Manuscript version: Author's Accepted Manuscript

The version presented in WRAP is the author's accepted manuscript and may differ from the published version or Version of Record.

Persistent WRAP URL:

http://wrap.warwick.ac.uk/112638

How to cite:

Please refer to published version for the most recent bibliographic citation information.
If a published version is known of, the repository item page linked to above, will contain details on accessing it.

Copyright and reuse:

The Warwick Research Archive Portal (WRAP) makes this work by researchers of the University of Warwick available open access under the following conditions.

Copyright © and all moral rights to the version of the paper presented here belong to the individual author(s) and/or other copyright owners. To the extent reasonable and practicable the material made available in WRAP has been checked for eligibility before being made available.

Copies of full items can be used for personal research or study, educational, or not-for-profit purposes without prior permission or charge. Provided that the authors, title and full bibliographic details are credited, a hyperlink and/or URL is given for the original metadata page and the content is not changed in any way.

Publisher's statement:

Please refer to the repository item page, publisher's statement section, for further information.

For more information, please contact the WRAP Team at: wrap@warwick.ac.uk.

Developing vocational rehabilitation services for people with long-term neurological conditions: Identifying facilitators and barriers to service provision

Short title: Developing vocational rehabilitation services for long-term neurological conditions

Authors:

1. Kate Hayward, Therapy and Rehabilitation Services, National Hospital for Neurology and Neurosurgery, London, UK.

2. Bilal A. Mateen, Division of Medicine, University College London, London, UK.

3. E Diane Playford, Warwick Medical School, University of Warwick, UK.

4. Gail Eva, Faculty of Health and Life Sciences, Oxford Brookes University, Oxford, UK.

Corresponding author:

Kate Hayward

Box 113, NHNN, Queen Square, London, WC1N 3BG

Kate.hayward2@nhs.net

Abstract

Purpose: This study aimed to understand existing vocational rehabilitation (VR) service provision in one locality in London (population 3.74 million), identify any gaps and explore reasons for this, to support service development.

Method: Using Soft Systems Methodology to guide the research process, semi-structured interviews were completed with nine participants, who were clinicians and managers providing VR within NHS services. Data were analysed thematically to build a 'rich picture' and develop a conceptual model of VR service delivery. Findings were then ratified with participants at an engagement event.

Results: The findings indicate a spectrum of VR service provision for long-term neurological conditions with differing levels of funding in place. VR often takes place 'under the radar' and therefore the true VR needs of this population, and the extent of service provision is not known. There is inconsistency of understanding across the services as to what constitutes VR and outcomes are not routinely measured.

Conclusion: For VR services to develop they require appropriate funding, driven by Government policy to commissioners. Clear definitions of VR, collecting and sharing outcome data and effective communication across services are needed at a local level. This is expressed in a conceptual model of VR service delivery.

Introduction

Long-term neurological conditions (LTNCs) result from damage to the body's nervous system (i.e. the brain, spinal cord and/or peripheral nerves), caused by disease or injury. LTNCs include sudden onset conditions (e.g. stroke, traumatic brain injury (TBI) and spinal cord injury (SCI)), intermittent or unpredictable conditions (e.g. epilepsy and migraine), progressive conditions (e.g. multiple sclerosis (MS) and muscular dystrophy) and stable neurological conditions (e.g. post-polio syndrome) (Department of Health, 2005). There are approximately 12.5 million people with LTNCs in England, equating to 59,000 per clinical commissioning group (Neurological Alliance, 2014). The nature, causes and impact of these LTNCs varies greatly between individuals, but for many people, injury or diagnosis occurs at working age.

For most adults work is integral to daily life, providing financial support, emotional and psychological wellbeing, security and independence (Baldwin and Brusco, 2011). Unemployment can negatively affect these factors, impacting on engagement in activities and putting psychological and physical health at risk (Dorstyn et al, 2017, Blank et al, 2015). Research indicates that high levels of sickness absence and health related unemployment lead to poor health outcomes and increased reliance on the state (Black and Frost, 2011, Department of Work and Pensions (DWP) and Department of Health, 2008). Maintaining working roles is therefore important at a societal level, as well as for individuals (Waddell and Burton, 2006), including those with LTNCs (Radford et al, 2018, Sinclair et al, 2014, Playford et al, 2011).

After minor ailments (such as coughs and colds); musculoskeletal conditions (e.g. back pain) and mental health issues (e.g. anxiety and depression) are the most common causes of sickness absence in England (Public Health England, 2018). Government initiatives aimed at providing vocational support for people with health conditions or

disability have therefore been designed with this client group in mind. However, the complex and often hidden needs of people with LTNCs are often difficult to support within generic programmes (Radford et al, 2013, Tyerman, 2012, Sweetland et al, 2007) and a need for specialist vocational rehabilitation (VR), tailored to the needs of this group, has been identified (Hilton et al, 2018, Libeson et al, 2018, Sinclair et al, 2014, Radford et al, 2013, Tyerman, 2012, Playford et al, 2011).

VR can be described as "whatever helps someone with a health problem to stay at, return to and remain in work" (Waddell et al, 2008, page 8). Health professionals are integral to managing health conditions and people with LTNCs consistently outline the benefit of support from people who understand the impact of their condition on maintaining employment (Sweetland et al, 2012). In the United Kingdom, occupational therapists are often the clinician leading this work, using key skills to help people overcome barriers to continuing with the valued occupation of employment (COT, 2016). The timing of VR interventions is key, with evidence suggesting that early intervention to support people to manage their LTNC in the workplace leads to them staying in work for longer (Radford et al, 2018 and 2013, Doogan and Playford, 2014, Kirkbrown et al, 2014, Rusbridge et al, 2013, Sweetland et al, 2012, Tyerman, 2012). However, in practice the provision of specialist VR remains sporadic, with poor inter-agency collaboration between health and employment services, meaning that people with LTNCs are at higher risk of being unemployed (All Party Parliamentary Group for MS, 2016, Sinclair et al, 2014, Playford et al, 2011).

