Suggested areas/subjects to achieve Pathology Competencies for Neurosensory STP trainees undertaking the Clinical Assessment and Investigation (CA&I) rotation module

Learning outcomes	Competence	Knowledge and understanding	Suggestions
Record and integrate a patient history with the outcome of clinical examination and determine appropriate diagnostic investigations for patients commonly referred to Audiology, Neurophysiology **OR** Ophthalmic and Vision Science.	Assist with obtaining a clinical history using a logical sequence/framework, which might include: • Brief biography • History of presenting complaint • Past history • Smoking/alcohol use • Medication (prescribed and other) • Allergies • Family/social history • Concerns and expectations • Summary.	The importance of an accurate and complete patient history and the potential implications of missing or incorrect information: • Factors relevant to the range of investigations to be undertaken. • How to validate information provided. • How to communicate with patients in ways that facilitate co-operation and an understanding of requirements, including patients with special needs.	Discussion with laboratory based clinical scientists pathologists and biomedical scientists to consider how accurate history taking and completing relevant clinical details on request forms can be important when interpreting pathology results.
Assist in performing a range of diagnostic and therapeutic procedures, recognising abnormal results/findings and appreciating the implication of results on patient treatment and care.	Assist in a range of diagnostic and therapeutic procedures in a variety of clinical settings, recognising when results deviate from normal values/findings and appreciating the implication of results on patient treatment and care, for example in: **Cardiac, Vascular, Respiratory and Sleep Science** • Medical assessment units – point of care testing e.g. blood and urine glucose tests. • High dependency settings – blood gas analysis, preparation of monitoring and ventilator system. • Community settings – spirometry, ankle brachial pressure indices measurements (leg ulcer clinics). **Gastrointestinal Physiology and Urodynamic Science** • Endoscopy unit – assist with telemetric pH capsule placement;	Relevant protocols and procedures for investigations. • How to communicate with patients in a way that respects their dignity, rights, privacy and confidentiality. • The importance of checking patient identity, fully explaining the procedure to the patient, including any potential contraindications and obtaining informed consent prior to undertaking investigatory procedures. • Requirements for the investigation environment to ensure privacy, dignity and comfort of the patient in order to facilitate the investigation procedure and optimise results. • How to check, calibrate and prepare the appropriate equipment and devices. • How to identify potential special needs of patients and the relevant action required to address any issues.	Complete training and competence documents for POCT equipment. Discussion with pathology and clinical staff on the interpretation of results and potential problems with the provision of POCT or other pathology testing.

	endoscopic placement of manometry catheter. • Operating theatre – assist with 2D/3D ultrasound pre and post-op assessment e.g. sphincterotomy, 'search and find' procedures. Diagnostic imaging – assist in the placement of small bowel manometry catheter. • Ward – undertake hydrogen breath tests on non-ambulant patients e.g. small bowel overgrowth. • Assist with transrectal ultrasound (TRUS) clinic. • Continence/flows clinic – fluid management advice, bladder training. • Observe pressure/flow studies in patients with special needs e.g. stoma, mobility issues, neuropathic. **Neurosensory Sciences** • Neurological signs. • Neurological monitoring and function. • Life sign measures. • Cognitive function wellbeing. • Screening.	• Infection control and decontaminations procedures. • Normal and abnormal ranges of relevant results and their implication for the treatment and care of the patient. • Relevant patient pathways and referrals arising from these. • The relationship between the results of a range of investigations across gastrointestinal and LUT disorders and their implication for holistic patient treatment and management.	
In a supportive role assist in performing pathology tests which patients with cardiovascular, respiratory, sleep **OR** with gastrointestinal and LUT disorders **OR** conditions resulting in referral to audiology, neurophysiology or ophthalmic and vision science services will commonly undergo as part of an individual diagnostic plan.	Assist in performing pathology tests with relevance to the routine investigation of relevant conditions, including the production of results, reference ranges and clinical interpretative reports e.g.: • Full blood count • Urea and electrolytes • Liver function test • Lipids • Cerebrospinal fluid monitoring • Sputum culture and sensitivity • Therapeutic drug monitoring e.g. carbamazepine.	Quality assurance and accreditation processes in pathology. • Relevant national, international and local standards. • Factors affecting health, safety and integrity in handling and processing of specimens. • Generation of common pathology test results, comparison to standard reference ranges and the possible abnormal results found in patients presenting to cardiac, vascular, respiratory and sleep or neurosensory science or gastrointestinal/urodynamic sciences services.	Visit a pathology laboratory to observe the range of analytical tests carried out and understand the departments' role in healthcare. Trainees should also take the opportunity to visit Oncology as part of their clinical experience since drug monitoring, especially of cytotoxic drugs, is important e.g. Gentamycin. (This could be done by carrying out a case study). Reflect and analyse how the work of the pathology laboratory links to the care of patients following a cardiac, vascular, respiratory or sleep pathway.

