Evidence Brief: Stroke Workforce

Contents

Produced by the Knowledge Management team Evidence Briefs offer an overview of the published reports, research, and evidence on a workforce-related topic.

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- Complete Evidence Brief list – link for External staff

Key publications – the big picture

Overworked and undervalued: building a stroke workforce for the future
Source: Stroke Association
Publication date: July 2023
The stroke workforce is the backbone of our stroke services. From nurses and physiotherapists to speech and language therapists and social care workers, these individuals work tirelessly in challenging circumstances to provide the best level of care possible. The UK is currently in the middle of our biggest ever health and social care workforce crisis. There are 124,000 vacancies across the NHS in England; nearly 9% of all posts are empty.1 With this level of staff shortages, remaining healthcare staff are placed under extreme and chronic pressure to deliver more care with fewer resources.

National Clinical Guideline for Stroke for the UK and Ireland
2023, Intercollegiate Stroke Working Party
This guideline relates to those aspects of clinical management that are specific to stroke; it does not seek to address areas of routine clinical practice and good governance such as courtesy and respect for the individual, shared decision making and supporting patient choice, accurate record keeping etc.
See Section 2 for workforce related issues

NHS Long Term Workforce Plan
Source: NHS England
Publication date: June 2023
The first comprehensive workforce plan for the NHS, putting staffing on a sustainable footing and improving patient care. It focuses on retaining existing talent and making the best use of new technology alongside the biggest recruitment drive in health service history.

Inequities in Access and Delivery of Acute Stroke Care A Brain Attack Coalition Symposium Report
Source: National Institute of Neurological Disorders and Stroke
Publication date: October 2022
Prior to the Brain Attack Coalition's Inequities in Access and Delivery of Acute Stroke Care symposium, the National Institute of Neurological Disorders and Stroke (NINDS), as a member of the Brain Attack Coalition, orchestrated a series of steering committee, task force, and subgroup meetings to begin thoughtful discussions on inequities in stroke care and possible strategies to address them. During the meetings, task force members identified key disparities in stroke care and their root causes, potential solutions, best practices, remaining knowledge or research gaps, and tangible actions over both the short- and long-term to address inequities. Notably, each task force was composed of diverse, multidisciplinary teams of stroke and public health experts, including neurologists, emergency specialists, epidemiologists, health policy analysts, professional group representatives, and others, who voluntarily came together to formulate these recommendations on how to improve equity in stroke care.

Stroke - GIRFT Programme National Specialty Report
Source: Getting it Right First Time
Publication date: April 2022
This report includes many case studies to highlight good practice that stroke services can learn from. We have also made a range of recommendations, based on the findings from our visits, to support improvements in local services. These recommendations include clear steps to implementation and who should take responsibility. Together they offer a substantial opportunity for change, benefiting patients and providers.

Integrated Stroke Delivery Networks National Stroke Service Model

Source: NHS England
Publication date: May 2021
Our Long Term Plan for the NHS recognises the importance of tackling the growing impact of stroke in England. Integrated stroke delivery networks are the key vehicle for transforming stroke care across the country. Using a full-pathway approach, they will prevent thousands of patients suffering a stroke, through improved diagnosis and access to treatment in 24/7 specialist stroke units, and increase the availability of high quality rehabilitation and ongoing community care to rebuild patients' lives after a stroke. By driving improvements, we will save half a million lives over the next decade, and give hundreds of thousands of stroke survivors the chance of a better recovery.

We are the NHS: People Plan for 2020/2021 – action for us all July 2020, NHS
We are the NHS: People Plan 2020/21 – action for us all, along with Our People Promise, sets out what our NHS people can expect from their leaders and from each other. It builds on the creativity and drive shown by our NHS people in their response, to date, to the COVID-19 pandemic and the interim NHS People Plan. It focuses on how we must all continue to look after each other and foster a culture of inclusion and belonging, as well as take action to grow our workforce, train our people, and work together differently to deliver patient care.

Stroke n.d., Health Education England
Lack of access to post-acute rehabilitation is where the least progress has been made over the last 10 years. Less than a third of stroke survivors receive a review of their progress and unmet needs at six months post stroke. A whole system workforce approach is needed to address the skills and capability for stroke prevention and detection; hyper-acute stroke services; specialist assessment and rehabilitation; and life after stroke.

Stroke: A training resources guide June 2021, Health Education England
[…] the need for embedding virtual education into stroke services has been highlighted and the delivery of education using digital and virtual solutions enable staff to maximise time-saving opportunities (Ford et al. 2020). The importance of looking at ways to both cross skill and up skill the available workforce is critical, particularly where there have been highlighted deficiencies in training (Natarajan et al. 2019). This includes the entire workforce, from staff in the emergency departments through to the community and voluntary sector. The aim of this guide is to provide learners with a comprehensive list of available resources that can be used simultaneously with the SSEF to support workforce upskilling, training and development.

Restoration and recovery of stroke services during the COVID-19 pandemic July 2019, Oxford Academic Health Science Network
See section 3.2: Workforce
In normal times, quality improvement in stroke care for the most part happens incrementally. Planned changes are considered, agreed and implemented, and the impact of changes is monitored in the regular Sentinel Stroke National Audit Programme. This approach leads to slow, continuous improvement. Occasionally services have to deal with challenges that suddenly disrupt quality of care, such as staff departures, but these tend to be timelimited, affecting individual units rather than entire networks

Springboard for Progress: The Seventh SSNAP Annual Report
April 2019 to March 2020
The Sentinel Stroke National Audit Programme (SSNAP) is a national healthcare quality improvement programme based in the School of Population Health and Environmental Studies at King's College London. SSNAP is commissioned by the Healthcare

Quality Improvement Partnership (HQIP) on behalf of the NHS in England and Wales, as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP)

NHS Long Term Plan January 2019, NHS
The NHS Long Term Plan was developed in partnership with those who know the NHS best – frontline health and care staff, patients and their families and other experts.
See Chapter 3 “Further progress on care quality and outcomes – better care for major health conditions” which includes detail on “stroke care” (p. 64), particularly “The NHS will work with Health Education England to modernise the stroke workforce with a focus on cross-specialty and in some cases cross-profession accreditation of particular ‘competencies.”

The role of the radiography workforce in stroke management
n.d., The Society and College of Radiographers
The radiography workforce delivers diagnostic imaging and radiotherapy services in a range of health and social care settings across the UK. Radiographers are pivotal to delivering fast and reliable diagnoses of disease, as well as curative and palliative treatment and care for patients with cancer. A large majority of patients will be referred for imaging during their treatment and radiographers are key to the delivery of successful clinical outcomes.

Case Studies

Stroke Quality Improvement project for complex stroke survivors
2023, NHS Fab Academy
This describes a services project to address the backlog of stroke survivors with complex needs.

Improving stroke services: lessons from research November 2023, NIHR
This Collection summarises the three studies discussed at the webinar. It covers priorities for stroke research which were identified by patients and professionals in the James Lind Alliance and reflected in the National Stroke Programme. These include increased use of thrombolysis, integrated community care and high-quality rehabilitation.

Reconfiguration and networking of services – Stroke and other Hospital Services in South Yorkshire and Bassetlaw (2019) May 2022, Future NHS **Login required*
This case study focuses on how South Yorkshire and Bassetlaw developed a strong case for change and worked with their community to develop a sustainable model for high quality hyper acute stroke care, and also used its scale and expertise as a system to bolster hospital services using a network model following a Hospital Services Review.

Leicester Stroke 360 VIRSIM Project April 2022, Future NHS **Login required*
We designed, recorded and produced a 360-degree virtual reality stroke simulation (VIRSIM). This content combined curriculum elements and trainee feedback from traditional simulation training. Our multi-disciplinary team of stroke doctors, nurses, educationalists and an external filming company created this unique content over a 3-month period. This content is now uploaded to HELM (the Learning Management System used by UHL) to provide a benchmark for stroke quality during acute thrombolysis locally and will supplement our regional ‘Stroke Simulation’ course to engage and prime candidates so they maximise the learning from face-to-face teaching.

Developing the workforce to grow stroke research January 2021, NIHR

DR RICHARD MARIGOLD, Consultant Stroke Physician
University Hospital Southampton NHS Foundation Trust (UHS)
University Hospital Southampton has been awarded Hyperacute Stroke Research Centre (HSRC) status by the NIHR. The award will make UHS a specialist centre for research carried out within the first few hours of a stroke, when treatment is most likely to be effective.

Learning from stroke reconfiguration in London and Greater Manchester: a case study of a new form of research dissemination n.d, UCL and Kaleidoscope, funding by NIHR
From March to May 2018 UCL and Kaleidoscope sought to start fresh conversations on how to achieve successful system change in the NHS. The events were underpinned by a mixed methods evaluation of changes to acute stroke services in London and Greater Manchester; both the research and the events series were funded by the National Institute for Health Research. The events included over 110 people joining live, with 85% of attendees coming from outside academia. There were also 7,200 visitors to the series' website. The methods used provide a new way to disseminate and share knowledge between research, practice and policy.All referenced blogs and materials are available at learningfromstroke.com.

New emotional support service, Liverpool January 2019, NHS Long Term Plan
Joint working between the Stroke Association, Liverpool Clinical Commissioning Group and stroke clinicians, is improving the emotional support given to patients before, during and after clinical care.

Joint care from the Community Stroke Team and Stroke Association's Reablement Services promotes the health and wellbeing of stroke survivors January 2019, NHS Long Term Plan
Partnership working between the NHS and the Stroke Association's Reablement Service is ensuring that people receive timely community based holistic care and support after a stroke, boosting both their health and wellbeing.

New models of care in practice: EMRAD (East Midlands Radiology Consortium) n.d., NHS Providers
The East Midlands Radiology Consortium (EMRAD) aims to deliver timely and expert radiology services to patients across the East Midlands, regardless of where they are being treated. Radiology services include imaging tests like x-rays and scans. The EMRAD network and its new way of working can save money as well as improve the clinical care offered within urgent services such as major trauma and stroke and in regional acute surgical centres. It also improves the support available to smaller hospitals and outpatient facilities around the region. See also Acute Care Collaboration Vanguards

Productive workforce utilisation at Whittington Health NHS Trust n.d., Skills for Health
Improved workforce utilisation and enhanced patient care by using competence-based roles to modernise services and develop staff skills.

