



NEUROLOGY ACADEMY: EDUCATION WITH IMPACT

Quality improvement in mild cognitive impairment (MCI)

Stories from across the UK and Ireland

A collection of short written summaries from professionals working in health, social care and the voluntary sector to improve services and support for people experiencing mild cognitive impairment.

April 2022

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The sponsor has had no control over the educational content of this activity.*

Dementia United

Foreword

Dementia United is Greater Manchester Health and Social Care Partnership's flagship programme for dementia and brain health. It is our aim to work alongside clinicians, charities, localities, professionals, those living with cognitive impairment, families, friends and care partners to make Greater Manchester a brain healthy city and the best place to live if you have dementia or are caring for someone who does.

In 2017, we observed a lack of consistency in how people across Greater Manchester were diagnosed with Mild cognitive impairment (MCI). We also heard from people living with MCI how a diagnosis could be confusing and lead to uncertainty as to what their future may hold.

We strongly believe that this does not need to be the case; with the correct support, treatment and diagnostic frameworks people can feel supported to live well with MCI, plan for their futures and adopt brain friendly lifestyle changes which could lower the risk of their cognition worsening or progressing to dementia.

As part of a suite of projects aimed at improving diagnosis and offering support to patients we collaborated with Dr Ross Dunne and Dementia Academy to develop the MCI virtual course. It was designed to equip those working in the provision or development of services for people with mild memory impairment with the knowledge and motivation to carry out their own service improvement projects.

The stories in this short booklet are a snapshot of some of those projects, and we are delighted to share them as a way of furthering learning, and encouraging others to improve services and support around MCI in the future.



Warren Heppolette, Executive Lead, Strategy & System Development
Greater Manchester Health & Social Care Partnership

Dementia United

Acknowledgements

This work would not have come about without the significant efforts of Dr Ross Dunne, consultant in Old Age Psychiatry, who developed the Mild Cognitive Impairment (MCI) virtual course alongside Dementia Academy, for Dementia United. His expertise, enthusiasm and boundless understanding created an educational resource which inspired each of the project contributors in this booklet to undertake their quality improvement project, and our sincere thanks go to him for initiating this important work in MCI.

Additional thanks go to all of the speakers on the MCI virtual course, to Dementia United for their financial support and professional encouragement of the course, and to Dr Sarah Fox for her essential role in mentoring delegates through their quality improvement projects, and in aiding the development of this booklet, to further the reach of that learning.

Contents

This series of summaries outlines the quality improvement projects that were conducted as part of the Dementia Academy’s ‘Mild cognitive impairment virtual course’ which ran from March-September 2021.

These projects fit largely within four key themes: brain health promotion, monitoring and early intervention, risk mitigation, and awareness raising.

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Brain health promotion

Growing evidence suggests that supporting lifestyle changes for people with mild cognitive impairment (MCI) could improve the health of their brains and may reduce their risk of developing dementia (Livingston 2020).

Unfortunately, this important window of opportunity to reduce dementia risk and improve wellbeing is often missed in existing UK clinical pathways, where people with an MCI diagnosis are commonly discharged without follow-up and asked to ‘watch and wait’ for their condition to deteriorate (Leroi et al, 2020).

These projects explore how we can provide post-diagnostic support for people living with MCI which could improve their brain health and lower their risk of developing dementia.

Promoting brain health amongst dementia carers

Sue Hinds, Head of Services, Dementia Carers Count (DCC)

Background

Promoting brain health through education and lifestyle modification is an essential element of reducing the prevalence and impact of cognitive impairment, including MCI and dementia (Leroi et al, 2020).

Clinical Deficit

Carers of people with dementia often tell voluntary organisation Dementia Carers Count (DCC) about the challenges they have with their own cognition, particularly in relation to the stress, lack of sleep or other difficulties involved in caring for someone with dementia.

Aims of intervention

To use an existing platform to provide information in a range of forms, styles, and media, via the DCC website, to educate, inform and support people caring for someone with dementia to understand how to prioritise their own brain health.

Methodology

To create and publish additional resources within a new online platform ‘the Virtual Carers Centre’, within two of the six themed portals: ‘the brain’ and ‘health promotion’ addressing areas of brain health.

