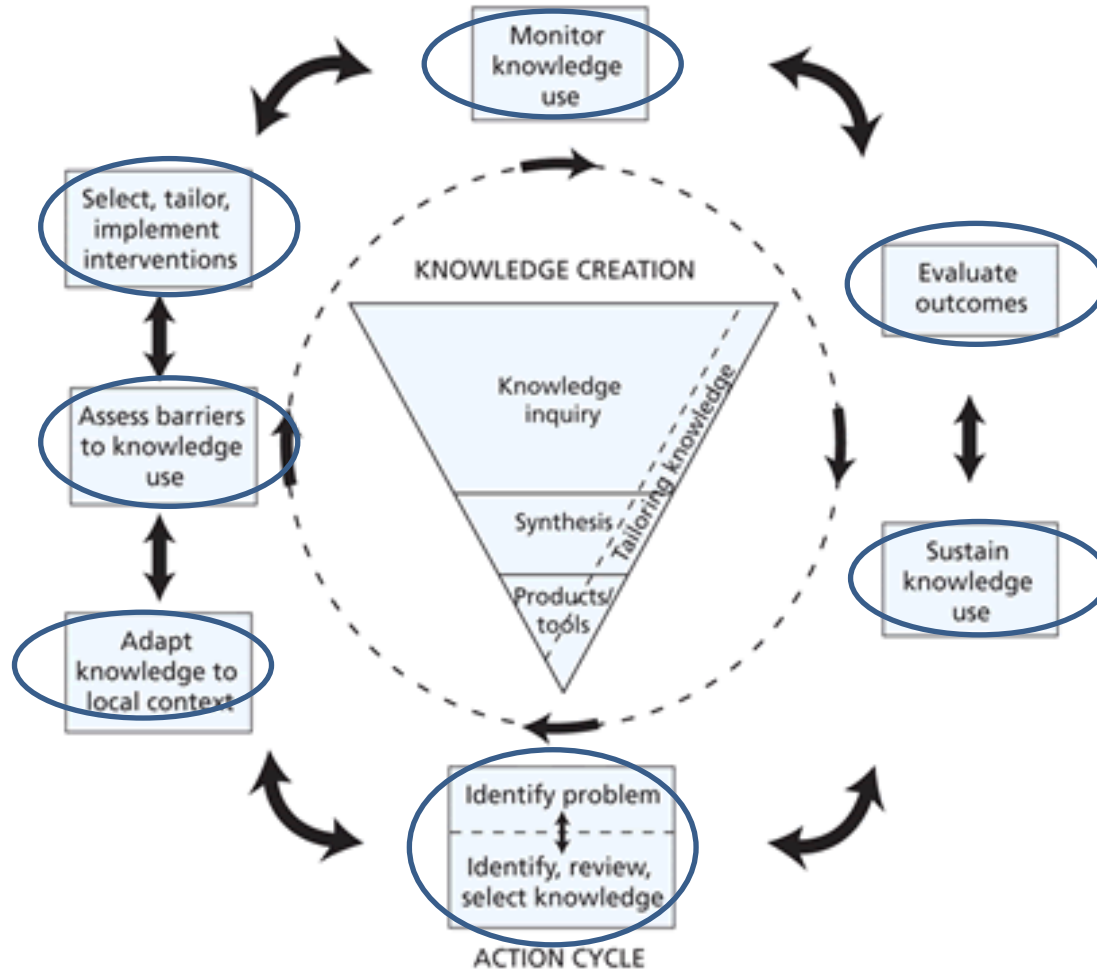# Independent computerised aphasia therapy at home:

Translating research evidence into clinical practice

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Knowledge to action process

Graham, I. D., Logan, J., Harrison, M. B., Straus, S. E., Tetroe, J., Caswell, W. and Robinson, N. (2006), Lost in knowledge translation: Time for a map?. J. Contin. Educ. Health Prof., 26: 13–24. doi: 10.1002/chp.47

Identifying the problem

- Issue
  - 1/3 people acquire aphasia post stroke but Speech & Language Therapy to improve language ability not often offered beyond first few months

  - Growing evidence that improvement can continue long term with therapy that is: **intensive**, **tailored**, **salient**. Stroke strategy (2007) recommends such intervention is continued **for as long as people benefit**.