Sinclair et al (2014) used Soft Systems Methodology (SSM) to explore stroke-specific VR in Derbyshire (one English county, population 791,966 (Office for National Statistics, 2017)) with the aim of clarifying existing service provision to support future service development. They identified that a lack of a sanctioned VR pathway led to ad hoc support, along with an unmet need for milder stroke survivors. Specific VR training was often

lacking and cross-agency working ineffective. Timing of VR was highlighted as a complex issue with not only early, but also late intervention required depending on the stroke survivors' needs and rehabilitation journey. Due to competing priorities commissioners deemed VR as non-essential (over services such as acute stroke units and early supported discharge teams), which made VR service development challenging and inconsistent.

Sinclair et al (2014) noted that their study focussed on one geographical area and one LTNC (stroke), and that the results may not generalise to other regions and conditions. However the methodology was robust and the results give a basis to review and compare current service provision in other localities, across all LTNCs. In line with this, the aim of this study was to conduct an analysis of VR services in North Central & North East London (NC&NEL) (an area incorporating 13 London boroughs, population 3,473,707 (Office for National Statistics, 2017)), focused by the following aims:

1. To investigate VR service provision in NC&NEL, exploring facilitators and barriers to supporting people with LTNCs to maintain employment.

2. To identify gaps in VR service provision in NC&NEL, the reasons for these and explore stakeholders' perspectives of how this could be addressed.

3. To develop a conceptual model of VR service delivery for NC&NEL to aid future development of a VR pathway for LTNC in this locality.

Methods

Research Design

Identifying barriers and facilitators to vocational rehabilitation service provision requires an in-depth understanding of the current situation. Therefore this study used a qualitative methodology. This included semi-structured interviews, thematic analysis of data and an engagement event with participants.

We followed Sinclair et al (2014) in using SSM (Checkland and Scholes, 1999) to guide this study. SSM is a systematic research approach, which can be used to evaluate interventions rooted in complex management, organisational and policy contexts, where no easy solution is identifiable (Sinclair et al, 2014, Checkland and Scholes, 1999). SSM uses systems rules and principles, following seven stages to support thinking about the real world and the human relationships between structure, process and outcome:

1. Identifying the problematic situation.

2. Researching the situation and building a 'rich picture' (a diagrammatic representation of current or real world situation).

3. Selecting perspectives and building 'root definitions' (key processes that should take place within the desired system).

4. Developing a conceptual model of the change system.

5. Comparing the model with the real-world situation.

6. Defining the changes to be implemented.

7. Taking action.

This study focused on stages one to six of SSM, using semi-structured interviews with VR service providers to gain qualitative data. These data were used to build a 'rich picture' of the topic, which was then ratified at an engagement event. SSM uses a structured framework 'CATWOE' (customers, actors, transformation process, worldview, owners and environmental constraints) to explore the perspectives of participants in relation to the research aim (table 1). This was therefore used to both develop the research questions and structure the data analysis.

Table 1: The Soft Systems Methodology CATWOE Approach

(Abbreviations: Vocational rehabilitation (VR))

CATWOE	General summary	Application to this research	Example interview question
Customers	The victims or beneficiaries of the system	Patients or clients receiving VR	What kinds of employment problems/VR needs do your clients have?
Actors	Those who facilitate the transformation or change	The people delivering VR and the skills needed to do that	Which disciplines work in your team? What is their seniority and experience relative to one another?
Transformation process	The change in relation to the system or service	Changes occurring because of the VR service	What are the things that you feel your service does particularly well?
Worldview	The context in which the transformation or change is meaningful	Marketing and evaluation of VR services	Do you do any service evaluation?
Owners	Those who would stop the transformation	Who the service is answerable to or funded by	How is your service commissioned and paid for?
Environmental constraints	Contextual factors or elements outside the system which may influence	Contextual, political and physical factors	What other VR services are available to your clients?

Ethical approval

Ethical approval was obtained from Brunel University's Department of Clinical Sciences, Research Ethics Committee. Ref: 14/10/MOT/18. Written informed consent was gained

from all participants. To ensure confidentiality for participants, people and sites, data have been anonymised.

Participants

Participants for the study were recruited using convenience sampling via the University College London Partners (UCLP), Centre for Neuro Rehabilitation, VR special interest group and wider stakeholders identified by group members (for example known providers of VR services who are not active group members). UCLP is an organisation, which aims to bring together health professionals and researchers to aid service development. The VR special interest group meets monthly and is open to anyone with an interest in VR. Members work across a variety of NHS, academic and third sector services.

Both managers and clinicians from NHS services within NC&NEL were invited to participate in semi-structured face-to-face interviews to identify the problematic situation and build a 'rich picture' of current VR service provision (SSM stages 1 and 2). Participants were limited to NHS providers due to resource constraints of the study and the implications of this are discussed in the limitations section of this paper.

Data collection and analysis

Questions for the semi-structured interviews were developed using CATWOE (see table 1 for examples), and piloted with members of the VR special interest group to ensure they were understandable to the professionals being interviewed. The interviews were audio recorded and transcribed verbatim. SSM does not provide a method for data analysis. Data were analysed thematically following Braun and Clarke's (2006) approach, with CATWOE (as outlined in table 1) as a guide.