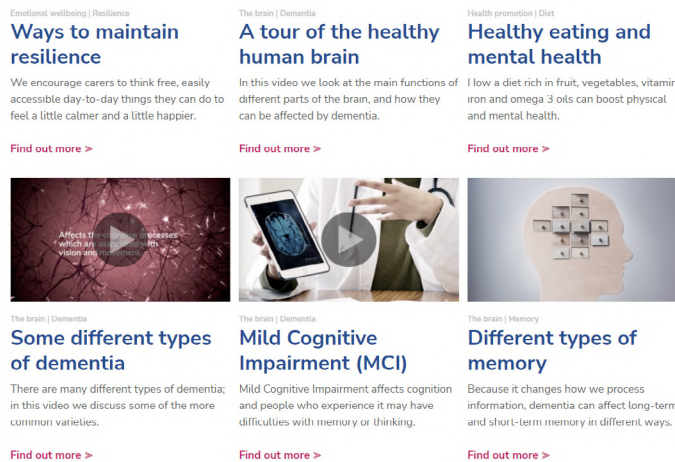
Results

A wide range of resources have been developed and are available in written copy, animations and recorded spoken videos, separated into two distinct portals of the virtual platform:

- ‘the brain’ includes information on what MCI is and changes in the brain with ageing
- ‘health promotion’ includes information around lifestyle modifications to promote brain health, including diet, physical and mental activity, relaxation, sleep, breathwork, social connections and more.

A formal launch took place in November 2021 and all the resources can be found at <https://dementiacarers.org.uk/vcc/all-posts/>

Image: Some of the linked resources around brain health available at <https://dementiacarers.org.uk/vcc/all-posts/>



Outcomes

Testing has been undertaken throughout the development of the Virtual Carers Centre platform and will continue to be reviewed over time.

Brain health and occupational therapy

Fiona Barclay, Occupational Therapist, Queen Elizabeth Hospital, Glasgow

Background

A central tenet of occupational therapy practice is working with people to support self-management of their daily occupations, or activities. For occupational therapists supporting self-management, this involves giving advice and guidance that supports people in adopting healthy behaviours, maintaining social interactions, and adaptive strategies that enable participation in occupations (Royal College of Occupational Therapists 2019).

Clinical Deficit

Optimising brain health at an individual and societal level may require supported lifestyle changes and providing a specific education programme.

Aims of intervention

To design and provide a one-off brain health education session for people in the first or second stage of Parkinson's, or another movement disorder, and who have had a recent change in their cognitive ability or a cognitive assessment indicative of MCI.

Methodology

A one-hour session including:

- Completion of the Parkinson's disease - Cognitive Functional Rating Scale (PD-CFRS) and lifestyle questionnaire
- Review of evidence from the Lancet commission report (Livingston 2020)
- Discussion and goal setting
- Anonymous feedback form

Outcomes

Four patients were identified; three chose to attend the session.

- The session was rated eight or 10 out of 10
- All participants elected to set goals around increased physical activity, increased and varied activities generally, and consuming more fruit and vegetables in their diet.
- Two of the three suggested they would be interested in further information or support.
- All reflected on their learning that positive lifestyle choices have an impact on their brain health.

Future sessions will be given, with improvements to the programme including:

- Liaison with the Movement disorders team to identify appropriate referrals for brain health education
- 6-monthly follow-up with participants
- Request completion of the PD-CFRS and lifestyle questionnaire pre-session
- Offer the session remotely
- Provide handouts for people to use as prompts or reminders at home.

Risk mitigation

Growing evidence suggests that people living with mild to moderate dementia can improve their wellbeing and perhaps slow the progression of the disease by improving their brain health and managing medical and lifestyle factors which pose a risk to the health of their brains (Livingston 2020; Leroi 2020).

These projects explore how we can support clinicians and people living with a cognitive diagnosis to manage brain health risk factors and perhaps slow the progression of their condition.

Supporting vascular health in people with Parkinson's

Dr Simon Cooper, Consultant in Medicine for the Elderly, Taunton and Somerset Foundation Trust

Background

People with Parkinson's often have other pathologies or comorbidities, some of which may impact on their cognitive abilities. Whilst little can be done to alter the underlying neuropathology of Parkinson's, other comorbidities which may increase a patient's cognitive burden, such as poor vascular health, can be impacted positively to improve and preserve cognitive health in those living with Parkinson's.

Clinical Deficit

There were no specific measure(s) in place to monitor and address vascular health in people with Parkinson's within the movement disorders service in Taunton and Somerset Foundation Trust.

Aims of intervention

To improve the vascular health of patients with Parkinson's and thereby reduce the potential for cognitive decline due to comorbid vascular disease.