  - Problem: Intensity of treatment required to achieve improvements in chronic phase would increase demands resources

- Recommended solution

  - 'Our Health Our Care Our Say' (2006) Prioritised **self management** for long term conditions using **technological innovations**.
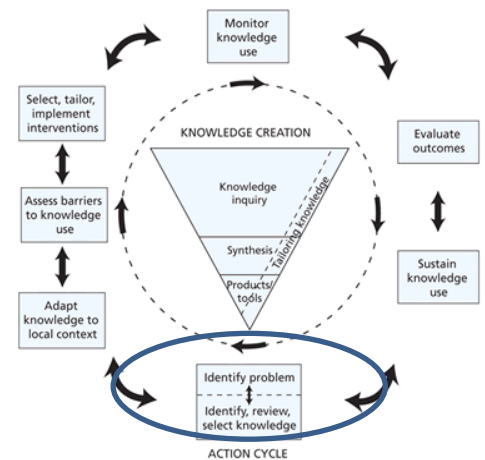
Knowledge: Intervention

Step by Step approach to treating long-term aphasia (Steps consulting Ltd)

- **light touch SLT** involvement (assessment and tailoring computer exercises)

- **computer supported self managed intensive practice** of word finding 20-30 minutes a day (Step by Step computer program)

- **Volunteer** guidance/encouragement and carryover activities
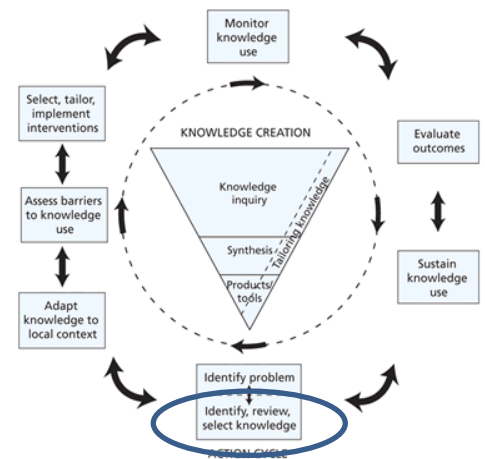
Pilot randomised control trial:

Cost effectiveness of aphasia computer therapy versus usual stimulation (CACTUS)

- Funded by NIHR Research for Patient Benefit programme (RfPB) (£179,000) 2009 – 2012

- 34 participants 6 months post stroke randomised to 5 months of usual stimulation or 5 months computer intervention

- Computer group improved naming by **19.8%** (ITT) more than control group 5 months from baseline (P=0.014, confidence interval 4.4% – 35.2%)

- Results indicate intervention is likely to be cost effective

- Interviews with participants suggest self managed intervention is acceptable

Adapt knowledge to local context, selecting tailoring and implementing intervention
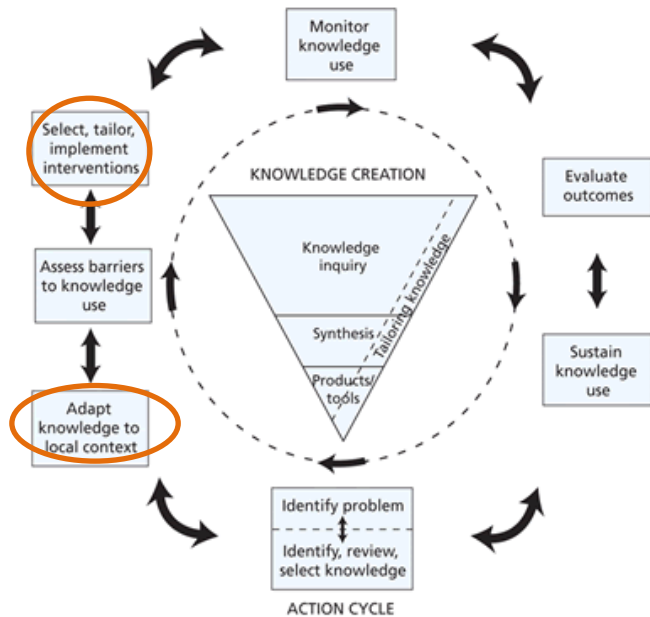
- Consultation with service manager and SLT stroke teams