The transcripts were analysed independently by two authors (KH and GE) and compared and discussed to ensure consistency. Using the CATWOE framework, barriers and facilitators of VR service provision were identified (SSM stage 3). A diagrammatic 'rich picture' was formulated together with a root definition; this conceptual model of VR in NC&NEL was compared against existing service provision (SSM stages 4&5) and shared with participants at the engagement event. At this event, the research findings were further developed and ratified (SSM stage 6).

Findings

Nine participants from six different services (one in-patient rehabilitation, three community neurological rehabilitation teams (CNRT), and two specialist VR services) volunteered to participate. A semi-structured interview was completed with each of them individually. Seven of the participants were occupational therapists (two of whom were managers), one was a physician (and a service lead) and one was a clinical psychologist. All of the participants were female. Data on age and years of practice were not collected.

All participants attended the engagement event, apart from those from service 6 who did not respond to their invitation. In addition to those interviewed, managers from services 4 and 5 and authors KH and GE were also in attendance at the engagement event.

Findings from the semi-structured interview data analysis are presented below using each of the CATWOE categories.

Customers

All but one of the services (which was specific for spinal cord injury) accepted referrals for adults with any neurological condition. Community team referrals were mainly received from GPs, health professionals in acute hospital services and occasionally social services. In

general the community team referrals were not specifically for VR, however VR was often highlighted as an issue within the clients' initial assessment. A specialist outpatient VR service received internal referrals from their hospital colleagues and external referrals from GPs, other hospitals and community teams who did not provide VR.

"...In terms of the patients we work with, (...), the biggest groups are probably stroke, multiple sclerosis, brain tumour and head injury, but all other neurological diagnoses as well." (P6)

A range of employment needs were identified: support with returning to work, maintaining employment, job seeking, and exiting the workplace. Participants from the generalist services did not know how many clients were referred to their service specifically for VR or how many clients in their service had identified VR needs.

"...It's [employment need] *normally either someone who's in work… they're in employment they've had an injury or an accident, or they've got a progressive condition and there needs to be either thought made about adjustments or it's about a return to work plan … it might be about disclosing …"* (P4)

Actors

Both specialist and generalist clinicians provided VR interventions. The majority of VR interventions were led by occupational therapists with access to other disciplines where required. The permutations of core and extended teams varied, but a core team tended to include occupational therapy and psychology, with physiotherapy and SLT available through

defined pathways. Linking with disciplines outside of the core MDT was seen as beneficial including Disability Employment Advisors and job coaches.

"...The voc rehab service is (...) led by a specialist occupational therapist, (...) but also they regularly access neuropsychologists and (...) if a patient required it in relation to their return to work issues, they could also access speech and language and physio..." (P2)

Participants gave consistent accounts of the skills required to provide VR, including understanding the impact of neurological symptoms, including those which might not be obvious, and confidence to advise employers regarding reasonable adjustments. All services identified supporting clients with job seeking as the most challenging area of VR intervention, with their services not being setup to support this effectively. Where VR was a core component of the service, therapists were confident of their knowledge and skills in the area. However, when VR was one aspect among many, participants had concerns about competence and keeping up to date with relevant legislation and support services.

"I personally think that vocational rehab is a speciality service in its own right.   And I don't think that it's something that should fall to OTs to dabble in, (...) I don't have the capacity or the support to go away and learn all the latest employment law and benefits and what help you can get, so I don't consider myself to be a vocational rehab expert in any way shape or form, I am more of a sign-poster or if you've got a job we can go back to then that's fine ..." (P1)

Transformation

Changes and developments in services were shaped by the content of VR interventions, communication with other services/commissioners, and review of outcome data. The scope of VR interventions varied across the services. Specialist services were able to provide input across the breadth of VR. However, they identified that job seeking requires skills that are often not available within their current service provision. The generalist services provided VR interventions on a more ad hoc basis and often with limitations, for example only providing support with return to work.

"... If we got a referral for vocational rehab, we'd struggle because we're not funded to do specifically vocational rehab. (...) if it comes up within their general assessment and treatment that they're having (...) we can do that (...) but it needs to be part of their overall treatment, rather than specific." (P8)

Service development was seen as essential by the specialist services to maintain timely VR service delivery. For example, they developed referral criteria and pathways of care, underpinned by data. However there was inconsistency in data collected and outcomes measured across the services. The generalist teams did not collate any data or outcomes regarding VR and although they engaged in service development this was not related to VR.

"...We don't tend to pull that ... information out (...) it's time to be able to do that and to make the information useful (...) we've not been asked for it (...) at the moment it would be quite tricky to pull that data, we would have to probably keep it separately..." (P4)

Effective communication with other services and commissioners was highlighted as beneficial by all services. Developing personal communication links was seen as the most effective way to achieve this. However, participants identified that this depended on geographical proximity, as well as time to maintain relationships, which is not possible for the generalist services.

"... The Job Centre, also our local disability employment advisors, will contact me if they have people with neurological conditions (...) we've kind of set up quite a nice sort of channel so (...) they'll check in with me just to see if I know them and if (...) they are suitable to come through to us as well ..." (P2)

Worldview

Funding for VR varied considerably across the services. The specific VR services received allocated VR funding, which was managed flexibly at an NHS Trust level with overall sign-off from commissioners. Within the generalist services there was variability of VR funding, complicated by different funding streams for stroke and other neurological conditions.

