Standards of Practice
and
Proficiency Framework
for
Deep Brain Stimulation
Nurse Specialist

A Competency Framework based on
Knowledge, Skills and Attitude
for
Nurses and Allied Health Professionals
working in Deep Brain Stimulation

**Deep Brain Stimulation Nurse Association
(DBSNA)**
*"Improving the quality of life for individuals with DBS through
clinical care, education, research and innovation."*

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Standards of Practice and Proficiency Framework for DBS Nurse Specialist

A Competency Framework based on Knowledge, Skills and Attitude for Nurses working in Deep Brain Stimulation

This document is produced by the Deep Brain Stimulation Nurse Specialist Association (DBSNA) to appraise the standards of practice and recognise the role of specialist nurses working in the field of movement disorders and deep brain stimulation (DBS).

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Deep Brain Stimulation Nurse Association
"Improving the quality of life for individuals with DBS through clinical care, education, research and innovation."

Foreword

Deep Brain Stimulation Nurse Association (DBSNA) is a non-profit professional organisation established by nurses specialising in neuro-modulation. Our mission statement is…

 "Improving the quality of life for individuals with DBS through clinical care, education, research and innovation"

DBSNA aspires is to exemplify the ethical and clinical responsibilities of deep brain stimulation (DBS) specialist nurses; to recognise the contributions of DBS specilaist nurses in providing high quality patient care. DBSNA aims to support the vital role of DBS specialist nurses in the progression of knowledge and skills in the field of neuromodulation.

This framework is a collaborative project of the DBSNA committee and its supporters to establish the standards of practice for specialist nurses working in the specialist field of DBS and neuromodulation. Importantly, this document will help benchmark the standards of care for patients implanted with DBS throughout their journey in the DBS care pathway.

Executive Summary

The role of the nurse specialist in deep brain stimulation (DBS) is central in providing the highest quality of specialist care for patients with DBS implant. A nurse specialist working in DBS is expected to develop a comprehensive knowledge and to acquire specialist skills to meet the care needs of patients requiring life-long management of conditions treated with DBS; this includes monitoring the progression of the condition, medication management and providing therapy using DBS devices.

This framework is developed by the Deep Brain Stimulation Nurse Association (DBSNA) to set the standards of practice for specialist nurses working in DBS. The proficiency framework will serve as a fundamental evidence of competency for specialist nurses working in DBS and neuromodulation in England. However, this framework can also be adopted by other UK countries. Moreover, other non-medical professionals who intend to develop clinical practice in DBS and neuromodulation can adopt the principles and proficiencies in this document.

The objectives of the framework are as follows:

- To enable nurses specialising in deep brain stimulation to be critically appraised by a clinical supervisor based on knowledge, skills and attitude to ascertain 'fitness for practice'.
- To serve as an evidence of competence for the nurse specialist to safely manage patients with DBS implant.
- To uphold the Nursing and Midwifery Council (NMC) code of professional practice and the Royal College of Nursing (RCN) definition of advance nurse practitioner; a DBS nurse specialist should be able to take comprehensive history, perform physical assessment, diagnose, prescribe DBS therapy and prescribe medication (for the registered non-medical prescribers).
- To provide a structure to identify learning needs and to identify learning objectives for nurses who are new in the specialist field.
- To serve as a continuing professional development tool for progression of the advanced practitioner in neuromodulation, review in Agenda for Change professional progression, revalidation and appraisal.

Abbreviation

DBS – Deep brain stimulation

AHP – Allied health professionals

STN - Subthalamic Nucleus

GPi – Globus Pallidum interna

DBSNA – Deep Brain Stimulation Nurse Association

NMC – Nursing and Midwifery Council

RCN – Royal College of Nursing

mA – milliamps (Current)

µs – Microseconds (pulse width)

Hz – Hertz (Frequency)

V – Voltage

VIM – Ventral intermediate nucleus

VOP - Ventralis Oralis Posterior

Ω - Ohms (impedance)

DBSNS – DBS nurse specialist

NHS – National Health Service

NHS KSF- NHS Knowledge Skills Framework

QoL – Quality of Life

PD – Parkinson's disease

PDNS – Parkinson's Nurse Specialist

PDNSA – Parkinson's disease Nurse Association

DOH – Department of Health

OSCE – Objective Structured Clinical Examination

UPDRS – Unified Parkinson's disease Rating Scale

TWSTRS – Toronto Western Spasmodic Torticollis Rating Scale

PC – Primary Cell (as used in DBS devices i.e. Activa PC or Vercise PC)

RC – Rechargeable Cell (as used in DBS devices i.e. Activa RC)

IPG – Implantable Pulse Generator

MHRA – Medicines and Healthcare Products Regulatory Agency

GP – General Practitioner

SMDNS - Surgical Movement Disorder Nurse Specialist

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I. Introduction

There are over 150,000 patients worldwide who have undergone deep brain stimulation (DBS) procedure[1]. DBS involves surgically implanting electrodes on one side or both sides within the deep structures of the brain. The electrodes are connected to extension cable(s) which are surgically tunnelled under the skin which is attached to a neuropacemaker battery which is then implanted in a pocket under the skin on the chest or other suitable areas of the body (i.e. lower abdominal area) [2]–[4]. DBS delivers high frequency electrical current to the targeted area. The principle behind delivering high frequency electrical stimulation is to block or correct the misbehaving electrical activities in the brain causing the symptoms seen in Parkinson's disease, dystonia, tremor and other movement disorder conditions [5].

