



# Early Stroke Specific Vocational Rehabilitation (ESSVR): A Feasibility Randomised Controlled Trial

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## Faculty Disclosure

	No, nothing to disclose

## Background

- 110,000 strokes annually in England, 1/4 in working age adults, less than half of stroke survivors resume work ([Daniel et al, 2009](#))
- Health risks of worklessness - greater than heart disease ([Waddell and Aylwood, 2005](#))
- Reduced quality of life and poorer psychosocial outcomes ([Robison et al, 2009](#), [Busch et al, 2009](#))
- Dramatic societal costs (treatment and productivity loss) of £8.9 billion a year in UK ([Saka et al, 2009](#))

## Background

- Work is a Health Outcome - The NHS Outcomes Framework
- National Stroke Strategy and National Clinical Stroke Guidelines support need for vocational rehabilitation (VR) services
- Rehabilitation fails to address work needs [Playford et al 2011](#)
  - Patchy provision – 37% PCTs address work needs [CQC 2011](#)
- Lack of evidence for stroke-specific vocational rehabilitation [Baldwin and Brusco 2011](#)
- **No national employers compensation scheme**
- **No direct link between Health and Social Security systems**



## CLAHRC NDL

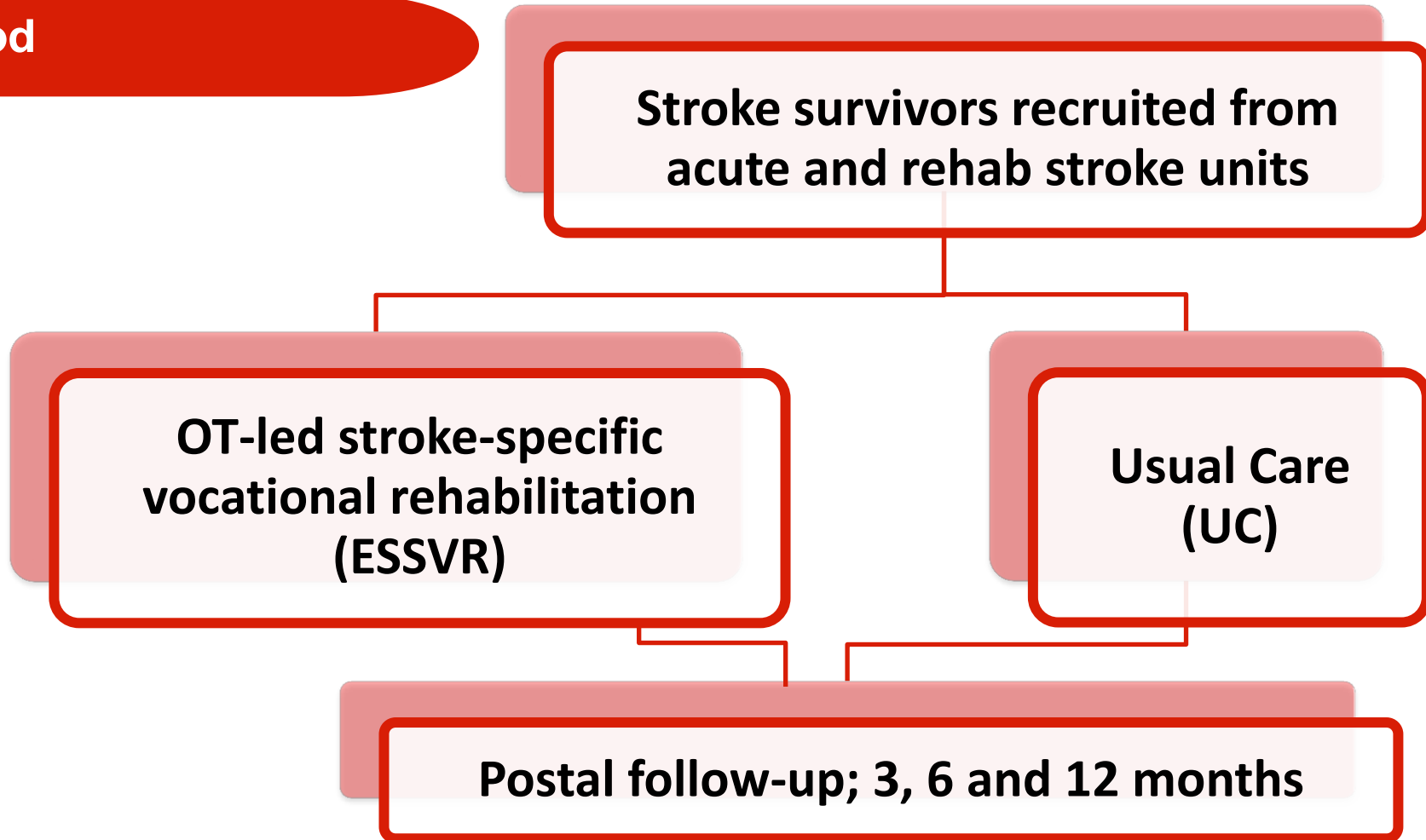
### 4 Stage Project

1. Interview and observational study of current provision
2. Intervention development (Case Studies, Lit review and Expert Panel)
- 3. Feasibility trial with economic analysis**
4. Qualitative interviews with stroke survivors, employers and commissioners to explore usefulness, acceptability and implementation issues

## Aim

- Test the feasibility of delivering OT-led Early Stroke-Specific Vocational Rehabilitation (ESSVR) and measuring its effects and cost-effectiveness in a pilot randomised controlled trial (RCT)