The Star for workforce redesign

More resources and tools are available in the Star

Statistics

You can find relevant statistics on the Health and Care Statistics Landscape under **"Stroke"**

Sentinel Stroke National Audit Programme (SSNAP) 2023, King's College London
The Sentinel Stroke National Audit Programme (SSNAP) is a major national healthcare quality improvement programme. We measure how well stroke care is being delivered in the NHS in England, Wales and Northern Ireland. We provide timely information to clinicians, commissioners, patients and the public so it can be used to improve the quality of care that is provided to patients.

SSNAP's clinical audit collects a minimum dataset for stroke patients in every acute hospital in England, Wales and Northern Ireland, and follows the pathway through recovery, rehabilitation, and outcomes at the point of their 6 month assessment. SSNAP is the only national stroke register in the world to collect longitudinal data on the processes and outcomes of stroke care up to 6 months after stroke.

National Data Programme

Workforce, Training and Education staff can look at the WT&E Data and Analytics Service resources including the National Data Warehouse SharePoint site to find out more about datasets and Tableau products.

Published Peer Reviewed Research

COVID-19

Was COVID-19 Associated With Worsening Inequities in Stroke Treatment and Outcomes? September 2023, Stroke
Stroke care during the pandemic could have been impacted by disruptions to usual processes of care, or by delay and deferral of care among patients experiencing stroke symptoms. Based on data from the GWTG (Get With The Guidelines) Stroke national registry, previous studies reported increases in mortality rates and stroke severity during the pandemic and no differences in the use of reperfusion therapy.23, 24 In contrast, although we also found increases in mortality, we found increases in the use of reperfusion therapy and no increase in stroke severity. The discrepancies in the findings may be due in part to differences in patient samples. Although the GWTG Stroke registry is a convenience sample that includes patients of all ages at a subset of hospitals participating in the GWTG quality improvement initiatives, our study is based on a larger population-based sample of elderly Medicare patients and includes patients at a much broader range of hospitals. Additionally, our study examined the effect of the pandemic as a function of the weekly hospital COVID-19 burden, whereas previous studies compared the prepandemic to the pandemic period by combining all of the patients in the pandemic period into 1 group, regardless of the inpatient COVID-19 burden. Although these earlier studies examined the impact of COVID-19 on the overall treatment and outcomes of patients with ischemic strokes, to our knowledge, no other study has examined the effects of COVID-19 on disparities in stroke outcomes and treatment.

The impact of COVID-19 pandemic on aortic valve surgical service: a single centre experience 2021, BMC Cardiovascular Disorders

Background: The coronavirus-disease 2019 (COVID-19) pandemic imposed an unprecedented burden on the provision of cardiac surgical services. The reallocation of workforce and resources necessitated the postponement of elective operations in this cohort of high-risk patients. We investigated the impact of this outbreak on the aortic valve surgery activity at a single two-

site centre in the United Kingdom. Methods: Data were extracted from the local surgical database, including the demographics, clinical characteristics, and outcomes of patients operated on from March 2020 to May 2020 with only one of the two sites resuming operative activity and compared with the respective 2019 period. A similar comparison was conducted with the period between June 2020 and August 2020, when operative activity was restored at both institutional sites. The experience of centres world-wide was invoked to assess the efficiency of our services. Results: There was an initial 38.2% reduction in the total number of operations with a 70% reduction in elective cases, compared with a 159% increase in urgent and emergency operations. The attendant surgical risk was significantly higher median Euroscore II was 2.7 1.9-5.2] in 2020 versus 2.1 0.9-3.7] in 2019 ($p = 0.005$)] but neither 30-day survival nor freedom from major post-operative complications (re-sternotomy for bleeding/tamponade, transient ischemic attack/stroke, renal replacement therapy) was compromised ($p > 0.05$ for all comparisons). Recommencement of activity at both institutional sites conferred a surgical volume within 17% of the pre-COVID-19 era. Conclusions: Our institution managed to offer a considerable volume of aortic valve surgical activity over the first COVID-19 outbreak to a cohort of higher-risk patients, without compromising post-operative outcomes. A backlog of elective cases is expected to develop, the accommodation of which after surgical activity normalisation will be crucial to monitor.

Integrating New Staff into Endovascular Stroke-Treatment Workflows in the COVID-19 Pandemic January 2021, American Journal of Neuroradiology

A health care crisis such as the coronavirus disease 2019 (COVID-19) pandemic requires allocation of hospital staff and resources on short notice. Thus, new and sometimes less experienced team members might join the team to fill in the gaps. This scenario can be particularly challenging in endovascular stroke treatment, which is a highly specialized task that requires seamless cooperation of numerous health care workers across various specialties and professions. This document is intended for stroke teams who face the challenge of integrating new team members into endovascular stroke-treatment workflows during the COVID-19 pandemic or any other global health care emergency. It discusses the key strategies for smooth integration of new stroke-team members in a crisis situation: 1) transfer of key knowledge (simple take-home messages), 2) open communication and a nonjudgmental atmosphere, 3) strategic task assignment, and 4) graded learning and responsibility. While these 4 key principles should generally be followed in endovascular stroke treatment, they become even more important during health care emergencies such as the COVID-19 pandemic, when health care professionals have to take on new and additional roles and responsibilities in challenging working environments for which they were not specifically trained.

Stroke care in Italy at the time of the COVID-19 pandemic: a lesson to learn September 2020, Journal of Neurology

From March to May 2020, the Italian health care system, as many others, was almost entirely devoted to the fight against the COVID-19 pandemic. In this context, a number of questions arose, from the increased stroke risk due to COVID-19 infection to the quality of stroke patient care. The overwhelming need of COVID-19 patient management made mandatory a complete re-organization of the stroke pathways: many health professionals were reallocated and a number of stroke units was turned into COVID-19 wards. As a result, acute stroke care suffered from a shortage of services and delays in time-dependent treatments and diagnostic work-up. In-patient and out-patient care and rehabilitation facilities for stroke survivors were also reduced or

slowed down, to direct resources to COVID-19 patients care and to reduce contagion risks. Overall, this is likely to result in a significant future increased burden of complications and disabilities that will impact the health care systems in the coming months. Thus, while still fighting against COVID-19 disease, authorities need to promptly implement robust action plans, including an increase of workforce, without forgetting the assurance of a high level of stroke care. The medical community and the health care administrators should always keep in mind that stroke was before, and will be after the pandemic, a, sometimes, life-threatening condition, and almost always a disease with a severe impact on the quality of life.

New, expanded or specialist roles

Equipping Stroke Nurses to Take on Extended Roles Within Acute Stroke Care Through an Advanced Practice Fellowship: An Evaluation Study 2024, Stroke Clinician
Stroke nurses are adopting extended roles to improve patient care due to limited numbers of vascular neurologists, however, little is known of this experience. We evaluated the impact of an internationally implemented fellowship education program to equip experienced stroke nurses, nationally and internationally, to undertake extended acute stroke roles. Methods: We conducted semi-structured interviews with the following groups of individuals associated with the NET SMART Advanced Practice fellowship program: 1) Stroke nurse program graduates; 2) currently enrolled stroke nurse fellows; 3) local physician mentors; 4) service managers of program graduates. Interviews took place between February-August 2018 and were analysed using the Theoretical Domains Framework. Results: Interviews were held with stroke nurses (n=11), mentors (n=4) and a service manager (n=1). Four themes were identified: 1) 'The learning journey'- describing motivations for undertaking the training and course content; 2) 'Organizational and professional change'- experiencing professional resistance to the new role, or lack of a suitable role to move into after program completion, 3) 'What hindered the learning journey?'- small hospitals with low patient volume makes completion challenging; 4) 'What helped the learning journey?'- a supportive team facilitated completion. Conclusion: We found overwhelming skill development and professional growth by nurses, and this was echoed by mentors and managers. However, despite expanding their stroke-specific knowledge and skills, non-U.S.A. nurses faced systemic challenges in implementing their skills including lack of acceptance of extended nurse roles from wider professions.

Clinical exercise provision in the UK: comparison of staff job titles, roles and qualifications across five specialised exercise services 2022, BMJ Open Sport & Exercise Medicine
Objectives In the UK, the National Health Service long-term plan advocates exercise as a key component of clinical services, but there is no clearly defined workforce to deliver the plan. We aimed to provide an overview of current UK clinical exercise services, focusing on exercise staff job titles, roles and qualifications across cardiovascular, respiratory, stroke, falls and cancer services. Methods Clinical exercise services were identified electronically between May 2020 and September 2020 using publicly available information from clinical commissioning groups, national health boards and published audit data. Data relating to staff job titles, roles, qualifications and exercise delivery were collected via electronic records and telephone/email contact with service providers. Results Data were obtained for 731 of 890 eligible clinical services (216 cardiac, 162 respiratory, 129 stroke, 117 falls, 107 cancer). Cardiac rehabilitation services provided both clinical (phase III) and community (phase IV) exercise interventions delivered by physiotherapists, exercise physiologists (exercise specific BSc/MSc) and exercise instructors (vocationally qualified with or

without BSc/MSc). Respiratory, stroke and falls services provided a clinical exercise intervention only, mostly delivered by physiotherapists and occupational therapists. Cancer services provided a community exercise service only, delivered by vocationally qualified exercise instructors. Job titles of 'exercise physiologists' (n=115) bore little alignment to their qualifications, with a large heterogeneity across services. Conclusion In the UK, clinical exercise services job titles, roles and qualifications were inconsistent. Regulation of exercise job titles and roles is required to remove the current disparities in this area.

New horizons in cardiogeriatrics: geriatricians and heart failure care-the custard in the tart, not the icing on the cake 2021, Age and Ageing
Heart failure (HF) can be considered a disease of older people. It is a leading cause of hospitalisation and is associated with high rates of morbidity and mortality in the over-65s. In 2012, an editorial in this journal detailed the latest HF research and guidelines, calling for greater integration of geriatricians in HF care. This current article reflects upon what has been achieved in this field in recent years, highlighting some future challenges and promising areas. It is written from the perspective of one such integrated team and explores the new role of cardiogeriatrician, working in a multidisciplinary team to deliver and improve care to increasingly complex, older, frail patients with multiple comorbidities who present with primary cardiology problems, especially decompensated HF. Geriatric liaison has improved the care of frail patients in orthopaedics, cancer services, stroke, acute medicine and numerous community settings. We propose that this vital role should now be extended to cardiology teams in general and to HF in particular.