Methodology

To examine relevant health records via the case notes of 50 patients with Parkinson's under the age of 65 within the movement disorders clinic, considering:

- vascular risk factors
- relevant investigations
- vascular management plans or treatment changes

Vascular risk* was considered to include the following elements with appropriate investigations identified for each:

- | | |
|--------------------|-----------------------|
| • hypertension | • diabetes |
| • smoking | • lipid disorder |
| • alcohol use | • exercise |
| • diet | • atrial fibrillation |
| • obesity / weight | |

[*This was drawn from NICE impact: dementia (2020)]

To then implement a clear change in clinic process and records dependent on results.

Outcomes

Based on the findings it was clear that some areas of vascular health were monitored, and interventions or information provided but that this was not the case for all areas of vascular risk. Monitoring and interventions were also not consistent across clinics and there was no set system agreed.

As a result:

- a history record with management prompts has been developed for the Parkinson's nurses to use within the Movement disorders clinic
- the potential for ECG and appropriate blood tests has been built into the annual review that the nurses conduct with people with Parkinson's
- the results of this work are being presented at a multidisciplinary team (MDT) meeting
- a repeat audit will be carried out in due course to monitor change.

Supporting vascular health in frail people with Parkinson's

Dr Christine McCarthy, Galway Integrated Care for Older People Group (GICOP)

Background

Older people, as a demographic, can be more vulnerable, frail and more likely to experience memory problems, including MCI or subjective memory impairment. However, they are rarely monitored for or given consistent advice and support regarding brain health and how to reduce the burden and impact on their cognitive abilities.

Clinical Deficit

The Galway Integrated Care for Older People Group (GICOP) supports a wide range of people with differing needs; however, there is no framework or process in place for support or related brain health monitoring.

Aims of intervention

To assess how well the GICOP supported its patients regarding brain health-related monitoring and assessment, and provision of information, advice and lifestyle interventions.

Methodology

A review of patient case notes, where a cognitive complaint was recorded. The review will assess how well patients' brain health is supported (in terms of what has been documented) specifically in relation to:

- Medication assessments and recommendations
- Smoking cessation
- Lifestyle interventions
- Sleep disturbances
- Hearing impairment

Interim results were as follows:

- Medication assessments and recommendations were consistently performed well.
- Smoking cessation was well supported.
- In 70% of cases lifestyle interventions were not documented as having been offered to those with cognitive complaints.
- 50% of cases were screened for sleep disturbances, however, further support in the form of medication review or sleep hygiene advice was not consistently provided.
- Screening for hearing impairment was undertaken and found present in 20% of cases but advice and support subsequent to this was not documented.

To understand why there was inconsistency in support and follow up around these areas, a further detailed team review of 30 patients who presented with memory complaints or MCI was conducted.

It was found that:

- the frailty of the patient population makes generic lifestyle advice complex:
 - 40% required assistance or an aid to be mobile, making exercise advice complex
 - 23% had moderate or high risk of malnutrition making generic nutritional advice more complex
- The sleep screening tool being used was not practical
- There is not a good map of audiology services and knowledge of how to initiate appropriate referrals or obtain access to hearing aids for patients was poor within the team.

Outcomes

- Development of a range of dedicated brain health literature which caters for the potential barriers that older and frail people may have in implementing lifestyle advice
- Change in sleep screening tool from RU-SATED to a self-designed and validated tool with practical questions to assist lifestyle changes
- Development of a map of current audiology services in the area and clear information around funding and access
- Ongoing staff education sessions are planned.
- Future audits are planned to monitor changes and ensure improvements.

Education on anticholinergic prescribing

Dr Nina Mohan, CT2 Psychiatry, NIMDTA: Southern Health and Social Care Trust

Background

Anticholinergic medications are prescribed to treat a variety of medical conditions including Parkinson's disease, allergies, Chronic Obstructive Pulmonary Disease, depression and urinary incontinence. One of the adverse effects of anticholinergic drugs is cognitive impairment and this can be exacerbated using multiple or strong anticholinergics - often referred to as a patient's anticholinergic burden. Older patients are more likely to have multiple comorbidities, and therefore to be on multiple medications. As the body ages, its ability to metabolise medications declines, and therefore older patients are more susceptible to the anticholinergic burden of their medications.