- Use of more than one piece of software to address a wider range of needs (word finding, comprehension, reading and writing)

- Volunteers – recruiting through Sheffield Teaching Hospitals.

- When to provide?
  After 12 weeks of specialist
  stroke SLT in intermediate care →
  move towards self management
  3-4 months post stroke.
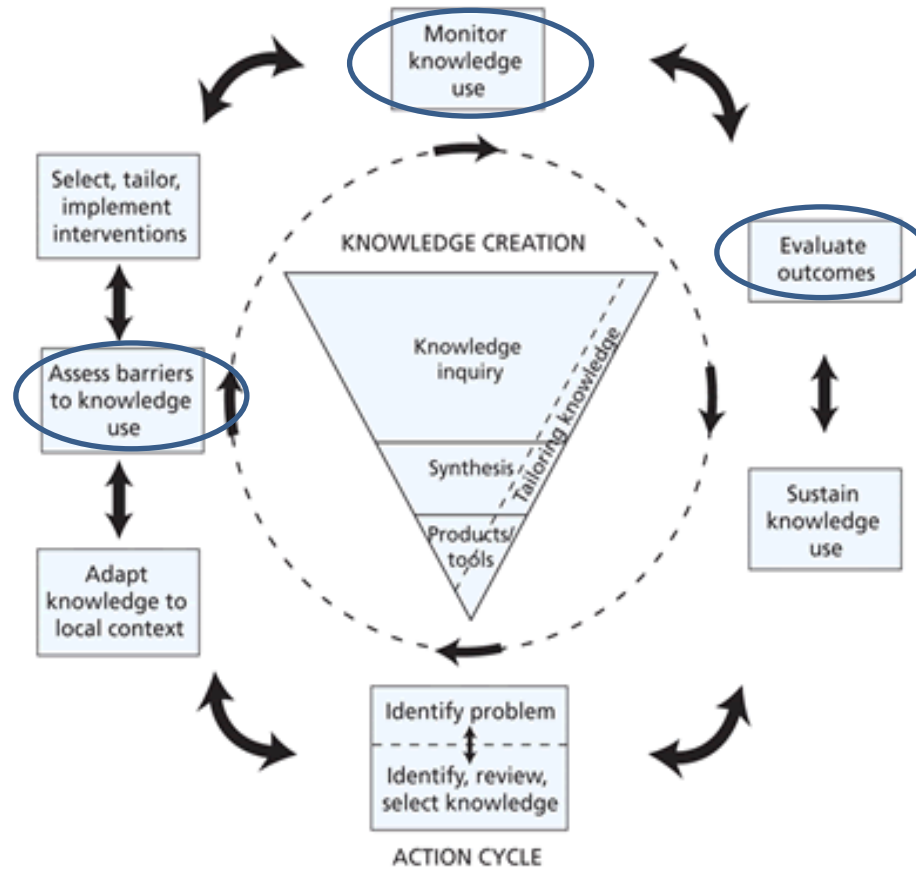
Service evaluation – 12 months

Data collection requirements – key stakeholder consultation including
Strategy and specification manager from care commissioning group (CCG)

