Health Education England

Evidence Brief: Stroke Workforce

Contents

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

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Key publications – the big picture

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.

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)

Meeting the Future Consultant Workforce Challenges: Stroke Medicine: Stroke Medicine Consultant Workforce Requirements 2019-2022 July 2019, British Association of Stroke Physicians
This report provides the most up-to-date guidance on stroke workforce requirements to help remedy the serious current shortfall in stroke consultants in the NHS – and ensure the highest quality care is available to all patients in the UK.

Interim NHS People Plan June 2019, NHS
Our Interim NHS People Plan, developed collaboratively with national leaders and partners, sets a vision for how people working in the NHS will be supported to deliver that care and identifies the actions we will take to help them.
See p. 38 "Medical credentialing" which has an impact on the pathway for stroke patients and was laid out in the Long Term Plan (see below).

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.”

Guidance for nurse staffing in stroke services November 2016, National Stroke Nursing Forum
High quality, compassionate stroke care is about relationships between people with stroke, their families and staff. It is not solely about how many numbers of nurses are needed on stroke units. Each inpatient Stroke Unit, Community Stroke Team, and Community Nurse need the right resources to provide high quality specialist clinical care, compassion and rehabilitation to people with stroke and their families. This paper provides advice specifically for the stroke speciality from admission to rehabilitation. The aim of this paper is to provide sound, specialist advice based on available evidence and expert opinion from four stroke nursing specialist interest groups in the United Kingdom. This document should be an adjunct to, and be read alongside national guidance and specific recommendations or legislation from all four countries in the UK.

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

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.

Community Stroke Microsystem – Sheffield Teaching Hospitals May 2017, NHS Fab Academy
Background: Sheffield Teaching Hospital's Community Stroke Service team is comprised of Administrators, Nurses, Occupational Therapists, Pharmacists, Psychologists, Physiotherapists, Rehabilitation Assistants and Speech & Language Therapists who provide therapy and support to approximately 700 patients per year. Representatives from across the professional groups formed a microsystem team that began meeting in December 2014.

Delivering stroke specific education and training November 2014, eWIN
One of the aims of the National Stroke Strategy (2007) was to ensure that high quality stroke care is provided by people working anywhere along the stroke pathway, (NICE 2013); from prevention through to long-term care. The Stroke-Specific Education Framework (SSEF), is a professional development web-based tool, which was developed as the first step in ensuring the realisation of this aim and is the first pathway-specific education framework of its kind in the UK.

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.

HEE Star

More resources and tools are available in the HEE Star

Statistics

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

HEE National Data Programme

HEE staff can look at the National Data Warehouse (NDL) SharePoint site to find out more about datasets and Tableau products.

Published Peer Reviewed Research

COVID-19

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

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.

Nurse practitioners and physician assistants in the intensive care unit: an evidence-based review October 2008, Critical Care Medicine *Abstract only**
BACKGROUND Advanced practitioners including nurse practitioners and physician assistants are contributing to care for critically ill patients in the intensive care unit through their participation on the multidisciplinary team and in collaborative physician practice roles. However, the impact of nurse practitioners and physician assistants in the intensive care unit setting is not well known. OBJECTIVES To identify published literature on the role of nurse practitioners and physician assistants in acute and critical care settings; to review the literature using nonquantitative methods and provide a summary of the results to date incorporating studies assessing the impact and outcomes of nurse practitioner and physician assistant providers in the intensive care unit; and to identify implications for critical care practice. METHODS We conducted a systematic search of the English-language literature of publications on nurse practitioners and physician assistants utilizing Ovid MEDLINE, PubMed, and the Cumulative Index of Nursing and Allied Health Literature databases from 1996 through August 2007.INTERVENTIONSNone.RESULTSOver 145 articles were reviewed on the role of the nurse practitioner and physician assistant in acute and critical care settings. A total of 31 research studies focused on the role and impact of these practitioners in the care of acute and critically ill patients. Of those, 20 were focused on nurse practitioner care, six focused on both nurse practitioner and physician assistant care, and five were focused on physician assistant care in acute and critical care settings. Fourteen focused on intensive care unit care, and 17 focused on acute care including emergency room, trauma, and management of patients with specific acute care conditions such as stroke, pneumonia, and congestive heart failure. Most studies used retrospective or prospective study designs and nonprobability sampling techniques. Only two randomized control trials were identified. The majority examined the impact of care on patient care management (n = 17), six focused on comparisons of care with physician care, five examined the impact of models of care including multidisciplinary and outcomes management models, and three assessed involvement and impact on reinforcement of practice guidelines, education, research, and quality improvement. CONCLUSIONS Although existing research supports the use of nurse practitioners and physician assistants in acute and critical care settings, a low level of evidence was found with only two randomized control trials assessing the impact of nurse practitioner care. Further research that explores the impact of nurse practitioners and physician assistants in the intensive care unit setting on patient outcomes, including financial aspects of care is needed. In addition, information on successful multidisciplinary models of care is needed to promote optimal use of nurse practitioners and physician assistants in acute and critical care settings.

Multidisciplinary and interdisciplinary teams

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
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

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

Conference Abstract: A stroke specific speech and language therapy (SLT) time in motion audit-recorded throughout eight Greater Manchester (GM) hyper acute stroke units (HASUs) and district stroke centres (DSCs) 2019, International Journal of Stroke

Introduction: The current Royal College of Physicians (RCP) and British Association of Stroke Physicians (BASP) recommended staffing levels for SLT do not meet the requirements of patients accessing inpatient stroke care. A better understanding of the demands placed on SLTs is required to inform future guidance on staffing levels and skill mix. Method(s): A stroke-specific SLT time in motion audit was carried out across GM over a 4-week period in September 2018. 3 HASUs and 5 DSCs recorded data in 15 minute time slots, for analysis as percentages of the working month. Result(s): 2895 hours of cumulative data were collected. A stark inequality and variation in SLT staffing and skill mix were identified across GM. Time spent on patient-related tasks was high at 66-95%. However face-to-face time ranged from 31-48%, demonstrating a significant proportion of the clinical demands placed on SLTs are not patient facing. Therapy time was low ranging from 2-30% and was mostly carried out by therapy assistants due to other demands placed on qualified SLTs. Time spent on instrumental tasks like swallowing assessments was low 0-7%, given the high incidence of silent aspiration among the acute stroke dysphagic population. Conclusion(s): As small teams, SLT services have insufficient time for duties including their own continuing professional development (CPD), demonstrating how clinical pressures detract from the development of a specialist stroke workforce. The audit supports the need for review of recommended SLT staffing levels for inpatient stroke care. Future recommendations must include skill mix and should reflect the multifaceted role of SLTs.

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

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

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

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

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

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

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 andWales. 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.

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 and Career 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
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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