Emerging subspecialties in neurology: paediatric stroke and cerebrovascular disorders November 2016, Neurology
This article discuses about the pediatric stroke and cerebrovascular disorders. Stroke, ischemic and hemorrhagic, is estimated to occur in at least 2–3 per 100,000 children annually, and 1 in 4,000 neonates. This makes pediatric strokes relatively common among serious pediatric neurologic conditions. Pediatric stroke neurology is now a career option, one that offers significant rewards. The excitement of being on the cutting edge of a new field of discovery provides opportunities for challenging and stimulating intellectual and research pursuits. The future of the field of pediatric stroke is bright, with increasing workforce demand for pediatric stroke clinicians and many opportunities for further research. Clinical trials in stroke treatment are urgently needed and increasingly feasible given the increasing capacity of pediatric centers to deliver acute stroke care.

The impact of Stroke Nurse Navigation on Patient Compliance Postdischarge October 2016, Rehabilitation Nursing *Abstract only**
PURPOSE The purpose of this study was to describe the impact a stroke nurse navigation program has on concurrent chart reviews and patient compliance postdischarge. DESIGN Phase I: Concurrent chart review of The Joint Commission Primary Stroke Center core measures for ischemic stroke patients. Phase II: Longitudinal study of 100 ischemic stroke patients discharged to home. METHODS Telephone surveys were conducted at prescribed intervals posthospital discharge (Phase II). Surveys focused on medication compliance, follow-up medical appointment compliance, and neurovascular emergency department (ED) visits/readmissions. FINDINGS Phase I trends included increased stroke performance measures compliance. Phase II favorable trends included increased medication compliance (>98%), increased follow-up appointments (100%), decreased rate of neurovascular ED visits/rehospitalizations

(3%), and improvement in activities of daily living and quality of life measures through 12 months postdischarge.
CONCLUSIONS Stroke nurse navigation increased conformity of stroke performance measures and stroke patient discharge compliance through 12 months postdischarge.

Benefits of arrythmia care coordinators 2013, Nursing Times
*Athens log in required**
Arrhythmias (abnormal heartbeats) are common but can be life threatening. Symptoms can be severe and include palpitations, dizziness, blackouts, breathlessness and even chest pain. These can be highly distressing for patients, causing them severe anxiety and depression if they are not well supported. Early diagnosis is essential to reduce mortality and improve quality of life--the most common arrhythmia--atrial fibrillation--can cause a stroke if left untreated or inadequately treated. While sudden cardiac death is less common in a young person, it is usually due to an inherited cardiac condition that has resulted in a critical arrhythmia. Screening family members at risk can provide timely assessment, psychological support through counselling and treatment with the implantation of a cardioverter defibrillator if necessary. In 2005, a chapter setting out best practice for arrhythmia care was added to the National Service Framework for Coronary Heart Disease. This highlights the need for early diagnosis and expert patient support. In response, the British Heart Foundation launched a pilot programme to fund specialist nurses as arrhythmia care coordinators. Its aim was to develop and improve care pathways, and provide continuity and support for patients diagnosed with an arrhythmia to improve clinical care and emotional wellbeing. An independent evaluation by the University of York showed that these posts significantly improved patients' experiences of arrhythmia services, prevented thousands of readmissions and cut costs for the NHS. This article explains how the new role was successfully implemented.

Nursing roles within a stroke telemedicine network February 2010, Journal of Central Nervous System Disease
Time sensitive acute stroke treatments and the growing shortage of vascular neurologists compound to create a gap in the delivery of care to meet the American Stroke Association guidelines in underserviced regions. Audio/video consultation (telemedicine), which has been evolving since the late 1990's, is a putative solution. While telemedicine can serve as a valuable facilitative tool, the telestroke consultation is only one piece of a complex collaboration between hub and spoke environments and clinical personnel. The growing use of telemedicine in stroke offers more opportunities for all nurses to participate in the continuum of cerebrovascular disease care. A review of this collaboration will include but will not be limited to: algorithms of the acute stroke evaluation, hub and spoke staff meetings, stroke education for spoke staff, and patient follow–up post-acute treatment. Our team's telemedicine experience, utilizing research, education, and clinical practice, will be described.

Multidisciplinary and interdisciplinary teams

How do speech and language therapists enact aphasia psychosocial support in Ireland? A cross-sectional online survey informed by normalization process theory 2024, International Journal of Language & Communication Disorders
Background: Supporting psychosocial well-being in aphasia is necessarily person-centred, interdisciplinary and coordinated. Shortcomings in such support are described in Ireland and elsewhere. Speech and language therapists (SLTs) are integral; and describing current practice and barriers they experience is important for enhancing service delivery. Aims: To understand how SLTs enact, and are supported to enact, aphasia psychosocial care in Ireland. Methods & Procedures: This is a cross-sectional, online, self-administered clinician survey

targeting SLTs working minimally 1 year post-qualification with persons with aphasia of any aetiology in Ireland. The survey questions were charted against key constructs of the implementation science framework, normalization process theory (NPT), and descriptive statistics were applied. Outcomes & Results: A total of 54 eligible datasets were included. SLTs believed psychosocial support to be part of their role, but perceived multiple barriers in enacting it. These included a lack of training, clinical supervision, management support, role recognition, and access to and joint working with mental health professionals and services. Conclusions & Implications: SLTs in Ireland face a range of individual and structural barriers, including care coordination and resourcing. There is a clear need not only for training, upskilling and mentorship, but also for wider changes around access to mental health professionals and clarity around the processes of referral, coordination and integration of aphasia care across settings. These findings comprise preliminary insights into current practices. Further research is needed as well as clarity on best-practice pathways for different aetiologies of aphasia. Articulating current practices using NPT may have utility for developing empirically informed and principled interventions to improve service delivery. WHAT THIS PAPER ADDS: What is already known on this subject: People with aphasia of all aetiologies are at risk of psychosocial problems. Shortcomings in access and the availability of appropriate support have been documented both internationally and in Ireland. To address this issue, an important first step is to understand how SLTs in Ireland currently enact and are supported to enact aphasia psychosocial care. What this study adds to the existing knowledge: The findings describe the potential levers and barriers to progressing aphasia psychosocial care in Ireland. A range of individual, team and structural factors were identified. These were locally contextualized but similar issues are reported in other countries. Linking attitudes with NPT constructs provides a first step for further principled implementation projects. What are the practical and clinical implications of this study?: Addressing psychosocial problems is perceived as a legitimate part of the speech and language therapy role. SLTs in Ireland enact a range of therapeutic approaches but may need opportunities for formal training and supervision, and for better coordination and integration with other mental health services and disciplines. Understanding differences in care pathways across the range of aphasia aetiologies is additionally important given the emphasis on post-stroke aphasia in the literature.

Barriers and facilitators in providing home-based rehabilitation for stroke survivors with severe disability in the UK: an online focus group study with multidisciplinary rehabilitation teams
2023, BMJ Open
Objectives In the UK, over 20% of stroke survivors leave hospital with severe disability. Limited evidence-based clinical guidance is available to support the rehabilitation of these individuals. Our previous research has focused on establishing consensus regarding the core components of home-based rehabilitation for this under investigated group. This study explores the barriers of providing rehabilitation and identifies strategies to overcome them. Design Three focus group interviews were conducted with n=20. The context coding framework was employed to organise the transcribed data and to facilitate inductive and deductive analysis and synthesis. Setting Online, MSTeams, UK. Participants A purposive sample of 20 National Health Service clinical staff participants, from 3 multidisciplinary teams providing home-based stroke rehabilitation for this population (n=7, 6 and 7). Results High levels of need were reported across multiple domains for survivors including continence, communication and physical function. Interventions often required multiagency collaboration in order to optimise the available resources and specialist skills. There was lack of clarity regarding who was ultimately responsible for providing components of rehabilitation

for stroke survivors with severe disability. Teams provide rehabilitation for this population but are insufficiently commissioned or resourced to fully meet their needs. In-complete and disjointed pathways with resultant healthcare inequalities were commonly reported. Teams used a variety of strategies to overcome these barriers and optimise rehabilitation opportunities. These included upskilling a diverse range of partners to capitalise on the skills and resources across health, social care and voluntary sector boundaries employing multiagency collaboration. Teams established and engaged networks of stakeholders in order to advocate on behalf of stroke survivors. Conclusions Collaboration and partnership working is important in the delivery of rehabilitation for stroke survivors with severe disability. Commissioners need to be aware that cross-agency multidisciplinary expertise is required, if rehabilitation opportunities are to be realised and existing health inequalities addressed.

Professional groups driving change toward patient-centred care: interprofessional working in stroke rehabilitation in Denmark
BMC Health Services Research, September 2017
Background: Patient-centred care based on needs has been gaining momentum in health policy and the workforce. This creates new demand for interprofessional teams and redefining roles and tasks of professionals, yet little is known on how to implement new health policies more effectively. Our aim was to analyse the role and capacity of health professions in driving organisational change in interprofessional working and patient-centred care. Methods: A case study of the introduction of interprofessional, early discharge teams in stroke rehabilitation in Denmark was conducted with focus on day-to-day coordination of care tasks and the professional groups' interests and strategies. The study included 5 stroke teams and 17 interviews with different health professionals conducted in 2015.Results: Professional groups expressed highly positive professional interest in reorganised stroke rehabilitation concerning patients, professional practice and intersectoral relations; individual professional and collective interprofessional interests strongly coincided. The corresponding strategies were driven by a shared goal of providing needs-based care for patients. Individual professionals worked independently and on behalf of the team. There was also a degree of skills transfer as individual team members screened patients on behalf of other professional groups. Conclusions: The study identified supportive factors and contexts of patient-centred care. This highlights capacity to improve health workforce governance through professional participation, which should be explored more systematically in a wider range of healthcare services.

Interdisciplinary team working in physical and rehabilitation medicine Journal of Rehabilitation, January 2010
Effective team working plays a crucial role in Physical and Rehabilitation Medicine (PRM). As part of its role of optimizing and harmonizing clinical practice across Europe, the Professional Practice Committee of Union of European Medical Specialists (UEMS) Physical and Rehabilitation Medicine (PRM) Section reviewed patterns of team working and debated recommendations for good practice at a meeting of national UEMS delegates held in Riga, Latvia, in September 2008. This consensus statement is derived from that discussion and from a review of the literature concerning team working. Effective team working produces better patient outcomes (including better survival rates) in a range of disorders, notably following stroke. There is limited published evidence concerning what constitute the key components of successful teams in PRM programmes. However, the theoretical basis for good team working has been well-described in other settings and includes agreed aims, agreement and understanding on how best to achieve these, a multi-professional team with an appropriate range of knowledge and skills, mutual trust and respect, willingness to share

knowledge and expertise and to speak openly. UEMS PRM Section strongly recommends this pattern of working. PRM specialists have an essential role to play in interdisciplinary teams; their training and specific expertise enable them to diagnose and assess severity of health problems, a prerequisite for safe intervention. Training spans 4-5 years in Europe, and includes knowledge and critical analysis of evidence-based rehabilitation strategies. PRM physicians are therefore well-placed to coordinate PRM programmes and to develop and evaluate new management strategies. Their broad training also means that they are able to take a holistic view of an individual patient's care.