Process evaluation – mixed methods

Outcome	Measures/ Collection methods	Analysis
Barriers	Field notes	Qualitative Thematic analysis
Knowledge use	Referral sources/rates	Descriptive statistics
Patient outcomes	Therapy Outcomes Measures (TOMS) (Enderby et al 2006) COAST (Long et al 2008)	Descriptive statistics
Impact on carer stress	Carer COAST (Long et al 2009)	Descriptive statistics
Costs/cost savings	Data collection sheets –Time spent using software, cost of software, therapist time, comparisons with face to face cost	Descriptive statistics

Barriers

Barriers to computer use

NHS restrictions on loaning lap tops
Difficulties installing software on home computers

Time consuming to set up

2-3 hours to set up specialist vocab

Patients not always selecting exercises set for them

Solution: volunteer/phone monitoring

Barriers to phone monitoring

Barriers with volunteer feedback

Solution: Telehealth/remote monitoring

Barriers to use of telehealth

Open plan working with no designated computer
Who pays ongoing networking costs?
Slow response/inefficiency of IT department (>12 months to get working)
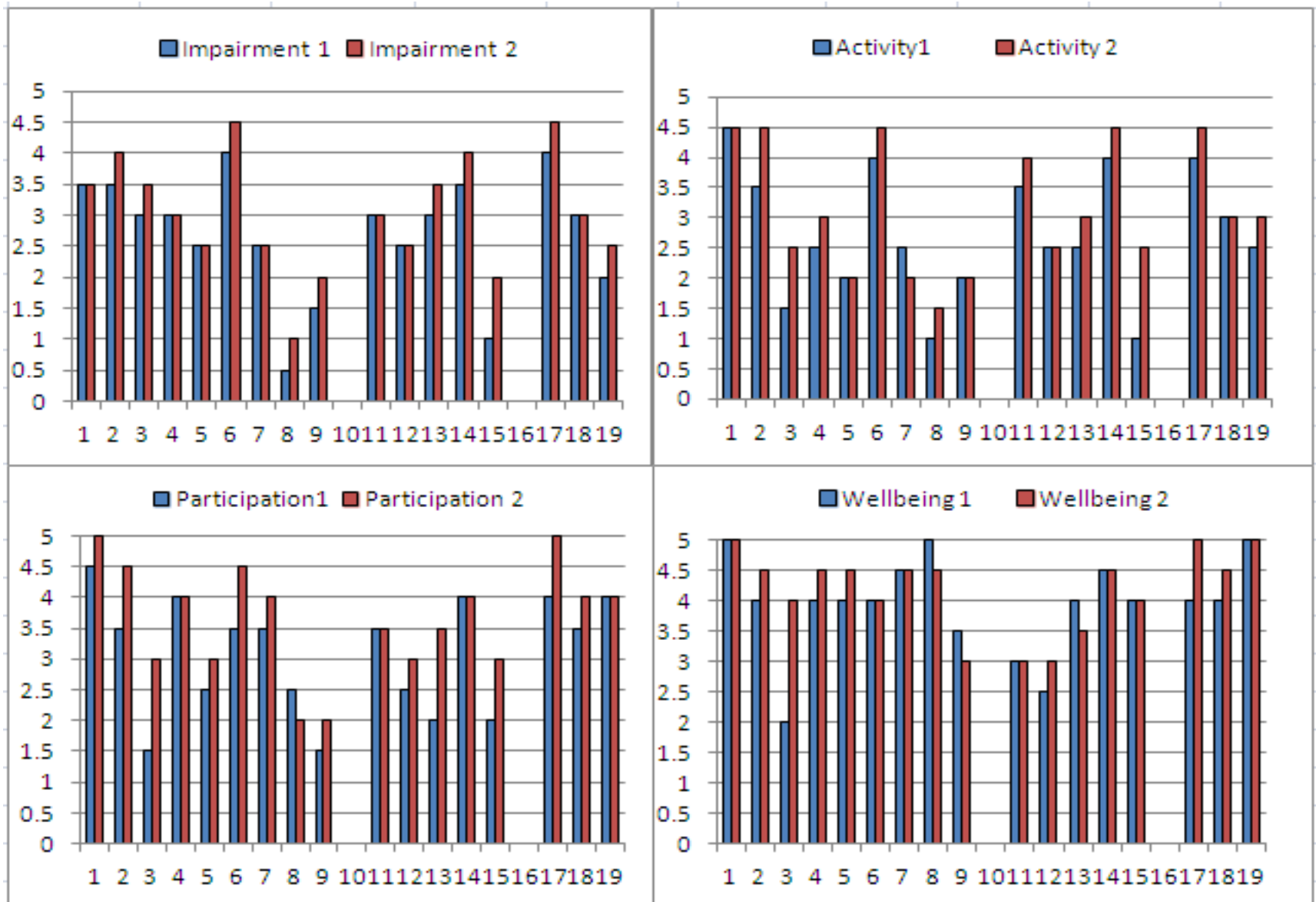
Knowledge use: Referral rate and source