Longitudinal studies have shown an association between the use of anticholinergics and the risk of developing cognitive impairment and of death. More recent research also indicates that there is a dose-dependent association between long term use of anticholinergics and the risk of developing dementia (Anticholinergic Burden Calculator).

Clinical Deficit

High level of referrals from GP practices and other specialties for people with mild or non-specific cognitive changes and borderline mini mental state examination (MMSE) scores who were being referred with suspected MCI were frequently found to have a high anticholinergic burden.

This anecdotal observation was validated with evidence-base from an audit of all referrals to the memory service across a 1-year period from January 2020-January 2021. The audit assessed all patient's medications and associated anticholinergic burden.

Aims of intervention

To reduce the prescription of anticholinergic medications by 30% at the time of patient referral to the memory service, thereby reducing overall MCI referrals to the service.

Methodology

- A letter was sent to all GP practices across the Trust advising them of the current guidelines regarding anticholinergic burden and its association with cognitive impairment.
- After a 3-month period, the same audit of referrals to the memory service assessing their medication prescribed and its associated anticholinergic burden, was conducted (103 referrals from 01.07-01.08.21)

Outcomes

When reviewing the audit data side by side, there was very little change in the prescriptions for referrals:

- There was a slight reduction in the prescriptions for amitriptyline (14%), fesoterodine (3%), co-codamol (10%) and diazepam (5%)
- There was an increase in prescriptions for quetiapine (25%), solifenacin (5%), risperidone (10%).

This did not meet the 30% reduction in anticholinergic prescriptions hoped for.

However, this was the first cycle of information to GPs.

Next steps include:

- Adding a prompt to the online referrals system to the memory service for the GP to use the anticholinergic (ACB) calculator at the time of referral.
- Reauditing again at that point.

Room for improvement in MCI patients?

Dr Mohammad Khalid Khaleel, Consultant Psychiatrist

Background

As is outlined in the previous case-study, anticholinergic medications are prescribed for a whole host of reasons, but can negatively impact cognitive function, particularly when used in strong doses or when multiple medications are being taken.

The decreasing ability of older patients to effectively metabolise these medications, the likelihood of people with comorbidities being on several different anticholinergics simultaneously, and the accumulative burden of these having an associated risk with dementia all make this an important area of medications management to review in light of cognitive decline.

Clinical Deficit

A number of people have been attending the local memory clinic who do not meet the criteria for dementia but do meet the criteria for MCI. It has become apparent that several individuals are demonstrating the effects of anticholinergic burden.

Aims of intervention

To add a medicines review for anticholinergics into memory clinic appointments for people with MCI to improve cognition in these patients and to target reversible causes of cognitive impairment.

Methodology

1: To initiate a medicines review and potential change for people with MCI by:

- identifying all people in the memory clinic within an elderly age bracket who do not meet the dementia criteria due to higher cognitive function
- reviewing all medication, and use of the anticholinergic burden scale (ACBS)
- liaising with the persons' GP to reduce doses, or wean off medications where possible

2: To improve education around the cognitive impact of anticholinergic burden amongst local GPs and Medicine for the Elderly colleagues.

3: To ascertain improvement, deterioration or no change in cognition in the time between the assessment with anticholinergic medication review and the 6-12 month follow-up appointment, by reviewing patient data across:

- cognitive assessments (MoCA and ACE)
- Activities of daily living (IADLS and ADLS)
- Collateral feedback
- Clinical assessment
- Global Assessment of Functioning (GAF scale)
- The anticholinergic burden scale (ACBS)

Outcomes

Results of the data review will be available in approximately 6 more months for full results and outcomes.

Initial outcomes of broader work include:

- improvement in local education at primary and secondary care levels around anticholinergic burden
- potential opportunity to note deterioration in cognition over a 6-12 month period potentially indicative of future dementia

Future plans include:

- extending the work to all adults referred to the memory clinic
- adding to the advice support and information around positive lifestyle interventions to promote brain health, particularly around cognitive training

Monitoring and early intervention

Early and differential diagnosis is important to ensure we are offering our patients the correct medication and support in a timely manner to manage their condition. This can be especially important amongst groups of patients at a higher risk of developing cognitive impairment.

These projects explore how we can detect cognitive impairment in a timely manner and ensure that we are providing patients with a correct differential diagnosis.