"We're not a voc rehab specific service and in fact we're not even commissioned to do voc rehab full stop. (...) But we would, if you think about the sort of pre voc rehab pathway, we stretch that to as far as we possibly can without going into someone's work place" (P5)

Due to funding constraints all services provided VR 'creatively'. This included development of a vocational support clinic in one service run with charity support, triage clinics to prioritise resources and optimise timing of intervention, and developing pathways to facilitate joint working with other service providers. The generalist services identified

difficulties in publicising and further developing their VR provision without allocated funding. The specialist services saw marketing as necessary to establish their service.

"…We had to do a lot of marketing at the beginning and what we tried to do was to base the service on what was already happening in London, so we looked at other service models and we tried to … sort of develop what we did in the community alongside other community, (…) examples" (P2)

Ownership

Across the services the core 'owners' were NHS Trusts and commissioners. Agreement that VR is a health outcome and therefore a local commissioning responsibility, rather than falling to national employment support services, was identified as beneficial in obtaining commissioner-led funding.

"We have ample evidence that a lot of commissioners still think that work is not health, despite the fact that it is … embraced in quality outcome two of the NHS quality outcomes framework, (…) it was in the NSF long term conditions as quality requirement six and (…) there is a national rehabilitation delivery board, where vocational rehabilitation (…) is about their third objective with the view that if you commission for vocational rehabilitation you are commissioning for excellence…" (P6)

Environment

All participants identified that service location and geographical environment impacted on service provision. The services embedded in the community had more established links with local services and were able to provide interventions in a variety of locations.

"...What's important is to embed people in their own community, (...) most people want to volunteer locally to their home or get work more locally to their home and also (...) the social isolation (...) barriers to integration of these patients, (...) being embedded in a system that's within their community ... that seems really valuable." (P9)

Contextual factors were seen as important across all of the services. These included the challenges of helping people who were unemployed pre-injury to gain employment, willingness of employers to make reasonable adjustments, high staff turnover impacting on service delivery, and keeping up to date with support services offered across the variety of neurological conditions. The political and commissioning climates were also a consistent issue across the services, including benefits, funding cuts and frequent restructuring of services.

"The drivers were that the research showed that this intervention works, that this population is hugely ... under serviced and (...) the current political climate of getting people back to work and keeping people in work (...) I think this joined up service was born out of clinical need but also (...) socio-political drivers as well." (P6)

The CATWOE analysis was developed to identify a list of 12 factors required for effective VR services or effective VR within generalist neurology services (facilitators and barriers). This allowed direct relation of the qualitative data themes to research aims 1 and 2 of this study. The 12 points are listed below, and correlating evidence from the CATWOE analysis is provided in Appendix 1.

1. Actual or perceived funding to provide VR services is in place.

2. Clinicians have direct formal contact with commissioners to support funding of service.

3. Services explicitly acknowledge/state that they provide VR (it is not under the radar).

4. Services have a clear concept of what VR is and how they provide it.

5. Expertise exists within a core MDT to meet the needs that patients identify are their vocational problems (from a neuro-rehabilitation point of view).

6. An effective triage process is in place: patients are quickly assessed and prioritised.

7. Services are well integrated within the community they serve: support services are known about and liaised with and the service is delivered in the geographical area/space most appropriate for the patient.

8. The needs of people who are self-employed/unemployed are understood and met.

9. There are identified, proactive ways for people to link back into the service as needed.

10. Desirable work outcomes are identified and measured.

11. Patients' needs are not always identified and therefore met, as the service perceives they do not have the skills to provide VR.

12. The prevalence of work problems in the service's population of people with neurological problems is not known.

Rich picture

In line with SSM, the CATWOE data analysis was used to develop a 'rich picture' or real world situation of current VR service delivery in NC&NEL (figure 1). This demonstrates a spectrum of service provision, ranging from specialist VR services where funding is agreed to generalist rehabilitation services that provide VR on an ad hoc basis, without specific funding identified.

Specialist services are collecting VR outcomes data, which they outline is essential for service development, but there is a lack of consistency of measures used and no formal way of sharing this information. In contrast the generalist services are not collating any work related data and therefore do not have a full understanding of the VR needs of their population.

At the centre of the 'rich picture' are other services that provide work support and the ways that the VR services communicate with them. Depending on geographical location and service focus, communication could be consistent through personal contact (which was reported as beneficial) or on an ad hoc basis. Job seeking support was seen as outside the scope of most of the VR services with their current resources and skills. It is therefore pictured as part of 'other services'.