DBS is a life-long treatment which involves routine management and periodic surgical replacement of neuropacemaker battery [6].

There are vast evidence highlighting the long-term improvement in the quality of life of patients by alleviating the cardinal symptoms of Parkinson's disease and motor fluctuations [7]–[11]. Longitudinal studies have found that dyskinesia, motor fluctuations and demands for dopaminergic medications remain significantly low following DBS by showing better outcome in activities of daily living at 5 to 8 years from DBS surgery [11], [12]. Moreover, DBS implanted patients exhibited better motor outcome than the patients on best medication both on short term and long-term assessments [13], [14]. Therefore, DBS is an effective treatment in advanced PD that improves patients' overall quality of life (QoL). The key target structures in Parkinson's disease are subthalamic nucleus (STN), globus pallidum interna (GPi) and Thalamus[15].

In dystonia, the electrodes are implanted in the globus pallidum interna (GPi) [16]. DBS is a safe and an effective treatment for dystonia [16]–[18]. DBS provides beneficial effect in the severity and disability in selected patients, with the greatest benefit found in primary dystonia, generalized dystonia, segmental dystonia, and tardive dystonia [17], [19], [20].

DBS is also an effective treatment in paediatric forms of dystonia [21]. Paediatric patients benefit from DBS predominantly implanting GPI targets for acquired generalised dystonia [22], [23]. The most common form of dystonia in children treated with DBS is cerebral palsy [21], [24]. DBS in children requires a skilled multi-disciplinary team (MDT) for patient selection and goal setting [22], [25]l. Improvements have been reported in comfort and care burden [24], [25].

In tremor, DBS is an effective treatment for essential tremor with sustained benefit for many years of treatment [26], [27]. The ventral intermediate nucleus (VIM) and nucleus ventralis oralis posterior (Vop) within the structures of the thalamus are the usual target in tremor dominant conditions such as parkinsonian and other kinds of tremor [28].

The care of DBS implanted patients is complex and multifaceted requiring multidisciplinary approach [29]. DBS surgery is performed in experienced specialist centres with the involvement of clinicians with highly specialised clinical knowledge and skills [29]–[31].

The efficacy and safety of DBS therapy relies on the specialist knowledge and clinical skills through the collaborative input of consultant neurologist, consultant neurosurgeon, DBS nurse specialist, psychologist, psychiatrist speech therapist, physiotherapist and occupational therapist.

In UK, the DBS nurse specialist role is central in the provision of life-long specialist care to patients implanted with DBS. The role of the specialist nurse is vital to the patient journey from the assessment and patient selection, the surgery and hospital discharge; moreover, the role of specialist nurses extends to the life-long care required for DBS implanted patients by providing support for patients, carers and family. The specialist nurses are considered expert practitioners with specialised skills and knowledge in DBS nursing care.

The gold standard approach in the management of patients with DBS therapy should be holistic that should cover from the standard nursing care such as wound care to advanced technical skills in operating a DBS device. This document contains the standards and proficiencies developed to support specialist nurses and guide employers about their learning needs and set-learning objectives to facilitate continuous learning. This framework will guide the nurse specialist to develop advanced clinical practice in the provision of care for patients from assessment, selection process, pre-operative care, and intra-operative care, post-operative care including management of post-operative complications, patient discharge and lifelong holistic follow up care.

II.   Competence-based and Evidence-based Learning

This framework is developed as part of the principal projects of the Deep Brain Stimulation Nurse Association (DBSNA). The proficiency section of this document was drafted and utilised by the DBSNA members since 2014. It is based on the competency booklet for non-medical prescribing course (see acknowledgement[2]). The feedbacks provided by the users of the document have been a valuable resource during the development of this framework. There is currently no known established competency framework for nurse specialist working in DBS and neuromodulation hence the development of this document. Also, it aims to support ongoing DBSNA training and teaching programmes for all nurses specialising in DBS and neuromodulation.

This framework can be adapted with any existing local competencies and learning programmes for neuromodulation. The framework is developed for nurses working in England. However, this framework can be adopted by other UK countries.

In recent years, allied health professionals (AHP) are developing new specialist roles involving programming of DBS. All AHP who are planning to take an extended role in DBS can use this document as evidence of competence.

Also, Parkinson's nurse specialist (PDNS) who wishes to develop skills in managing DBS therapy can also use this document to develop an extended role.