		• Relevance and importance of specificity, sensitivity, accuracy, precision and linearity in the evaluation of analytical methods. • Capabilities and limitations of methods, techniques and equipment. • Safe laboratory practices, including principles of sterilisation and decontamination. • Specimen preservation, distribution, separation, storage and disposal procedures.	Discuss the relevant Health and Safety Policies for the pathology department. Describe the Quality Assurance and Accreditation processes within the pathology laboratory. (This could be covered by the Pathology Quality Manager or equivalent). Assist in performing basic haematological pathology tests with relevance to physiological science e.g. full blood count. Assist in performing basic biochemistry pathology tests with relevance to physiological science e.g. urea and electrolytes, liver function test. Review the results from these tests, compare to standard reference ranges and describe limitation and how normality and abnormality is classified. For example: FBC and U&Es are both relevant to understand the general health of the audiology patient. CSFs and serous fluid tests are very relevant but sputum less so. Thyroid tests, ECG and tests for diabetes etc. are all relevant as they indicate underlying chronic conditions.
In a supportive role assist in performing safety checks, calibration and quality assurance of imaging and pathology equipment using local, national or international standards. Devise a diagnostic plan for a patient	Critically evaluate the role of calibration and quality assurance in pathology and imaging departments in ensuring accuracy of test outcomes and identifying any potential errors or risks when applied in clinical practice.	Methods of risk assessment relevant to work activity. • Hazards and risks associated with the working environment and the procedures to be performed. • The implication of defective equipment and devices on patient	Assist experienced imaging staff in the routine maintenance and checks on imaging equipment using local, or national or international standards. Assist experienced pathology staff in the routine maintenance and checks on

based on the presenting symptoms and clinical information available, and indicate what the next steps might be (diagnostic or therapeutic), dependent on the outcome of the initial results from a mix of diagnostic modalities.	Devise evidence based diagnostic plans for presenting signs and symptoms and clinical information. Assimilate reports from pathology and imaging investigations from patients typically referred to cardiac, vascular, respiratory and sleep or neurosensory science or gastrointestinal/urodynamic sciences present findings for review by the clinical team and propose a differential diagnosis. Work within multidisciplinary teams to support the investigation, treatment and management of patients with relevant conditions to neurosensory science or gastrointestinal physiology and urodynamic sciences or cardiac, vascular, respiratory and sleep services as relevant.	care. • The signs and symptoms of patients commonly presenting to cardiac, vascular, respiratory and sleep or neurosensory science or gastrointestinal/urodynamic sciences and their interaction and significance for differential diagnosis. • The likely needs of people with disabilities within the relevant patient pathways. • The requirements of a diagnostic plan and its presentation. • How these results are used in conjunction with physiological science investigation results in differential diagnosis or in response to treatment. • The importance of ensuring that different assessments are combined appropriately in contributing to the differential diagnosis of disease or disability. • The impact of the results of each different investigation on patient treatment, management and care. • The role that different healthcare scientific services play in the care of patients with disorders presenting to cardiac, vascular, respiratory and sleep or neurosensory science or gastrointestinal/urodynamic sciences services in a range of healthcare settings. For example: o Integrated care o Critical care o Primary care o Independent sector.	pathology test instrumentation using local, or national or international standards. Recognise the errors or potential risks of using defective imaging and pathology equipment in clinical practice.