Supply

Demand-led supply of neurointerventionalists for endovascular ischemic stroke therapy July 2013, Neurology *Abstract only** Drs. Fiorella and Cloft and authors Zaidat et al. discuss the impending oversupply of neurointerventionalists and echo debates ongoing in many medical subspecialties, namely, how to construct barriers to decrease the number of people entering a field. Between 2005 and 2007, the United Council of Neurologic Subspecialties created 7 new board examinations, complete with rigid application requirements. It is hard not to view these barriers as potentially self-serving. Many of the people initiating additional fellowships and new board examinations have managed well in their fields without those hurdles. While it is difficult to argue against more education, these requirements have a time and financial cost for trainees (and their departments) and could contribute to fragmentation within the field.

Upskilling

Developing a Hyperacute Stroke-Ready Nursing Workforce: a Service Improvement Initiative October 2020, British Journal of Neuroscience Nursing *Abstract only**
Background: Thrombolysis treatment varies considerably between in- and out-of-hours services. Aims: This improvement initiative aimed to upskill acute stroke unit nurses as stroke thrombolysis response nurses, testing a new model of nursing in readiness for hyperacute stroke unit developments. Methods: Three registered nurses were trained to a specialist competency framework. The role was tested over 28 weeks, and times to treatment milestones were measured. Thrombolysed patients from the test period were statistically compared with a matched group using a two-sample t-test in Excel. Qualitative feedback was sought from the stroke team, medical and emergency department colleagues. Findings: Median out-of-hours door-to-needle time reduced from 85 to 61.5 minutes. Statistically significant differences were seen in the time to stroke unit admission (p=0.012) and swallow screen (p=0.038). Stroke and emergency department colleagues considered the role essential to out-of-hours thrombolysis treatment. Conclusions: The stroke thrombolysis response nurse role reduced variation in treatment and improved timely acute stroke care. This work may inform the development of stroke nursing workforce models.

Demographics

Stroke doctors: Who are we? A World Stroke Organisation survey October 2017, International Journal of Stroke
Background Specialist training provides skilled workforce for service delivery. Stroke medicine has evolved rapidly in the past years. No prior information exists on background or training of stroke doctors globally. Aims To describe the specialties that represent stroke doctors, their training requirements, and the

scientific organizations ensuring continuous medical education. Methods The World Stroke Organization conducted an expert survey between June and November 2014 using e-mailed questionnaires. All Organization for Economic Co-operation and Development countries with >1 million population and other countries with >50 million population were included (n = 49, total 5.6 billion inhabitants, 85% of global strokes). Two stroke experts from each selected country were surveyed, discrepancies resolved, and further information on identified stroke-specific curricula sought. Results We received responses from 48 (98%) countries. Of ischemic stroke patients, 64% were reportedly treated by neurologists, ranging from 5% in Ireland to 95% in the Netherlands. Per thousand annual strokes there were average six neurologists, ranging from 0.3 in Ethiopia to 33 in Israel. Of intracerebral hemorrhage patients, 29% were reportedly treated by neurosurgeons, ranging from 5% in Sweden to 79% in Japan, with three neurosurgeons per thousand strokes, ranging from 0.1 in Ethiopia to 24 in South Korea. Most countries had a stroke society (86%) while only 10 (21%) had a degree or subspecialty for stroke medicine. Conclusions Stroke doctor numbers, background specialties, and opportunities to specialize in stroke vary across the globe. Most countries have a scientific society to pursue advancement of stroke medicine, but few have stroke curricula.

New ways of working

Wellbeing After Stroke (WAterS): Feasibility Testing of a Co-developed Acceptance and Commitment Therapy Intervention to Support Psychological Adjustment After Stroke 2024, Clinical Rehabilitation
Objective: Feasibility test a co-developed intervention based on Acceptance and Commitment Therapy to support psychological adjustment post-stroke, delivered by a workforce with community in-reach. Design: Observational feasibility study utilising patient, carer, public involvement. Setting: Online. UK. Participants: Stroke survivors with self-reported psychological distress 4 + months post-stroke. Interventions: The co-developed Wellbeing After Stroke (WAterS) intervention includes: 9-weekly, structured, online, group sessions for stroke survivors, delivered via a training programme to upskill staff without Acceptance and Commitment Therapy experience, under Clinical Psychology supervision. Main measures: Feasibility of recruitment and retention; data quality from candidate measures; safety. Clinical and demographic information at baseline; patient-reported outcome measures (PROMs) via online surveys (baseline, pre- and post-intervention, 3 and 6 months after intervention end) including Mood (hospital anxiety and depression scale (HADS)), Wellbeing (ONS4), Health-Related Quality of Life (EQ5D5L), Psychological Flexibility (AAQ-ABI) and Values-Based Living (VQ). Results: We trained eight staff and recruited 17 stroke survivors with mild-to-moderate cognitive and communication difficulties. 12/17 (71%) joined three intervention groups with 98% attendance and no related adverse events. PROMS data were well-completed. The HADS is a possible future primary outcome (self-reported depression lower on average by 1.3 points: 8.5 pre-group to 7.1 at 3-month follow-up; 95% CI 0.4 to 3.2). Conclusion: The WAterS intervention warrants further research evaluation. Staff can be trained and upskilled to deliver. It appears safe and feasible to deliver online to groups, and study recruitment and data collection are feasible. Funding has been secured to further develop the intervention, considering implementation and health equality.

Implementing an Innovative Lipid Management Technique Using siRNA LDL-C Lowering Therapy: Lessons Learned in an NHS Primary Care Practice With Worked Case Examples 2023, Journal of Primary Care & Community Health
Introduction: The UK Government partnered with industry to tackle cardiovascular disease (CVD) in the first NHS population

health agreement. The ambition was to prevent 150 000 strokes, heart attacks and dementia cases over the next 10 years with a new siRNA LDL-C lowering therapy (Inclisiran) delivered within Integrated Care Services by primary care to support a comprehensive approach to lipid management. Following the approval of inclisiran, and guidance published by the National Institute for Health & Care Excellence (NICE) on its use, this paper has been created by a UK general practice to share real-world observations of cases and the potential service benefits of rolling out this innovative drug treatment. The process of identifying patients at risk of atherosclerotic cardiovascular disease (ASCVD) and lessons learned from implementing in practice is also addressed. Workstreams were developed to rapidly roll out a low clinical burden enhanced lipid management program incorporating siRNA LDL-C lowering therapy into primary care practice. Approach/Method: (1) Multi-disciplinary team (MDT) education program based on freely available Academic Health Science Network (AHSN), National Institute for Health & Care Excellence (NICE), and commercial materials. (2) Automated searches using a software program were run to identify "at-risk" patients alongside manual case-finding in everyday clinics. (3) Patients were invited for review using multi-channel modalities. (4) Where appropriate, treatment was commenced after consent was obtained. (5) Automated recall systems are used to ensure follow-up; initially at 3 months, then every 6 months. Discussion and Conclusions: Enhanced lipid management as a secondary prevention measure is achievable in line with national guidance and objectives. The methodology and education/training processes used in combination with reconstructing the management process can help practice staff realize the program benefits, which in turn can lead to a shift in behavior where all staff embed manual case-finding of high-risk patients into everyday consultations and reviews; enabling rapid identification of eligible patients. Taking a multi-disciplinary, holistic approach to new initiatives reduces service burden, particularly for GPs. Leveraging resources from the AHSN and others removes additional training pressures often associated with new initiatives and provides a wealth of educational material to support primary care MDT upskilling.

Integrating an approach to personalised self-management support in stroke and neurorehabilitation service contexts: People1st - a quality improvement initiative 2023, Disability & Rehabilitation

Purpose People living with stroke and neurological conditions access rehabilitation at different times but self-management is often viewed as what happens post-discharge. Personalised models that integrate self-management support within everyday care are now advocated but this may require practitioners to change their behaviour to adopt and sustain new ways of working. The People1st project evaluated integration of an existing Supported Self-Management programme (“Bridges”) across varied stroke and neurorehabilitation service contexts. Materials and methods Mixed-method evaluation of training for groups of healthcare practitioners across 24 UK National Health Service (NHS) Trusts, exploring how learning from Bridges was assimilated and enacted in practice, on an individual and collective basis. Results Staff growth in confidence and skill around supported self-management was demonstrated. Transformations to practice included changes to: the structure of, and language used in, patient interactions; induction/training processes to increase potential for sustainability; and sharing of successes. Bridges helped practitioners make changes that brought them closer to their professional ideals. Engaged leadership was considered important for successful integration. Conclusions Bridges was successfully integrated within a wide range of stroke and neurorehabilitation service contexts, enabled by an approach in line with practitioners’ values-based motivations. Further work is required to explore sustainability and impact on service users. Implications for rehabilitation

- Personalised models of care and support for self-management are advocated for people living with stroke and neurological conditions; this requires practitioners to be supported to change behaviour and practices to adopt and sustain new ways of working.
- Staff from a wide variety of backgrounds in neurorehabilitation and stroke can learn collaboratively about self-management practices via the Bridges programme and can integrate those practices into their service contexts.
- Bridges can take practitioners closer to their professional ideals of caring and making a difference and empowers them to initiate change.
- Organisational commitment and engaged leadership are required to facilitate a culture of support for self-management in practice.

Audit as a Tool for Improving the Quality of Stroke Care: A Review March 2023, International Journal of Environmental Research and Public Health
Results: Studies showed that an audit brought an improvement in rehabilitation processes when it included a team of experts, an active training phase with facilitators, and short-term feedback. In contrast, studies looking at an audit in stroke prevention showed contradictory results. Conclusions: A clinical audit highlights any deviations from clinical best practices in order to identify the causes of inefficient procedures so that changes can be implemented to improve the care system. In the rehabilitation phase, the audit is effective for improving the quality of care processes.