Figure 1: 'Rich picture' demonstrating the complexity and variability of VR provision for LTNCs in NC&NEL.
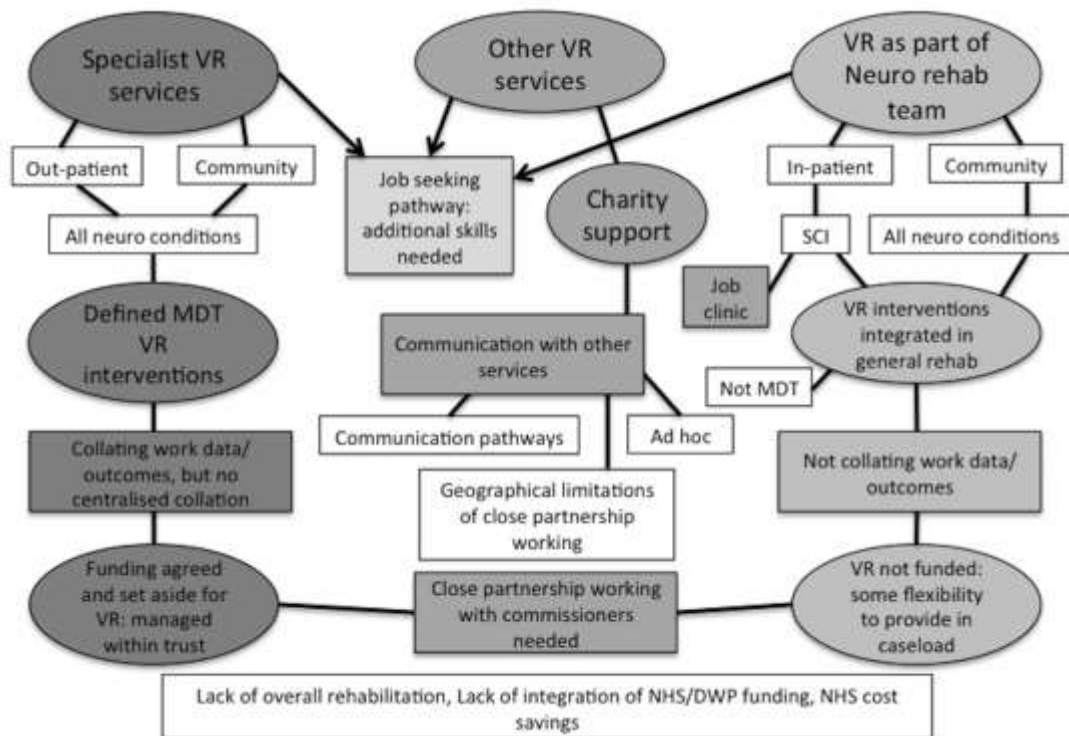
Conceptual model and engagement event

At the engagement event we reviewed and expanded the initial findings through collaborative discussion with participants, leading to an agreement of the most important factors required for effective VR, as follows:

1. Actual or perceived funding to provide VR services is in place.

2. The Government leads funding via commissioners.

3. Expertise to provide VR exists within an extended MDT, including DWP.

4. Services have a clear concept of what VR is and how they provide it.

5. There are identified, proactive ways for people to link back into VR services as needed.

We then refined the 'rich picture' shown in figure 1 to present a conceptual model of VR service delivery for NC&NEL (figure 2). The importance of communication links between specialist, generalist and other VR services is shown in figure 2 by the lines linking the services. Specialist and generalist VR services need to agree definitions of VR and identify ways that services can share data to improve commissioning pathways and service delivery. A top down commissioning approach via Government and NHS England was seen as an essential driver for service development. Job seeking is kept as a separate pathway (as shown by the dashed arrow in figure 2) as participants report the need for further exploration of appropriate models of service delivery, including the possibility of shared group programmes.

Figure 2: Conceptual model of VR service delivery for NC&NEL.
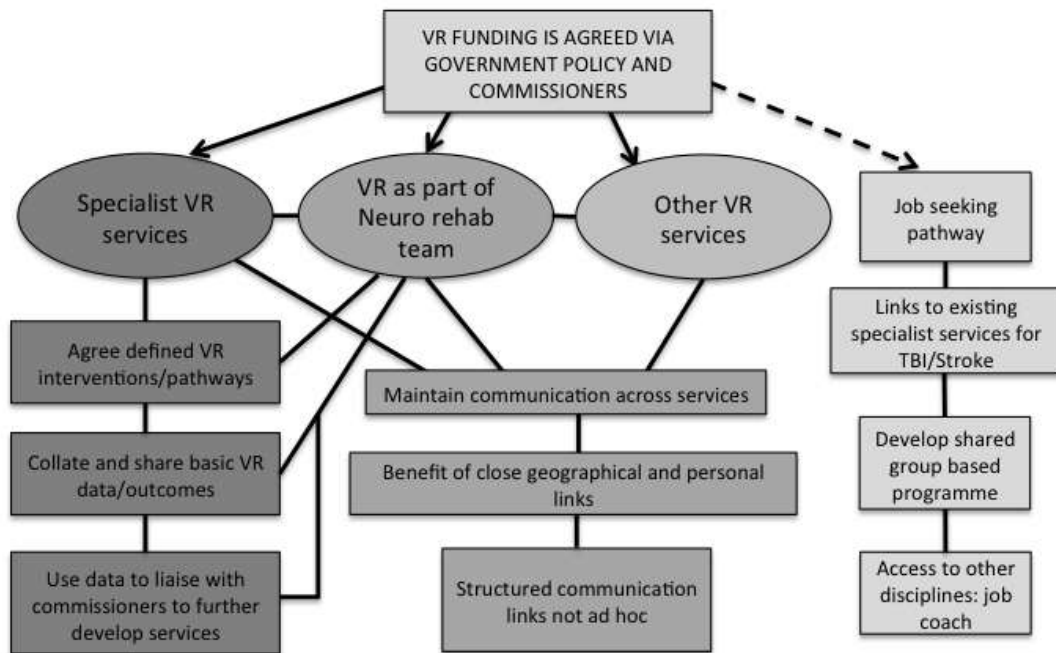
Discussion

The main findings of this study relate to the need for nationally agreed funding, an extended VR MDT, a job seeking pathway, shared understanding of VR interventions, shared standards for data collection and outcome measurement, the provision of timely VR services, and the integration of VR services within the local community.

Funding was seen as the most important factor in providing effective VR services. When specific VR funding was in place, services were able to focus on delivering effective VR through continued service development. Without specific funding, services were required to manage VR within the competing demands of their general caseloads. Therefore VR tended to be provided 'under the radar', limiting both the range of VR interventions provided and the development of needed services. Playford et al (2011) and Sinclair et al (2014) highlight that commissioners do not view VR as a legitimate health concern, despite

the fact that people who are unemployed are more frequent users of health services (Black and Frost, 2011).