This framework is aimed to be utilised for continuing education, practice update, annual appraisal and for appointing new roles for specialist nurse.

III.   The DBS Nurse Specialist

DBS nurse specialist (DBSNS) refers to a nurse practitioner or aspiring nurse specialist with the role to provide high quality care to patients with movement disorders requiring DBS treatment. The main role involves independently managing patients treated with DBS therapy including modifying settings, controlling the amount of

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[2] Independent and Non-Medical Prescribing Competency Booklet, City University London

stimulation utilised to help control the symptoms. Moreover, with the growing indication of DBS therapy, the role of the nurse specialist may not be limited to managing patients with movement disorders. The indication for DBS is growing; other indications for DBS which are being explored are for chronic pain [32], [33], chronic cluster headache [34], [35] and psychiatric conditions such as obsessive compulsive syndrome and Tourette's syndrome [36]–[38].

In the field of paediatrics, a DBS nurse undertakes the role of Complex motor Disorders Advanced nurse practitioner; often covering dystonia and spasticity and including managing other complex treatment options such as baclofen pumps.

A publication in 2004 by Joint et al, entitled 'The Role of the Surgical Movement Disorder Nurse Specialist' has provided initial insights on the role of the 'Surgical Movement Disorder Nurse Specialist (SMDNS) [39]. The role is exactly the same as the role and title of the DBSNS. However, this framework highlights the developing and evolving role of the nurse specialist working in DBS and neuromodulation.

IV. Why is standards of practice and evidence of competence for DBS nurses important?

Programming DBS settings such as modifying the amplitude, pulse width, and frequency of DBS stimulation is as potent as any form of medication. It is a treatment that directly alleviates and control symptoms. However, like any form of medication, stimulation may potentially cause adverse reactions and side effects. DBS may potentially induce temporary or permanent side effects that may affect speech and cause sensory problems [29], [40], [41]; also, DBS may induce motor problems such as severe involuntary movement – dyskinesia and dystonic symptoms similarly seen in high doses of levodopa [29]. DBS may also induce impulsive behaviours that are similarly seen in high doses of dopamine agonist drugs [29], [42]. Importantly, there is a significant risk of irreversible tissue damage and disability that may occur when parameters of high amplitudes and wide pulse widths is delivered inappropriately by an untrained and inexperienced clinician [43]. Therefore, any form of DBS modifications independently undertaken by a clinician or the nurse specialist encompasses a degree of 'prescribing' accountability.

In this regard, a nurse specialist should uphold the professional commitment to work within one's competence which underpins the principles of the NMC Code – to protect patients and public who uses the service at all times [44].

This framework advocates that nurses aspiring to specialise in DBS and neuromodulation should acquire a comprehensive knowledge in conditions where DBS is indicated as a therapy. Moreover, the framework endorses that all nurse specialist working in DBS should develop advanced clinical skills including ability perform physical assessment and should be able to plan and implement from simple to complex management plan utilising the DBS therapy.

V. The Standards of Practice for DBS Nurse Specialist

The DBSNS responsibilities are in line with the RCN and NMC's definition of advance nurse practitioner [45], [46]. A qualified and competent DBSNS or specialist allied health practitioner should possess the following qualities:

- A highly experienced and educated member of the care team; able to diagnose and independently prescribe DBS therapy settings as well as manage complex

medication regimes. Non-medical prescribers can prescribe medications as clinically necessary.

- Demonstrates comprehensive understanding of the context of anatomical and physiological differences within the basal ganglia or structures where electrodes are implanted and stimulated.
- Acquires specialist skills in history taking, physical assessment, use expert knowledge and judgement to diagnose, decide to prescribe or recommend treatment options; able to utilise comprehensive knowledge and expertise to plan and provide a safe and competent care to DBS implanted patients [45].
- An independent practitioner that makes sound clinical decision to take appropriate actions in modifying DBS settings.
- An advocate of the principles of the National service framework for long term conditions [47]: to provide a patient centred service, to provide prompt access to specialist care and treatment both for patients in the community and hospital setting, to provide on-going support on hospital discharge.
- An autonomous practitioner able to manage own caseload, can make decisions to admit and discharge patients, able to diagnose ailments that are common within the speciality. Also, able to apply standard nursing skills in managing surgical wounds and surgical complications.
- With sound clinical judgement to refer patients to other members of care team or another specialist if required.
- Knowledgeable in pharmacological and non-pharmacological treatments including DBS devices; able to appraise the therapeutic purpose and effects of DBS settings as well as able to identify potential risk that these therapies may cause to patients.
- Must have a comprehensive understanding of how DBS therapy works, have technical ability to troubleshoot and diagnose technical faults of DBS devices.
- Able to maintain up to date knowledge and skills with new devices, features and functions by collaborating with device companies through training and product development.
- Able to provide comprehensive feedback to the rest of the members of multi-disciplinary team (MDT) and device companies about issues that matter to patients by ensuring that patient safety remains the priority of care.
- Able to provide continuing support to help patients manage their condition and life-long care needs.
- Able to demonstrate evidence-based practice and critically appraise own clinical practice. A DBSNS or specialist allied health professional should strive to actively take part in research and professional development.
- Demonstrates leadership qualities and provide consultation to other members of the care team. Has the ability to work and collaborate with device companies.
- Demonstrates to meet advance levels of the 6 core dimensions of NHS knowledge skills framework (NHS KSF) [48].
- Moreover, a DBS nurse specialist must uphold the NMC code of practice [44]. A DBS nurse specialist should uphold professional behaviour and attitudes to maintain safe practice and to maintain patient dignity, privacy and confidentiality at all times.