**Method**



## Inclusion Criteria

- Confirmed stroke diagnosis
- Aged 16+
- In paid/voluntary work, education, >1 hour per week

## Exclusion Criteria

- Not intending to RTW
- Unable to give informed consent



## Primary Outcome

- **Return to work:** yes/no

## Secondary Outcomes

- **Mood;** Hospital Anxiety and Depression Scale
- **Work Productivity;** Work Productivity and Impairment Questionnaire and Work Limitations Questionnaire
- **Social Participation;** Sydney Psychosocial Reintegration Scale
- **Activities of Daily Living;** Nottingham Extended Activities of Daily Living
- **Health Status;** EQ5D
- **Resource Use;** Bespoke Questionnaire

## ESSVR Intervention

### Case coordination model; Fadyl and McPherson, 2009

- Assessing stroke impact on patient and their role as worker/ student
- Educating patients/families/employers about stroke and impact on work/education
- Strategies to lessen stroke impact e.g. pacing to manage fatigue
- Work preparation i.e. establishing routines increasing activity to increase stamina, concentration and confidence; practicing work skills
- Liaison with employers/ tutors to plan and monitor a phased return to work.



## Early Stroke Specific VR - assumptions

- Returning to work doesn't mean returning to the same job with the same responsibilities.
  - Same employer - Same, modified or different job
  - New employer - Same, modified or different job
- **Therapist's role - match stroke survivor's abilities to the demands of the job**

# Results: Participants

1098 admitted to acute stroke ward

Excluded (n=973)  
Not stroke (40% n=389)  
Not working age (75% n=729)  
Unemployed (2.9% n=28)