Hyperacute stroke thrombolysis via telemedicine: a multicentre study of performance, safety and clinical efficacy 2022, BMJ Open
Objectives Timely thrombolysis of ischaemic stroke improves functional recovery, yet its delivery nationally is challenging due to shortages in the stroke specialist workforce and large geographical areas. One solution is remote stroke specialist input to regional centres via telemedicine. This study evaluates the usage and key metrics of performance of the East of England Stroke Telemedicine Partnership-the largest telestroke service in the UK-in providing hyperacute stroke care. Design Prospective observational study. Setting The East of England Stroke Telemedicine Partnership provides a horizontal 'hubless' model of out-of-hours hyperacute stroke care to a population of 6.2 million across a 7500 square mile semirural region.

Prehospital video triage of potential stroke patients in North Central London and East Kent: rapid mixed-methods service evaluation 2022, Health and Social Care Delivery Research
Background In response to COVID-19, alongside other service changes, North Central London and East Kent implemented prehospital video triage: this involved stroke and ambulance clinicians communicating over FaceTime (Apple Inc., Cupertino, CA, USA) to assess suspected stroke patients while still on scene. Objective To evaluate the implementation, experience and impact of prehospital video triage in North Central London and East Kent. Design A rapid mixed-methods service evaluation (July 2020 to September 2021) using the following methods. (1) Evidence reviews: scoping review (15 reviews included) and rapid systematic review (47 papers included) on prehospital video triage for stroke, covering usability (audio-visual and signal quality); acceptability (whether or not clinicians want to use it); impact (on outcomes, safety, experience and cost-effectiveness); and factors influencing implementation. (2) Clinician views of prehospital video triage in North Central London and East Kent, covering usability, acceptability, patient safety and implementation: qualitative analysis of interviews with ambulance and stroke clinicians (n = 27), observations (n = 12) and

documents (n = 23); a survey of ambulance clinicians (n = 233). (3) Impact on safety and quality: analysis of local ambulance conveyance times (n = 1400; April to September 2020). Analysis of national stroke audit data on ambulance conveyance and stroke unit delivery of clinical interventions in North Central London, East Kent and the rest of England (n = 137,650; July 2018 to December 2020). Results (1) Evidence: limited but growing, and sparse in UK settings. Prehospital video triage can be usable and acceptable, requiring clear network connection and audio-visual signal, clinician training and communication. Key knowledge gaps included impact on patient conveyance, patient outcomes and cost-effectiveness. (2) Clinician views. Usability – relied on stable Wi-Fi and audio-visual signals, and back-up processes for when signals failed. Clinicians described training as important for confidence in using prehospital video triage services, noting potential for 'refresher' courses and joint training events. Ambulance clinicians preferred more active training, as used in North Central London. Acceptability – most clinicians felt that prehospital video triage improved on previous processes and wanted it to continue or expand. Ambulance clinicians reported increased confidence in decisions. Stroke clinicians found doing assessments alongside their standard duties a source of pressure. Safety – clinical leaders monitored and managed potential patient safety issues; clinicians felt strongly that services were safe. Implementation – several factors enabled prehospital video triage at a system level (e.g. COVID-19) and more locally (e.g. facilitative governance, receptive clinicians). Clinical leaders reached across and beyond their organisations to engage clinicians, senior managers and the wider system. (3) Impact on safety and quality: we found no evidence of increased times from symptom onset to arrival at services or of stroke clinical interventions reducing in studied areas. We found several significant improvements relative to the rest of England (possibly resulting from other service changes). Limitations We could not interview patients and carers. Ambulance data had no historic or regional comparators. Stroke audit data were not at patient level. Several safety issues were not collected routinely. Our survey used a convenience sample. Conclusions Prehospital video triage was perceived as usable, acceptable and safe in both areas.

Developing a Hyperacute Stroke-Ready Nursing Workforce: a Service Improvement Initiative October 2020, British Journal of Neuroscience Nursing *Abstract only**
Background: Thrombolysis treatment varies considerably between in- and out-of-hours services. Aims: This improvement initiative aimed to upskill acute stroke unit nurses as stroke thrombolysis response nurses, testing a new model of nursing in readiness for hyperacute stroke unit developments. Methods: Three registered nurses were trained to a specialist competency framework. The role was tested over 28 weeks, and times to treatment milestones were measured. Thrombolysed patients from the test period were statistically compared with a matched group using a two-sample t-test in Excel. Qualitative feedback was sought from the stroke team, medical and emergency department colleagues. Findings: Median out-of-hours door-to needle time reduced from 85 to 61.5 minutes. Statistically significant differences were seen in the time to stroke unit admission (p=0.012) and swallow screen (p=0.038). Stroke and emergency department colleagues considered the role essential to out-of-hours thrombolysis treatment. Conclusions: The stroke thrombolysis response nurse role reduced variation in treatment and improved timely acute stroke care. This work may inform the development of stroke nursing workforce models.

Conference Abstract: The quality improvement (QI project) in senior decision making at the door: Matching workforce to patients needs in hyperacute stroke 2019, International Journal of Stroke

Introduction: Historically stroke unit had a traditional model where stroke pathways were influenced by a junior member on the door. The result was poor patient and staff experience, poor retention, mimic patients in HASU, multiple outlier's strokes waiting for HASU beds and crowding in ED and HASU. Method(s): This clinically led QI project was designed as part of the Pride way with Virginia Mason Institute methods with a focus on lean, waste management, 5S and team huddle. A time plot analysis of patient arrival journey including stroke mimics with other time-dependent activities of senior decision maker been included in the model of the desired stroke medical workforce to meet demands with new team job planning was implemented. Result(s): The maximum activity was observed between 1300 to 0100 and workforce available was minimal from 1700 to 0900 suggesting mismatch. The new way of working after QI means the timing of senior review dropped by 30%, the median time of stroke patients to HASU was now 176 minutes, Stroke admissions are reduced by 26%, Stroke Bed availability has increased to 0 outliers from 10-14 outliers previously. By new way of extra ED cover by stroke consultant provided 46% more patients direct access. Length of stay dropped by 3.6 days, Mortality dropped by 25%, reliability of care increased by 91% with speed of hyperacute care delivery increased by 35%. Staff rated Safety, Efficiency, Training and Staff Satisfaction as improved. Conclusion(s): The demand and capacity model observed clear mismatch in the arrival of stroke patient's time and available workforce. The stroke patients survive better if they have access to senior decision maker early with new job planning and be able to admit stroke patients in HASU it reduces harm.

Optimising long-term participation in physical activities after stroke: exploring new ways of working for physiotherapists September 2009, Physiotherapy *Abstract only**

There is now good empirical evidence of physical and functional benefits for individuals with stroke from long-term engagement in a range of physical activities. However, long-term participation of stroke survivors in physical activity after rehabilitation is low, and maximum benefits are not being achieved. This article reviews relevant literature and evidence, and suggests that physiotherapists are ideally placed to support patients in long-term participation in activity as they prepare patients for the end of physical rehabilitation. However, this requires the development, testing and application of stroke-specific evidence-based behavioural and motivational interventions that are feasible in clinical practice, take account of the role of carers, and seek to address the barriers to activity faced by stroke survivors at the end of rehabilitation. It also requires physiotherapists to take a leading role in developing appropriate policies and strategies with other exercise professionals and services to address the transition from rehabilitation to an active lifestyle following stroke.

Research

Exploring recruitment issues in stroke research: a qualitative study of nurse researchers' experiences May 2016, Nurse Researcher *Abstract only**
AIM To explore the practice of experienced stroke nurse researchers to understand the issues they face in recruiting participants. BACKGROUND Participant recruitment is one of the greatest challenges in conducting clinical research, with many trials failing due to recruitment problems. Stroke research is a particularly difficult area in which to recruit; however various strategies can improve participation. DISCUSSION Analysis revealed three main types of problems for recruiting participants to stroke research: those related to patients, those related to the nurse researcher, and those related to the study itself. Impairments affecting capacity to consent, the acute recruitment

time frame of most stroke trials, paternalism by nurse researchers, and low public awareness were especially pertinent. CONCLUSION The disabling nature of a stroke, which often includes functional and cognitive impairments, and the acute stage of illness at which patients are appropriate for many trials, make recruiting patients particularly complex and challenging. IMPLICATIONS FOR PRACTICE An awareness of the issues surrounding the recruitment of stroke patients may help researchers in designing and conducting trials. Future work is needed to address the complexities of obtaining informed consent when patient capacity is compromised.

Stroke care organisation and staffing

Protocol for a feasibility registry-based randomised controlled trial investigating a tailored follow-up service for stroke (A-LISTS) 2024, Pilot and Feasibility Studies

Background Stroke affects long-term physical and cognitive function; many survivors report unmet health needs, such as pain or depression. A hospital-led follow-up service designed to address ongoing health problems may avoid unplanned readmissions and improve quality of life. Methods This paper outlines the protocol for a registry-based, randomised controlled trial with allocation concealment of participants and outcome assessors. Based on an intention-to-treat analysis, we will evaluate the feasibility, acceptability, potential effectiveness and cost implications of a new tailored, codesigned, hospital-led follow-up service for people within 6–12 months of stroke. Participants (*n* = 100) from the Australian Stroke Clinical Registry who report extreme health problems on the EuroQol EQ-5D-3L survey between 90 and 180 days after stroke will be randomly assigned (1:1) to intervention (follow-up service) or control (usual care) groups. All participants will be independently assessed at baseline and 12–14-week post-randomisation. Primary outcomes for feasibility are the proportion of participants completing the trial and for intervention participants the proportion that received follow-up services. Acceptability is satisfaction of clinicians and participants involved in the intervention. Secondary outcomes include effectiveness: change in extreme health problems (EQ-5D-3L), unmet needs (Longer-term Unmet Needs questionnaire), unplanned presentations and hospital readmission, functional independence (modified Rankin Scale) and cost implications estimated from self-reported health service utilisation and productivity (e.g. workforce participation). To inform future research or implementation, the design contains a process evaluation including clinical protocol fidelity and an economic evaluation. Discussion The results of this study will provide improved knowledge of service design and implementation barriers and facilitators and associated costs and resource implications to inform a future fully powered effectiveness trial of the intervention.

Psychological support after stroke: unmet needs and workforce requirements of clinical neuropsychological provision for optimal rehabilitation outcomes 2023, British Journal of Hospital Medicine

Stroke services must detect and manage psychological and neuropsychological problems that occur after stroke, such as cognitive and language impairments, post-stroke apathy, post-stroke emotionalism, depression, anxiety, post-traumatic stress disorder, personality changes and suicidality. Stroke neuropsychology plays a key role in the assessment, understanding and management of these consequences of stroke, as well as contributing to complex case management, staff supervision and training. Where these provisions are absent from the stroke rehabilitation pathway, this significantly limits potential rehabilitation outcomes. To manage the scale of psychological and neuropsychological needs post stroke, clinical guidance recommends the use of a matched care system, in

which these needs are triaged and matched with corresponding levels of support. Recent workforce guidelines provide clear professional recommendations for psychological staffing skill mix and threshold requirements for clinical oversight and clinical governance assurances.