Diagnosing mild cognitive impairment in Parkinson's disease

Dr Alison Yarnall, Clinical Fellow, Institute of Neuroscience, Newcastle University

Background

Mild cognitive impairment (MCI) is a common feature in Parkinson's disease (PD), even at the time of diagnosis. The nature of Parkinson's means that there is some risk of increasing severity of cognitive impairment, and of MCI converting to Parkinson's disease dementia (PDD) in the future. To prevent unnecessary cognitive deterioration, maximise quality of interventions and support to people with Parkinson's, it is important to monitor for MCI in those with the condition (Cammissuli, 2019; Yarnell, 2013)

Clinical Deficit

There are currently no formal means of monitoring patients with Parkinson's for mild cognitive impairment (MCI) within local Parkinson's clinics. The Parkinson's Excellence Network supports the use of a PD-MCI algorithm which includes the PD-Cognitive Function Rating Scale (PD-CFRS) for use within routine Parkinson's clinics. This is to ensure people with Parkinson's are fully assessed and appropriately supported if they experience cognitive decline.

Aims of intervention

To determine whether:

1. the PD-MCI algorithm is feasible for use in routine Parkinson's clinics
2. use of this algorithm can improve detection of mild cognitive impairment in Parkinson's, including whether it leads to a change in service management or patient diagnosis.

This snapshot refers to part one of the two aims.

Methodology

- Exclusion was made for patients with anything other than idiopathic Parkinson's, and those already diagnosed with dementia.
- Three month's clinic data was reviewed for patients with Parkinson's, Parkinson's-MCI or Parkinson's disease dementia, also noting age, gender, disease duration (to nearest year), last Montreal Cognitive Assessment (MoCA)
- Informal training for nurses and implementation of the PD-CFRS (this had already been provisionally discussed), monitoring and reviewing the implementation through:
 - percentage of eligible patients to use it with
 - time taken to complete the scale (nurses timed this)
 - whether a MoCA was also completed
 - proportion diagnosed after two months of implementation (PD-MCI score >2, PDD>6) and associated MoCA score (where this was also taken)
 - Of those diagnosed, was further action taken and what.

Outcomes

Four patients had their management plan adjusted with three medication changes and one referral to a memory clinic.

Results suggest positive measures in asking about an assessing cognition using the MoCA but that this does not follow up with reviews or formal documentation.

Training on the PD-MCI algorithm has now been implemented with the nursing team with a view to completing part two of the project aims and the service will be reassessed in two months' time.

Screening for REM sleep behaviour disorder to improve consideration of dementia with Lewy bodies

Dr Rachel Moir, Dr Ruth-Pye Jones, Dr Amit Sindhi, and Dr Boben Benjamin

Background

Lewy body dementia (LBD) is believed to be underdiagnosed in the general population. Since differential diagnosis of dementia subtypes is important for patient support and disease-targeted treatment, we believe that it's important to address this deficit.

Our recent pilot study has highlighted a method by which memory assessments may improve differential diagnosis of LBD, without placing significant extra time commitments on staff. We would like to share our methodology and findings here, in the hope that this intervention may be adopted more widely. If you have any questions please contact Rachel.Moir2@nhs.net or ruth.pye-jones1@nhs.net

Clinical Deficit

Lewy Body Dementia (LBD) is predicted to be underdiagnosed in the general population. There is a large disparity between prevalence rates in clinical population based studies (4%) of LBD and neuropathological studies (15-20%).

Aims of intervention

REM sleep behaviour disorder (RBD) is one of the 4 core clinical criteria for diagnosis of LBD. Longitudinal studies of RBD show strong association with LBD, potentially present up to 8 years prior to identification of LBD.

Adding a screening question can potentially alert the clinician to consider a diagnosis of LBD.

Methodology

- A validated screening question was added to the initial assessment proforma for memory assessments; 'Have you ever been told that you "act out your dreams" while sleeping (punched or flailed arms in the air, shouted or screamed)?' (Postuma 2012)
- Delivery of an RBD and LBD educational package to the memory team who administer the initial assessments.
- Reminders to use the new proforma.

Outcomes

- The initial baseline data showed that 0% of initial assessments screened for RBD. This increased to 100% at the end of the last plan-do-study-act cycle.
- Main reason for non-completion was nurses using the old proforma.
- 4/152 patients screened positive for RBD
 - These patients were subsequently diagnosed with delirium, late-onset Alzheimer's disease, vascular dementia and mixed dementia (Alzheimer's disease and vascular dementia)

Further work

The authors are in the process of disseminating the project findings locally within Greater Manchester and intend to submit an abstract to the Royal College of Psychiatrists International Congress 2022.