124 screened

Consort Diagram

78 excluded

33 failed to meet  
inclusion criteria  
40 declined  
5 other reasons

Randomisation

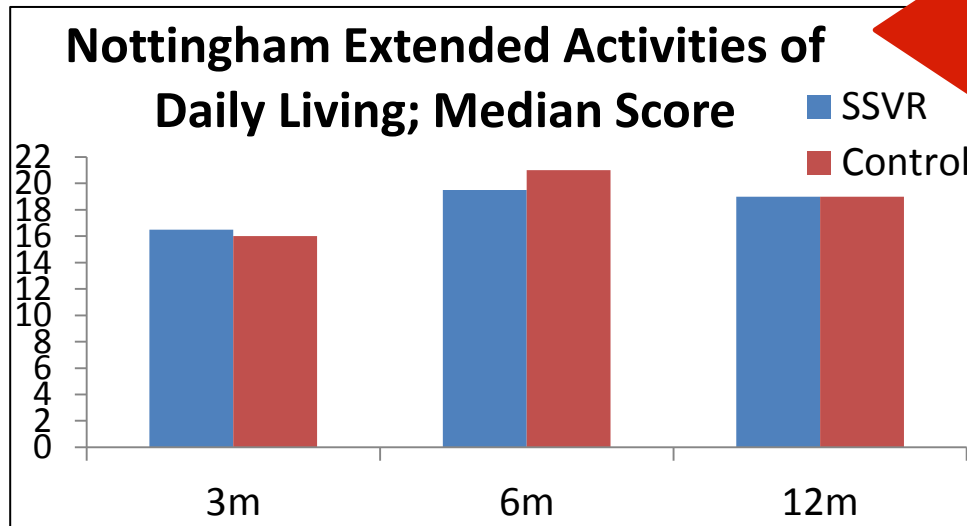
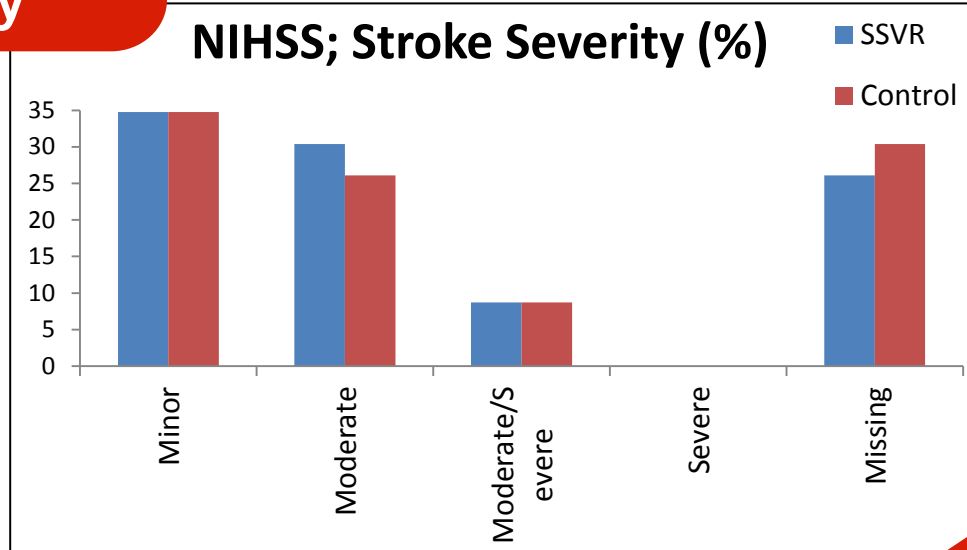
ESSVR = 23