The role of the healthcare assistant on a stroke unit: A scoping review September 2023, Clinical Rehabilitation
A healthcare assistants' role was viewed as caring directly for patients – some individuals felt they contributed to rehabilitation during these tasks, and that they could be undervalued by multidisciplinary team members, patients and their families. The barriers identified to healthcare assistants' role fulfilment were lack of time, training and staffing shortages. Training was perceived to improve healthcare assistants' communication, confidence and knowledge but training needed to be flexible, ward based and accommodate staffing shortages. However, it is unclear whether training has any clinical benefit for patients. Conclusion: Healthcare assistants are well placed to enhance rehabilitative practice with patients; however, there are clear perceived barriers to this occurring. Future research should aim to define the role of healthcare assistants and explore whether further stroke-specific training could cause clinical benefits for patients.

Nursing Care for Stroke Patients: Current Practice and Future Needs September 2023, Nursing Reports
As per the results of the study, there is an urgent need for stroke units run by specialized stroke nurses to provide early stroke management and improve survivors' outcomes. Structured stroke-care programs are needed to improve nursing practice and meet the international standard of stroke care.

Nursing’s Role in Successful Stroke Care Transitions Across the Continuum: From Acute Care Into the Community November 2021, Stroke
The purpose of this article is to provide evidence on the important nursing roles in stroke care and transition management across the care continuum, discuss cross-setting issues in stroke care, and provide recommendations to leverage nursing’s impact in optimizing outcomes for stroke survivors and their family unit across the continuum. To optimize nursing’s influence in facilitating safe, effective, and efficient care transitions for stroke survivors and their family caregivers across the continuum we have the following recommendations (1) establish a system of coordinated and seamless comprehensive stroke care across the continuum and into the community; (2) implement a stroke nurse liaison role that provides consultant case management for the episode of care across all settings/services for improved consistency, communication and follow-up care; (3) implement a validated caregiver assessment tool to systematically assess gaps in caregiver preparedness and develop a tailored caregiver/family care plan that can be implemented to improve caregiver preparedness; (4) use evidence-based teaching and communication methods to optimize stroke survivor/caregiver learning; and (5) use technology to advance stroke nursing care. Nurses must leverage their substantial influence over the health care delivery system to achieve these improvements in stroke care delivery to improve the health and lives of stroke survivors and their families.

Healthcare professionals' competence in stroke care pathways: A mixed-methods systematic review December 2020, Journal of Clinical Nursing
We recommend organisational support and formulation of stroke care patient guidelines in line with healthcare competence requirements. Focus should be added for nursing professions in developing interactive communication competence since nurses spend the majority of the time providing individual patient care.

Also, organisations should integrate continuing training in specialised stroke care for healthcare professionals' competence development

Regional variation in acute stroke care organisation 2016, Journal of Neurological Sciences
BACKGROUND: Few studies have assessed regional variation in the organisation of stroke services, particularly health care resourcing, presence of protocols and discharge planning. Our aim was to compare stroke care organisation within middle- (MIC) and high-income country (HIC) hospitals participating in the Head Position in Stroke Trial (HeadPoST). METHODS: HeadPoST is an on-going international multicenter crossover cluster-randomized trial of 'sitting-up' versus 'lying-flat' head positioning in acute stroke. As part of the start-up phase, one stroke care organisation questionnaire was completed at each hospital. The World Bank gross national income per capita criteria were used for classification. RESULTS: 94 hospitals from 9 countries completed the questionnaire, 51 corresponding to MIC and 43 to HIC. Most participating hospitals had a dedicated stroke care unit/ward, with access to diagnostic services and expert stroke physicians, and offering intravenous thrombolysis. There was no difference for the presence of a dedicated multidisciplinary stroke team, although greater access to a broad spectrum of rehabilitation therapists in HIC compared to MIC hospitals was observed. Significantly more patients arrived within a 4-h window of symptoms onset in HIC hospitals (41 vs. 13%; P<0.001), and a significantly higher proportion of acute ischemic stroke patients received intravenous thrombolysis (10 vs. 5%; P=0.002) compared to MIC hospitals. CONCLUSIONS: Although all hospitals provided advanced care for people with stroke, differences were found in stroke care organisation and treatment. Future multilevel analyses aims to determine the influence of specific organisational factors on patient outcomes.

A comparison between reported therapy staffing levels and the department of health therapy staffing guidelines for stroke rehabilitation: a national survey May 2014, BMC Health Services Research
BACKGROUND This study compared reported staffing levels for stroke care within UK in-patient stroke units to stroke strategy staffing guidelines published by the UK Department of Health and the Royal College of Physicians. The purpose was to explore the extent to which stroke teams are meeting recommended staffing levels. METHOD The data analyzed in this report consisted of the detailed therapist staffing levels reported in the demographic section of our national survey to determine upper limb treatment in stroke units (the ATRAS survey). A contact list of stroke practitioners was therefore compiled primarily in collaboration with the 28 National Stroke Improvement Networks. Geographic representation of the network areas was obtained by applying the straight-forward systematic sampling method and the N(th) name selection technique to each Network list. In total 192 surveys were emailed to stroke care providers around England. This included multiple contacts within stroke teams (e.g. a stroke consultant and a stroke co-coordinator) to increase awareness of the survey. RESULTS A total of 53 surveys were returned from stroke teams and represented 20 of the 28 network areas providing 71% national coverage. To compare reported staffing levels to suggested DoH guidelines, analysis was conducted on 19 of the 37 inpatient hospital care units that had no missing data for staff numbers, unit bed numbers, number of stroke patients treated per annum, average unit length-of-stay, and average unit occupancy rates. Only 42% of units analyzed reached the DoH guideline for physiotherapy and fewer than 16% of the units reached the guideline for speech & language therapy. By contrast, 84% of units surveyed reached the staffing guideline for occupational therapy. However, a post-hoc analysis highlights this as an irregularity in the DoH guidelines, revealing that all

therapies are challenged to provide the recommended therapy time. CONCLUSIONS Most in-patient stroke units are operating below the DoH guidelines and are therefore challenged in providing the recommended amount of therapy and patient time to facilitate optimal functional recovery for stroke patients.

Volunteers

Volunteer Engagement in a Stroke Self-Management Program: Qualitative Analysis of a Hybrid Team of Healthcare Providers and Trained Volunteers July 2022, International Journal of Environmental Research and Public Health
The findings of this study highlight that volunteer-assisted stroke self-management programs entail a bilateral exchange of knowledge and support between healthcare providers/volunteers and survivors. They also encourage the adoption of an individualized, goal-oriented and confidence-enhancing approach. Volunteer engagement can be optimized by developing well-designed programs that sufficiently clarify volunteers' roles, strengthen their collaborations with healthcare providers and fulfil their training needs in caring for and communicating with stroke survivors. Future research should evaluate the use of peer and healthcare professional volunteers in self-management programs and thereby build community capacity to support the recovery of stroke survivors.

Volunteers as members of the stroke rehabilitation team: a qualitative case study April 2020, BMJ Open

OBJECTIVES Clinicians are facing increasing demands on their time, exacerbated by fiscal constraints and increasing patient complexity. Volunteers are an essential part of the many healthcare systems, and are one resource to support improved patient experience and a mechanism through which to address unmet needs. Hospitals rely on volunteers for a variety of tasks and services, but there are varying perceptions about volunteers' place within the healthcare team. This study aimed to understand the role of volunteers in stroke rehabilitation, as well as the barriers to volunteer engagement. DESIGN A qualitative case study was conducted to understand the engagement of volunteers in stroke rehabilitation services within a complex rehabilitation and continuing care hospital in Ontario, Canada.PARTICIPANTS28 clinicians, 10 hospital administrators and 22 volunteers participated in concurrent focus groups and interviews. Organisational documents pertaining to volunteer management were retrieved and analysed. RESULTS While there was support for volunteer engagement, with a wide range of potential activities for volunteers, several barriers to volunteer engagement were identified. These barriers relate to paid workforce/unionisation, patient safety and confidentiality, volunteer attendance and lack of collaboration between clinical and volunteer resource departments. CONCLUSIONS An interprofessional approach, specifically emphasising and addressing issues related to key role clarity, may mediate these barriers. Clarity regarding the role of volunteers in hospital settings could support workforce planning and administration.

Diversity, Inclusion and Participation

Diversity, Equity, Inclusion, and Health Inequities Training in Neurologic Disorders and Stroke: Analysis and Recommendations From the NINDS Advisory Council Working Group August 2023, Neurology
The working group recommends support for 2 distinct types of training activities: one designed for scientists from historically under-represented backgrounds and the second designed for scientists of all backgrounds performing health inequities research. Support for grant writing workshops and establishment of multi-institutional mentorship networks are recommended as potentially especially high-yield activities. The working group

recommends that all NINDS-supported investigators should have sufficient diversity, equity, and inclusion training to be prepared and qualified to mentor trainees from under-represented backgrounds and mentor trainees engaged in health disparities research; there should be no “diversity tax” placed on established investigators from under-represented backgrounds to shoulder all the mentorship responsibilities. Among other recommendations, training in health disparities research should include a focus on interventional studies to alleviate inequities as well as social science and qualitative methods.

How to Be Savvy About Gender Disparities in Academic Stroke Medicine: Five Practical Strategies September 2020, Stroke
*Abstract only**
In the past decade, stroke medicine has evolved from discovery of innovative diagnostic tools to implementation of new treatments. These advances are projected to increase the demand for stroke neurologists in academic and clinical practices, but hopefully with equitable opportunities for everyone across the gender spectrum. Academic medicine provides opportunities to participate in clinical care, teaching, research, and administration. The early career stage is short-focused on finding an academic niche and developing new skills that will help you navigate the academic environment. A recent InterSECT article emphasized the critical role of women's leadership in stroke medicine. In this article, we reflect on workforce gender disparities and provide 5 practical strategies that may help women overcome barriers and advance their work mission.