Awareness raising

Early disease detection has been pivotal for developing treatments and interventions for many diseases, and dementia is no different. As our knowledge grows, we develop better ways of managing dementia, improving brain health and perhaps even slowing disease progression. It becomes increasingly important that we support our patients in receiving the correct diagnosis early in the course of the disease.

These projects explore how we can ensure cognitive impairments are detected early, so patients can be offered support to manage their symptoms and perhaps slow the progression of any underlying disease pathology.

Early detection of MCI at a GP level

Dr Karen O'Connor, General Practitioner

Background

There are an estimated 7,000 people with dementia in Sheffield, just over 1% of the city's population (Sheffield Dementia Strategy Commitments 2019). Recently, Sheffield has developed a new Dementia strategy (2019) setting out 13 commitments to delivering care and support, which aim to improve everyone's experience of dementia. The Dementia Strategy sets out four elements in its vision, the first of which is 'To prevent or delay the onset of dementia by maintaining a healthier lifestyle and behaviours, across all ages, (with a focus on mid-life 40s and 50s).'

Clinical Deficit

Much of dementia prevention or brain health promotion lies within general practice. Implementation of the Dementia strategy relies on awareness of its existence and of its core content. For GPs, this specifically refers to early detection of mild cognitive impairment and appropriate referral, or advice around lifestyle modification, to protect against further cognitive decline.

Aims of intervention

To ascertain whether the GP surgeries across Sheffield are aware of the new dementia strategy and if so, to what extent they have interacted with it.

To raise awareness around the importance of brain health and encourage more of a focus on it.

Methodology

To send an e-questionnaire to the circa 90 GP practices across Sheffield and their dementia implementation groups asking whether they:

- aware of the new dementia strategy,
- have read the strategies' summary
- have read the entire strategy

Outcomes

19 responses were received across the 90 GP practices.

- Nine of the responses were aware of the dementia strategy, 10 were not.

The limited responses demonstrate that this is perhaps not a priority at present and that in itself is important learning given the societal burden of dementia, the current Western lifestyle model and its links with risk factors for cognitive decline (Livingston et al 2020).

Increased awareness of MCI within and in relation to the BAME community

Abdul Shakoor, BAME Dementia Family Link Worker, Tameside and Glossop Mind

Background

There is a significant BAME (black, Asian and minority ethnic) population in Greater Manchester. Within this broad population are many different languages, cultures and religions which all impact how people understand and relate to dementia, and how they will interact with a healthcare professional around this.

Clinical Deficit

There is a requirement for better understanding of MCI amongst South Asian populations, where cognitive decline is often assumed to be a natural part of ageing, or a religious intervention. There is also a need for increased understanding of social, cultural and religious backgrounds amongst healthcare professionals to optimise their services and to tailor lifestyle modifications to people with MCI from South Asian populations.

Aims of intervention

To improve understanding amongst both South Asian populations and healthcare professionals across Greater Manchester around MCI and its management within the social, cultural, linguistic and religious framework of South Asian populations.

Methodology

The development of two distinct educational presentations.

1: For South Asian populations, the presentation details:

- the difference between MCI and dementia,
- what the symptoms of MCI are and when to visit your doctor,
- treatment, management and supporting brain health
- the benefits of diagnosing MCI.

This presentation has been translated into several Asian languages and is being offered in culturally significant places including mosques, churches, and places of refuge for asylum seekers.

2: For healthcare professionals across Greater Manchester:

- background and information to develop and improve cultural awareness,
- improve understanding of culture, practices and diversity in relation to healthcare support and specifically MCI and dementia.

This presentation has been developed with a layered approach to information, so that it can be delivered with key messages in a 1-hour session, or as a half-day training course.

Delivery will follow the same model that Tameside, Oldham and Glossop Mind have previously used to roll out training of this kind for dementia.

Outcomes

The presentations are complete, but have yet to be used given the social parameters set by the coronavirus pandemic, and the pressures being felt across healthcare at present.

The work has been featured in Alzheimer's Taxi, an international partnership project between Roche and other agencies, including Neurology Academy, to highlight areas of positive practice within MCI, dementia and Alzheimer's which are not always understood or focused on.

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www.neurologyacademy.org

Neurology Academy

1 The Edge Hillsborough Barracks
Langsett Rd
Sheffield
S6 2LR

 **01143 270 230**

 **info@neurologyacademy.org**

 **@TheNeuroAcademy**

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