Our study supports findings from previous research showing that expertise to deliver work retention interventions for people with LTNCs resides with the common disciplines found in a neurology MDT (for example, occupational therapists, clinical psychologists, physicians, speech and language therapists) (Rumrill and Roessler, 2015, Sweetland et al, 2012). However, we identify that additional team members including Job Centre Plus, careers counsellors and job coaches are required to deliver effective VR to job seekers, in line with Tyerman (2012) and Sweetland et al (2012) who note that different kinds of support are required for people who are employed or returning to employment, compared to those who need to find new employment.

Interestingly, there is no consensus in the literature on what VR consists of or how best to deliver it. As a consequence provision of VR varies from service to service with some services performing elements of VR within a general rehabilitation programme. This has resulted in a lack of clarity regarding the extent of met and unmet VR needs within the population, and many commissioners and referrers not being aware of the extent of VR service provision currently occurring. In addition, we found that there is no routine or consistent collection of VR outcomes within NC&NEL. As acknowledged in the recent government paper 'Improving Lives: The Work, Health and Disability Green Paper' (Department of Work and Pensions and Department of Health, 2016), work should be embedded as a health outcome and therefore the routine collection of work-related outcomes related to people with LTNCs is needed to inform business case development and local commissioning (Department of Work and Pensions and Department of Health, 2016, Sinclair et al, 2014).

The participants in this study agreed that defining VR interventions for job maintenance, return to work, work exit and job seeking is essential. A lack of taxonomy or classifications of VR interventions is highlighted as a challenge throughout the VR literature, with authors struggling to establish which service type produces the best work outcomes (Tyerman, 2012, Baldwin and Brusco, 2011, Otomanelli and Lind, 2009).

By definition, LTNCs fluctuate and change. Participants in this study recognised that having standardised, proactive ways for people to link back into VR services when needed was essential. This is well documented within the literature with early and on-going intervention resulting in people staying in work for longer, thereby reducing burden on society (Radford et al, 2018 and 2013, Middleton et al, 2015, Doogan and Playford, 2014, Kirkbrown et al, 2014, Rusbridge et al, 2013, Sweetland et al, 2012, Tyerman, 2012).

There was consensus among participants that for effective VR to occur, services should be well integrated within the community they serve, enabling awareness of and personal liaison within the extended MDT. Local provision gives flexibility to provide VR in the geographical area or space most appropriate for service users (for example practicing computer based tasks a local library rather than in a hospital clinic room).

Implications for service provision

Using SSM, this research study has identified barriers and facilitators of VR service provision in NC&NEL, gaps in service delivery and the reasons for this. It has explored how stakeholders think the issues identified could be addressed and developed a conceptual model of VR service delivery for the locality. This was fed back to the local VR special interest group, which helped develop project work. The results suggest a need for integrated commissioning between health, DWP and voluntary sectors, based on an accurate assessment of met and unmet VR needs. This would ensure VR services are appropriately established,

and can meet the needs of people with LTNCs to both retain their current jobs and re-enter the workplace should they become unemployed. This needs to be facilitated by the collection of work status as a health outcome, along with agreed standard VR outcome measures. The findings demonstrate that there has been little change in NHS VR provision in recent years despite recommendations in the National Service Framework for Long Term Conditions in 2005 (Department of Health, 2005) and the Government's agenda to reduce the number of people claiming ill health benefits.

Limitations

The results of this study are local to the six services that participated. To the best of our knowledge, we captured all of the services who identified themselves as providing NHS funded VR in NC&NEL. However, it is possible that other services are providing VR although they may not identify themselves as doing so.

The primary researcher (KH) is a colleague of many of the participants, which could have led to interview bias. Efforts were made to minimise this by asking the participants the same questions during the semi-structured interviews and using CATWOE to analyse the data. The engagement event also helped to limit bias as participants were given the opportunity to discuss, debate and develop the research themes outside of direct researcher facilitation.

It was important to gain perspectives of both clinicians and managers as they could have differing viewpoints regarding VR service delivery, and these views are represented in the study. However, the study was limited to NHS service providers and it would be valuable to explore the perspectives of commissioners and other VR providers including DWP and charity led services.

The study focused on a specific geographical area, with implications for generalisability. However, like Sinclair et al (2014), we have found SSM to be both feasible and valuable for this kind of evaluation, and our results are congruent with theirs. This provides a potential framework for other services to follow suit, contributing to the wider picture of VR service provision.

Future Research

The evidence regarding the provision VR for LTNCs is currently limited. Following on from this study, further research, which examines the perspectives of people with LTNCs of their work support needs, and the adequacy of services to meet these, would be valuable. From a service-delivery point of view it is important to test the feasibility of collecting a common core set of VR outcomes data across different service providers.

Conclusion

The research model employed in this study is effective in identifying local systems currently in place to provide VR. It could be used more widely to identify inequalities in LTNC VR service provision. As a priority commissioners need to clearly understand met and unmet LTNC VR needs. This would be facilitated by development of a VR taxonomy, and the collation of agreed work data and outcomes.

Key findings

- VR provision for LTNCs is variable and often happens 'under the radar'.
- To improve service delivery commissioners need to understand the met and unmet VR needs of people with LTNCs.

What the study has added

This study has highlighted systemic issues regarding funding and service provision of VR for people with LTNCs in one locality, adding to the small evidence base in this clinical area.