Integrated care

Rotterdam Stroke Service: audits for the quality of integrated care August 2019, International Journal of Integrated Care
Introduction: The Rotterdam Stroke Service (RSS) in the Netherlands, is a stroke service network of hospitals, nursing homes, rehabilitation centers and community care organizations, collaborating to provide an optimal quality of care after stroke for patients in the acute, rehabilitation and chronic phase. The aim of the RSS is to realize an optimal treatment and outcomes for every stroke patient, according to the most recent (scientific) standards. Policy Context and objective: Audits should make it possible to check on quality of care, although it is a challenge to judge if the care process and quality of collaboration in an integrated care network is sufficient. Therefore a unique instrument for auditing the quality of collaboration was developed. Targeted population: The Stroke Knowledge Network Netherlands (SKNN) developed a unique audit instrument derived from the Development Model for Integrated Care (DMIC) (1). The DMIC consists of nine clusters in which is described what is necessary to realize good quality of care. Also, the indicators from the Dutch Institute for clinical auditing and care standard CVA/TIA were integrated in the audit instrument. The instrument exists of 2 main parts: self-evaluation and care standard (38 norms) and benchmark (4 norms). The actual working methods are compared with regulations, evidence based guidelines, norms/indicators and regional agreement/commitment. The audit focusses particularly on collaboration with integrated care partners and that is what makes the audit instrument unique. In 2017, an audit team from SKNN visited the RSS and used the new audit instrument. The audit team studied documentation and information beforehand: i.e. (transfer of) medical files, documentation about (the education of) the personnel/workforce, agreements and guidelines. During the audit they made a tour in the organizations and interviewed numerus health care workers. After the audit, they reported on their findings. High lights (innovation, impact and outcomes): Seven stroke services received a report on their best practices and points of

improvement. The audit team complimented the RSS for their clear information and the comprehensive commitment of all the integrated care partners. The organization and quality of education and research were rated very positive. There was also much appreciation for the "stroke after-care" method that was developed in the RSS. Points of improvement were the interdisciplinary collaboration, exchange of patient information via ICT and involvement of informal caregivers. Furthermore, results of new projects were not always sufficiently disseminated between the organizations and the collaboration between the integrated care partners and general practitioners was not always satisfactory. Comments on transferability: To be able to work on the points of improvement, the RSS organized a meeting with the organizations. Input of all the representatives have been translated in an improvement plan for 2018 and 2019. Innovative cure and care in the RSS creates a better treatment and rehabilitation environment, resulting in an increasing area of support among professionals in the stroke service. This seems to manifest itself in better communication, better data collection and a better quality of delivered stroke care.

Burnout

Impact of Stroke Call on the Stroke Neurology Workforce in the United States: Possible Challenges and Opportunities July 2018, Journal of Stroke & Cerebrovascular Diseases *Abstract only**

Background: The Stroke & Vascular Neurology Section of the American Academy of Neurology was charged to identify challenges to the recruitment and retention of stroke neurologists and to make recommendations to address any identified problems. The Section initiated this effort by determining the impact of stroke on-call requirements as a barrier to the recruitment and retention of vascular neurologists.Methods: This is a cross-sectional survey of a sample of US Neurologists providing acute stroke care.Results: Of the 900 neurologists who were sent surveys, 313 (35%) responded. Of respondents from institutions providing stroke coverage, 71% indicated that general neurologists and 45% indicated that vascular neurologists provided that service. Of those taking stroke call, 36% agreed with the statement, "I spent too much time on stroke call," a perception that was less common among those who took less than 12-hour shifts (P < .0001); 21% who participated in stroke call were dissatisfied with their current job. Forty-six percent indicated that their stroke call duties contributed to their personal feeling of "burnout."Conclusions: Although the reasons are likely multifactorial, our survey of neurologists providing stroke care suggests that over-burdensome on-call responsibilities may be contributing to the vascular neurology workforce burnout and could be affecting recruitment and retention of vascular neurologists. Strategies to reduce the lifestyle impact of stroke call may help address this problem.

Career progression

Stroke as a career option for neurologists 2024, Practical Neurology

Stroke is one of the most common acute neurological disorders and a leading cause of disability worldwide. Evidence-based treatments over the last two decades have driven a revolution in the clinical management and design of stroke services. We need a highly skilled, multidisciplinary workforce that includes neurologists as core members to deliver modern stroke care. In the UK, the dedicated subspecialty training programme for stroke medicine has recently been integrated into the neurology curriculum. All neurologists will be trained to contribute to each aspect of the stroke care pathway. We discuss how training in stroke medicine is evolving for neurologists and the opportunities and challenges around practising stroke medicine in the UK and beyond.

A sustainable stroke nursing workforce requires a clear pathway for career progression December 2017, British Journal of Neuroscience Nursing *Abstract only**

The author conveys her thoughts on an emerging evidence about the central role of stroke nurses in lowering mortality rates and ensuring quality outcomes and mentions related topics such as the Nursing and Midwifery Council, the National Health Service, and transient ischaemic attack.

Education and Training

Gender and Sex Equity in Stroke Research, Education, and Care January 2023, Stroke
Undergraduate clinical education has become more supportive of TGNCNBI folks; however, this progress toward inclusion is not consistent between institutions. Between the limited exposure to TGNCNBI health education and use of outdated vocabulary, there are several barriers impeding further progress toward a gender- and sex-inclusive healthcare system.
A 2011 study found most medical schools only provided 4 to 5 curricular hours to issues pertaining to LGBTQIA+ individuals.4 Topics that have relevance to CVD in TGNCNBI people, such as substance use, chronic disease risk, gender-affirming care, body image, and transitioning, were taught in <40% of schools. Since 2011, there has been a small increase in the number of transgender focused standardized cases and short-term curricula during preclinical or clerkship years, but many are not inclusive of nonbinary and intersex people, nor is TGNCNBI health integrated throughout the overall curriculum. To our knowledge, there are no publications describing curriculum addressing stroke and CVD in TGNCNBI people.
Another important gap to address in clinical education is the use of outdated vocabulary when introducing TGNCNBI concepts and terminology. Both TGNCNBI trainees and patients frequently need to explain how to care for TGNCNBI people or interact with TGNCNBI colleagues. Much of this can be attributed to a lack of LGBTQIA+ clinical education when the current faculty and preceptors were trainees and lack of required LGBTQIA+ content in continuing medical education.

Conference Abstract: Stroke medicine teaching in UK medical schools: A design for a nationwide undergraduate stroke education module 2019, International Journal of Stroke

Introduction: There is a workforce crisis among stroke specialists in the UK, and there are low numbers of junior doctors applying for stroke training. Medical students with more experience in stroke medicine are more likely to consider it as a future career. Lack of exposure to stroke medicine among students is a factor in its relative unpopularity, and there is an urgent need to ensure it is a meaningful part of the undergraduate curriculum. Method(s): We have comprehensively reviewed the Multi-Disciplinary Stroke Education Programme at the University of Leicester, and used the findings to design a new module that has the potential for nationwide uptake. We propose the use of "blended learning" techniques to facilitate situated learning even in the context of the limitations that exist to bedside stroke teaching. Result(s): We evaluated the existing programme according to four domains and found it to be highly successful. The domains were: aims and learning outcomes, teaching settings, accessibility methods and use of student assessment, evaluation and feedback. We used this evaluation to design a new national programme, with constructively aligned learning outcomes and a student-centred pedagogy. We propose centrally and freely available teaching materials that would be supplemented by a non-onerous burden of teaching and feedback contact hours for each medical school, delivered over 4 days, combined with a centralised assessment process. Conclusion(s): We have used the findings of our review to design

a new course for nationwide implementation to facilitate situated learning, even where the potential for bedside teaching of large groups is limited.

Advanced Practice

Stroke advanced clinical practitioner and stroke specialist nurse: what is the difference? May 2023, British Journal of Neuroscience Nursing *Abstract only**
The stroke advance clinical practitioner (ACP) and stroke specialist nurse (SSN) are two vitally important roles within the hyper acute stroke unit, acute stroke unit and spoke sites that provide acute stroke care for continued rehabilitation until the point of discharge. The SSN role has been developed over the past decade, whereas the ACP role is much newer. While there are similarities between the two roles, there are some core differences that allow the two roles to coexist and support one another. It is important to understand the two roles, the differences and how each will benefit from the other, as this will allow teams working within hyper acute stroke units and acute stroke units to work to their full potential, while ensuring professional and patient safety and enhancing job satisfaction and patient care.

Exploring advanced nursing practice in stroke services: a scoping review April 2021, British Journal of Neuroscience Nursing *Abstract only**
Current research does not clarify the rationale for implementing these posts or how ANP is conceptualised. This review does identify that stroke ANP incorporates the four pillars of advanced practice (clinical, research, leadership and education) and was implemented to improve the quality of stroke care. Barriers and facilitators to implementation were also identified.

Utilization of Advanced Practice Providers in Advanced Practice Provider-Led Stroke Clinic to Expand Outpatient Stroke Follow up Care January 2021, Clinical Nurse Specialist: The Journal for Advanced Nursing Practice *Abstract only**
Stroke follow-up care with neurology specialty advanced practice providers is critical to focus on stroke prevention. The need for which is underscored by results of a recent study noting that many stroke survivors of first-ever strokes were not receiving stroke standard-of-care prevention measures including consistent antiplatelet therapies and regular exercise. Study findings further note the rates of usage for stroke prevention interventions (daily anti-platelet therapy, smoking cessation, regular exercise, hypertension control) were between 50% and 70%. Clinical nurse specialists along with nurse practitioner and physician assistant advanced practice providers are uniquely suited to manage outpatient ischemic stroke care to reduce the recurrence of stroke and improve patient outcomes.

Conference Abstract: Expanding a stroke advanced Nurse practitioner service to provide 24/7 cover-a summative evaluation-1 year on 2019, International Journal of Stroke
Introduction: Introducing a stroke Advanced Nurse Practitioner (ANP) team has helped transform the hyper acute service delivered at University Hospital Southampton (UHS) by providing timely specialist assessment and access to hyper acute treatments. Approximately 1 in 5 acute stroke referrals at UHS are received out of hours (OOH's). Expansion of the ANP service is providing stroke specialist involvement at point of entry 24/7, increasing patient access to acute stroke treatments at all hours, day or night. Method(s): SSNAP data, referral records and case notes over the past 2 years were analysed in order to evaluate the benefit of an OOH's ANP service in the treatment of acute stroke patients. Result(s): Since the introduction of a 24 hour ANP presence key performance indicators have increased and less inequality exists between in hour and OOH's care. OOH advances include: More patients receive a CT scan within 1 hour

(90% CI). Fewer stroke mimic admissions to the HASU OOH (99% CI) with a greater number receiving a stroke diagnosis (95% CI). Greater detection of appropriate thrombolysis patients OOH (95% CI). Greater access to specialist stroke management within 1 hour from hospital arrival (99% CI). Increase in stroke patients receiving swallow screens within 4 hours from hospital arrival (99% CI). Secondary analysis showed further positive impact on the wider hospital and workforce. Conclusion(s): A 24-hour ANP service better provides rapid access to acute stroke treatments for a significant subset of patients referred OOH, whilst positively affecting staff and organisational priorities and targets.