- 19 patients, Oct 2012-Oct 2013

- 13 men, 6 women, 36 – 89 years of age,
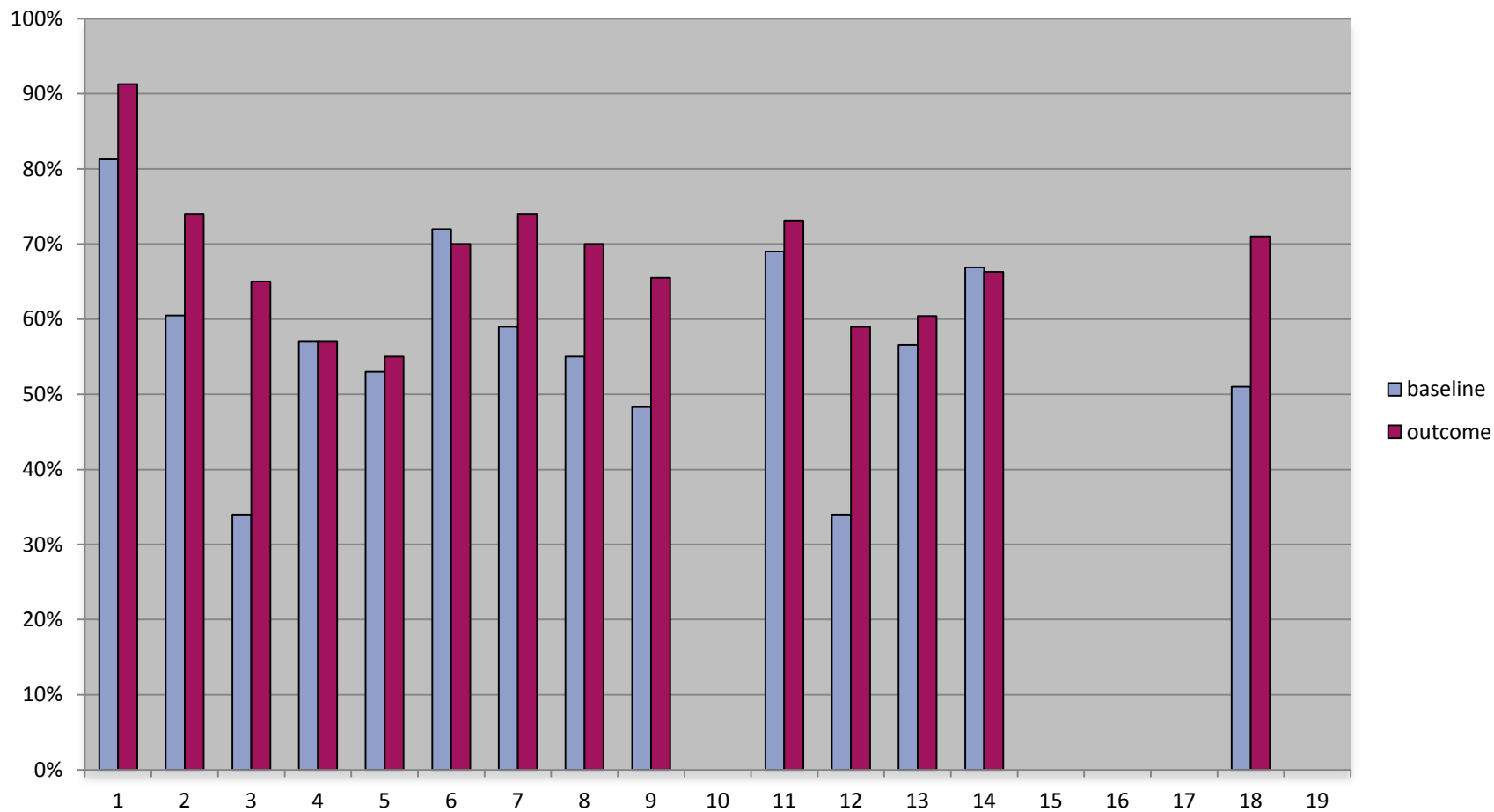- 8 mild, 5 moderate, 5 severe