Statements:

Research Ethics

Ethical approval was obtained from Brunel University's Department of Clinical Sciences Research Ethics Committee. Ref: 14/10/MOT/18, November 2014.

Consent

All participants provided written informed consent to be interviewed for the study.

Declaration of interests

The authors declared the following potential conflicts of interest with respect to the research, authorship and/or publication of this article. Author EDP was supported by the National Institute for Health Research, University College London Hospitals, Biomedical Research Centre.

References

All-Party Parliamentary Group for MS, (2016) *'Employment that works: Supporting people with MS in the workplace'* Available at: https://www.mssociety.org.uk/what-we-do/news/employment-review-finds-people-with-ms-lack-support-at-work, (Accessed 15/10/2018).

Baldwin, C. and Brusco, N. (2011), 'The effect of vocational rehabilitation on return to work rates post stroke: A systematic review', *Topics in Stroke Rehabilitation,* 18 (5), pp. 562-572.

Black, C. and Frost, D. (2011), '*Health at work - an independent review of sickness absence'*. The Stationary Office: London.

Blank, A., Harries P. and Reynolds F. (2014), 'Without Occupation You Don't Exist: Occupational Engagement and Mental Illness', *Journal of Occupational Science,* Available at: http://dx.doi.org/10.1080/14427591.2014.882250 (Accessed: 11/01/2015).

Braun, V. and Clarke, V. (2006) 'Using thematic analysis in psychology', *Qualitative Research in Psychology,* 3, pp. 77-101.

Checkland, P. and Scholes, J. (1999), *'Soft-systems methodology in action',* John Wiley: Chichester.

College of Occupational Therapists (2016), *'Occupational Therapy evidence: Vocational Rehabilitation Factsheet'.* Available at: https://www.rcot.co.uk/sites/default/files/VR%20factsheet.pdf (Accessed: 15/10/2015)

Department of Health (2005), '*The national service framework for long term conditions',* The Stationary Office: London.

Department for Work and Pensions and Department of Health (2008), *'Improving health and work: Changing lives',* The Stationary Office: London.

Department for Work and Pensions and Department of Health (2016), '*Improving lives: The work, health and disability green paper'.* The Stationary Office: London.

Doogan, C. and Playford, E.D. (2014), 'Supporting work for people with multiple sclerosis', *Multiple Sclerosis Journal,* 20 (6), pp. 646-650.

Dorstyn D.S., Roberts R.M., Murphy G. and Haub R. (2017), 'Employment and multiple sclerosis: A meta-analytic review of psychological correlates', *Journal of Health Psychology*, Feb 01, pp. 1359105317691587.

Hilton, G., Unsworth, C. and Murphy, G. (2018), 'The experience of attempting to return to work following spinal cord injury: a systematic review of the qualitative literature', *Disability & Rehabilitation*, 40 (15), pp. 1745-1753.

Kirk-Brown, A., van Dijk, P., Simmons, R., Bourne, M. and Cooper, B. (2014), 'Disclosure of multiple sclerosis in the workplace positively affects employment status and job tenure', *Multiple Sclerosis Journal,* 0 (0), pp. 1-6.

Libeson, L., Downing, M., Ross, P., and Ponsford, J. (2018), 'The experience of return to work in individuals with traumatic brain injury (TBI): A qualitative study', *Neuropsychological Rehabilitation*, 10, pp. 1-18.

Middleton, J., Johnston, D., Murphy, G., Ramakrishan, K., Savage, N., Harper, R., Compton, J., and Cameron, I. (2015), 'Early access to vocational rehabilitation for spinal cord injury inpatients', *Journal of Rehabilitation Medicine,* 47, pp. 626-631.

Neurological Alliance, (2014), *'Neuro Numbers'.* Available at: http://www.neural.org.uk/store/assets/files/381/original/Final_-_Neuro_Numbers_30_April_2014_.pdf. (Accessed: 12/01/2014).

Office for National Statistics, (2017), 'Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland'. Available at: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland (Accessed: 30/07/2018).

Ottomanelli, L. and Lind, L. (2009), 'Review of critical factors related to employment after spinal cord injury: Implications for research and vocational services', *The Journal of Spinal Cord Medicine,* 32 (5), pp. 503-530.

Playford, E.D., Radford, K., Burton, C., Gibson, A., Jellie, B., Sweetland, J. and Watkins, C. (2011), *'Mapping vocational rehabilitation services for people with long-term neurological conditions: Summary report',* London: Department of Health. Available at: http://www.ltnc.org.uk/download_files/final%20reports/April%2012/2012/2012/Vocational%20rehabilitation_Final%20report.pdf (Accessed: 12/01/2014).

Public Health England, (2018), *'Workplace health: Applying All Our Health'.* Available at: https://www.gov.uk/government/publications/workplace-health-applying-all-our-health/workplace-health-applying-all-our-health (Accessed 15/10/2018).

Radford K., Sutton C., Sach T., Holmes J., Watkins C., Forshaw D., Jones T., Hoffman K., O'Connor R., Tyerman R., Merchán-Baeza J.A., Morris R., McManus E., Drummond A., Walker M., Duley L., Shakespeare D., Hammond A. and Phillips J. (2018), 'Early, specialist

vocational rehabilitation to facilitate return to work after traumatic brain injury: the FRESH feasibility RCT', _Health Technology Assessment,_ 22 (33), pp. 1-124.

Radford, K., Crompton, A. and Stainer, K. (2013), 'Commissioning vocational rehabilitation after stroke: can the Cinderella services get to the ball? A qualitative study', _Journal of Health Services Research and Policy,_ 18 (Suppl. 1), pp. 30-38.