UC = 23

## Participants

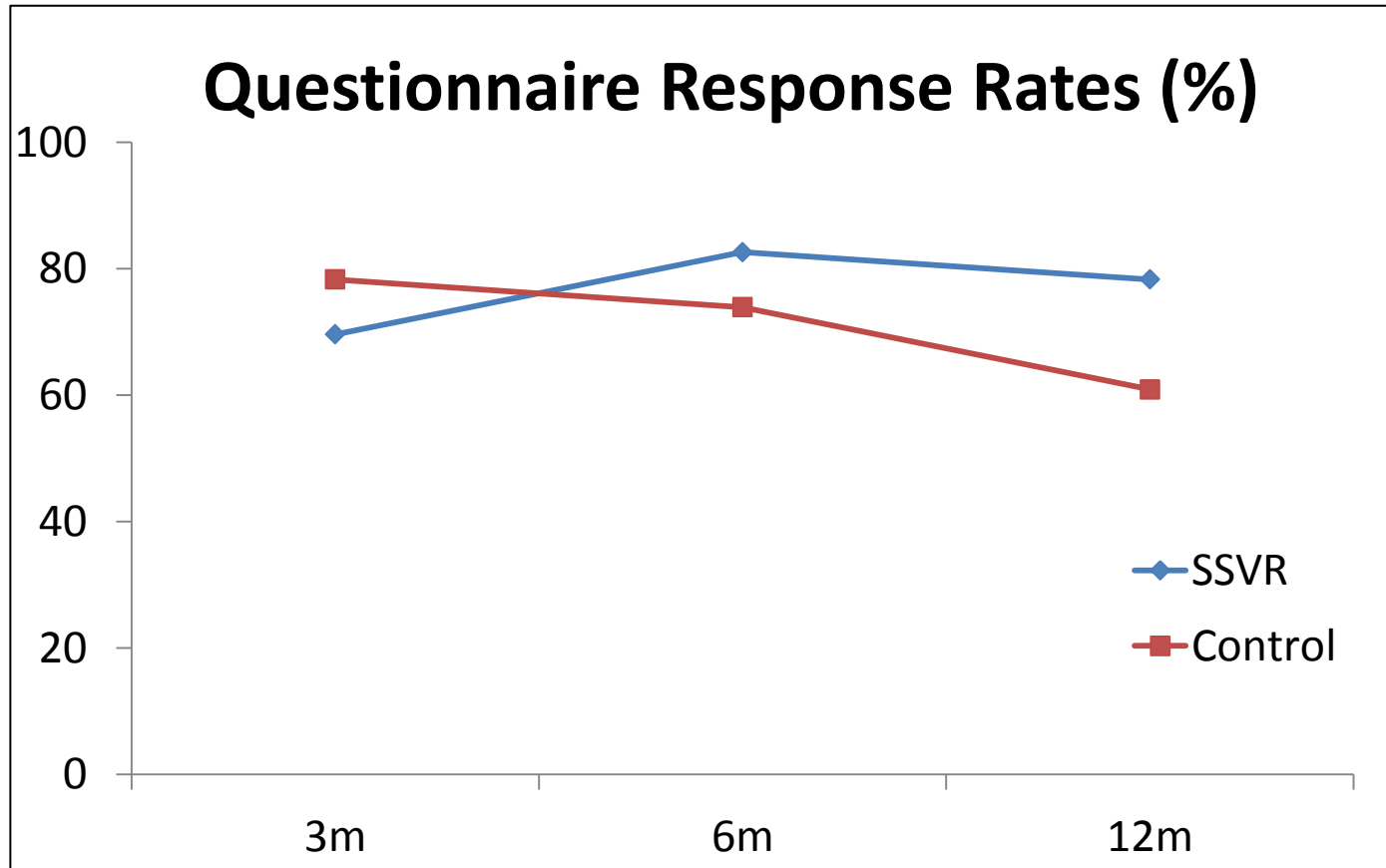
Characteristic	ESSVR (n=23)	Control (n=23)
<b>Gender; n (%)</b>		
Male	17 (73.9%)	19 (82.6%)
Female	6 (26.1%)	4 (17.4%)
<b>Age</b>		
Mean (SD)	58.3 (12.7)	53.8 (12.6)
Range	24-78	18-77
<b>LOS</b>		
Mean days (SD)	19.6 (21.6)	27.1 (26.9)
<b>SOC</b>		
Non-Professional	4 (17.4%)	12 (52.2%)
Professional	19 (82.6%)	11 (47.8)