- 14 patients were 3-8 months post stroke
- 5 patients were re-accessing service at 2,7,10 and 12 years post stroke

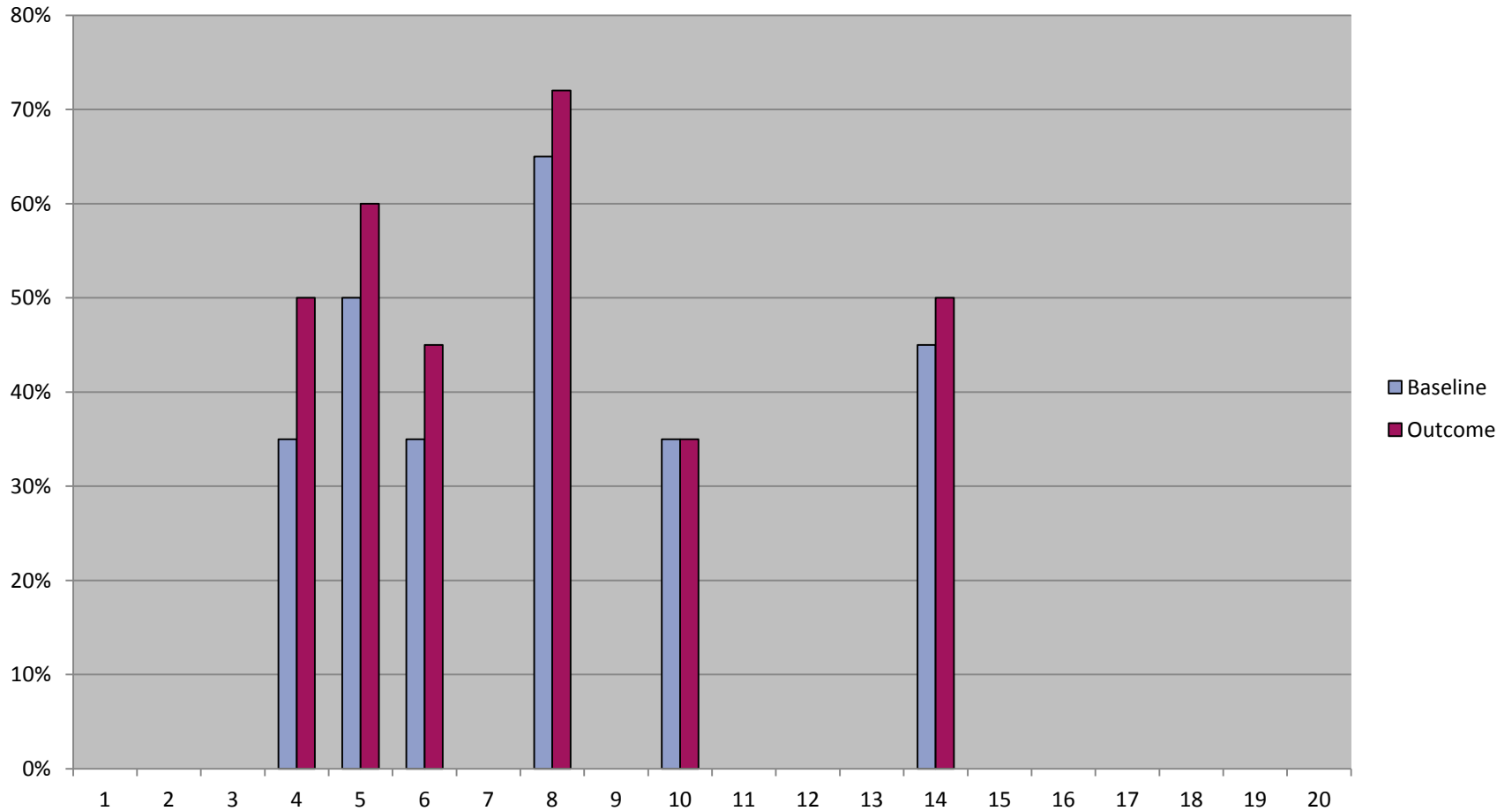- Referral sources: intermediate care, Older Adults Community Team, self referral