Rumrill, P. and Roessler, R. (2015), 'An overview of Multiple Sclerosis: Medical, Psychosocial, and Vocational Aspects of a Chronic and Unpredictable Neurological Disorder', _Rehabilitation, Research, Policy and Education,_ 29 (2), pp. 122-134.

Rusbridge, S., Walmsley, N., Griffiths, S., Wilford, P. and Rees, J. (2013), 'Predicting outcomes of vocational rehabilitation in patients with brain tumours', _Psycho-Oncology,_ 22, pp. 1907-1911.

Sinclair, E., Radford, K., Grant, M. and Terry, J. (2013), 'Developing stroke-specific vocational rehabilitation: a soft systems analysis of current service provision', _Disability and Rehabilitation,_ Early Online: 1-9, Available at: http://informhealthcare.com/dre (Accessed: 14/10/2013).

Sweetland, J., Riazi, A., Cano, S.J., and Playford, E.D. (2007), 'Vocational rehabilitation services for people with multiple sclerosis: what patients want from clinicians and employers', _Multiple Sclerosis,_ 13, pp. 1183-1189.

Sweetland. J., Howse, E. and Playford, E.D. (2012), 'A systematic review of research undertaken in vocational rehabilitation for people with multiple sclerosis', _Disability and Rehabilitation,_ 34 (24), pp. 2031-2038.

Tyerman, A. (2012), 'Vocational rehabilitation after traumatic brain injury: Models and services', _NeuroRehabilitation,_ 31, pp. 51-62.

Waddell, G., Burton, A., and Kendall, N. (2008), _'Vocational Rehabilitation, what works for whom and when?',_ The Stationary Office: London.

Waddell, G. and Burton, A. (2006), '*Is work good for your health and well-being?'* The Stationary Office: London

Appendix 1

Factors required for effective vocational rehabilitation services or effective vocational rehabilitation within generalist neurology services

(Abbreviations: Multi-disciplinary team (MDT), Vocational Rehabilitation (VR))

	Factor	Evidence from CATWOE analysis
1	Actual or perceived funding to provide VR services is in place.	Development of the specialist VR services was linked to actual funding being allocated within their individual NHS Trusts. The generalist services provided VR on an ad hoc basis if they perceived they were allowed to (i.e. they had not been told not to by managers), whether actual funding was in place or not.
2	Clinicians have direct formal contact with commissioners to support funding of service.	One of the specialist VR services outlined that they were able to agree funding and develop their service through direct clinician contact with commissioners. This was not available to the other services. A lack of knowledge of the best communication route to commissioners was highlighted as a barrier for developing VR in the generalist services.
3	Services explicitly acknowledge/state that they provide VR (it is not under the radar).	Explicitly stating that they provide VR enabled services to market, gain patient feedback and develop this area of practice. Without allocated funding the generalist services tend to provide ad hoc VR 'under the radar'. They are unable to advertise that they have the skills to provide VR, limiting referrals and possibly leading to an unmet need in their population.

4	Services have a clear concept of what VR is and how they provide it.	There was inconsistency across the services as to what constitutes VR. One service stated they didn't provide VR, but they did support people to return to their existing job. This is considered to be VR in the literature and by the other services. The specialist services had a clear concept of what VR is and the interventions needed for effective service delivery.
5	Expertise exists within a core MDT to meet the needs that patients identify are their vocational problems (from a neuro-rehabilitation point of view).	There was consistency across the services as to the core disciplines needed to provide effective VR (occupational therapy, psychology, speech and language therapy, neurology/rehab consultant and rehabilitation/psychology assistant). Expertise was linked to regularly providing VR interventions, access to training and access to peer support/supervision.
6	An effective triage process is in place: patients are quickly assessed and prioritised.	Participants highlighted the importance of timing of VR interventions. An effective triage system was important within all services for prioritisation and utilisation of resources.
7	Services are well integrated within the community they serve: support services are known about and liaised with and the service is delivered in the geographical area/space most appropriate for the patient.	All participants saw the benefit of providing VR within the patients' own community. This enabled them to identify appropriate local support services and establish personal communication links with them. It also allowed flexibility of treatment location, which supported work hardening.
8	The needs of people who are self-employed/unemployed are understood and met.	Participants highlighted that the needs of people who are self-employed are different. For example they may need to return to work earlier than employed people due to financial constraints. All of the services discussed the challenges of supporting people who are unemployed with job seeking. This was an area the services felt unable to effectively support within their current staffing and service models.

9	There are identified, proactive ways for people to link back into the service as needed.	Participants identified that patients' VR needs change and they may require multiple periods of intervention. Therefore they need to be able to easily re-access VR services to ensure timely support.
10	Desirable work outcomes are identified and measured.	The specialist VR services collated work outcomes and used these to further develop their services. However there was a lack of consistency of the outcome measures used and no pathway for sharing this information between the services. The generalist services did not collate any VR related data. This meant they were unable to objectively monitor their VR provision.
11	Patients' needs are not always identified and therefore met, as the service perceives they do not have the skills to provide VR.	Within the generalist services there was a lack of consistency as to how or if VR needs were identified. Clinicians with experience in VR would ask clients about work, but those with less experience or confidence would not, possibly leading to an unmet need. As they are not funded to provide VR, training is not provided within these services to address this issue.
12	The prevalence of work problems in the service's population of people with neurological problems is not known.	The generalist services are not collating any work data and therefore they do not know the prevalence of work problems within their population, hindering VR service development.