- Finally, DBSNA recommends that only nurses, doctors and allied professionals with relevant knowledge, competence, skills and experience should prescribe DBS therapy settings for DBS implanted patients.

This competency framework is based on the following professional, local and national policies, guidelines and initiatives:
- Agenda for change [49]
- UK DBS Parkinson's excellence network [50]
- PDSNA Competency Framework [51]
- A competency framework for all prescribers [52], [53]
- National Service Framework for Long Term Conditions [47]
- NMC 'code' [44]
- Role of a movement surgical nurse specialist [39]
- RCN competencies for advance nurse practitioner [54]
- NMC's definition of advance nurse practitioner [45]
- Need for leadership for advance clinical practice including nurse [55]–[57]
- Nursing accountability [44]
- Continuing education and professional development [58], [59]
- Annual Appraisal [60]
- Development of standards of practice for DBS nurse specialist [61]

VI. Qualifications of a DBSNS

The document entitled 'Role of the Surgical Movement Disorder Nurse Specialists (SMDNS)' published by Joint et al (2004) has provided useful guidelines for the aspiring nurse specialist or practitioners regarding the definition of the role, qualification, and responsibilities of a SMDNS [39]. Also, Joint et al (2004) emphasised guidelines for the employer and trust regarding the key points in appointing a nurse specialist as well as providing recommendation for employing authorities, NHS Trust and centres who are planning to undertake surgical procedures such as lesioning and implanting DBS devices for conditions where these procedures are indicated [39]. Furthermore, the framework recommends guidance in defining the levels of practice in nursing from a nurse specialist to a nurse consultant. In line with the recommendations of Joint et al (2004) [39] along with the RCN and NMC's definitions of 'advanced nurse practitioner' [45], [54] and the competency for all prescribers [52], the following are the recommended qualifications of an aspiring and appointed DBSNS or SDMNS:
- Must be a registered nurse or allied practitioner
- Must be at least working at a band 6 level or its equivalent
- Must have at least have 3 years of experience in general or specialist practice and deemed competent by the employer to undertake an extended role and responsibilities outlined in this document.
- The nurse must have a relevant nursing degree and be working towards a masters as this is a specialist role.
- Must have excellent communication skills. Able to communicate effectively to other members of MDT and demonstrates therapeutic communication skills to patients, carers and family members.
- Must possess essential nursing skills such as wound care, maintaining hydration, nutrition, personal care and activities of daily living. A nurse specialist

should not assume that the role is beyond the fundamentals of nursing care, but it should serve as a foundation to develop advanced practice.

- A clinical supervisor must be allocated to all aspiring or practicing nurse specialist which is identified by the manager.
- Must be motivated to pursue professional development.
- Able to work as an integral member of a multi-disciplinary team (MDT) which includes the neurologist, neurosurgeons, psychologist, psychiatrist, speech and language therapist, physiotherapist, occupational therapist, GP, and other members of the social services and clinical team in the community.
- Must have the capacity and ability to educate other members of the team, nurses, junior doctors, and other health professionals.
- Be a role model to other team members, leading by example and promotes best evidence practice in order to enhance patient outcomes.
- Able to receive constructive criticism and recommendations to improve practice.
- Able to act without delay to manage possible risk in clinical practice to ensure patient, carer and colleagues' safety is maintained.
- Must possess assertive qualities to challenge unsafe practice and be able to develop accurate and professionally written statements to report concerns to someone in authority following protocols and Trust procedure in risk management.
- Finally, the aspiring nurse and nurse specialist must have a genuine interest to work in the field of movement disorders or other conditions where DBS therapy is indicated. Furthermore, able to demonstrate enthusiasm and willingness to learn, to gain experience and motivated in continued learning and professional development.

VII. Guidance for employing authority

According to the Clinical commissioning policy of the NHS published in 2013, 'DBS should only be performed in experienced specialist centres willing to publish their results and use established clinically relevant patient outcomes' [30]. Furthermore, The National Toolkit for the Designation of Providers of DBS published in September 2011 has set out service standards for DBS providers in England [62].