Outcomes – patients (rated by therapists TOMS)
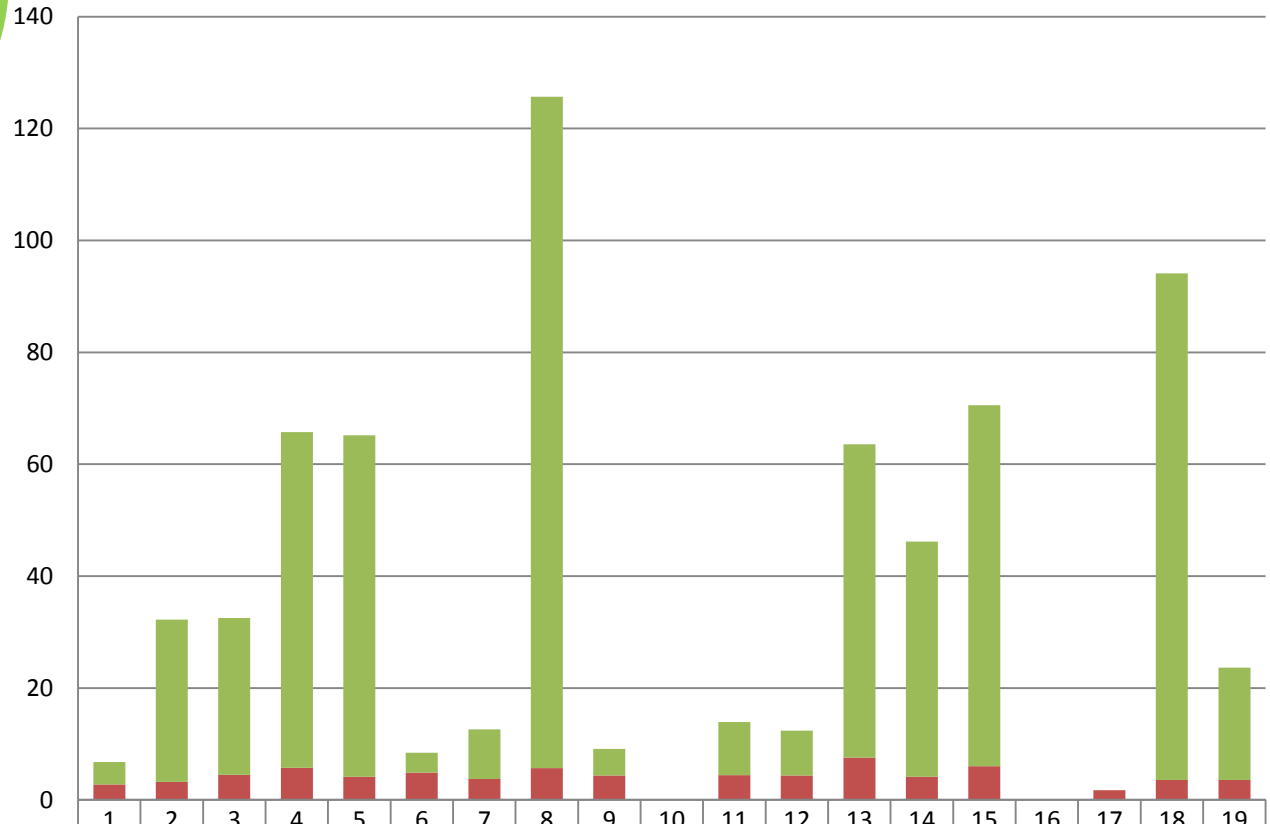
Outcomes – patients (self rated – COAST)