# Stroke severity

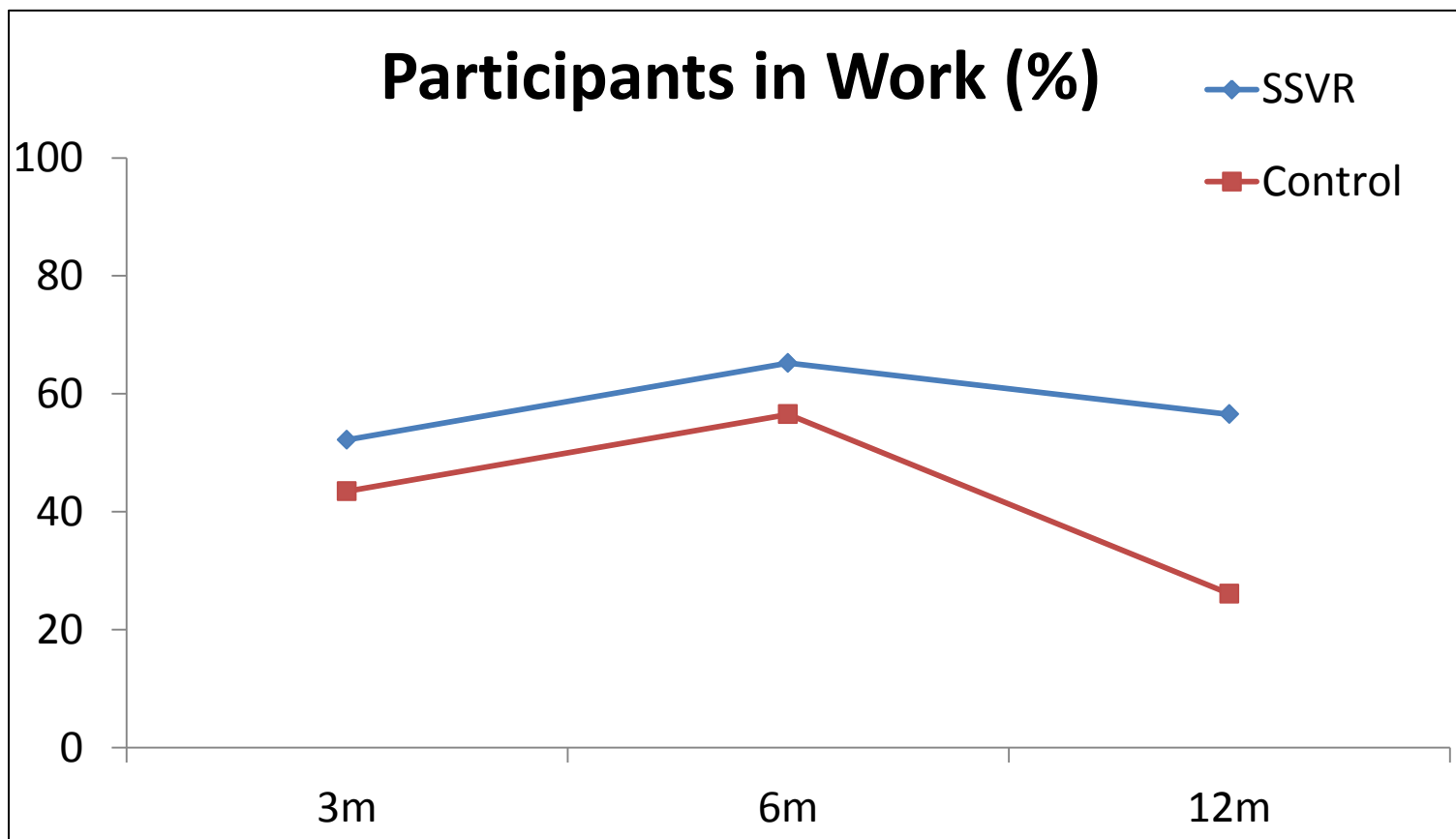


# Functional ability

## Feasibility

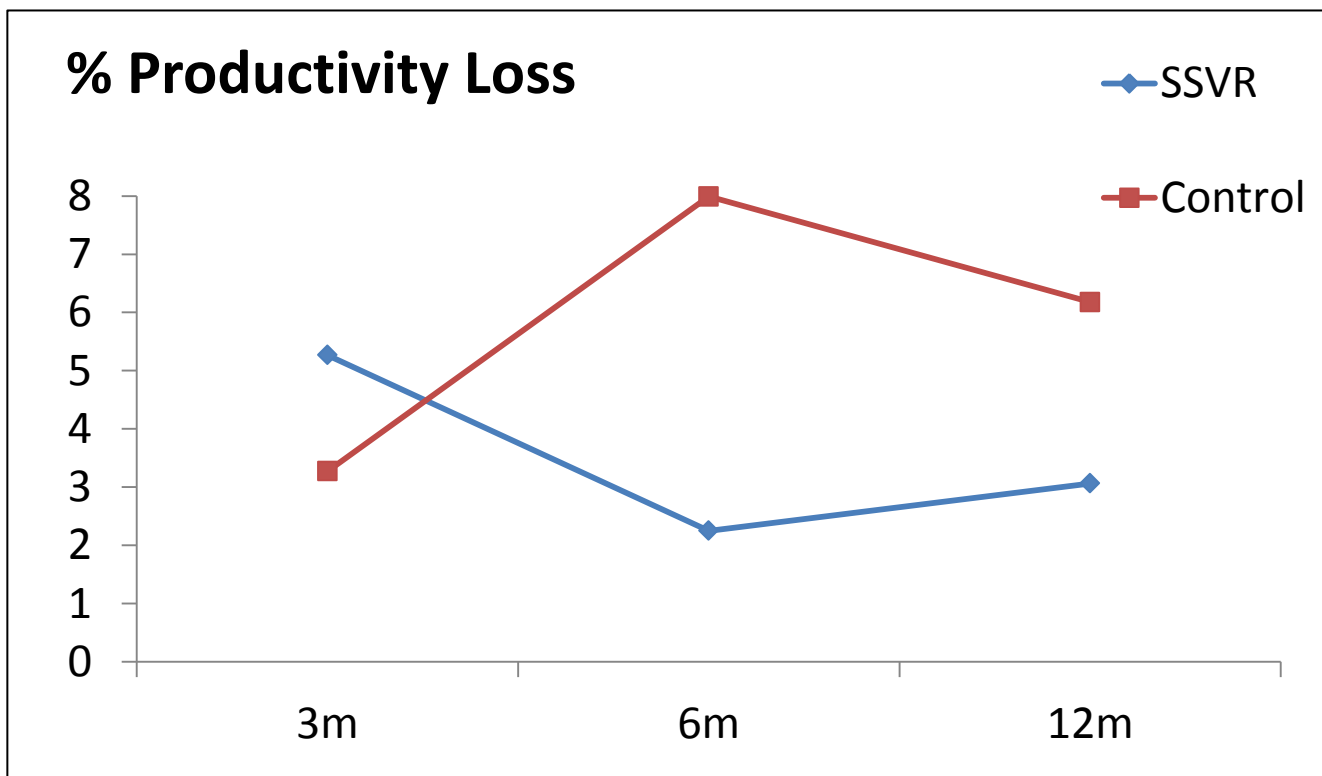


## Primary Outcome





## Self-reported Productivity Loss



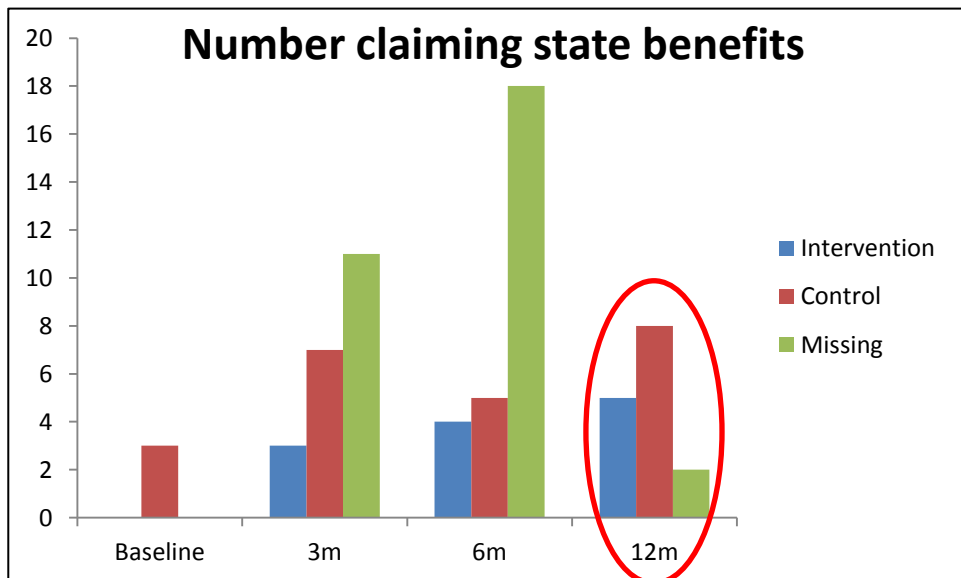
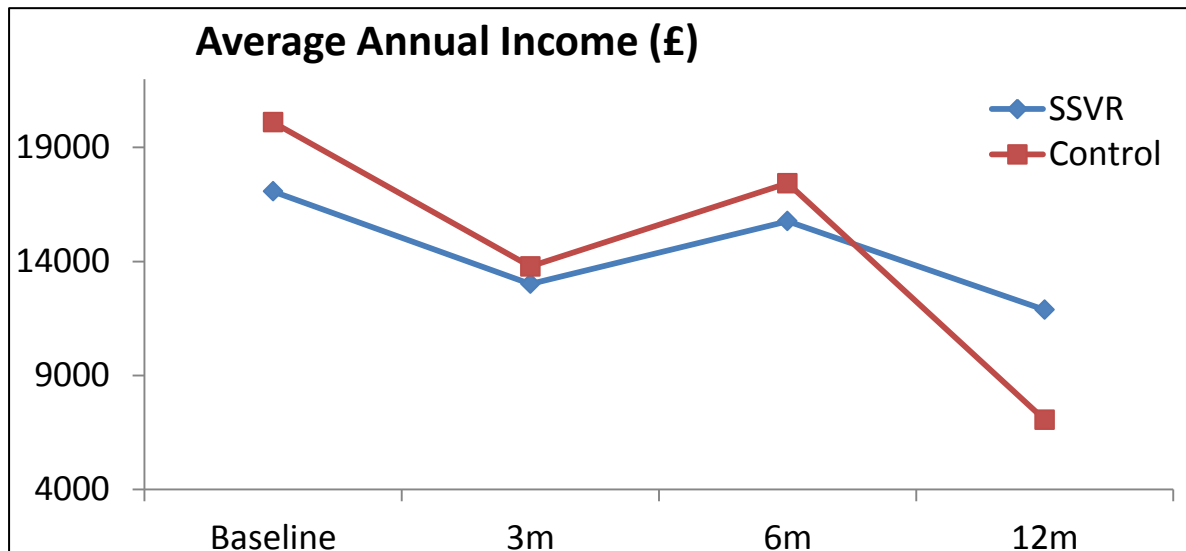
**Work Limitations Questionnaire**

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## Time taken to return to work

Days to return to work	Number	Mean	Median	Range	SD
Intervention group	17	94.88	59.00	7-227	77.41
Control group	14	85.57	82.50	8-190	62.12

# Income & Benefits Status



# Measuring cost effectiveness

Community-based services				
a) Have you visited, or been visited by the following professionals as a result of your brain injury in the last 3 months?				
GP	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—
Practice Nurse	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—
Case manager	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—
Occupational Therapist	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—
Speech and Language therapist	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—
Physiotherapist	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—
Social worker	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—
Walk in Centre	Yes <input type="checkbox"/> <sub>1</sub>	No <input type="checkbox"/> <sub>0</sub>	If yes, how many times?	—

Ref: Thompson S and Wordsworth S (2001). An annotated cost questionnaire for completion by patients. Centre for Health Economics, University of York, Health Economics Research Unit, University of Aberdeen.