In line with these initiatives, this framework provides the following recommendations for all NHS Trust with established DBS service and for newly established centres:

- A nurse specialist should be appointed. The nurse specialist role is central in ensuring the continuity of care for patients living with DBS implant.
- The employing authority should accept responsibility to support the appointed nurse specialist or practitioner to undertake the competencies and training for professional development. The trust should also support applications for funding for at least one national and international conference relevant to the speciality.
- The employing authority should provide a structured career development programme for the appointed nurse specialist or practitioner. The employer should support professional development strategies to support career progression.

VIII. Defining the Levels of Practice and Expertise for DBSNS

The introduction of the 'National Health Service (NHS) Agenda for Change – modernizing the NHS pay system' in 1999 and succeeding review process of NHS KSF has provided a structure in framework of pay and condition. This national initiative provided guidelines for job evaluation, provided a fair reward scheme through set criteria for pay bands, investing in continuing learning and development, supported career progression and development of individuals to so they can be effective at work [48], [63].

Moreover, Department of Health (DOH) - Advanced Level Nursing: A Position Statement has provided a benchmark for advanced level nursing under the following four themes [57]:

1. Clinical/Direct care practice
2. Leadership and collaborative practice
3. Improving quality and developing practice
4. Developing self and others

Table 1 outlines the criterion of levels of practice and expertise for DBSNS which serves as a guidance for employing trust and authorities. These standards can be utilised for annual appraisals, professional development and career progression.

Table 1 Criterion of levels of practice and expertise of DBSNS

Role	Qualifications and Responsibilities (Essential E, Desirable D)	KSF Dimensions	Proposed Pay Band
Junior DBSNS	• This level defines the entry point for a registered general nurse new to the speciality. • Experience of working in the speciality for at least 6 months to 1 year • Level competence at this level is at minimum threshold • Requires supervision in performing specialist clinical skills E • Has basic understanding and knowledge in the speciality E • Utilises general nursing skills and supports the role of the competent and senior nurse specialist E • Level of achievement on the DBSNA competency is between level 1 (Novice) to level 2 (advance beginner) E	Core 1 level 2 Core 2 level 2 Core 3 level 2 Core 5 level 1 Core 6 level 2 HWB1 level 1 HWB2 level 2 HWB4 level 2 HWB5 level 2 HWB6 level 1 HWB7 level 2 IK2 level 1	Band 6 working towards 7 as soon as the competencies are achieved.
Competent DBSNS	• Work experience in the speciality for at least 1 year to 2 years • Clinical skills are at competent level. • Able to perform specialist skills without assistance D • Aware of own limitations in competence and needs guidance to develop practice. • Able to confidently discuss the basic concepts		

	and principles underpinning conditions and DBS [E] • Level of achievement on the DBSNA competency is level 3 (safe practice) and level 4 (competent) [E]		
Senior DBSNS	• Work experience in the speciality from 2 to 5 years onwards. • Clinical skills are at a proficient level. • Performs clinical skills at a safe level with acceptable speed and quality of work [E] • Able to appraise knowledge and principles and apply to practice [E] • Able to work according to local protocols, co-ordinate the complex care of a patient [E] • May or may not possess specialist advanced clinical skills that may be undifferentiated from those seen in doctors [D] • Works autonomously without necessarily asking advice from other medical members of MDT [E] • Demonstrates potential leadership skills [E] • Able to independently manage pharmacological and non-pharmacological treatments including DBS programming and troubleshooting problems [E] • Working within own level of competence; able to seek advice and opinion from other members of MDT for cases beyond own qualification and expertise. • Able to recommend treatments either through independent non-medical and supplementary prescribing or Patient Group Directions (PGDs) [D] • Must be working towards a masters level degree [D] • Able to manage own caseload, can make decision to admit and discharge patients [E] • Level of achievement is between level 4 (proficient) and level 5 (competent); able to achieve some proficiencies at Level 6 (expert)	Core 1 level 3 Core 2 level 2 Core 3 level 3 Core 4 level 3 Core 5 level 5 HWB1 level 3 HWB2 level 3 HWB3 level 3 HWB4 level 3 HWB5 level 3 HWB6 level 3 HWB7 level 3 IK2 level 2 G1 level 3 G2 level 2 G3 level 1	Band 7, working towards Band 8a (for independent prescribers)
Nurse Consultant	• Experienced in the speciality for 5 to 10 years onwards. • Clinical skills are at an expert level of practice • An autonomous practitioner with the capacity to provide expert clinical management plan for patients with complex conditions and still able to work within the MDT environment [E]	Core 1 level 4 Core 2 level 4 Core 3 level 4 Core 4 level 4 Core 5 level 4 Core 6 level 4 HWB1 level 4	Band 8b or 8c