Outcomes – carers (self rated Carer COAST)

Therapy time

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
total independent practice time (hours)	4	29	28	60	61	3.5	8.83	120	4.75	0	9.5	8	56	42	64.5	0	0	90.5	20.08
total therapist time (hours)	2.78	3.2	4.5	5.73	4.15	4.9	3.75	5.7	4.35	0	4.43	4.37	7.58	4.16	6.05	0	1.72	3.58	3.58

Pie chart: therapist time, 74; self managed practice, 610

Costs/Cost savings

- Costs
  - £2850 software
  - £4000 hardware
  - £950 IT support

  - £1861 SLT band 7 time (not including travel and admin)

  - £600 Volunteer expenses

  £6600

- Cost savings
  - **£15,341**(B7)/£13,023 (B6) 610 hours face to face therapy

  - Reduction in use of face to face therapy resources (earlier discharge for some)

  - Two patients returned to work

Sustainability

- Information needed for commissioners included:
  - Cost per client; (£836)
  - capacity of the service; (20-25 patients per annum)
  - impact on carer stress;
  - effect on reduction in use of other services

- A report was prepared using the following headings:

  1. *Current service and what the gap identified is*
  2. *The proposal*
  3. *Learning from research/service evaluation*
  4. *Benefits of the proposal*
     - *For patients and carers*
     - *Cost savings*
  5. *Cost of proposal*
  6. *Integration into current service pathway*
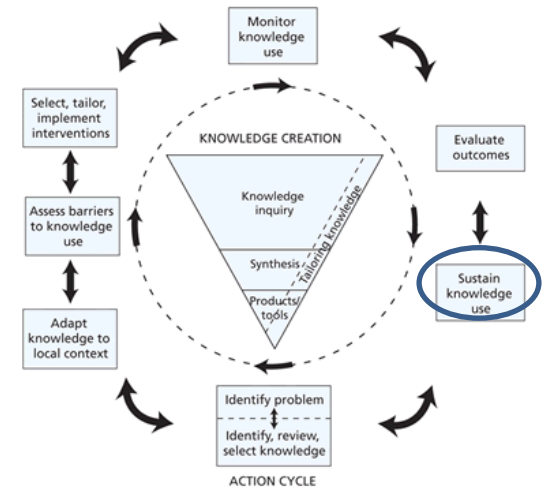
Need to isolate effect of intervention:
Big CACTUS

- National Institute of Health Research - Health Technology Assessment

- Tavistock Trust for Aphasia

- Definitive Randomised Controlled Trial 2014-2018

- 285 people with aphasia in UK

- 20 SLT departments in UK

Summary

Pilot RCT (CACTUS)

Local pilot Implementation

Knowledge to action model
Evidence/knowledge
Tailoring
Evaluation of barriers, knowledge use, patient/carer benefits
Costs

Use of model to guide case for commissioning as sustainable intervention

Big CACTUS

Adequately powered RCT 'Big CACTUS'

??Large scale implementation

Acknowledgements