Prime movers: Advanced practice professionals in the role of stroke coordinator April 2017, Journal of the American Association of Nurse Practitioners *Abstract only**
Background and purpose: Following a stroke quality improvement clustered randomized trial and a national acute ischemic stroke (AIS) directive in the Veterans Health Administration in 2011, this comparative case study examined the role of advanced practice professionals (APPs) in quality improvement activities among stroke teams. Methods: Semistructured interviews were conducted at 11 Veterans Affairs medical centers annually over a 3-year period. A multidisciplinary team analyzed interviews from clinical providers through a mixed-methods, data matrix approach linking APPs (nurse practitioners and physician assistants) with Consolidated Framework for Implementation Research constructs and a group organization measure.
Conclusion: Five of 11 facilities independently chose to staff stroke coordinator positions with APPs. Analysis indicated that APPs emerged as boundary spanners across services and disciplines who played an important role in coordinating evidence-based, facility-level approaches to AIS care. The presence of APPs was related to engaging in group-based evaluation of performance data, implementing stroke protocols, monitoring care through data audit, convening interprofessional meetings involving planning activities, and providing direct care. Implications for practice: The presence of APPs appears to be an influential feature of local context crucial in developing an advanced, facility-wide approach to stroke care because of their boundary spanning capabilities.

Staff perceptions and experiences

Strength training to improve walking after stroke: how physiotherapist, patient and workplace factors influence exercise prescription 2022, Physiotherapy Theory and Practice *Abstract only**
Background:Muscle weakness is well established as the primary impairment that affects walking after stroke and strength training is an effective intervention to improve this muscle weakness. Observation of clinical practice however has highlighted an evidence-practice gap in the implementation of evidence-based strength training guidelines. Objective: To explore perceived barriers and facilitators that influence Australian physiotherapy practices when prescribing strength training with stroke survivors undergoing gait rehabilitation. Methods: Semi-structured interviews were conducted with a convenience sample of physiotherapists currently providing rehabilitation services to patients following stroke in Australia. Interviews were transcribed verbatim and line-by-line thematic analysis was undertaken to create themes and sub-themes. Results: Participants were 16 physiotherapists (12 females) with 3 months - 42 years experience working with people after stroke. Major themes identified were1) patient factors influence the approach to strength training; 2) interpretation and implementation of strength training principles is diverse; and 3) workplace context affects

the treatment delivered. Physiotherapists displayed wide variation in their knowledge, interpretation and implementation of strength training principles and strength training exercise prescription was seldom evidence or guideline based. Workplace factors included the clinical preference of colleagues, and the need to modify practice to align with workforce resources. Conclusions: Implementation of strength training to improve walking after stroke was diverse. Therapist-related barriers to the implementation of effective strength training programs highlight the need for improved knowledge, training and research engagement. Limited resourcing demonstrates the need for organizational prioritization of stroke education and skill development. Narrowing the evidence-practice gap remains a challenge.

Registered nurses' role experiences of caring for older stroke patients: a qualitative study 2021, BMC Nursing
Background With China's population ageing rapidly, stroke is becoming one of the major public health problems. Nurses are indispensable for caring for older patients with acute and convalescent stroke, and their working experiences are directly linked to the quality of care provided. The study aims to investigate registered nurses' experiences of caring for older stroke patients. Methods A qualitative descriptive design was adopted. Data were collected via semi-structured interviews with 26 registered nurses about their lived experiences of caring for older stroke patients. Thematic analysis was used to analyze the data. Results Two main themes were identified. First, the nurses identified an obvious gap between their ideal role in elderly care and their actual practice. The unsatisfactory reality was linked to the practical difficulties they encountered in their working environment. Second, the nurses expressed conflicting feelings about caring for older stroke patients, displaying a sense of accomplishment, indifference, annoyance, and sympathy. Caring for older stroke patients also affects nurses psychologically and physically. The nurses were clear about their own roles and tried their best to meet the elderly people's needs, yet they lack time and knowledge about caring for older stroke patients. The factors influencing their working experiences extend beyond the personal domain and are linked to the wider working environment. Conclusions Sustaining the nursing workforce and improving their working experiences are essential to meet the care needs of older people. Understanding nurses' lived working experiences is the first step. At the individual level, nurse mangers should promote empathy, relieve anxiety about aging, and improve the job satisfaction and morale of nurses. At the institutional level, policymakers should make efforts to improve the nursing clinical practice environment, increase the geriatric nursing education and training, achieve a proper skill mix of the health workforce, and overall attract, prepare and sustain nurses regarding caring for older people in a rapidly aging society.

Conference Abstract: Attitudes towards and experience of stroke medicine in the UK: A mixed methods survey of medical students December 2018, International Journal of Stroke
See Entry 209. Introduction: There is no available data on medical student attitudes towards and experience of stroke medicine. Understanding these may help address the physician workforce crisis in stroke medicine in the UK. Method(s): All UK medical schools were asked to circulate a SurveyMonkey questionnaire to all medical students on 26th October 2016. Students were asked to identify which specialities and subspecialties they were considering for their career (from the GMC approved specialties list), detail their clinical experience in stroke medicine and explain what is appealing or unappealing about a career in stroke medicine. Result(s):We received 1,050 responses covering 7 medical schools in England, Scotland and Wales. Of final year students (n=323), 8% were considering stroke medicine and 68% had less than 1 week of clinical experience of the subspecialty. Those with less experience were

less likely to consider the subspecialty (p=0.024). Common themes for finding stroke medicine appealing included the impact of successful treatments on quality of life, recent advances in stroke care and the team-based approach. Common themes for finding stroke medicine unappealing included limited treatment options, slow paced, repetitive, poor outcomes and too specialised. Conclusion(s): Limited exposure to stroke medicine at undergraduate level may contribute to low interest in the subspecialty. Reasons for a negative perception may relate to exposure to a narrow focus within stroke medicine. We recommend broadening training opportunities at medical school across the stroke pathway, incorporating these throughout the undergraduate curriculum and emphasising to medical students those aspects of the subspecialty that they find appealing.

Telemedicine

Implementation of a telemedicine, stroke evaluation service; a qualitative study August 2022, BMC Health Services Research
This study showed that telemedicine stroke evaluation with a remote-controlled CT using local on call personnel was experienced as valuable in the local community, providing a sense of healthcare services security and equality. The set-up of the service required radiation protection and privacy approvals, which is important to be aware of when planning similar services. Task shifting for paramedics was a main task in the project. This supported the importance of a manager/coordinator role for education and training, as the paramedics needed to acquire theoretical and practical knowledge in working with the telemedicine application combined with CT scanning and new clinical tasks. Management involvement, flexibility, and a culture for coordination and cooperation both within and between the departments locally, and with external hospitals seems to be a key factor both in the implementation process and for keeping the service operating long term.

Telerehabilitation for Stroke is Here to Stay. But at What Cost?
June 2022, Neurorehabilitation & Neural Repair *Abstract only**
The use of telerehabilitation after stroke has necessarily increased in the last 2 years because of the COVID-19 pandemic, and many rehabilitation teams rapidly adapted to offering their services remotely. Evidence supporting the efficacy of telerehabilitation is still scarce with few randomized controlled trials, although current systematic reviews suggest that telerehabilitation does not lead to inferior outcomes when compared to face-to-face treatment. Increasing experience of telerehabilitation however has highlighted some of the pitfalls that need to be solved before we see widespread pragmatic adoption of new practices. We must ensure that offering services using digital technologies does not exclude those who need our services. We must acknowledge that our interactions online differ, both in the way we relate to each other and in the content of clinical consultations. Furthermore, we need to consider how to support staff who may be feeling disconnected and fatigued after spending hours providing remote therapies.
Telerehabilitation is likely here to stay and has potential to help deliver rehabilitation to the many people who could benefit, but there are obstacles, challenges and trade-offs to be considered and overcome

Pathways

Stroke Pathway 2016, NHS RightCare
The Stroke Pathway defines the core components of an optimal service for people who have had a stroke or are at risk of a stroke. The Stroke Pathway has been developed in collaboration with the National Clinical Director for Stroke Services, Tony Rudd, Public members of the Intercollegiate Stroke Working Party (ICSWP), the Stroke Association and a range of other

stakeholders from across the health and care system. The pathway defines the key interlocking components for an optimal system for prevention and management and the priority higher value interventions that systems should focus on to address variation, improve outcomes, reduce cost and contribute toward a sustainable NHS.

Competency Frameworks

Stroke-Specific Education Framework (SSEF)
In response to the National Stroke Strategy (2007) the UK Stroke Forum developed a training arm with the task of establishing nationally recognised, quality-assured and transferable education programmes in stroke. A Steering Group and four Task Groups developed the Stroke-Specific Education Framework (SSEF), which covers the whole of the stroke care pathway. The SSEF consists of 16 Elements of Care, based on the quality markers in the National Stroke Strategy and related to the stroke strategies in all four UK countries.

UK Career Framework for Stroke Nurses n.d., Royal College of Nursing *Free login required**
In the United Kingdom, more than 100,000 people have a stroke each year, with almost 75% of stroke survivors living with a disability. It is expected that not only the incidence of first time strokes will rise significantly but also the number of stroke survivors living with a disability. These challenges require a robust nursing workforce equipped with knowledge and skills including stroke prevention; acute management and rehabilitation; leadership and innovation; research; and evidence-based care.

Stroke Competency Toolkit Framework (SCoT): Making care for stroke patients safer n.d., Chest and Heart Stroke Scotland
The Stroke Competency Toolkit (SCoT) has been developed as a framework to help staff evidence how their learning translates into their care of patients. It is a stroke-specific continuing professional development (CPD) resource, and is aligned to the NHS Knowledge and Skills Framework (KSF).

Developing an education framework for stroke 2012, Nursing Times *Athens log in required**
The National Stroke Strategy identified that staff caring for people with stroke needed knowledge and skills, and nationally recognised learning programmes were required. This article describes the development of an education framework for stroke.

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