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• With an advance nurse practitioner degree [E] or equivalent in masters level. • Motivated to further education and professional development [D] • Practicing as an expert practitioner within the speciality [E] • Can prescribe both pharmacological and non-pharmacological treatments including DBS therapy with or without seeking advice from clinical supervisor or medical members of the MDT[E] • Able to collaborate in research; and promote nursing research within the field [D] • Able to provide consultation to colleagues, other members of the MDT, as well as device and pharmaceutical companies [D] • Demonstrates leadership within the local level and can influence practice developments from local, national and international centres [E] • Contributes to local, national and/or international community within the speciality [D] • Publishes works and research projects [D] • Able to educate and provide presentations at local, national and international conferences [D] • Able to write and implement protocols as well as guidelines within the expertise in collaboration with other specialist nurses, medical colleagues from local and national centres. • Able to take initiative for service improvement; able to assess, plan, implement and review strategies including utilisation and management of financial resources [E] • Acknowledges own limitations in competence and able to set learning objectives to develop expertise. • Able to inspire nurses and other professionals to develop own expertise and experience [E] • Level of achievement on DBSNA competency is between level 5 (proficient) and Level 6 (expert) [E]	HWB2 level 4 HWB3 level 4 HWB4 level 4 HWB5 level 4 HWB6 level 4 HWB7 level 3-4 IK2 level 2-3 G1 level 4 G2 level 2-3 G3 level 2 G4 level 1-2 G5 level 3 G6 level 3 G7 level 1 [D] G8 level 1-2 [D]

IX. Guidelines in completing the competency framework

All aspiring and experienced nurses working as DBSNS has a duty to provide an evidence of competence in independently and safely modifying DBS settings. The primary purpose of this document is to ensure that the safety of patients are maintained [44].

The competencies are set out to meet a range of learning outcomes to reflect the following:

1. Comprehensive understanding of the principles and concepts related to movement disorders in normal physiology and pathologies.
2. Understands the principles and concepts underpinning neuromodulation and devices used in neuromodulation.
3. Safe practice
4. Professional accountability
5. And other responsibilities relevant to the role of a DBS Nurse Specialist

Designated Clinical Supervisor

A nurse specialist should have a designated clinical supervisor. A designated clinical supervisor is a senior or experienced in the specialist field of DBS and neuromodulation (i.e. experienced specialist nurse, consultant neurologist, and consultant neurosurgeon). Clinical supervisors should have at least 5 years of experience in DBS. The role of the designated clinical supervisor is to guide and support the nurse specialist in the process of completing the proficiencies set out within this framework. The clinical supervisor should also provide the final conclusions/signed off and approved competency to practice.

Time frame in completing the document

There is no set time limit in completing the proficiencies. The nurse specialist and the clinical supervisor should agree about the timeline and timeframe for the completion of the proficiencies. The nurse specialist and the clinical supervisor should meet on a regular basis to discuss action plans in achieving full competency.

Completing the Proficiencies

The proficiencies in this framework will support the specialist nurse to build knowledge, understand the principles underpinning DBS, promote professional values and develop skills that are central to the practice of a DBS nurse specialist.

The nurse specialist should discuss with the line manager about protected time allocated for study and learning. The nurse specialist should take every opportunity to observe and obtain clinical supervision in clinical practice in order to complete and achieve the proficiencies included in the framework. Each completed competency should be signed by the observing clinical supervisor which is not necessarily the designated clinical supervisor.

Evidence of Learning

The nurse specialist should critically appraise individual learning needs by engaging in discussions with the clinical supervisor. Also, the nurse specialist should be able to provide evidence of learning.
The following are examples of evidence of learning
- Clinical practice
- Repeat demonstration of a skill
- Literature review
- Case presentation

- Clinical notes
- Project management
- Audit
- Attendance to a meeting and conference
- Attendance to a training session
- Collaborative work in writing protocols, policies, information booklets and guidelines
- Journal club
- Objective Structured Clinical Examination (OSCE)
- Feedback process such as 360˚ feedback
- Personal and professional development portfolio
- Collaborative work in research projects

Evaluating Practice and Competency

The clinical supervisor will evaluate each proficiency being undertaken by following the criteria from 0 to 6 levels of achievement according to the Benner's novice to expert criteria of nursing practice [64], [65] [see page 15].

The framework is not directly based on the NHS knowledge Skills and Framework (NHS KSF) [48]. On the other hand, the whole framework complements and upholds the six core dimensions in the NHS KSF as follows:

1. Communication – this covers all forms of communication as a key aspect of any jobs in the NHS.
2. Personal and People Development – the on-going pursuance to develop a safe practice and maintaining high standards of care.
3. Health, Safety and Security – focuses on promoting safety, protecting health and well-being of all care providers as all patients that uses the service.
4. Service improvement – motivation to implement policies, protocols and strategies to improve practice and service.
5. Quality – the initiative to maintain the highest quality of care by developing strategies to improve and develop standards of clinical practice.
6. Equality and Diversity – underpins importance of diversity and equality being an integral part of the organisation. This culture should reflect in the way patients are treated.