# Example questions

Has your employer/college had to pay for additional support or equipment because of your stroke?

If you know, please state approximately how much this has cost:

\_\_\_\_\_

In the past 3 months, have you or your family incurred any other costs as a result of your stroke? e.g. complementary therapists, equipment, non-prescribed medication? If so, please state the name of the item and the approximate cost.

What is your best estimate of your current monthly income from all sources (before tax and other deductions)?

(Please tick one box)

Less than £800 per month	<input type="checkbox"/> <sub>1</sub>	£800 to £1,600 per month	<input type="checkbox"/> <sub>2</sub>
£1,601 to £2,500 per month	<input type="checkbox"/> <sub>3</sub>	£2,501 to £3,250 per month	<input type="checkbox"/> <sub>4</sub>
£3,251 to £4,150 per month	<input type="checkbox"/> <sub>5</sub>	£4,151 or greater per month	<input type="checkbox"/> <sub>6</sub>

In the last 3 months, has your main carer (your spouse, partner, parent or whoever has the most contact with you) had to take time off work as a result of your stroke?

Yes  <sub>1</sub>

No  <sub>0</sub>

If yes, how much time, in the last 3 months, have they had to take off?

\_\_\_ Months    \_\_\_ Weeks    \_\_\_ Days    \_\_\_ Hours

## Feasibility of cross referencing – random 10%

- **Participant 1:** GP (-2), Consultant (-1) OT (+5), other services (-17)
- **Participant 2:** GP (-4), Psychologist (-2) OT (+29), Physiotherapy (+3), social worker (+12), and other services (-86)
- **Participant 3:** Consultant (-8), OT (-1), Physiotherapy (-8), other services (-5).
- **Participant 4:** GP (-25), OT (-11), Physiotherapy (-21).
- **Participant 5:** GP (-2), Consultant (-5), Physiotherapy (-2) and other services (-6) Speech and language therapy (+2).

Feasibility of cross  
referencing cost data

- Considerable discrepancy between self-reported use data and service records
- Discrepancies between GP records and therapy team records.
- **Participants generally underestimate service use especially GP and consultants.**
- **Cross referencing was time intensive and complex**
  - 51 phone calls, 4 letters/faxes ; 19 emails sent to services to verify the self-reported service use data. Taking 12 hours for 5 patients.
  - 4 GP surgeries requested further copy of consent (1 charged for information provided)
  - Only one service checked with the participant before giving the information. Some services volunteered additional information about other services, which was not reported in participants' questionnaires.

## Discussion

- **Primary outcome:** More intervention participants were in work at 12m and more returned to their pre-stroke working hours
- **Secondary outcome measures:** Little variation between the two groups.
- **Feasibility:**
  - ESSVR was acceptable, good compliance (1 dropout)
  - Reasonable response rate 73.9%
  - ESSVR can be effectively delivered and measured using standardised and bespoke questionnaires
  - Costs may be underestimated if using self report



## Conclusion

**ESSVR is a job retention model** - may potentially influence RTW rates in people with mild and moderate stroke **BUT**

- **Larger trial needed to demonstrate effect**
- **Different model for severe stroke** and those who require re-training
- **Mechanism for success?**
  - ***Co-location*** – the ability to cross service boundaries and ‘create a team’ involving Health (NHS), Employment services, private and charitable sectors.

## Acknowledgements

### The Participants

#### Trial Steering Group :

**NB Lincoln, A Drummond, J Phillips, C Coole,  
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Health Research*



# Thank you for listening

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