Other dimensions which may or may not apply to some job roles:

7. Health and Wellbeing (HBW)
8. Estates and Facilities (EF)
9. Information and Knowledge (IK)
10. General (G)

A DBSNS is deemed fit and competent to practice when all the proficiencies in this framework are completed. The DBSNS is able to practice with specialist skills by applying comprehensive knowledge, able to exhibit full understanding of the concepts of principles in movement disorders and neuromodulation. The DBSNS is able to demonstrate accountability and safe practice. Importantly, professional values and attitudes should always be reflected in clinical practice, which is an essential quality of a DBSNS.

Table 2 Levels of Achievement by Benner [64], [65] [2]

1 (Novice)	• Ability to perform skills under direct supervision but requires frequent prompting and assistance • Performance is slow and lacks co-ordination • Able to identify the cognitive and affective components of the skill • With guidance, is able to reflect on performance and identify learning needs
2 (Advanced Beginner)	• Can perform clinical activities satisfactorily under direct supervision but requires some prompting or assistance • Demonstrates psychomotor dexterity • Awareness of the cognitive and affective components of the skill is demonstrated • With guidance, is able to reflect on performance and identify learning needs
3 (Safe Practice)	• Able to perform clinical activities without assistance or prompting and does not require direct supervision • Awareness of the cognitive and affective components of the skill is demonstrated • Aware of own limitations and seeks help and advice appropriately • With guidance, is able to reflect on performance to identify strengths and learning needs
4 (Competent)	• Able to perform the specified clinical activity satisfactorily without assistance, prompting or direct supervision, with acceptable speed and quality of work • Cognitive and affective components of the skill are integrated • Aware of own limitations and seeks help and advice appropriately • With guidance, is able to reflect on performance to identify strengths and learning needs
5 (Proficient)	• Able to perform the specified activity safely without assistance, prompting or supervision, with acceptable speed and quality of work • Works with initiative and adaptability to special problem situations • Cognitive and affective components of the skill are highly developed • Can supervise others in performance of this activity • Is able to reflect on performance independently
6 (Expert)	• Psychomotor components of the skill no longer require conscious thought • Cognitive and affective components are highly developed and integrated • Performance, based on increasing knowledge & experience, is confident, efficient & responsive to situational cues • Able to lead/teach others in performing clinical activity • Able to guide/assist others in reflection regarding clinical performance

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[2] This is based on the Independent and Supplementary prescribing competency booklet courtesy of City University London

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X. Declaration

Name of the Candidate	
Job Title	
Division/Department	
Name of the Clinical Supervisor	
Job Title of the Clinical Supervisor	

Date of the initial meeting

Agreed completion date:

I verify that this DBS competency booklet consist of all my own work. Any information obtained from other sources is referenced accordingly.

Signature:_____ **Date:**_____

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Knowledge Proficiency: Neurology and Pharmacology

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
A. Understands the basic anatomy and physiology involved in movement disorders.									
B. Understands movement disorder conditions, the natural progression and how to assess the severity of conditions in movement disorders.									
C. Understands different non-pharmacological and pharmacological approaches in treatments for conditions in movement disorder.									

Knowledge Proficiency: Neurology and Pharmacology

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
D. Demonstrates understanding of the different medications and treatments; including indication, mode of action and therapeutic effects; as well as the potential side effects.									
E. Understands the potential for pharmacological adverse effects and how to avoid, minimise recognise and manage these events.									
F. Demonstrates continuing professional development by being up-to-date with research papers and scientific evidence related to specialist practice.									

Knowledge Proficiency: Consultation

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
A. Understands the principles underpinning consultation and assessment in clinical area: face to face and telephone advice.									
B. Understands the fundamental principles behind clinical assessment tools in movement disorders (i.e. Unified Parkinson's disease rating scale (UPDRS), Burke Fahn Dystonia Scale, Toronto Western Spasmodic Torticollis rating Scale (TWSTRS), Burke Fahn Tolosa tremor rating scale etc.).									
C. Understands the importance of safe practice by acting within the level of competence; and demonstrates ability to collaborate by consultation with other members of MDT for clinical advice whenever necessary.									
D. Understands the importance of documentation and reporting.									

Knowledge Proficiency: DBS Devices

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
A. Uses up-to-date information about deep brain stimulator devices and products from different manufacturers (i.e. Medtronic, Abbott, Boston Scientific).									
B. Able to discuss the difference between constant voltage and constant current and the clinical implications.									
C. Able to discuss the basic principles between amplitude, pulse width and frequency.									
D. Understands the different principles behind the use of different use of polarity (i.e. Monopolar, double Monopolar, bipolar, interleave settings, directional leads) in DBS settings to achieve effective symptom control.									

Knowledge Proficiency: DBS Device

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
E. Knows how to detect and troubleshoot problems arising from different DBS devices and demonstrates understanding of the importance of documentation and reporting adverse effects related to medical devices.									

Knowledge Proficiency: Commissioning

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
A. Understands how specialist treatment is currently funded and how funding is secured for exceptional circumstances where DBS is indicated.									

Skills Proficiency: Consultation

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement 1	2	3	4	5	6	Signature and Date
A. Demonstrates ability to carry out systematic consultation (History taking, assessment and planning).									
B. Demonstrates ability to perform clinical assessment using appropriate tools and scales (i.e. Unified Parkinson's disease rating scale (UPDRS), Burke Fahn Dystonia Scale, Toronto Western Spasmodic Torticollis Rating Scale (TWSTRS), Burke Fahn Tolosa tremor rating scale etc.).									
C. Demonstrates ability to perform DBS screening for newly implanted patients.									
D. Demonstrates ability to assess patient for DBS adjustment for follow up review of DBS patients.									

Skills Proficiency: Consultation

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
C. Demonstrates essential nursing skills in surgical wound care management and wound review (including, dressing changes, removal of stitches).									

Skills Proficiency: DBS Devices

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	

A. Able to identify the device specifications, and amplitude configurations of different devices utilised in clinical area.
1. Medtronic
    a. Activa PC®, RC®
    b. Soletra®
    c. Kinetra®
    d. Percept PC®
2. Abbott
    a. Libra®
    b. Brio®
    c. Infinity®
3. Boston Scientific
    a. Vercise®
    b. Vercice PC®
    c. Gevia®									

Skills Proficiency: DBS Device

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
B. Able to demonstrate understanding and skills in utilising different interface of DBS clinician controller.									

C. Demonstrates skill in interrogating implanted DBS by using DBS clinician controller (i.e. NVision®, Athena®, Boston® etc)
   a) Electrode configuration
   b) Amplitude adjustment
   c) Pulse width adjustment
   d) Frequency adjustment									

D. Demonstrates ability to read and interpret (implanted pulse generator) IPG battery levels.									
E. Demonstrates ability to switch ON and OFF a DBS device.									

Skills Proficiency: DBS Devices

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
F. Demonstrates skill in checking impedances and able to interpret the results.									

G. Demonstrates skills to adjust DBS implants and able to express rationale for each modality:
• Changing polarity
   ▪ Monopolar
   ▪ Double Monopolar
   ▪ Bipolar
• Changing between Constant voltage and Constant current
• Changing amplitude, pulse width and frequency
• Setting up interleave stimulation
• Setting up multiple group settings
• Setting up patient programmer settings (i.e. advance mode to set patient controller window range)
• Directional programming									

Skills Proficiency: DBS Device

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
H. Able to discuss the pros and cons between primary battery and rechargeable battery. The importance of compliance in regular recharging; and importantly, able to demonstrate how to use rechargeable battery.									
I. Demonstrates skills in trouble shooting in outstanding issues and problems on different devices.									
J. Demonstrates skills in accurate documentation and reports adverse effects related to medical devices to appropriate channels (consultants, manufacturers, Medicine and Health Care products Regulatory Agency - MHRA) following applicable Trust policies and procedures									

Skills Proficiency: DBS Devices									
Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
K. Able to educate and communicate to patient and carers about the use of their own device (patient controller), recharging, post op care, discharge planning and information regarding possible interference and lifestyle modifications post DBS implant.									
L. Demonstrates skills in systematic documentation and recording assessment, planning and intervention.									

Attitude and Values: Consultation									
Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
A. Provides a secure and safe environment during consultation to maintain patient dignity and confidentiality.									

Attitude and Values: Consultation

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
B. Understands own competence and limitations.									
C. Practices and communicates in a professional manner.									
D. Prioritises individual care needs of patient and able to prioritise own workload.									

Attitude and Values: Team Working and Collaboration

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
A. Able to effectively work as a part of multi-disciplinary team.									

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Attitude and Values: Team Working and Collaboration

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
B. Communicates and collaborates effectively to external care providers (GP, Local care providers, Social services).									
C. Able to delegate workload effectively to other members of the team.									
D. Willing to share skills and experience to other members of the MDT as well as junior members of the team.									

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Attitude and Values : Education and Personal Development

Competency	Evidence of Learning	Supervisor's Comments	Level of achievement						Signature and Date
			1	2	3	4	5	6	
A. Identifies own learning needs and can facilitates plan of action to continue professional development.									
B. Uses up to date literatures and attends trainings and seminars									

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CERTIFICATION OF COMPETENCY

This is to certify

_____

has completed the proficiency framework for Deep Brain Stimulation Nurse Specialist.

He/she is competent to practice and perform the responsibilities and duties of
a nurse specialist in DBS therapy.

_____
Date of completi

_____   _____
DBSNA Committee Signature   Clinical Supervisor Signature

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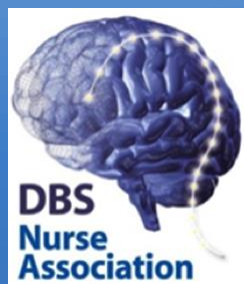
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NOTES

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